COMMITTENTE:

RFI RETE FERROVIARIA ITALIANA
GRUPPO FERROVIE DELLO STATO ITALIANE

DIREZIONE LAVORI:

ITALFERR
GRUPPO FERROVIE DELLO STATO ITALIANE

APPALTATORE:

Ghella — CONSORZIO CFT — ITINERA — PIZZAROTTI FONDATA NEL 1910

PROGETTAZIONE:	PROGETTISTA:	DIRETTORE DELLA PROGETTAZIONE
RAGGRUPPAMENTO TEMPORANEO PROGETTISTI PIZZAROTTI FONDATA NEL 1910 — Sintagma — INTEGRA — AK INGEGNERIA GEOTECNICA	Ing. G.S. KALAMARAS	Ing. PIETRO MAZZOLI Responsabile integrazione fra le varie prestazioni specialistiche

PROGETTO ESECUTIVO

ITINERARIO NAPOLI-BARI
RADDOPPIO TRATTA CANCELLO-BENEVENTO
I° LOTTO FUNZIONALE CANCELLO-FRASSO TELESINO E VARIANTE ALLA LINEA ROMA-NAPOLI VIA CASSINO NEL COMUNE DI MADDALONI

GALLERIA MONTE AGLIO

USCITA DI EMERGENZA KM 3+777.276
Relazione tecnica e di calcolo

APPALTATORE		SCALA:
Consorzio CFT IL DIRETTORE TECNICO Geom. C. Bianchi 10/10/2018		-

COMMESSA	LOTTO	FASE	ENTE	TIPO DOC.	OPERA/DISCIPLINA	PROGR.	REV.
IF1N	01	E	ZZ	CL	GN0600	001	C

Rev.	Descrizione	Redatto	Data	Verificato	Data	Approvato	Data	Autorizzato Data
A	Emissione	L. Gallo	10/07/2018	G. Kalamaras	10/07/2018	P. Mazzoli	10/07/2018	G. Kalamaras
B	Rev. Istruttoria ITF 29/08/18	L. Gallo	13/09/2018	G. Kalamaras	13/09/2018	P. Mazzoli	13/09/2018	
C	Recepimento istruttoria	L. Gallo	10/10/2018	G. Kalamaras	10/10/2018	P. Mazzoli	10/10/2018	
								10/10/2018

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ALLEGATI

- ALLEGATO 1: SOLLECITAZIONI E VERIFICHE DEI SOSTEGNI DI PRIMA FASE
- ALLEGATO 2: SOLLECITAZIONI NEL RIVESTIMENTO DEFINITIVO

1 PREMESSA

La presente relazione è redatta nell'ambito del Progetto Esecutivo per il raddoppio della linea Cancello-Benevento sull'itinerario Napoli-Bari e in particolare si riferisce al primo lotto funzionale compreso tra Cancello e la Stazione di Frasso Telesino/Dugenta e variante alla linea Roma-Napoli via Cassino nel comune di Maddaloni.

L'estensione del tracciato in progetto è di circa 16,5Km; nell'ambito di questa tratta è presente la galleria Monte Aglio, una galleria naturale a doppio binario lunga oltre 4Km. Oltre alla galleria principale (di linea), sono previste una serie di gallerie secondarie che ospitano le vie di fuga.

La presente relazione di calcolo illustra il dimensionamento delle sezioni tipologiche di scavo e consolidamento previste nell'ambito dell'innesto della galleria finestra al km 3+777.276 con la galleria di linea. In particolare sono trattati i seguenti aspetti:

- valutazione del comportamento atteso del cavo in corrispondenza dell'innesto;
- modello di calcolo messo a punto per la verifica delle sezioni e relative verifiche geotecniche e strutturali degli elementi che compongono le sezioni tipo.

1.1 RIFERIMENTI

1.1.1 NORMATIVA

Le verifiche statiche e la redazione della presente relazione sono state eseguite in conformità alle seguenti Normative:

- Decreto Ministero Infrastrutture 14 gennaio 2008, "Nuove norme tecniche per le costruzioni".
- Circolare n.617 del 2 febbraio 2009 Ministero Infrastrutture e Trasporti, Istruzioni per l'applicazione delle "Nuove norme tecniche per le costruzioni".

1.1.2 RACCOMANDAZIONI E SPECIFICHE TECNICHE

- Specifica tecnica ITALFERR cod. PPA0002403 rev. A "Linee guida per la progettazione geotecnica delle gallerie naturali".

1.2 CARATTERISTICHE DEI MATERIALI

CALCESTRUZZI

SPRITZ-BETON FIBRORINFORZATO:

- Rispondenza ai requisiti delle norme UNI EN 14487-1 e UNI EN 14487-2
- Classe di resistenza: C20/25
- Resistenza a compressione alle brevi stagionature:
  - a 24 ore $\geq$ 10MPa
  - a 48 ore $\geq$ 13MPa
- Curva granulometrica degli aggregati di tipo continuo con diametro massimo di 6÷8mm
- Classe di consistenza: S5
- Dosaggio in fibre: 35kg/m^3
- Energia assorbita: $\geq$ 500joule (da prove di punzonamento eseguite su piastre in cls fibrorinforzato)

- Fibre di acciaio a basso contenuto in carbonio da filo trafilato (tipo A1), diametro equivalente Ø≤0.7mm e resistenza a trazione f_{yk} = 800MPa (UNI 11037).

CALCESTRUZZO MAGRO:

- Classe R_{ck} = 15MPa (C12/15)
- Classe di esposizione ambientale X0 (UNI EN 206-1)

CALCESTRUZZO STRUTTURALE (CALOTTA E PIEDRITTI ARMATI):

- Classe R_{ck} = 30MPa (C25/30)
- Classe di esposizione ambientale XC2 (UNI EN 206-1)
- Diametro massimo degli aggregati: 32mm
- Rapporto massimo acqua/cemento: 0.60
- Classe di consistenza: S4

CALCESTRUZZO STRUTTURALE (ARCO ROVESCIO E MURETTE):

- Classe R_{ck} = 37MPa (C30/37)
- Classe di esposizione ambientale XA1 (UNI EN 206-1)
- Diametro massimo degli aggregati: 32mm
- Rapporto massimo acqua/cemento: 0.55
- Classe di consistenza: S3-S4

MARCIAPIEDI E GETTO DI REGOLAMENTO:

- Classe R_{ck} = 30MPa (C25/30)
- Classe di esposizione ambientale X0 (UNI EN 206-1)
- Diametro massimo degli aggregati: 32mm
- Rapporto massimo acqua/cemento: 0.60
- Classe di consistenza: S3-S4

ACCIAI

ACCIAIO:

- Armature: B450C controllato in stabilimento
- Centine e profilato: S275 o superiore
- Piastre: S275 o superiore
- Piastrame e travi di collegamento tiranti: S275 o superiore
- Presostegno al contorno: S355 (UNI10025)
- Catene: B450C controllato in stabilimento
- Bulloni piastre di unione centine: classe 8.8 o superiori (UNI3740/74)

COPRIFERRO:

- 5cm (±0.5cm)

INTERVENTI DI CONSOLIDAMENTO IN FASE DI SCAVO

ELEMENTI IN VETRORESINA STRUTTURALI:

- TUBI
  - Diametro esterno/interno: Ø60/40mm ad aderenza migliorata
  - Spessore medio: 10mm
  - Densità: 1.8t/m^3
  - Resistenza a trazione: f_{yk} = 450MPa
  - Resistenza al taglio: τ = 85MPa
  - Contenuto in vetro: 60%, pressione di scoppio: 80bar
  - Diametro di perforazione >100mm
- PROFILATI PIATTI
  - N° 3 piatti 40mm, sp. 6mm ad aderenza migliorata ottenuta o con riporto di sabbia quarzosa polimerizzata a caldo o con impronta negativa sul profilo strutturale, collegati al contorno di un tubo in PE PN10, Ø22mm (valvolato 2v/m per sezione C1bis)
  - Densità: 1.9 t/m^3
  - Resistenza a trazione: f_{yk} = 1000MPa
  - Resistenza al taglio: τ = 140MPa
  - Contenuto in vetro: 60%
  - Diametro di perforazione >100mm

- ELEMENTO DI RINFORZO TIPO P.E.R. GROUND H700
  - Tubi in vetroresina Ø60/40mm corrugati
  - Resistenza a trazione: f_{yk} > 450MPa
  - Resistenza al taglio: τ > 120MPa
  - Modulo elastico, E_v = 20000MPa
  - Guaina tecnica espandibile
  - Massa areica: 350g/m^2
  - Resistenza a trazione: 24kN/m

BULLONI RADIALI IN GALLERIA:

- bulloni a resistenza continua tipo SWELLEX Pm24
- diametro di perforazione: Ø=48mm
- carico di snervamento: $R_y \geq$200kN
- carico di rottura: $R_t \geq$240kN
- piastra di ancoraggio bombata tipo SWELLEX P24C, dimensioni 152x152mm

IMPERMEABILIZZAZIONE E DRENAGGI

DRENAGGI IN AVANZAMENTO IN FASE DI SCAVO:

- Tubi microfessurati in PVC ad alta resistenza (4.5MPa alla trazione), diametro esterno Ø=60mm, sp. 5mm, perforo = 100mm, rivestiti con TNT
- I primi 10.00m da bocca foro dovranno essere ciechi

IMPERMEABILIZZAZIONE IN PVC:

- Teli per impermeabilizzazione: sp. = 2±0.5mm, g = 3g/cm^2
- Strato di tessuto non tessuto di 400gr/m^2 a filo continuo

CORDOLINO IDROESPANSIVO DI TENUTA IDRAULICA (WATER-STOP):

- Composizione miscela in peso: 25% gomma butilica, 75% bentonite di sodio
- Dimensione: 20x25mm
- Peso: 0.780kg/m
- Temperatura di applicazione da -15°C a +50°C
- Stabilità alle soluzioni saline ed aggressive e resistenza all'azione inibente degli ioni calcio e magnesio
- Espansione a contatto con l'acqua: 6 volte il volume iniziale minimo senza perdita di coesione di massa e con reperibilità del fenomeno certificata per numerosi cicli di idratazione/essiccamento

SISTEMA DI IMPERMEABILIZZAZIONE COMPARTIMENTATO:

- Tubi in PVC-P ri-iniettabili tipo MAPEI IDROSTOP MULTI Ø11/19mm
- Teli per impermeabilizzazione in PVC-P: sp. = 2±0.5mm, g = 3g/cm^2
- Strato di tessuto non tessuto di 400gr/m^2 a filo continuo
- Water stop in PVC-P, larghezza 400mm, spessore 4mm con 6 scanalature di altezza 30mm, tipo MAPEPLAN WATERSTOP
- Scatole 90x90x40mm in PVC per terminali tubi ri-iniettabili
- Valvole di iniezione in PVC-P tipo MAPEPLAN, valvola di collaudo/iniezione
- Tubi in PVC Ø6/8mm per iniezione/collaudo valvole

TUBI:

- Tubi micro fessurati in PVC/tubo di scarico cieco in corrispondenza della linea al piede dell'impermeabilizzazione, Øinterno >150mm (con caratteristiche meccaniche conformi alle norme DIN 1187).

2 DESCRIZIONE DELL'OPERA

La galleria di linea denominata "Monte Aglio" ha una lunghezza complessiva di 4196m, di cui 337m in artificiale e 3859m in naturale da scavare con il metodo tradizionale.

La galleria di linea si compone delle seguenti tratte:

Tabella 1: sintesi delle tratte di cui si compone la galleria di linea.

pk inizio	pk fine	lunghezza [m]	galleria	sezione di intradosso
2+780.00	2+881.00	101	artificiale	scatolare
2+881.00	3+000.00	119	artificiale	policentrica
3+000.00	6+859.00	3859	naturale	monocentrica
6+859.00	6+917.00	58	artificiale	policentrica
6+917.00	6+976.00	59	artificiale	scatolare

L'imbocco lato Cancello si trova a pk 2+780.00 nel comune di Maddaloni, mentre l'imbocco lato Benevento si trova a pk 6+976.00 nel comune di Valle di Maddaloni.

L'imbocco lato Cancello si trova a circa 63m s.l.m, mentre l'imbocco lato Benevento si trova a circa 117m s.l.m, con una pendenza di circa il 1.3% in discesa da Benevento verso Cancello.

Le coperture massime previste per la tratta in naturale sono di circa 306m e sono localizzate nella tratta centrale della galleria, mentre agli imbocchi si registrano le coperture minime.

Il progetto prevede 4 uscite di emergenza lungo il tracciato in sotterraneo da utilizzare come vie di fuga per l'evacuazione e l'accesso dei mezzi di soccorso:

- 1° uscita di emergenza a pk 3+777.276 con collegamento diretto verso l'esterno mediante una galleria finestra di lunghezza 330m. Questa tratta di galleria è utilizzata anche in fase costruttiva al fine di creare una nuova finestra di accesso alla galleria di linea ed utilizzare così più fronti di avanzamento per lo scavo della galleria principale.
- 2° uscita di emergenza ubicata a pk 4+777.531 collegata mediante un cunicolo alla terza uscita di emergenza da cui si accede all'esterno mediante una tratta di galleria finestra.
- 3° uscita di emergenza a pk 5+503.917, collegata direttamente all'esterno con una galleria finestra di lunghezza pari a 550m circa. Alla galleria finestra si interseca anche il cunicolo di emergenza che collega la seconda e quarta uscita.
- 4° uscita di emergenza a pk 5+978.240 è collegata alla finestra di uscita mediante il cunicolo di lunghezza complessiva di 1226m posto a circa 22 di distanza dall'asse della galleria principale di linea.

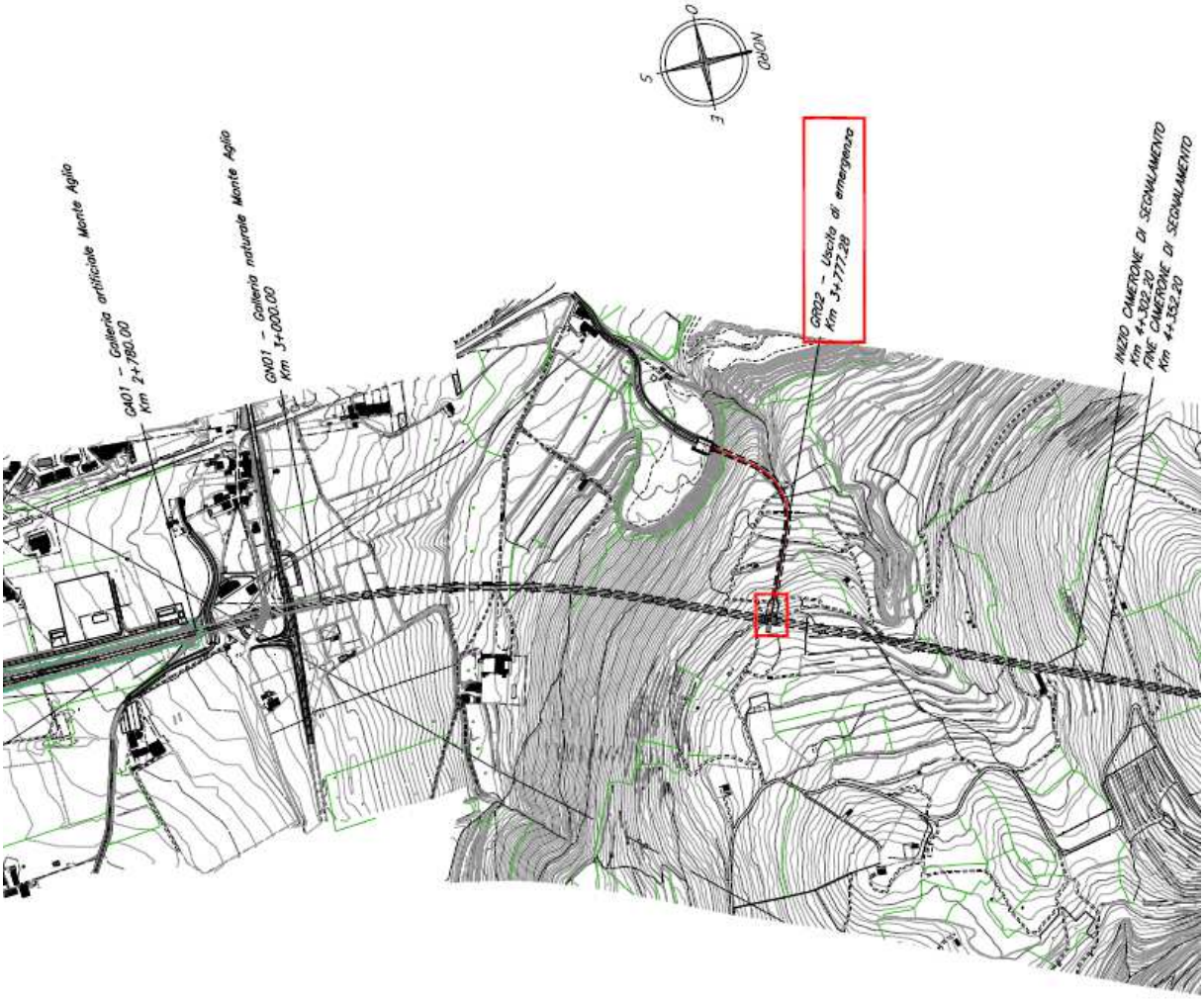


Figura 2.1: Stralcio della planimetria della galleria di linea con indicazione del nodo di innesto alla progressiva 3+777.276.

3 CARATTERIZZAZIONE GEOMECCANICA

Nella zona di innesto alla progressiva 3+777.276 le formazioni geologiche interessate dallo scavo della galleria sono costituite da calcari caratterizzati da buone proprietà meccaniche, con una copertura di 180 m circa. Per maggiori dettagli relativi all'analisi dei dati e alla stima dei parametri geotecnici e geomeccanici si rimanda al documento *Relazione geotecnica e di calcolo Galleria Monte Aglio*.

Nella tabella seguente sono riassunti i parametri geotecnici utilizzati per le analisi.

Tabella 2: parametri geomeccanici dei calcari.

Unità	GSI	H [m]	σ_0 [MPa]	γ [kN/m^3]	c'$_k$ [kPa]	ϕ'_k [°]	$C_{u,k}$ [kPa]	E_m [MPa]
RDO	45	181	4.525	25	710	41	-	6000

dove:
H è la copertura della galleria
σ_0 è la tensione geostatica a livello del cavo
γ è il peso specifico del terreno/roccia
c'$_k$ è la coesione efficace
ϕ'_k è l'angolo di attrito efficace
$C_{u,k}$ è la coesione non drenata
E_m è il modulo dell'ammasso roccioso.

4 FASE DI DIAGNOSI

Per la valutazione del comportamento deformativo in corrispondenza dell'innesto, si è utilizzato il metodo delle linee caratteristiche, che per la posizione specifica individua un comportamento dell'ammasso roccioso allo scavo di tipo elastico (A), poiché risulta σc /1.2 pc con σc = 3.12 / 1.2 x 1.02 MPa. Nella figura seguente è riportato l'andamento della linea caratteristica per l'innesto alla progressiva 3+777.276 (l'eventuale adozione del rinforzo del fronte è funzione delle effettive caratteristiche geomeccaniche dell'ammasso roccioso riscontrate durante lo scavo).

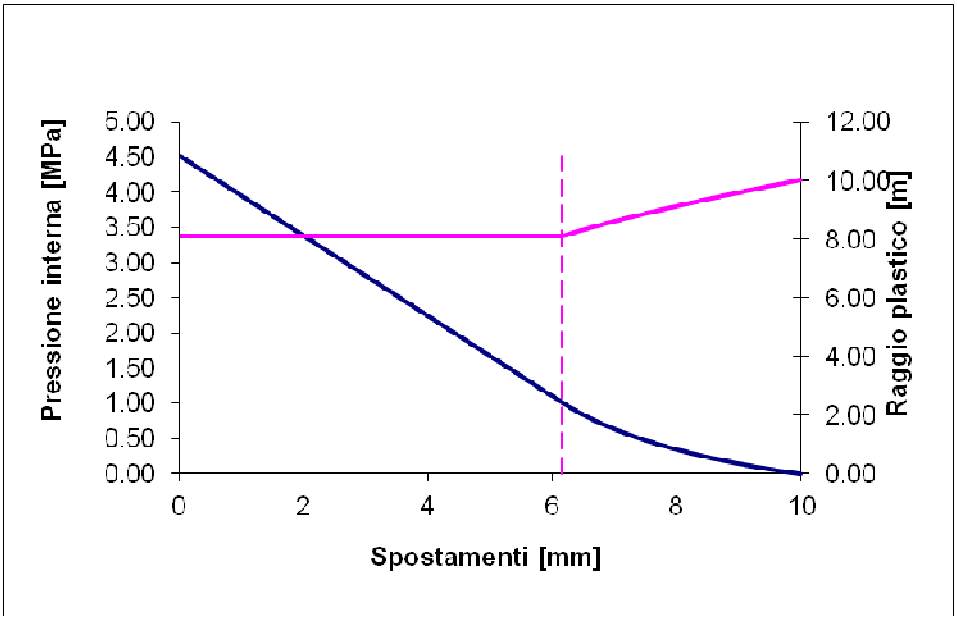


Figura 4.1: Andamento della linea caratteristica e del raggio plastico in corrispondenza dell'innesto alla progressiva 3+777.276.

5 FASE DI TERAPIA

5.1 DESCRIZIONE DEL NODO DI INNESTO

Nelle successive figure sono riportate la planimetria della zona di innesto del camerone di manovra con la galleria di linea e di questa con la camera di esodo negli assi principali, le fasi di installazione e le centine impiegate per la realizzazione del sostegno di prima fase. Per maggiori dettagli si rimanda agli elaborati grafici.

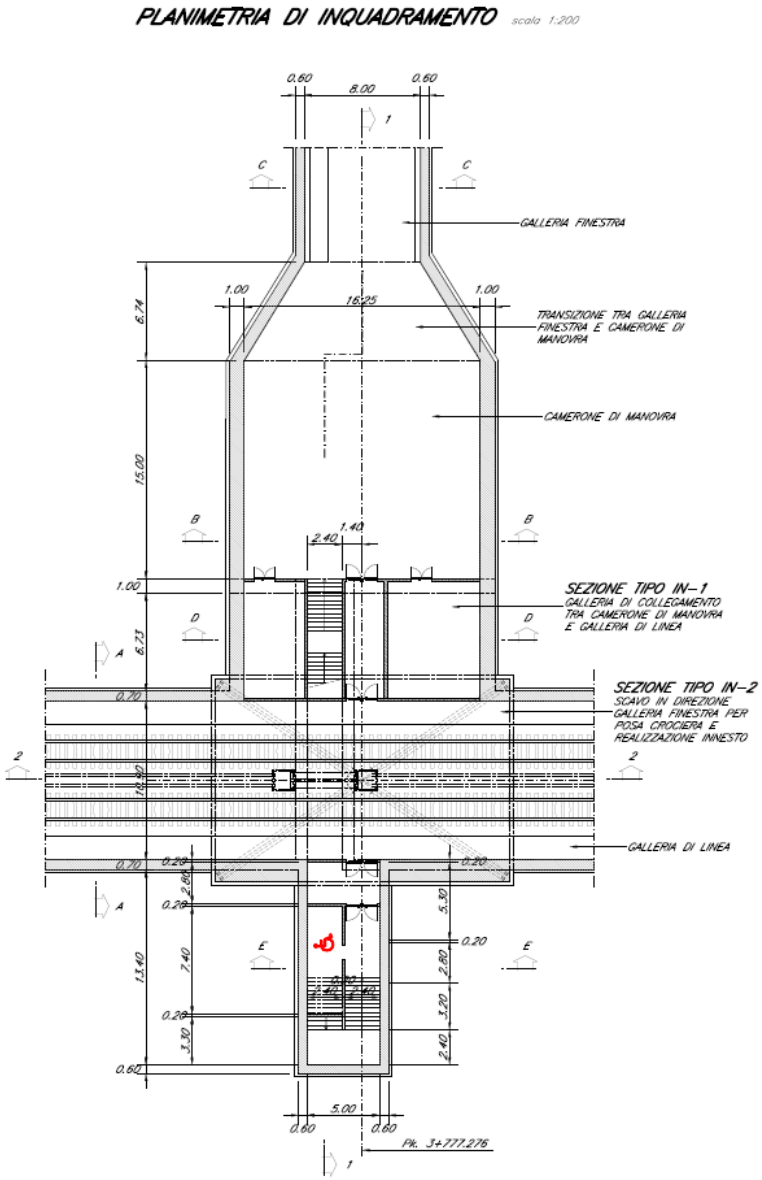


Figura 5.1: planimetria dell'innesto del camerone di manovra con la galleria di linea e con la camera di esodo alla progressiva 3+777.276.

Nelle figure seguenti si descrivono le fasi di realizzazione dei sostegni di prima fase e dei rivestimenti definitivi delle gallerie che costituiscono l'innesto.

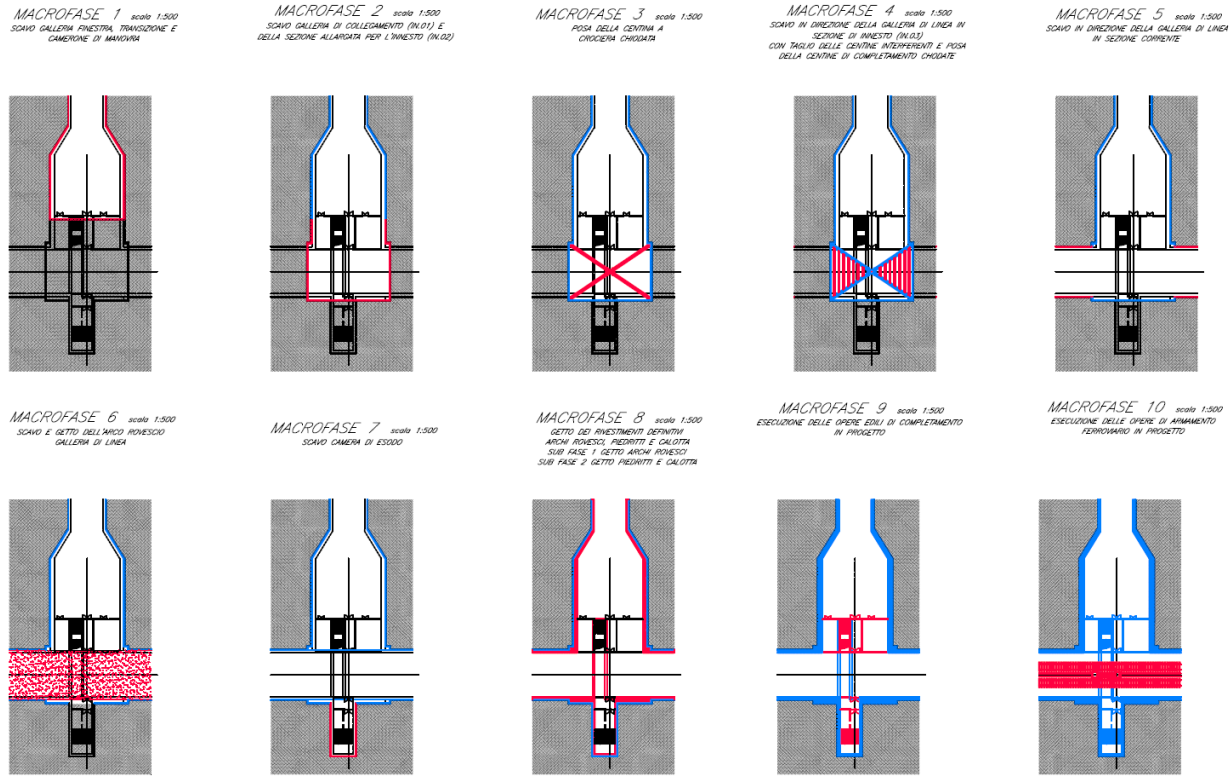


Figura 5.2: zona di innesto del camerone di manovra e della camera di esodo con la galleria di linea alla progressiva 3+777.276 – fasi di realizzazione.

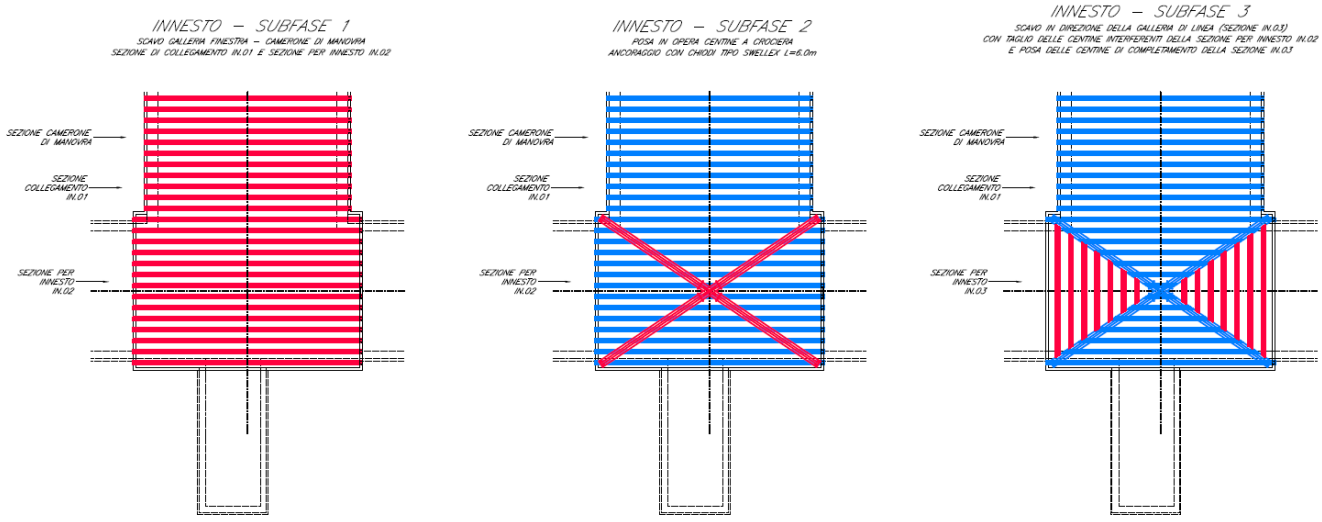


Figura 5.3: dettaglio delle fasi di montaggio del sostegno di prima fase in corrispondenza dell'innesto del camerone di manovra con la galleria di linea alla progressiva 3+777.276.

Nelle figure seguenti si illustrano le centine impiegate per la realizzazione del sostegno di prima fase nella zona di innesto IN02.

Le centine a crociera, costituite da due profili HEB220, sono installate nella zona di innesto tra la galleria di linea e il camerone di manovra. Esse sono ancorate all'ammasso roccioso mediante chiodi tipo "Swellex Pm24" di lunghezza L=4.50m e perforo ∅48 mm. In funzione delle caratteristiche dell'ammasso riscontrate in fase di scavo, la lunghezza dei chiodi potrà variare da 4.5m a 6.0m.

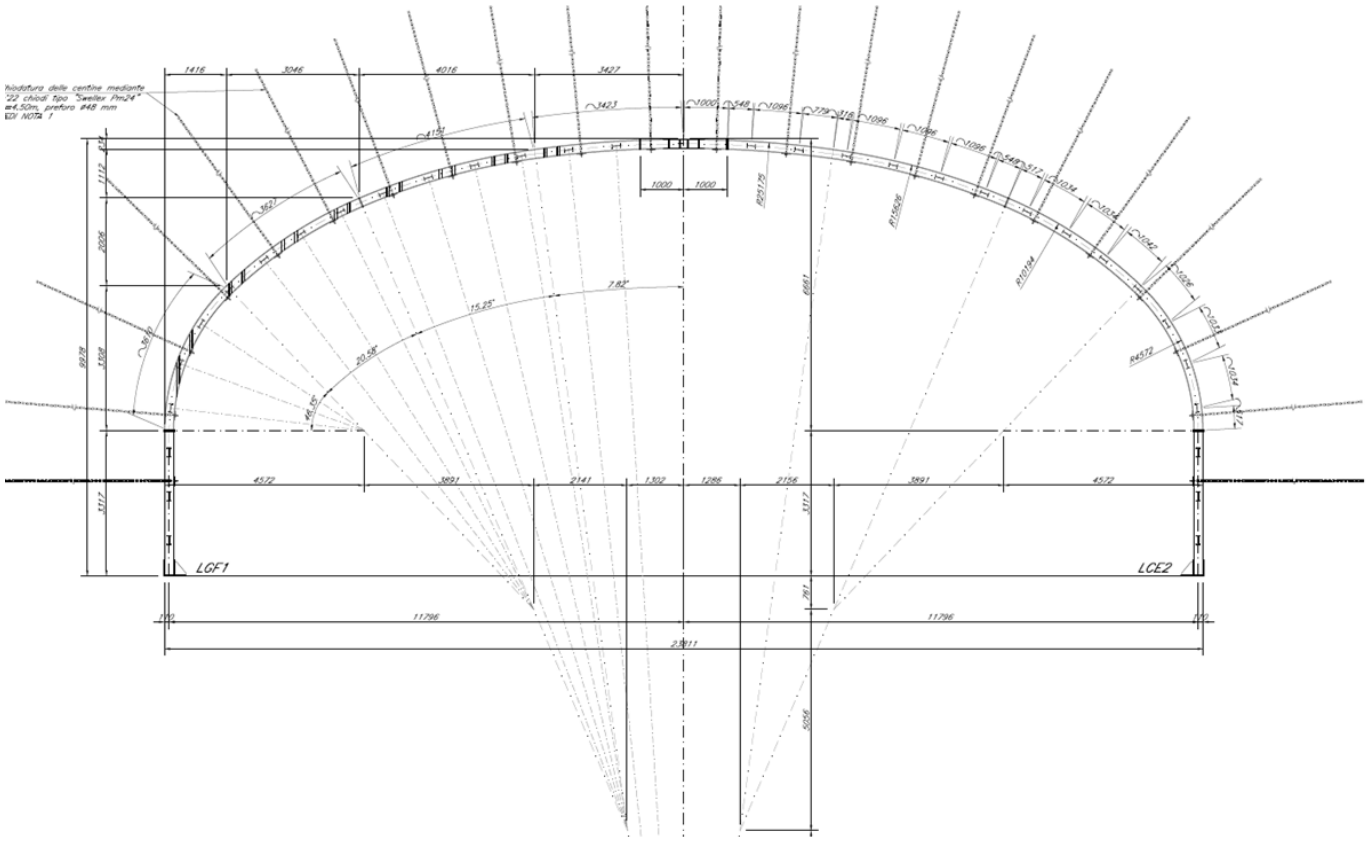


Figura 5.4: centina a crociera CC1 - CC2 utilizzata nella sezione di innesto IN02.

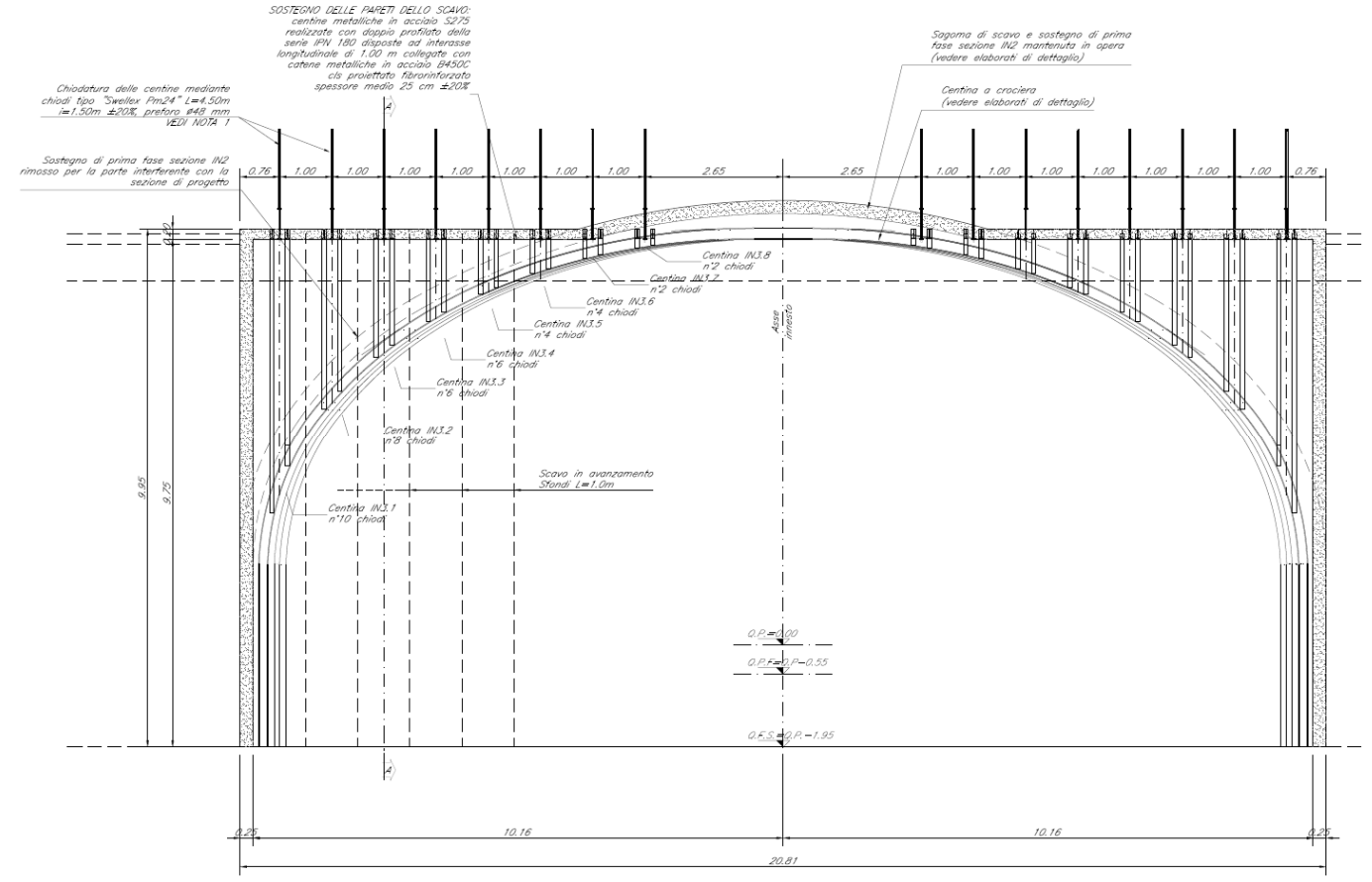


Figura 5.5: centine IN03 installate dopo la rimozione del sostegno di prima fase IN02.

5.2 DESCRIZIONE DELLE SEZIONI TIPO

Lo scavo della galleria di linea in corrispondenza dell'innesto con la camera di esodo e con il camerone di manovra sarà effettuato in tradizionale adottando la sezione tipo A2 e sarà effettuato mediante avanzamenti a piena sezione per singoli sfondi di lunghezza massima pari a 2.4m.

Di seguito sono descritte le caratteristiche principali delle sezioni adottate in corrispondenza dell'innesto.

5.2.1 SEZIONE TIPO A2 CAMERONE DI MANOVRA

La sezione tipo A2 camerone di manovra è una sezione cilindrica che prevede una bullonatura radiale del cavo e una sezione maggiorata rispetto alle sezioni correnti. Gli elementi principali che caratterizzano la sezione tipo camerone di manovra sono:

- scavo a piena sezione per sfondi massimi di 1m;
- per la sezione IN01 si utilizza un sostegno di prima fase costituito da 25cm di cls proiettato fibrorinforzato e centine realizzate con profilati IPN200 doppie a passo 1m;
- per la sezione IN02 si utilizza un sostegno di prima fase costituito da 25cm di cls proiettato fibrorinforzato e centine realizzate con profilati IPN220 doppie a passo 1m;
- chiodatura radiale mediante 21/22 chiodi tipo Swellex® Pm24 disposti in raggiere alternate di lunghezza 4.5m posti ad interasse longitudinale di 1m;

- rivestimento definitivo di spessore 1m in arco rovescio e 1m in calotta; l'arco rovescio dovrà essere gettato a una distanza massima dal fronte di 3 diametri equivalenti mentre il getto della calotta non è vincolato. Il rivestimento in corrispondenza dell'innesto è armato sia in calotta e sia in arco rovescio.

5.2.2 SEZIONE TIPO A2 GALLERIA DI LINEA

La sezione tipo A2 della galleria di linea è una sezione cilindrica che non prevede interventi di preconsolidamento del fronte e al contorno, ma solo una bullonatura radiale del cavo; è adottata per la zona di innesto alla progressiva 3+777.276 in quanto il comportamento dell'ammasso roccioso allo scavo è di tipo stabile (Categoria A).

Gli elementi principali che caratterizzano la sezione tipo A2 sono:

- scavo a piena sezione per sfondi massimi di 2.4m;
- sostegno di prima fase costituito da 20cm di cls proiettato armato con rete elettrosaldata ∅6 maglia 15x15cm e centine "automatiche" realizzate con profilati IPN180 doppie con passo 1.2m. In corso d'opera si valuterà la sostituzione della centina automatica con la centina tradizionale, con l'utilizzo di betoncino proiettato fibrorinforzato in luogo della rete elettrosaldata;
- chiodatura radiale mediante 14/15 chiodi tipo Swellex® Pm24 disposti in raggiere alternate di lunghezza 4.5m posti ad interasse longitudinale di 1.2m;
- rivestimento definitivo di spessore 80cm in arco rovescio e 70cm in calotta; l'arco rovescio dovrà essere gettato a una distanza massima dal fronte di 3 diametri equivalenti mentre il getto della calotta non è vincolato. Il rivestimento definitivo per le zone di innesto è armato sia in arco rovescio e sia in calotta, in calotta la sezione di 70cm è sormontata da un getto di riempimento variabile tra 10cm e 30cm. Il rivestimento definitivo del sottoattraversamento ha spessore 80cm ed è armato.

5.2.3 SEZIONE TIPO CAMERA DI ESODO IN CALCARI

La sezione tipo camera di esodo prevista nella formazione dei calcari con buone caratteristiche meccaniche è una sezione cilindrica che non prevede interventi di preconsolidamento del fronte, ma solo una bullonatura radiale del cavo; è adottata per la zona di innesto realizzate a profondità elevate in ammassi rocciosi consistenti..

Gli elementi principali che caratterizzano la sezione tipo camera di esodo da realizzare in calcari sono:

- scavo eseguito per i 2/3 superiori della sezione, per sfondi massimi di 1.2m;
- sostegno di prima fase costituito da 25cm di cls proiettato fibrorinforzato e centine realizzate con profilati IPN140 doppie a passo 1.2m;
- chiodatura radiale mediante 11/12 chiodi tipo Swellex® Pm24 disposti in raggiere alternate di lunghezza 3.0m posti ad interasse longitudinale di 1.2m;
- chiodatura delle pareti di fondo campo mediante 14+11 bulloni tipo Swellex® Pm24 di lunghezza 3.0m e disposti a quinconce con maglia 1.80m x 1.80m;
- rivestimento definitivo di spessore 60cm per il solettone di fondo, i piedritti, la calotta e i timpani di fondo, tutti elementi armati.

5.3 ANALISI E VERIFICA DEL NODO DI INNESTO

5.3.1 DESCRIZIONE DEL METODO DI CALCOLO ADOTTATO

Il metodo di calcolo impiegato è quello degli elementi finiti (FEM) implementato tramite il codice commerciale Midas GTS NX ver. 2.1, prodotto dalla Midas Information Technology Co., Ltd.

Midas è un programma agli elementi finiti che consente di svolgere analisi tridimensionali in campo elasto-plastico per la valutazione dello stato di sforzo e di spostamento al contorno di opere in sotterraneo e di analizzare la risposta tensio-deformativa dei sostegni installati a supporto degli scavi durante le fasi costruttive, mediante l'implementazione di analisi multi-stage.

5.3.1.1 CONDIZIONI AL CONTORNO ED INIZIALI

Il modello numerico, di dimensioni 96mx78mx206m (bxLxh), è realizzato tramite una maglia di 220314 elementi tetraedrici, le cui dimensioni variano da 4m in prossimità dei limiti del modello a 1m in corrispondenza delle strutture sotterranee. I confini del modello sono stati collocati a una distanza dalle camere di esodo e dal cunicolo tale da non risentire degli effetti di bordo. Il bordo superiore del modello coincide con il piano campagna.

Le condizioni al contorno sono state applicate al modello imponendo spostamenti nulli alle facce del modello secondo quanto specificato di seguito:

- Spostamenti nulli nelle tre direzioni x,y e z per il fondo del modello;
- Spostamenti nulli in direzione x per le facce destra/sinistra;
- Spostamenti nulli in direzione y per le facce davanti/dietro;
- Superficie superiore non vincolata.

Lo stato tensionale iniziale è stato supposto litostatico con un coefficiente di spinta a riposo k_0 per i calcari pari a 0.8. Lo stato tensionale geostatico è stato riprodotto nel modello tramite la fase 1, applicando un campo di sforzo di tipo gravitazionale.

5.3.1.2 LEGGE DI COMPORTAMENTO DEI MATERIALI

5.3.1.2.1 Ammasso roccioso

Il criterio di rottura adottato per l'ammasso roccioso è quello di Hoek & Brown, opportunamente linearizzato per la copertura corrispondente all'analisi effettuata. Per gli elementi lontani dalle opere sotterranee il materiale è stato considerato elastico.

5.3.1.2.2 Sostegno di prima fase

Il sostegno di prima fase è stato simulato con elementi shell aventi comportamento elastico. Gli elementi shell sono stati simulati con un materiale di rigidezza equivalente.

I valori dello spessore (s_{eq}) e del modulo elastico (E_{eq}) equivalente sono ricavati dalla risoluzione del seguente sistema lineare:

$$(E_s/E_c-1)*E_c*A_s/i + E_c*A_c = E_{eq}*s_{eq}$$

$$(E_s/E_c-1)*E_c*J_s/i + E_c*J_c = E_{eq}*s_{eq}^3/12$$

Dove:
E_s = modulo elastico dell'acciaio
A_s, J_s = area e momento d'inerzia delle centine a metro lineare
i = interasse centine
E_c = modulo elastico del cls proiettato
A_c, J_c = area e momento d'inerzia del cls proiettato per metro lineare.

A tergo degli elementi shell, per simulare il contatto con l'ammasso roccioso, è stata interposta un'interfaccia con le caratteristiche di rigidezza valutate secondo la relazione di Galerkin:

dove:
k_n è la rigidezza normale;
k_t è la rigidezza tangenziale;
E è il modulo elastico del terreno a tergo del sostegno di prima fase;
ν è il coefficiente di Poisson.

Cautelativamente si è ipotizzato che a lungo termine il sostegno di prima fase non sia più attivo e che tutti i carichi siano trasferiti al rivestimento definitivo.

5.3.1.2.3 Rivestimento definitivo

Il rivestimento definitivo è simulato modificando le proprietà dei medesimi elementi shell che costituiscono il sostegno di prima fase, imponendo a questi, nella fase di costruzione del rivestimento definitivo, i sui effettivi spessori e rigidezze. La legge di comportamento degli elementi del rivestimento definitivo è stata assunta di tipo elastica, con le seguenti caratteristiche di rigidezza:

—— ;

.

A lungo termine quindi, tutti i carichi geotecnici gravano sul rivestimento definitivo.

5.3.1.2.4 Consolidamento radiale al contorno dello scavo

Il consolidamento radiale al contorno del cavo è stato simulato tramite elementi embedded truss aventi le caratteristiche geometriche e di deformabilità dei bulloni di tipo "Swellex". La legge di comportamento di questi elementi è tipo elasto-plastica con cut-off a trazione pari alla resistenza di calcolo dei bulloni (146kN).

5.3.1.3 SIMULAZIONE DELLE FASI ESECUTIVE

Le fasi esecutive delle opere sono fedelmente riprodotte nel modello stramite un'analisi di tipo multi-stage. Il nodo di innesto alla progressiva 3+777.276 è caratterizzato dalle fasi costruttive riportate nel seguito.

5.3.1.4 AZIONE SISMICA

Per i nodi di innesto tra la galleria di linea e le camere di esodo/cameroni, gli effetti del sisma sono stati trascurati sulla base dei risultati delle analisi sismiche condotte per la galleria di linea a profondità elevate: tali analisi hanno infatti evidenziato effetti del tutto trascurabili sui rivestimenti definitivi.

5.3.2 MODELLO DI CALCOLO

Nel presente paragrafo si riportano le fasi adottate nel modello di calcolo e i parametri geotecnici/geomeccanici utilizzati nell'analisi.

L'analisi numerica del nodo d'innesto è stata condotta utilizzando i parametri geotecnici e la stratigrafia riportata nella tabella seguente.

Tabella 3: parametri geotecnici dei calcari linearizzati.

Unità geot.	Stratigrafia [m da p.c.]	copertura [m]	γ [kN/m^3]	c' [kPa]	φ' [°]	E [MPa]	ν [-]	k_0 [-]
RDO	-	181	25	710	41	6000	0.25	0.8

dove:

- γ è il peso specifico dell'ammasso roccioso
- c' è la coesione efficace
- ϕ' è l'angolo di attrito efficace
- E è il modulo dell'ammasso roccioso
- n è il rapporto di Poisson
- k_0 è il coefficiente di spinta a riposo.

I parametri della roccia sono stati determinati mediante linearizzazione del criterio di rottura di Hoek & Brown.

Tabella 4: parametri geomeccanici dei calcari.

GSI	UCS [MPa]	mi [-]	D [-]	Ei [MPa]
45	75	10	0.5	55000

Le fasi del modello di calcolo sono le seguenti:

Fase	Descrizione
0	Condizione iniziale geostatica
1	Scavo e installazione del sostegno di prima fase di un tratto della galleria finestra A1 pari a 14.4m in un unica fase
2-3	Scavo della galleria finestra A1 per sfondi di 2.8m per un totale di 5.6m
3-4	Installazione del sostegno di prima fase della galleria finestra A1 alla fase n+1 rispetto alle fasi di scavo
4-45	Scavo della sezione A2 del camerone per sfondi di 1m
5-46	Installazione del sostegno di prima fase del camerone A2 alla fase n+1 rispetto alle fasi di scavo
47	Installazione della centina a crociera chiodata
48	Rimozione del sostegno di prima fase della zona di intersezione con la galleria di linea
49-58	Scavo della galleria di linea A2 con sfondi di 2.4m in entrambe le direzioni
50-59	Installazione del sostegno di prima fase della galleria di linea A2 alla fase n+1 rispetto alle fasi di scavo
60	Getto dell'arco rovescio della galleria di linea A2
61-72	Scavo della camera di esodo per sfondi di 1.2m
62-73	Installazione del sostegno di prima fase della camera di esodo alla fase n+1 rispetto alle fasi di scavo
74	Scavo del sottoattraversamento
75	Getto dell'arco rovescio della camera di esodo, del camerone e del sottoattraversamento
76	Decadimento del sostegno di prima fase e contestuale getto delle calotte

Nella tabella seguente si riporta una sintesi delle caratteristiche delle sezioni tipologiche previste in corrispondenza del nodo di innesto.

Tabella 5: sintesi delle sezioni tipologiche previste in corrispondenza del nodo d'innesto.

Sezione tipo	Camerone	Galleria di linea	Sottoattraversamento	Camere di esodo
Scavo	≤1m	≤ 2.4m	-	≤ 1.2m
Chiodatura radiale	Swellex Pm24, L=4.5m i radiale=1m i longitudinale=1m	Swellex Pm24, L=4.5m i radiale =1.20 i longitudinale =1.20m	-	Swellex Pm24, L=3.0m i radiale =1.20 i longitudinale =1.20m
Bullonatura di fondo campo	-	-	-	17+11 Swellex Pm24, L=3m disposti a quinconce con maglia 1.80m x 1.80m
Centine	2IPN200 (IN01), 2IPN220 (IN02), passo 1m	2IPN180, passo 1.20m	-	2IPN140, passo 1.20m
Cls proiettato	25cm	20cm	-	25cm

Rivestimento definitivo calotta	1m	70cm	80cm	60cm
Rivestimento definitivo arco rovescio / soletta piatta	1m	80cm	80cm	60cm

Nella figura seguente sono riportati la geometria e gli elementi principali del modello di calcolo tridimensionale a elementi finiti del nodo di innesto.

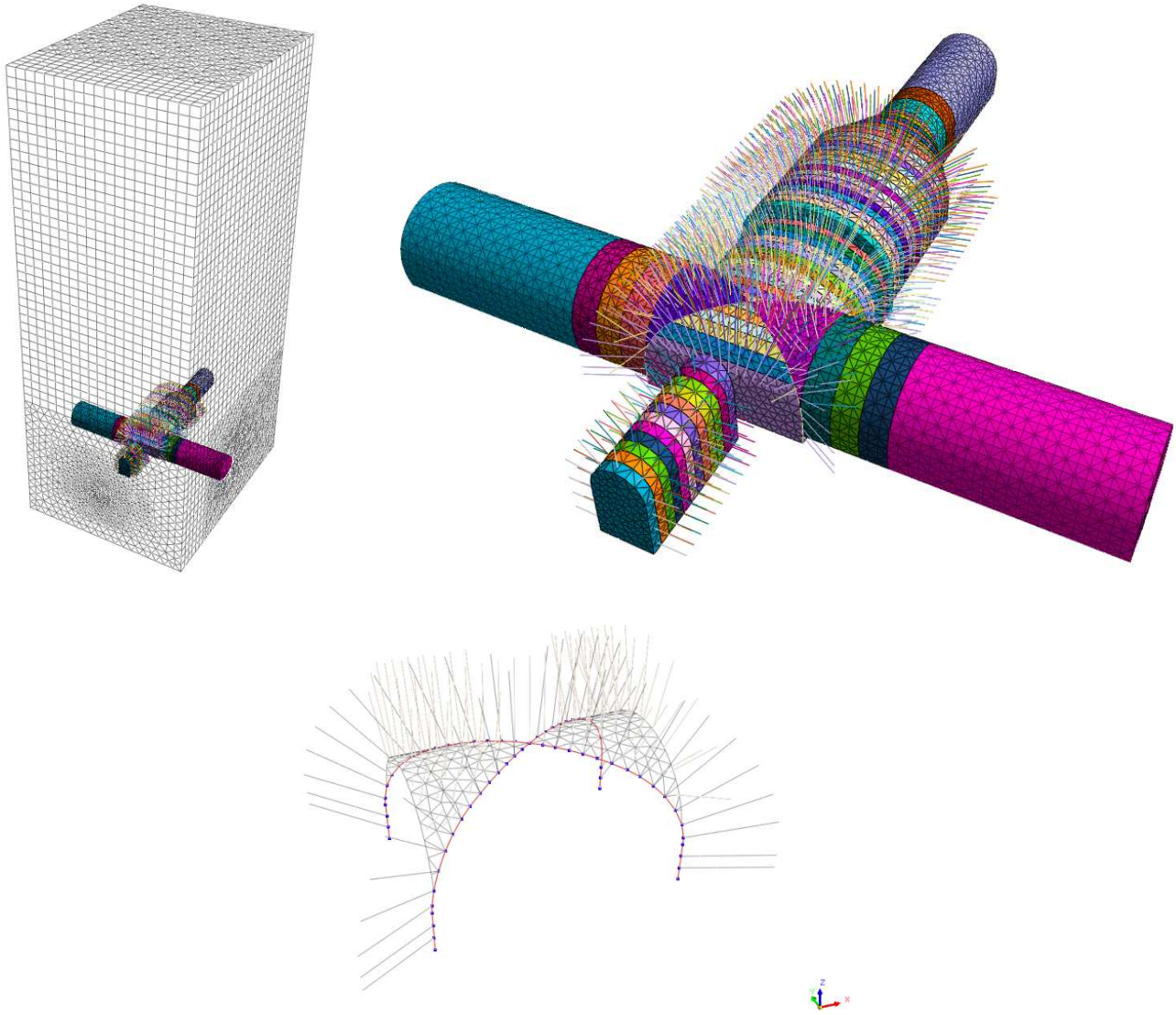


Figura 5.6: geometria ed elementi principali del modello di calcolo 3D FEM del nodo di innesto alla progressiva 3+777.276 implementato con il codice MIDAS GTS NX.

5.3.3 RISULTATI OTTENUTI IN TERMINI DI SPOSTAMENTI

Nell'immagine seguente si riportano i risultati dell'analisi numerica in termini di deformazioni al contorno del cavo sul sostegno di prima fase in corrispondenza dello stage precedente a quello di getto del rivestimento definitivo.

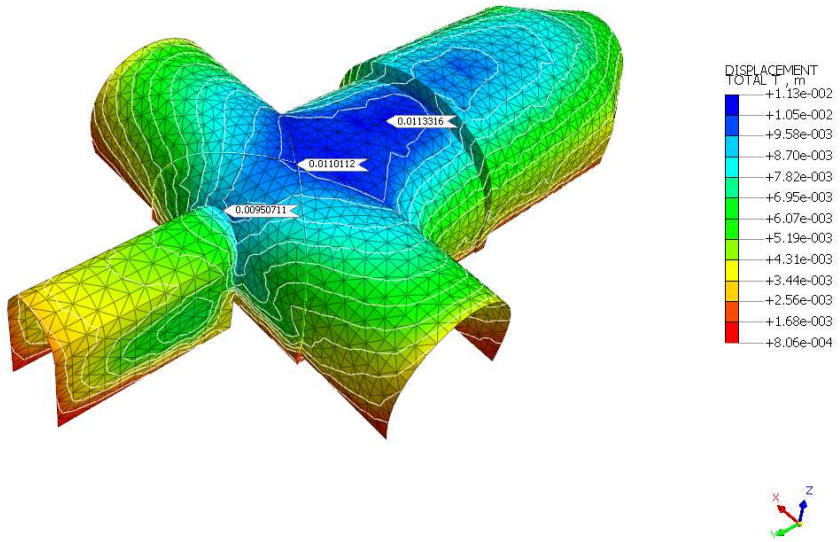


Figura 5.7: andamento degli spostamenti totali sul sostegno di prima fase per lo stage precedente a quello di getto del rivestimento definitivo (δ_{max} = 1.11cm).

Nelle figure seguenti sono mostrati nel dettaglio gli spostamenti delle centine a crociera e delle centine in direzione della galleria di linea.

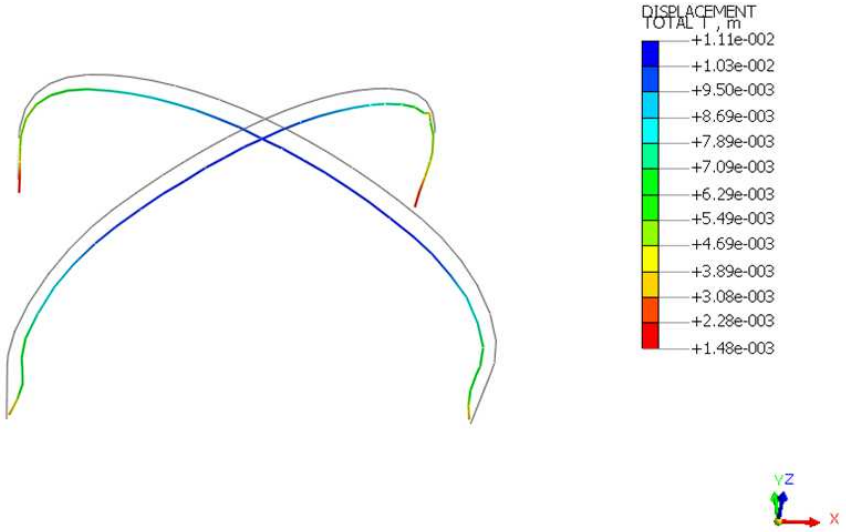


Figura 5.8: spostamenti totali delle centine a crociera, δ_{max} = 1.11cm.

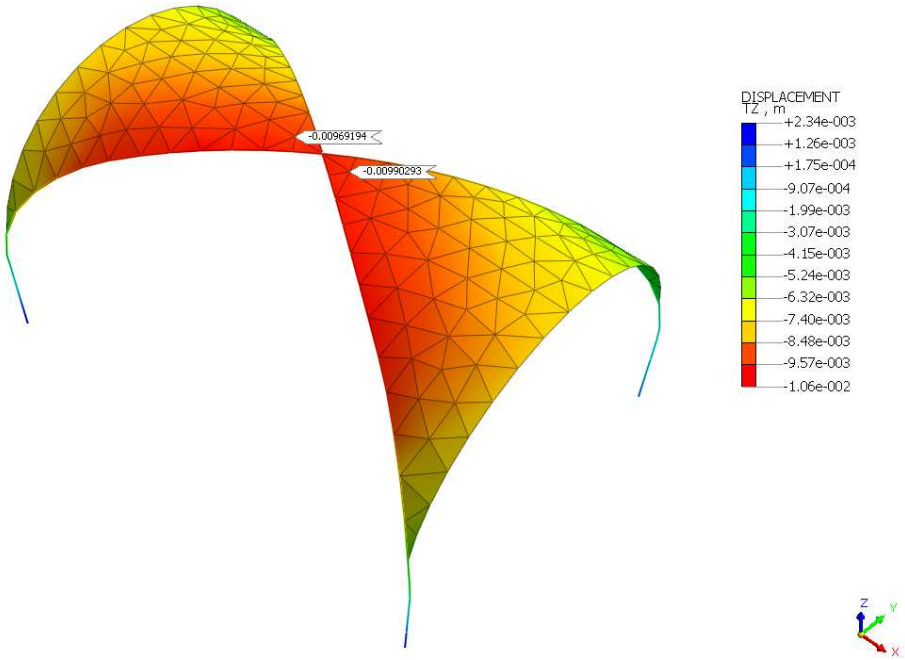


Figura 5.9: spostamenti verticali assoluti del sostegno di prima fase presente in direzione della galleria di linea costituito dalle centine IN03, δ_{max} = 1.0cm.

Gli spostamenti massimi subiti dalla struttura a telaio sono pari a 1.11cm e si verificano in sommità alla centina a crociera.

5.3.4 VERIFICHE STRUTTURALI DEL SOSTEGNO DI PRIMA FASE

5.3.4.1 CRITERI DI VERIFICA

Il sostegno di prima fase, così come illustrato nei precedenti paragrafi, è stato simulato nei modelli di calcolo con elementi shell a comportamento elastico lineare ove le caratteristiche geometriche e di rigidezza equivalenti sono assegnate mediante una omogeneizzazione della sezione.

Le verifiche strutturali sono condotte sulle sollecitazioni estratte dal programma di calcolo relative alle sezioni di riferimento in corrispondenza del nodo d'innesto, opportunamente amplificate mediante i coefficienti parziali sulle azioni di normativa. Le verifiche strutturali sono eseguite nella condizione A1+M1+R1.

Il sostegno di prima fase è costituito da centine metalliche e cls proiettato, pertanto ai fini delle verifiche strutturali, lo sforzo normale di compressione è ripartito tra le centine e il cls proiettato in base alle rispettive rigidezze assiali; il taglio, il momento flettente e gli eventuali sforzi di trazione localizzati sono attribuiti soltanto alle centine metalliche.

La verifica strutturale del cls proiettato è condotta secondo la seguente relazione (rif. paragrafo 2.2.1 del NTC2008)

$$\sigma_c = \frac{N_{C,d}}{A_C} \leq f_{cd}$$

Dove:
$N_{C,d}$ è la sollecitazione normale di compressione agente sul cls proiettato
A_C è l'area resistente del cls proiettato
f_{cd} è la resistenza a compressione di calcolo del cls proiettato

La verifica strutturale delle centine metalliche a taglio e presso-tenso/flessione è condotta confrontando la tensione ideale calcolata a partire dalle tensioni indotte dalle sollecitazioni agenti, con la resistenza di calcolo dell'acciaio secondo la seguente relazione (rif. paragrafo 4.2.4.1.2 del NTC2008).

$$\sigma_{s,d,\max} = \frac{N_{Sd}}{A_S} + \frac{M_{Sd}}{W_S}$$

$$\tau_{s,d} = \frac{V_{Sd}}{A_{V,S}}$$

$$\sigma_{id,s,d} = \sqrt{\sigma_{s,d,\max}^2 + 3\tau_{s,d}^2} \leq f_{yd}$$

Dove:
N_{Sd} è lo sforzo assiale di calcolo sulla centina metallica;
A_s è l'area della centina metallica
W_s è il modulo resistente elastico della centina
M_{sd} è il momento agente di calcolo
T_{sd} è il taglio agente di calcolo
$A_{v,s}$ è l'area resistente a taglio della centina
f_{yd} è la tensione di snervamento di calcolo dell'acciaio delle centine
Av,s è l'area resistente a taglio che per profilati ad I, caricati nel piano dell'anima, vale:

$$A_V = As - 2 \cdot b \cdot t_f + (t_W + 2 \cdot r) \cdot t_f$$

b: larghezza delle ali dei profilati;
r: raggio di raccordo tra anima e ala;
t_f: spessore delle ali;
t_w: spessore dell'anima.

5.3.4.2 COEFFICIENTI PARZIALI SULLE AZIONI E SULLE RESISTENZE

Le azioni permanenti utilizzate, sono riferite ai valori caratteristici ottenuti dal modello di calcolo, per cui le successive verifiche sono rapportate al valore del coefficiente parziale di sicurezza delle azioni permanenti

γ_G = 1.30. I valori di calcolo delle resistenze dei materiali si ricavano dividendo ciascun valore caratteristico per il fattore di sicurezza parziale γ_M specifico del materiale considerato (si veda la tabella seguente).

Tabella 6: coefficienti parziali sulle resistenze dei materiali.

Stato limite	Acciaio Carpenteria γ_s	Calcestruzzo γ_C
SLU	1.05	1.50

Di seguito si riportano i valori delle resistenze di calcolo, ottenute come rapporto tra la resistenza caratteristica ed il coefficiente γ_M:

$$f_d = \frac{f_k}{\gamma_M}$$

Tabella 7: tensione di snervamento di calcolo delle centine metalliche.

Acciaio	f_{yk} [MPa]	f_{yd} [MPa]
S275	275	261.9

Tabella 8: resistenze di calcolo del calcestruzzo proiettato.

Cls proiettato [Classe]	f_{cd} [MPa]	f_{ctd} [MPa]
C20/25	13.83	1.03

5.3.4.3 CENTINE A CROCIERA

Nella figure seguenti si riportano le sollecitazioni agenti nelle centine a crociera e nel sostegno di prima fase composto dalle centine presente in direzione della galleria di linea allo stage precedente alla fase di getto del rivestimento definitivo.

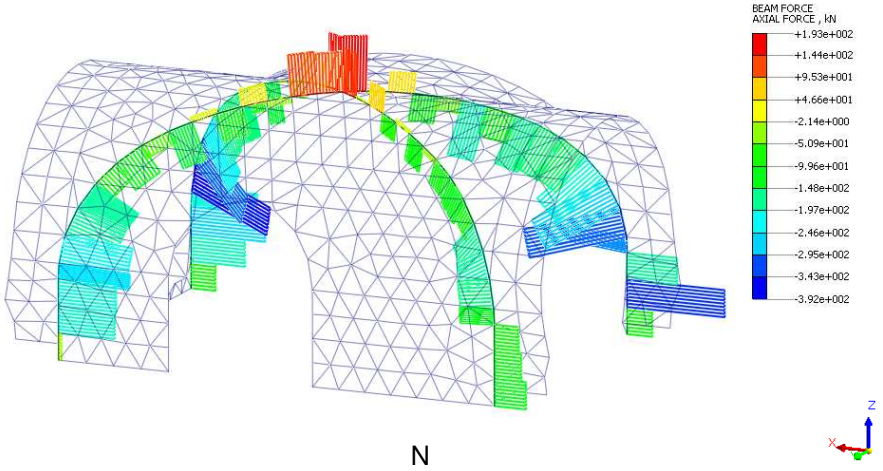
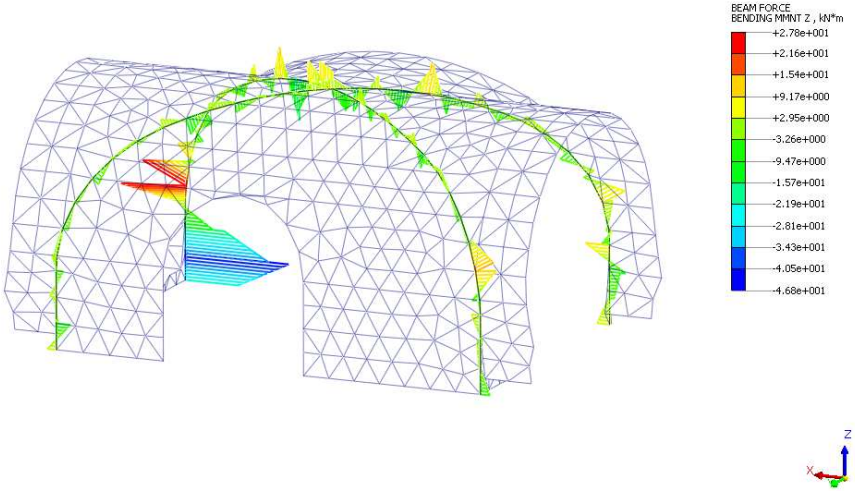
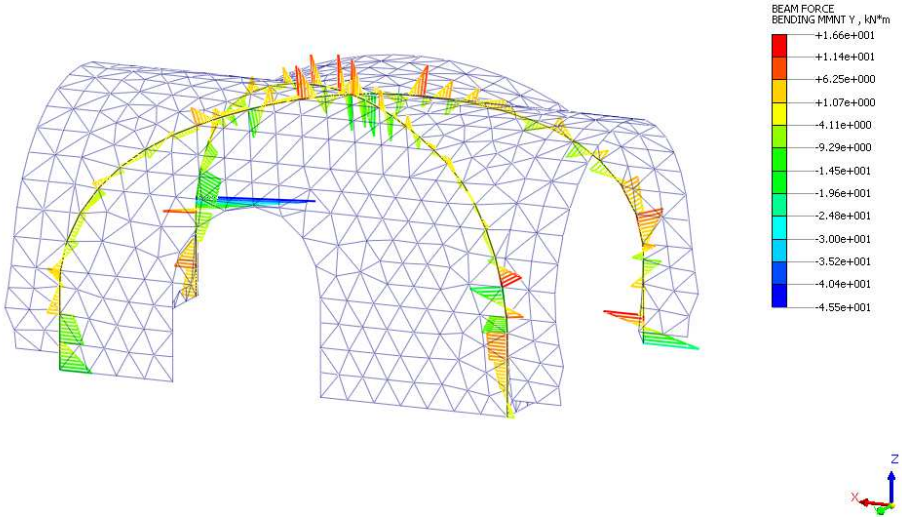


Figura 5.10: sollecitazioni agenti nelle centine della crociera (sforzo normale N<0 se di compressione).

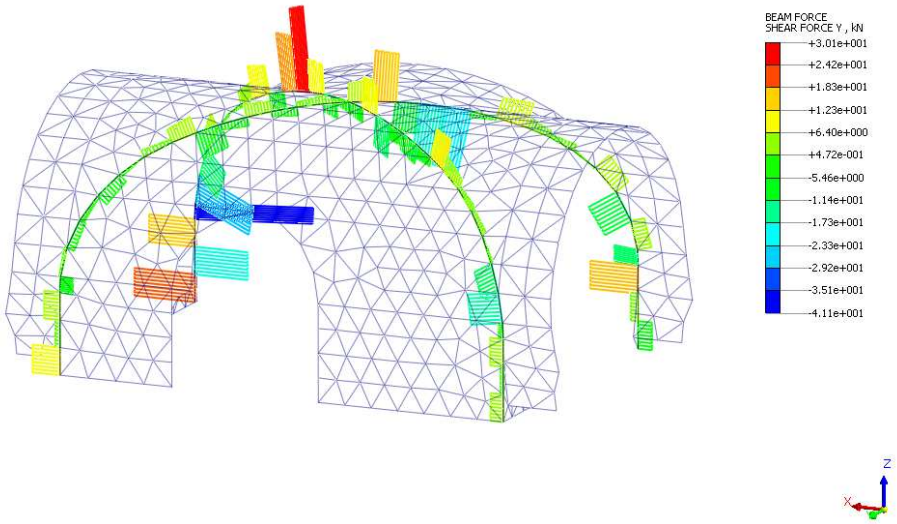


M_z (piano delle anime)

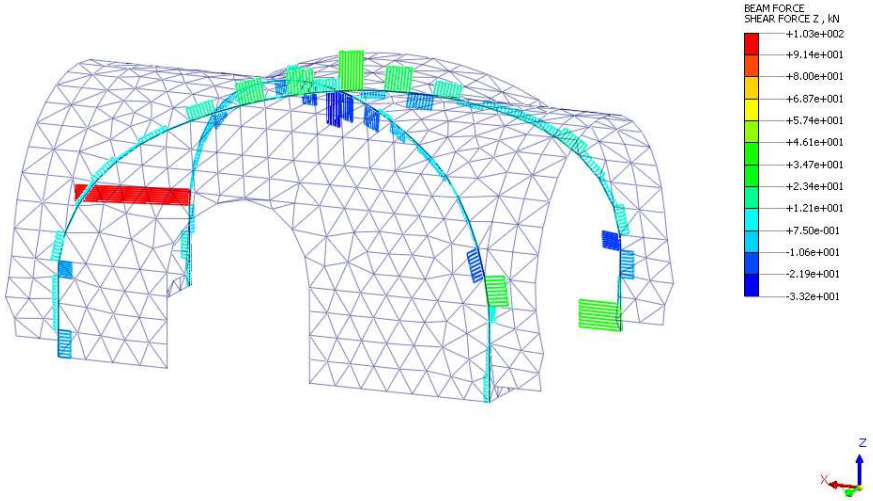


M_y (piano delle ali)

Figura 5.11: sollecitazioni agenti nelle centine della crociera (M_z momento flettente agente nel piano delle anime; M_y momento flettente agente nel piano delle ali).



T_y (anime)



T_z (ali)

Figura 5.12: sollecitazioni agenti nelle centine della crociera (T_y taglio agente parallelo alle anime; T_z taglio agente parallelo alle ali).

5.3.4.4 VERIFICHE TENSIONALI DEI PROFILATI

Le tensioni di presso-flessione e tenso-flessione nelle sezioni delle strutture di contrasto sono calcolate come segue:

$\sigma_{Ed} = N/A \pm M_y/W_x \pm M_x/W_y$.

La tensione tangenziale τ_{Ed} in asse ai profilati segue le seguenti formulazioni (a seconda della direzione di taglio maggiormente sollecitante l'elemento):

$\tau_{Ed} = \tau_y = (T_y \times S^*_x)/ (t \times J_x)$; $\tau_{Ed} = \tau_x = (T_x \times S^*_y)/ (t \times J_y)$

Da cui si ottiene una tensione ideale (criterio di Von Mises) per la sezione esaminata pari a:

$\sigma_{id} = (\sigma_{Ed}^2 + 3 \times \tau_{Ed}^2)^{0.5}$

Dove:

N : sforzo normale;
M_y : sollecitazione flettente asse forte;
M_x : sollecitazione flettente asse debole;
T_y : sollecitazione di taglio asse forte;
T_x : sollecitazione di taglio asse debole;
A : area della trave/sezione;
$W_{x/y}$: moduli di resistenza della trave/sezione nelle direzioni forte e debole;
$S^*_{x/y}$: momento statico di metà sezione della trave per le due direzioni;
$J_{x/y}$: momenti d'inerzia relativi ai due assi della trave;
t : spessore dell'anima della trave;
σ_{Ed} : tensione normale di calcolo;
τ_{Ed} : tensione tangenziale di calcolo (cautelativamente per le verifiche è stata usata la risultante dei tagli agenti contemporaneamente);

La verifica delle travi/sezioni è soddisfatta se sussiste la relazione seguente:

$\sigma_{id} \leq f_{yd} = f_{yk} / \gamma_M$

dove γ_M è il coefficiente di sicurezza per la resistenza delle membrature, pari a

$\gamma_M = 1.05$.

Tabella 5.9: verifiche tensionali per le sollecitazioni più sfavorevoli allo SLU per le centine a crociera.

Tipologia profilato	Elemento strutturale	σ_{Ed} [MPa]	τ_{Ed} [MPa]	σ_{id} [MPa]	f_{yd} [MPa]	Verifica
2xHEB220	Crociera	-42.95	10.1	46.4	261.9	$\sigma_{id}<f_{yd}$

Dalle verifiche sopra riportate si evince il soddisfacimento delle verifiche a presso-flessione delle centine a crociera.

5.3.4.5 SEZIONE TIPO A2 CAMERONE DI MANOVRA

Di seguito sono riportate le sollecitazioni (N, M e T) nel sostegno di prima fase della sezione in esame; i valori numerici (caratteristici e di calcolo) sono riportati nell'allegato specifico.

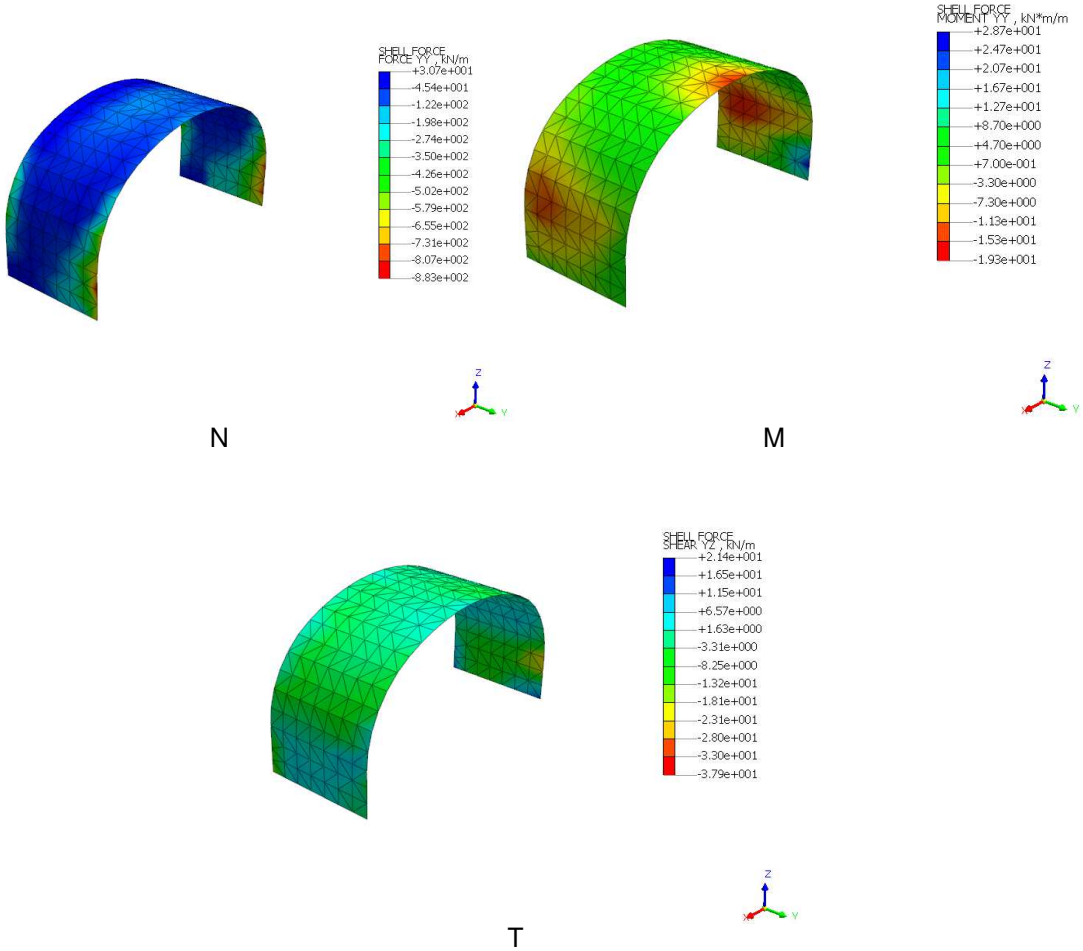


Figura 5.13:: Sollecitazioni sul sostegno di prima fase del camerone di manovra sezione IN01 nell'intorno del nodo d'innesto – stage precedente alla fase di getto del rivestimento definitivo.

Tabella 10: verifiche del sostegno di prima fase (M>0 fibre tese in intradosso).

Sollecitazioni caratteristiche				Sollecitazioni SLU				Verifica calcestruzzo proiettato			Verifica centine				
N_{clsp}	N_{cen}	M_{cen}	T_{cen}	$N_{clsp,d}$	$N_{cen,d}$	$M_{cen,d}$	$T_{cen,d}$	$\sigma_{c\_clsp,d}$	f_{cd}	Verifica	$\sigma_{cen,d}$	$\tau_{cen,d}$	$\sigma_{id,cen,d}$	f_{yd}	Verifica
[kN]	[kN]	[kNm]	[kN]	[kN]	[kN]	[kNm]	[kN]	[MPa]	[MPa]	-	[MPa]	[MPa]	[MPa]	[MPa]	-
761.0	122.2	28.7	-13.0	989.3	158.8	37.4	-16.8	4.0	13.8	OK	111.1	-5.4	111.5	261.9	OK
0.0	-30.7	-9.1	3.2	0.0	-39.9	-11.9	4.2	0.0	13.8	OK	33.7	1.4	33.8	261.9	OK
761.0	122.2	28.7	-13.0	989.3	158.8	37.4	-16.8	4.0	13.8	OK	111.1	-5.4	111.5	261.9	OK
601.9	96.6	3.9	-37.9	782.4	125.6	5.1	-49.2	3.1	13.8	OK	30.7	-15.8	41.1	261.9	OK

I risultati completi delle verifiche sono riprotati nell'Allegato 1.

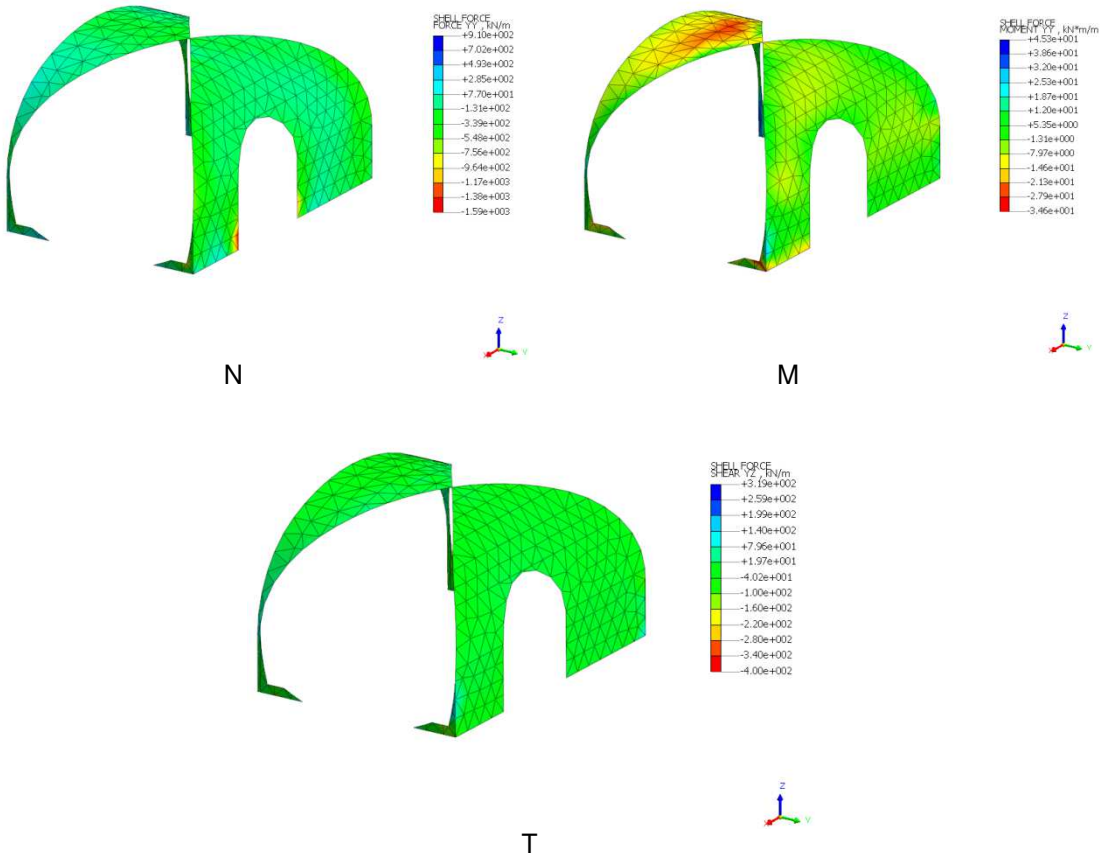


Figura 5.14: Sollecitazioni sul sostegno di prima fase del camerone di manovra sezione IN02 nell'intorno del nodo d'innesto – stage precedente alla fase di getto del rivestimento definitivo.

Tabella 11: verifiche del sostegno di prima fase (M>0 fibre tese in intradosso).

Sollecitazioni caratteristiche				Sollecitazioni SLU				Verifica calcestruzzo proiettato			Verifica centine				
N_{clsp}	N_{cen}	M_{cen}	T_{cen}	$N_{clsp,d}$	$N_{cen,d}$	$M_{cen,d}$	$T_{cen,d}$	$\sigma_{c\_clsp,d}$	f_{cd}	Verifica	$\sigma_{cen,d}$	$\tau_{cen,d}$	$\sigma_{id,cen,d}$	f_{yd}	Verifica
[kN]	[kN]	[kNm]	[kN]	[kN]	[kN]	[kNm]	[kN]	[MPa]	[MPa]	-	[MPa]	[MPa]	[MPa]	[MPa]	-
1335.1	253.5	0.1	-46.8	1735.6	329.6	0.2	-60.8	6.9	13.8	OK	42.0	-16.4	50.7	261.9	OK
0.0	-909.8	45.2	-58.0	0.0	-1182.7	58.8	-75.4	0.0	13.8	OK	255.4	-20.3	257.8	261.9	OK
0.0	-632.6	45.3	-54.3	0.0	-822.4	58.9	-70.5	0.0	13.8	OK	210.0	-19.0	212.6	261.9	OK
13.1	2.5	0.8	-399.6	17.0	3.2	1.0	-519.5	0.1	13.8	OK	2.2	-140.0	242.5	261.9	OK

I risultati completi delle verifiche sono riprotati nell'Allegato 1.

5.3.4.6 SEZIONE TIPO A2 LINEA

Nelle figure seguenti si riportano le sollecitazioni (N, M e T) e i risultati delle verifiche dei sostegni di prima fase IN03 (installati dopo la rimozione delle centine IN02 per la parte interferente con la sezione di progetto) e della galleria di linea; i valori numerici (caratteristici e di calcolo) sono riportati nell'allegato specifico.

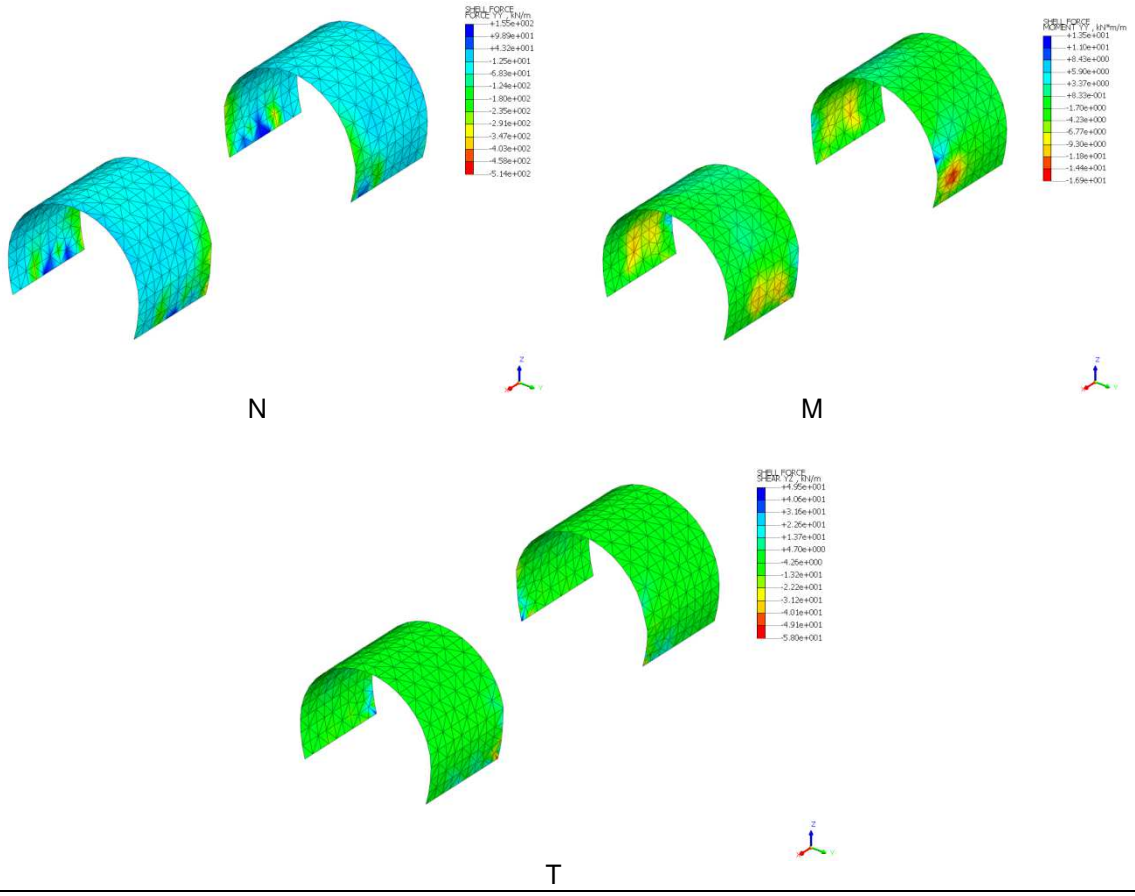


Figura 5.15: Sollecitazioni sul sostegno di prima fase della galleria di linea nell'intorno del nodo d'innesto – stage precedente alla fase di getto del rivestimento definitivo.

Tabella 12: verifiche del sostegno di prima fase (M>0 fibre tese in intradosso).

Sollecitazioni caratteristiche				Sollecitazioni SLU				Verifica calcestruzzo proiettato			Verifica centine				
N_{clsp}	N_{cen}	M_{cen}	T_{cen}	$N_{clsp,d}$	$N_{cen,d}$	$M_{cen,d}$	$T_{cen,d}$	$\sigma_{c\_clsp,d}$	f_{cd}	Verifica	$\sigma_{cen,d}$	$\tau_{cen,d}$	$\sigma_{id,cen,d}$	f_{yd}	Verifica
[kN]	[kN]	[kNm]	[kN]	[kN]	[kN]	[kNm]	[kN]	[MPa]	[MPa]	-	[MPa]	[MPa]	[MPa]	[MPa]	-
451.0	63.0	-10.9	34.8	586.4	81.9	-14.1	45.3	2.9	13.8	OK	70.3	20.9	79.0	261.9	OK
0.0	-154.6	-1.8	3.4	0.0	-201.0	-2.4	4.4	0.0	13.8	OK	52.2	2.0	52.3	261.9	OK
244.0	34.1	-16.9	10.1	317.2	44.3	-22.0	13.1	1.6	13.8	OK	91.4	6.0	92.0	261.9	OK
127.4	17.8	-3.2	-58.0	165.6	23.1	-4.1	-75.5	0.8	13.8	OK	20.3	-34.8	63.7	261.9	OK

I risultati completi delle verifiche sono riprotati nell'Allegato 1.

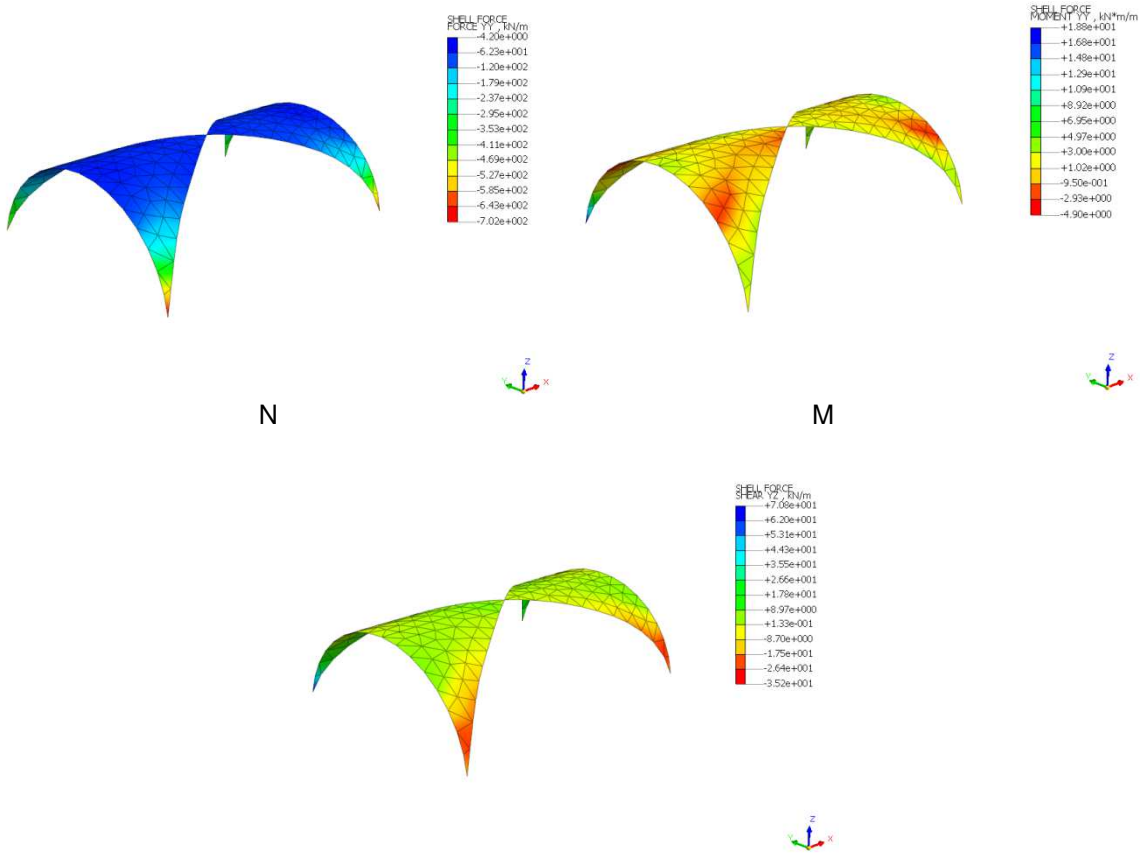


Figura 5.16: Sollecitazioni sul sostegno di prima fase IN03 – stage precedente alla fase di getto del rivestimento definitivo.

Tabella 13: verifiche del sostegno di prima fase (M>0 fibre tese in intradosso).

Sollecitazioni caratteristiche				Sollecitazioni SLU				Verifica calcestruzzo proiettato			Verifica centine				
N_{clsp}	N_{cen}	M_{cen}	T_{cen}	$N_{clsp,d}$	$N_{cen,d}$	$M_{cen,d}$	$T_{cen,d}$	$\sigma_{c\_clsp,d}$	f_{cd}	Verifica	$\sigma_{cen,d}$	$\tau_{cen,d}$	$\sigma_{id,cen,d}$	f_{yd}	Verifica
[kN]	[kN]	[kNm]	[kN]	[kN]	[kN]	[kNm]	[kN]	[MPa]	[MPa]	-	[MPa]	[MPa]	[MPa]	[MPa]	-
618.5	83.0	0.5	-16.8	804.1	107.8	0.6	-21.8	3.2	13.8	OK	21.3	-8.4	25.8	261.9	OK
120.2	16.1	-4.9	-1.2	156.3	21.0	-6.4	-1.5	0.6	13.8	OK	23.5	-0.6	23.5	261.9	OK
120.2	16.1	-4.9	-1.2	156.3	21.0	-6.4	-1.5	0.6	13.8	OK	23.5	-0.6	23.5	261.9	OK

I risultati completi delle verifiche sono riprotati nell'Allegato 1.

5.3.4.7 SEZIONE TIPO CAMERA DI ESODO IN CALCARI

Di seguito sono riportate le sollecitazioni (N, M e T) nel sostegno di prima fase della sezione in esame; i valori numerici (caratteristici e di calcolo) sono riportati nell'allegato specifico.

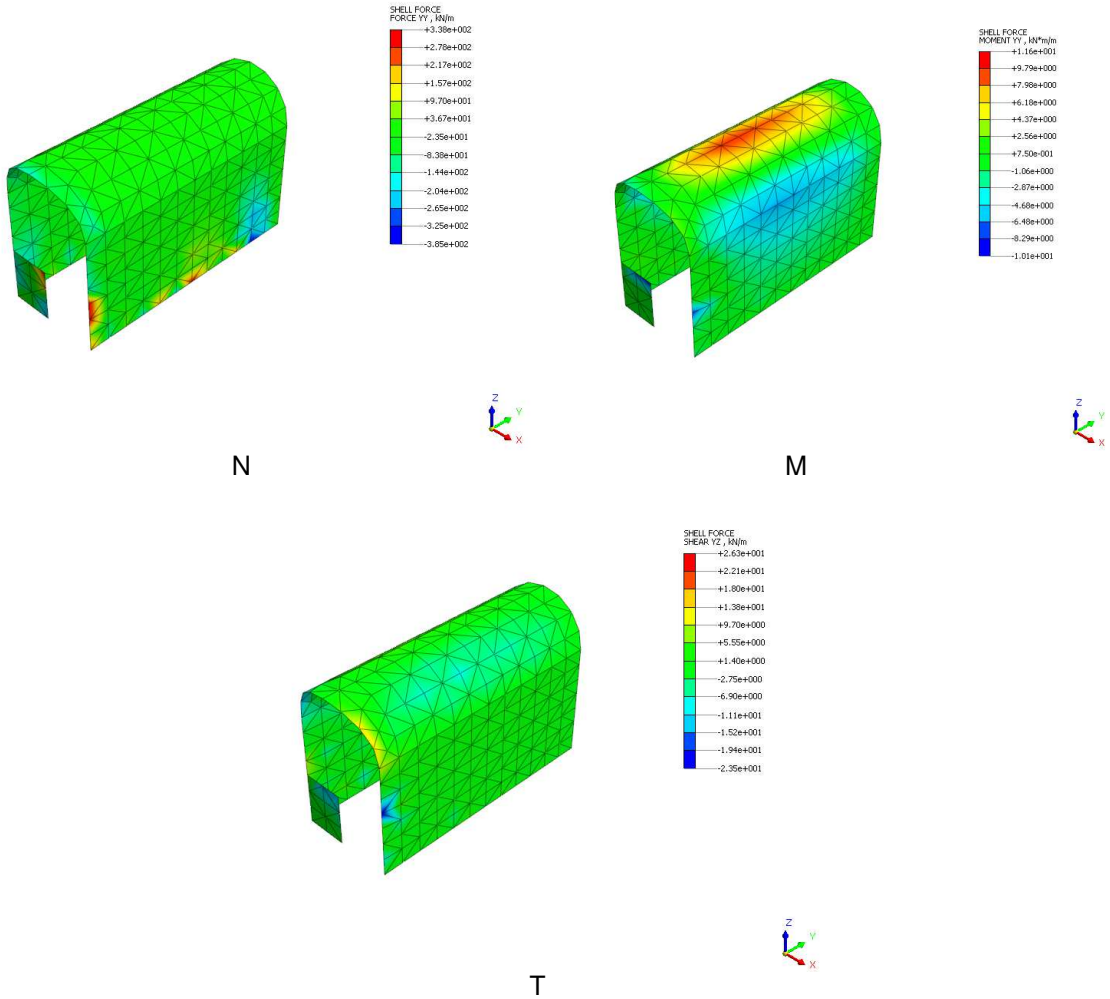


Figura 5.17: Sollecitazioni sul sostegno di prima fase della camera di esodo nell'intorno del nodo d'innesto – stage precedente alla fase di getto del rivestimento definitivo.

Tabella 14: verifiche del sostegno di prima fase (M>0 fibre tese in intradosso).

Sollecitazioni caratteristiche				Sollecitazioni SLU				Verifica calcestruzzo proiettato			Verifica centine				
N_{clsp}	N_{cen}	M_{cen}	T_{cen}	$N_{clsp,d}$	$N_{cen,d}$	$M_{cen,d}$	$T_{cen,d}$	$\sigma_{c\_clsp,d}$	f_{cd}	Verifica	$\sigma_{cen,d}$	$\tau_{cen,d}$	$\sigma_{id,cen,d}$	f_{yd}	Verifica
[kN]	[kN]	[kNm]	[kN]	[kN]	[kN]	[kNm]	[kN]	[MPa]	[MPa]	-	[MPa]	[MPa]	[MPa]	[MPa]	-
358.7	26.3	-0.4	-2.8	466.3	34.2	-0.6	-3.7	1.9	13.8	OK	15.5	-2.6	16.1	261.9	OK
0.0	-338.7	-10.1	14.3	0.0	-440.4	-13.1	18.6	0.0	13.8	OK	240.3	13.2	241.4	261.9	OK
0.3	0.0	11.6	0.6	0.4	0.0	15.1	0.8	0.0	13.8	OK	110.5	0.5	110.5	261.9	OK
93.3	6.8	0.9	26.3	121.3	8.9	1.2	34.1	0.5	13.8	OK	11.9	24.3	43.8	261.9	OK

I risultati completi delle verifiche sono riprotati nell'Allegato 1.

5.3.5 VERIFICHE STRUTTURALI DEL RIVESTIMENTO DEFINITIVO

Le verifiche strutturali del rivestimento definitivo sono condotte a partire dalle sollecitazioni estrapolate dai risultati del modello di calcolo opportunamente amplificate per il coefficiente parziale γ_{G1} specifico per i diversi stati limite analizzati.

Tabella 15: fattore di sicurezza parziale dei materiali costituenti il rivestimento definitivo.

Stato limite	Acciaio γ_s	Calcestruzzo γ_c
SLU	1.15	1.50

Le verifiche strutturali di seguito riportate per ciascuna sezione tipo sono:

- in condizioni statiche (condizioni di normale esercizio):
  - Verifica a S.L.U. per flessione;
  - Verifica a S.L.U. per taglio;
  - Verifica a S.L.E delle tensioni indotte nel calcestruzzo e nell'armatura metallica: conformemente alla normativa di riferimento, i valori limite sono pari a:
    - calcestruzzo: $\sigma_{c\,max} = 0.45 f_{ck}$
    - acciaio: $\sigma_{s\,max} = 0.8 f_{yk}$
  - Verifica a S.L.E per fessurazione per la combinazione quasi permanente.

I valori di calcolo delle resistenze dei materiali si ricavano dividendo ciascun valore caratteristico per il fattore di sicurezza parziale γ_m specifico del materiale considerato (vedi tabella seguente).

Tabella 16: coefficienti parziali per le azioni secondo Tabella 2.6.I delle NTC2008.

Tipo di carico	Condizione	Simbolo	Approccio
Permanente	sfavorevole	γ_{G1}	A1 (STR)

Di seguito si riportano i valori delle resistenze di calcolo, ottenute come rapporto tra la resistenza caratteristica ed il coefficiente γ_m: $f_d = f_k/\gamma_m$

Tabella 17: tensione di snervamento di calcolo per l'acciaio di armatura.

Acciaio	f_{yd} [MPa]
B450C	391

Tabella 18: resistenze di calcolo per il calcestruzzo.

Classe calcestruzzo	$f_{cd\,arm}$ [MPa]	f_{ctd} [MPa]	f_{cfd} [MPa]
C25/30	14.17	1.2	1.44

Dove:
f_{cd} = resistenza a compressione cilindrica di calcolo valutata secondo quanto riportato al paragrafo 4.1.12.1 delle NTC2008,
f_{ctd} = resistenza a trazione di calcolo valutata secondo quanto riportato al paragrafo 11.2.10.2 delle NTC2008 ,
f_{cfd} = resistenza a trazione per flessione di calcolo valutata secondo quanto riportato al paragrafo 11.2.10.2 delle NTC2008.

5.3.5.1 SEZIONE TIPO A2 CAMERONE DI MANOVRA

Nel presente paragrafo si illustrano le verifiche di resistenza del rivestimento definitivo della sezione A2 Camerone di manovra del nodo d'innesto. Le verifiche sono riportate per via grafica.

5.3.5.1.1 Sollecitazioni agenti

Di seguito sono riportate le sollecitazioni (N, M e T) nel rivestimento definitivo della sezione in esame; i valori numerici (caratteristici e di calcolo) sono riportati nell'allegato specifico.

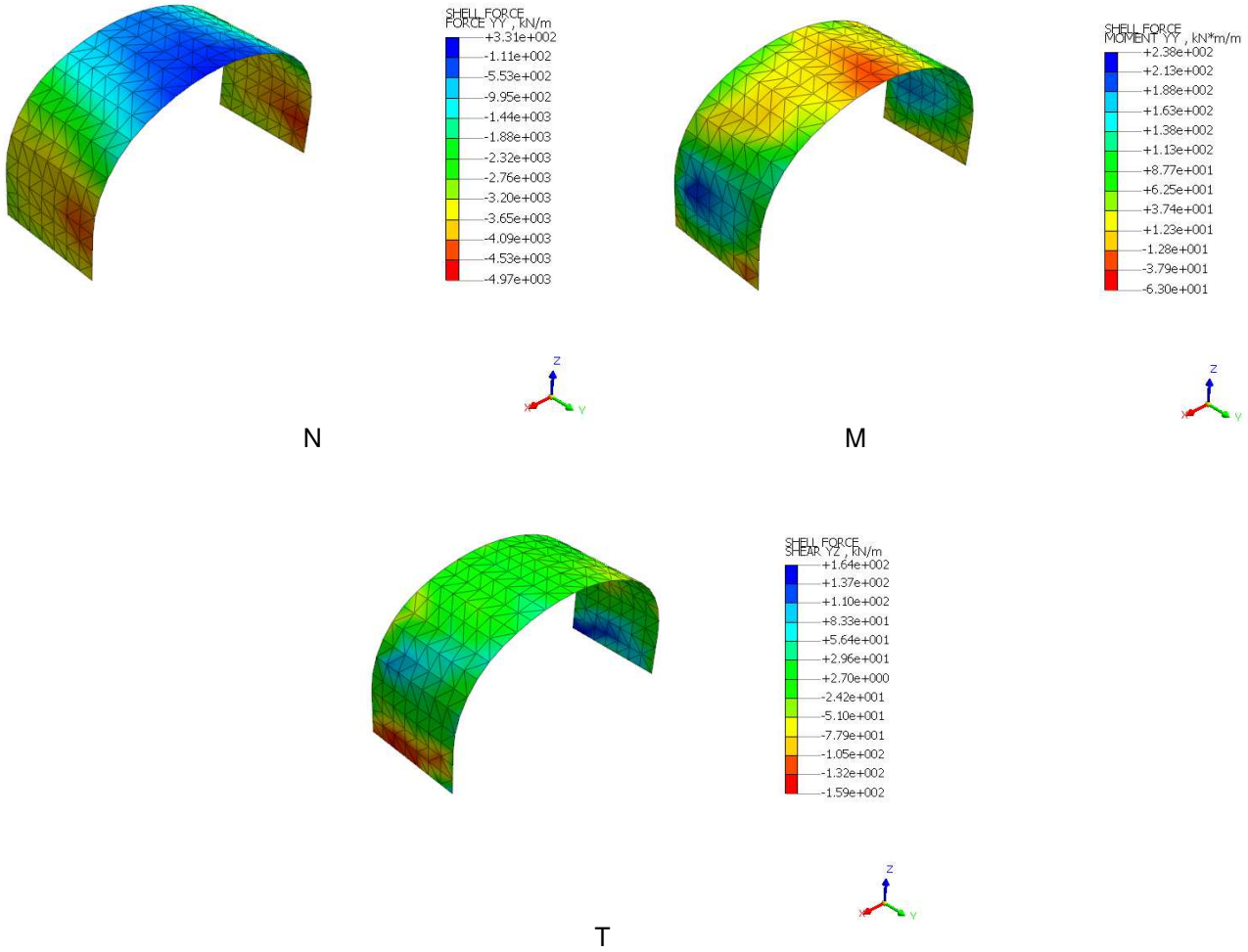


Figura 5.18: Sollecitazioni sul sostegno definitivo del camerone di manovra nell'intorno del nodo d'innesto – calotta – (N<0 se di compressione) – stage finale.

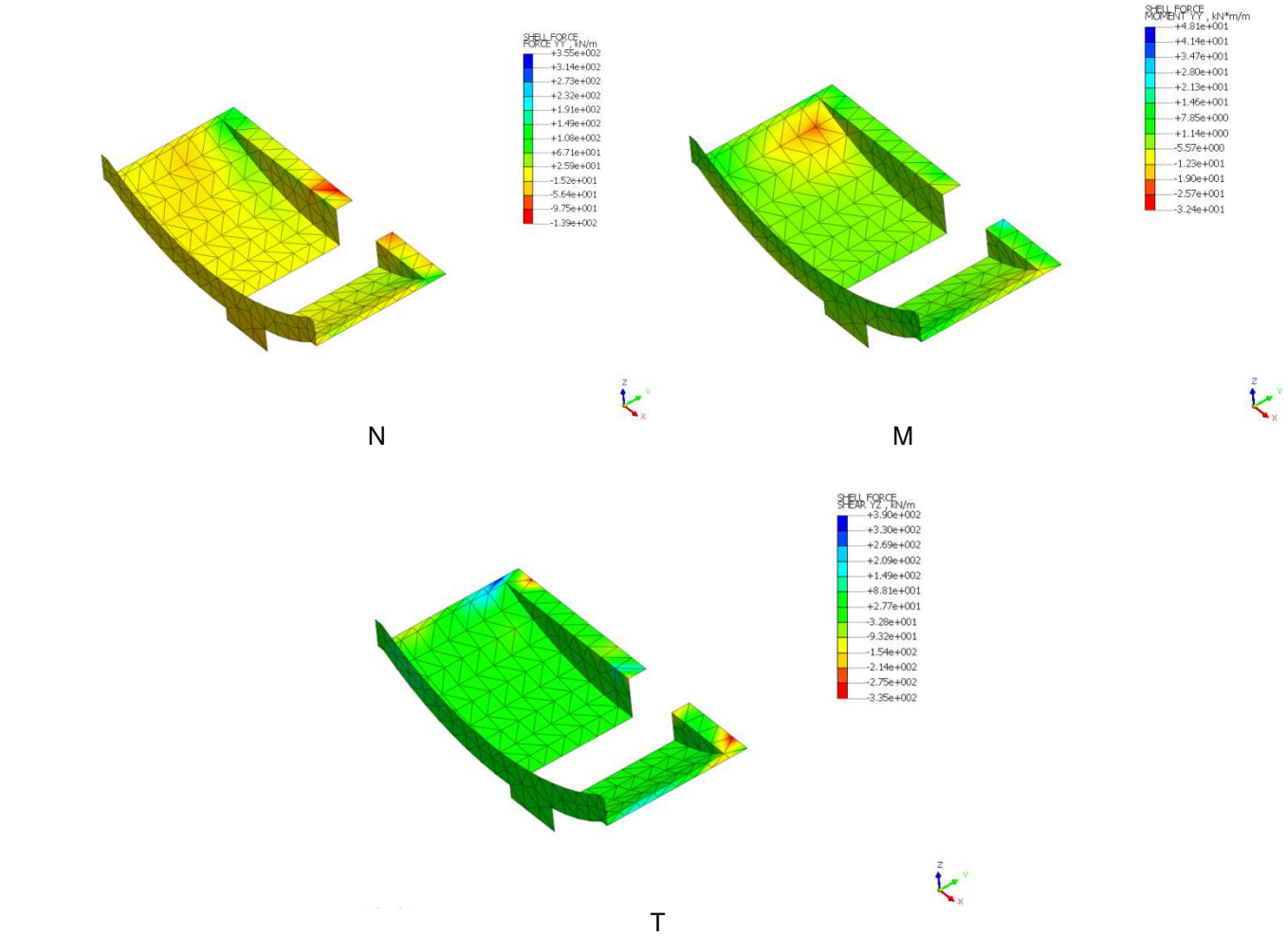


Figura 5.19: Sollecitazioni sul sostegno definitivo del camerone nell'intorno del nodo d'innesto – arco rovescio – (N<0 se di compressione) – stage finale.

5.3.5.1.2 Armatura disposta

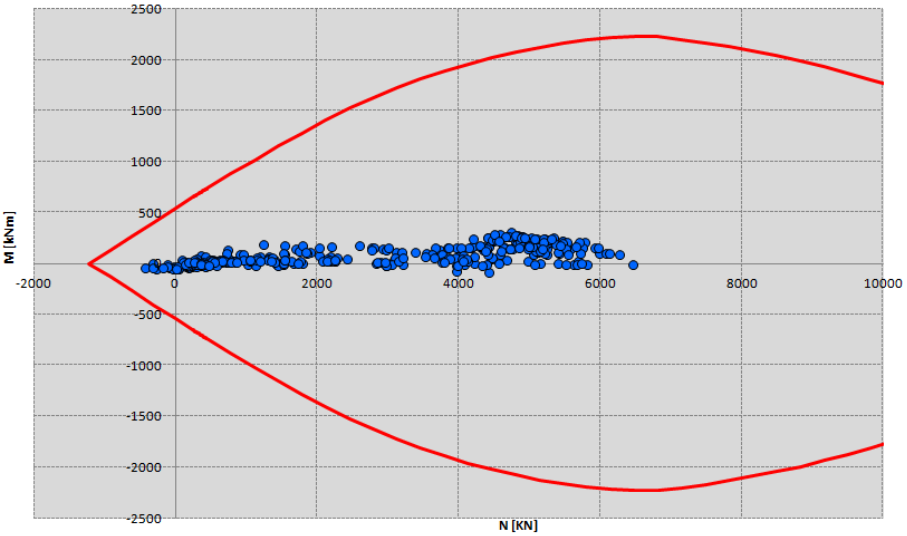
Nella tabella seguente sono riassunte le armature previste per la sezione tipo A2.

Tabella 19: armatura prevista per la sezione tipo A2.

Posizione	Armatura flettente Intradosso	Armatura flettente estradosso	Armatura a taglio	Classe calcestruzzo	Copriferro [cm]
Calotta	5Ø20/m	5Ø20/m	-	C25/30	8
Murette	5Ø20/m	5Ø20/m	-	C25/30	8
Arco rovescio	5Ø20/m	5Ø20/m	1Ø12/50/33	C25/30	8

5.3.5.1.3 Calotta – verifiche allo SLU – pressoflessione

Le verifiche allo SLU del rivestimento definitivo prevedono il confronto tra le sollecitazioni di calcolo, ottenute moltiplicando i valori caratteristici restituiti dal modello di calcolo per il coefficiente parziale γ_G = 1.3, e le resistenze di calcolo definite dai punti M_{Rd}, N_{Rd} che individuano il dominio resistente della sezione nel piano M-N.



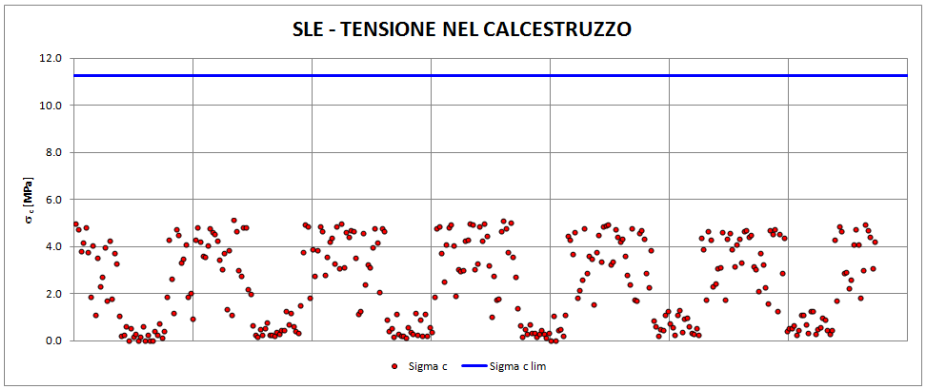
Calotta – spessore 1m – armatura: 5Φ20 in intradosso + 5Φ20 in estradosso

Figura 5.20: Verifiche allo S.L.U. per pressoflessione – calotta – dominio di resistenza della sezione e sollecitazioni di calcolo.

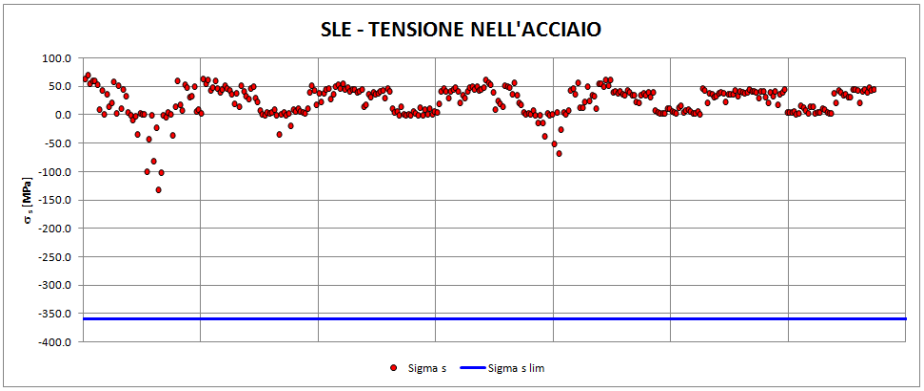
Le verifiche sono soddisfatte.

5.3.5.1.4 Calotta – verifiche allo SLE

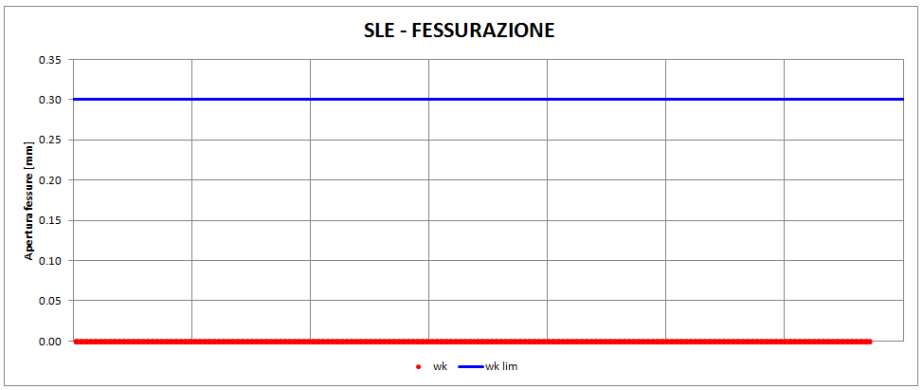
Le verifiche allo S.L.E. risultano soddisfatte quando l'ampiezza delle fessure w<0.3mm, la tensione massima nel calcestruzzo $\sigma_{c\,max} \leq 0.45 f_{ck}$ = 11.25MPa e la tensione massima nell'acciaio $\sigma_{s\,max} \leq 0.8 f_{yk}$ = 360MPa.



Tensioni di compressione nel calcestruzzo - $\sigma_c < \sigma_{c,max}$



Tensioni nell'acciaio - $\sigma_s < \sigma_{s,max}$



Apertura delle fessure – $w < w_{lim} = 0.3mm$

Figura 5.21: Verifiche allo S.L.E. della sezione – calotta.

Le verifiche sono soddisfatte.

5.3.5.1.5 Calotta – verifiche allo SLU per sollecitazioni taglianti

Nel caso di elementi strutturali privi di armature trasversali a taglio, occorre verificare che il taglio di progetto (V_{Ed}) sia minore di quello resistente (V_{Rd}); essendo:

$$V_{Rd} = 0{,}18 \cdot k \cdot (100 \cdot \rho_1 \cdot f_{ck}) / \gamma_c + 0{,}15 \cdot \sigma_{cp} \cdot b_w \cdot d \geq (v_{min} + 0{,}15 \cdot \sigma_{cp}) \cdot b_w \cdot d$$

con

$k = 1 + (200/d) \cdot 1/2 \leq 2$

$v_{min} = 0{,}035 \cdot k^{3/2} \cdot f_{ck}^{1/2}$

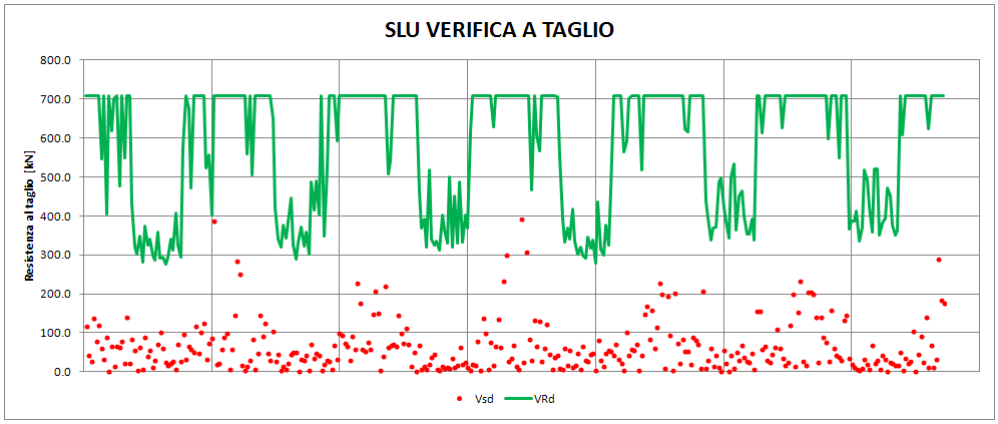
d è l'altezza utile della sezione (mm);

$\rho_1 = A_{sl} / (b_w \cdot d)$ è il rapporto geometrico di armatura longitudinale ($\leq$ 0.02);

$\sigma_{cp} = N_{Ed}/A_c$ è la tensione media di compressione nella sezione ($\leq$ 0.2 f_{cd});

b_w è la larghezza minima della sezione (mm).

Per il significato delle diverse entità si rimanda al paragrafo 4.1.2.1.3.1 del NTC2008.



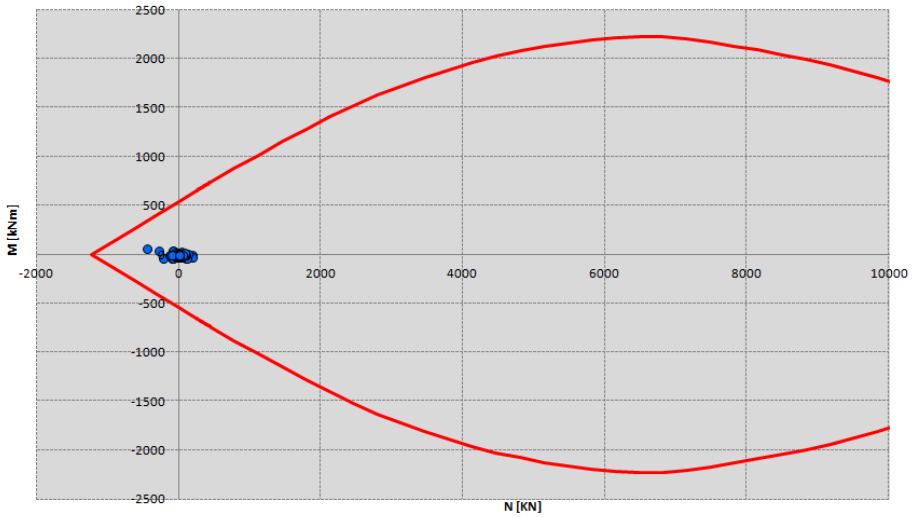
Calotta – spessore 1m

Figura 5.22: Verifiche allo S.L.U. per sollecitazioni taglianti – calotta.

Le verifiche sono soddisfatte.

5.3.5.1.6 Arco rovescio – verifiche allo SLU – pressoflessione

Le verifiche allo SLU del rivestimento definitivo prevedono il confronto tra le sollecitazioni di calcolo, ottenute moltiplicando i valori caratteristici, restituiti dal modello di calcolo, per il coefficiente parziale γ_G = 1.3, e le resistenze di calcolo definite dai punti M_{Rd}, N_{Rd} che individuano il dominio resistente della sezione nel piano M-N.



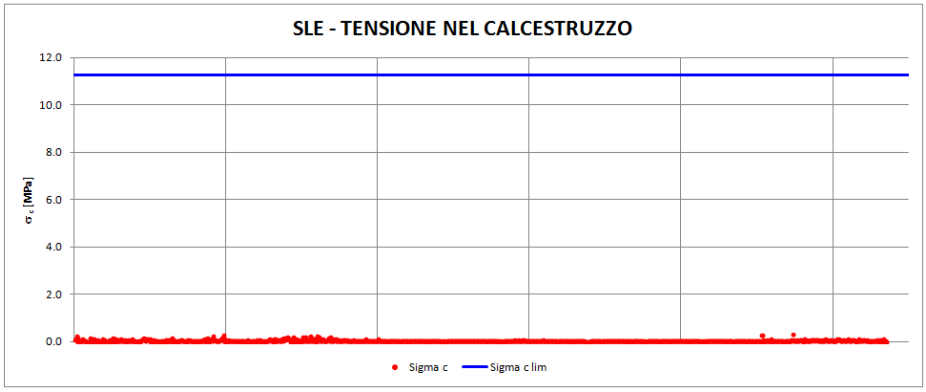
Arco rovescio – spessore 1m – armatura: 5Φ20 in intradosso + 5Φ20 in estradosso

Figura 5.23: Verifiche allo S.L.U. per pressoflessione – arco rovescio – dominio di resistenza della sezione e sollecitazioni di calcolo.

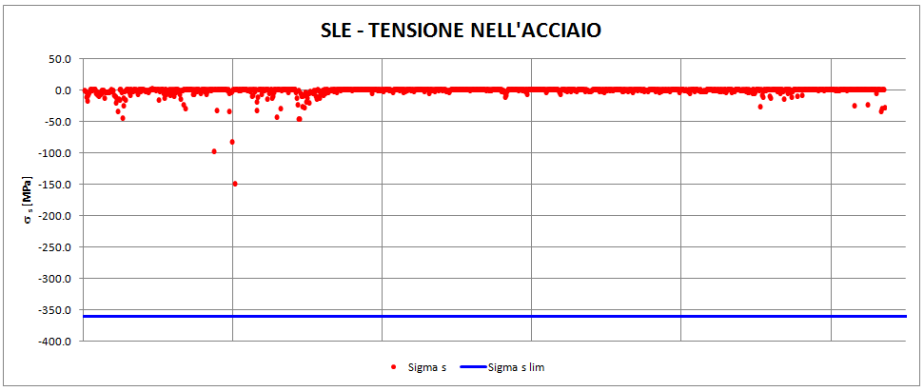
Le verifiche sono soddisfatte.

5.3.5.1.7 Arco rovescio – verifiche allo SLE

Le verifiche allo S.L.E. risultano soddisfatte quando l'ampiezza delle fessure w<0.3mm, la tensione massima nel calcestruzzo $\sigma_{c\,max} \leq 0.45 f_{ck}$ = 11.25MPa e la tensione massima nell'acciaio $\sigma_{s\,max} \leq 0.8 f_{yk}$ = 360MPa.



Tensioni di compressione nel calcestruzzo - $\sigma_c < \sigma_{c,max}$



Tensioni nell'acciaio - $\sigma_s < \sigma_{s,max}$

Apertura delle fessure – $w < w_{lim} = 0.3mm$

Figura 5.24: Verifiche allo S.L.E. della sezione – arco rovescio.

Le verifiche sono soddisfatte.

5.3.5.1.8 Arco rovescio – verifiche allo SLU per sollecitazioni taglianti

Nel caso di elementi strutturali dotati di armature trasversali a taglio occorre verificare che il taglio sollecitante di progetto (V_{Ed}) sia minore di quello resistente (V_{Rd}); essendo:

$V_{Rd} = \min (V_{Rsd}, V_{Rcd})$

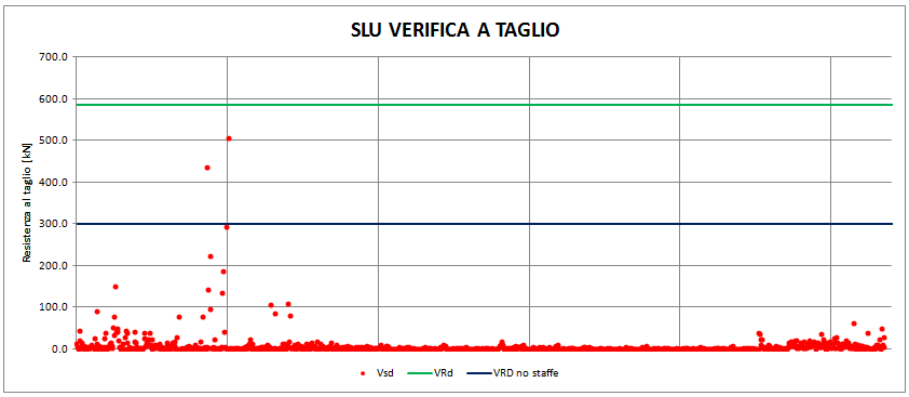
V_{Rsd}, è la resistenza di calcolo a "taglio trazione" dell'armatura trasversale

$V_{Rsd} = 0.9 \cdot d \cdot (A_{sw}/s) \cdot f_{yd} \cdot (\text{ctg}\alpha + \text{ctg}\theta) \cdot \sin\alpha$

V_{Rcd}, è la resistenza di calcolo a "taglio compressione" del calcestruzzo

$V_{Rcd} = 0.9 \cdot d \cdot b_w \cdot \alpha_c f'_{cd} (\text{ctg}\alpha + \text{ctg}\theta) / (1 + \text{ctg}^2\theta)$

Per il significato delle diverse entità si rimanda al paragrafo 4.1.2.1.3.1 del NTC2008.



Arco rovescio – spessore 1m – armatura a taglio: 1Φ12/50/33

Figura 5.25: Verifiche allo S.L.U. per sollecitazioni taglianti – arco rovescio.

Le verifiche sono soddisfatte.

5.3.5.2 SEZIONE TIPO A2 LINEA

Nel presente paragrafo si illustrano le verifiche di resistenza del rivestimento definitivo della sezione A2 di linea del nodo d'innesto; tali verifiche sono riportate per via grafica.

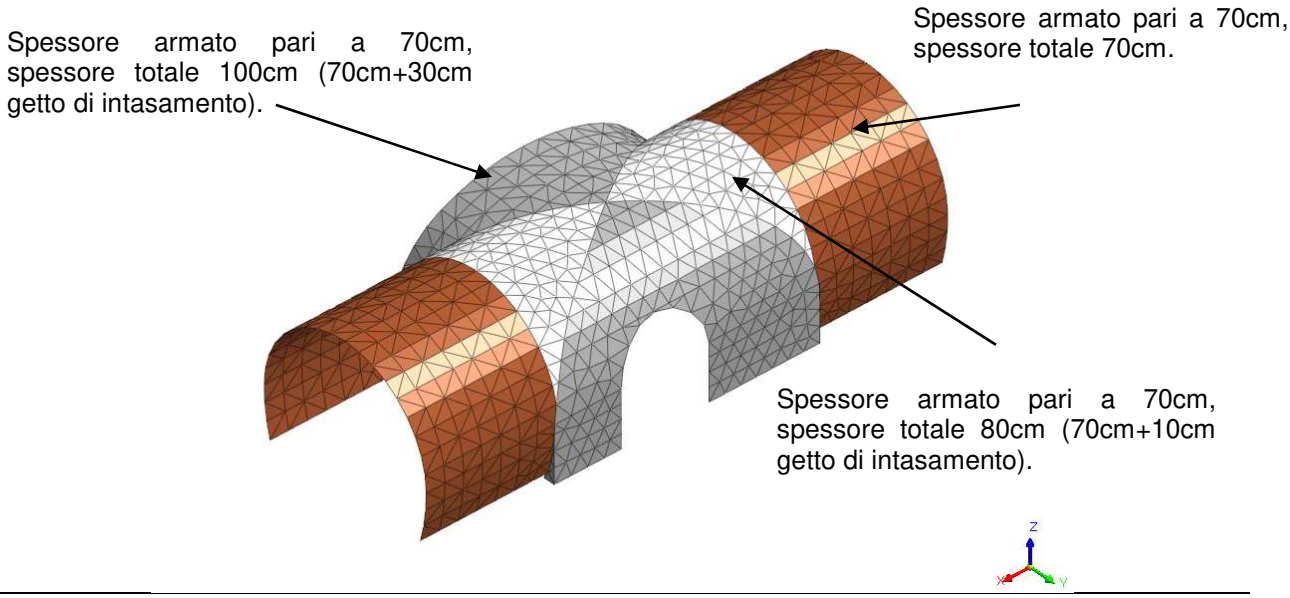


Figura 5.26: rivestimento definitivo della calotta della galleria di linea nella zona di innesto con evidenza delle diverse tipologie di rivestimento definitivo adottate.

5.3.5.2.1 Sollecitazioni agenti

Di seguito sono riportate le sollecitazioni (N, M e T) nel rivestimento definitivo della sezione in esame; i valori numerici (caratteristici e di calcolo) sono riportati nell'allegato specifico.

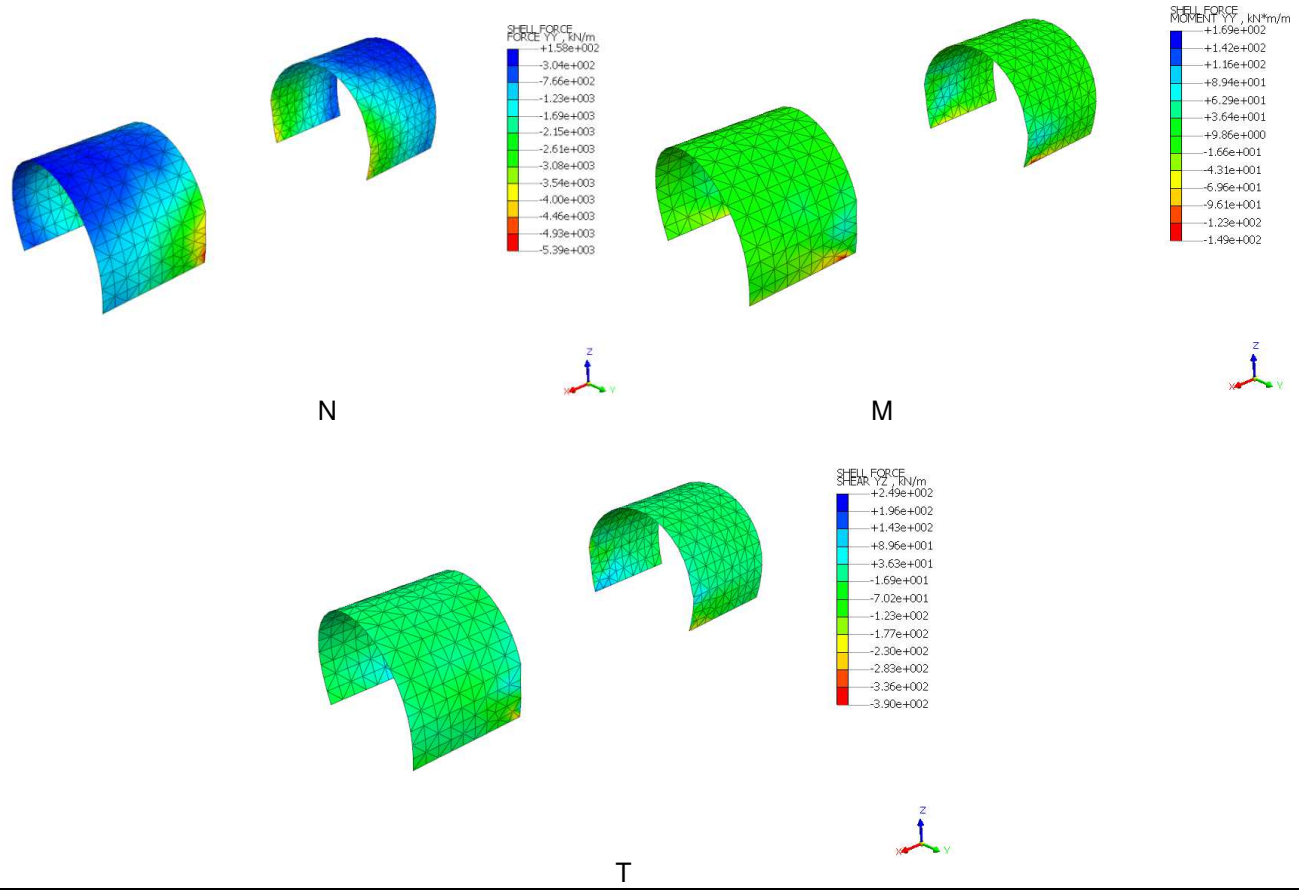


Figura 5.27: Sollecitazioni sul sostegno definitivo della galleria di linea nell'intorno del nodo d'innesto – calotta con spessore armato 70cm – (N<0 se di compressione) – stage finale.

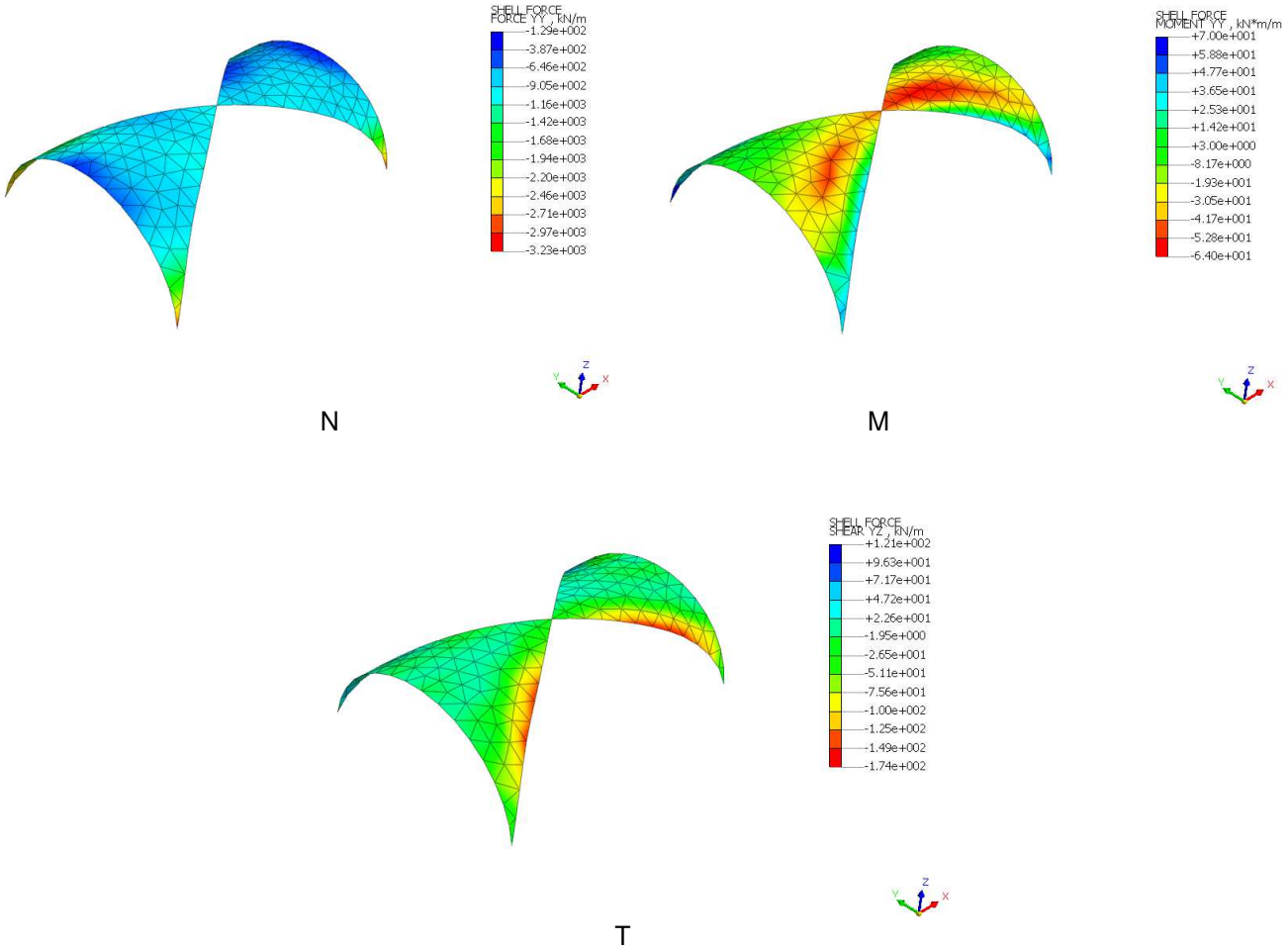
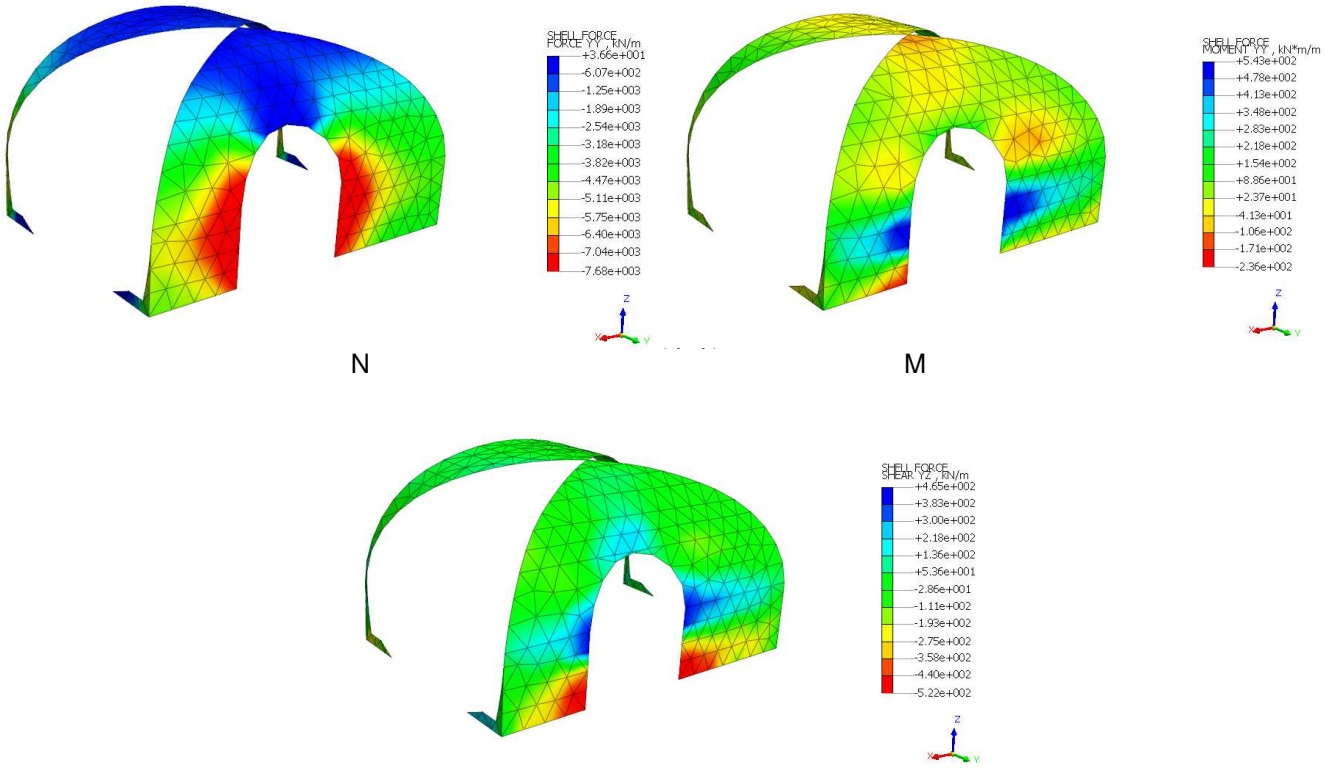


Figura 5.28: Sollecitazioni sul sostegno definitivo della galleria di linea nell'intorno del nodo d'innesto – calotta con spessore armato 70cm, spessore totale 80cm – (N<0 se di compressione) – stage finale.



N M

T

Figura 5.29: Sollecitazioni sul sostegno definitivo della galleria di linea nell'intorno del nodo d'innesto – calotta con spessore armato 70cm, spessore totale 100cm – (N<0 se di compressione) – stage finale.

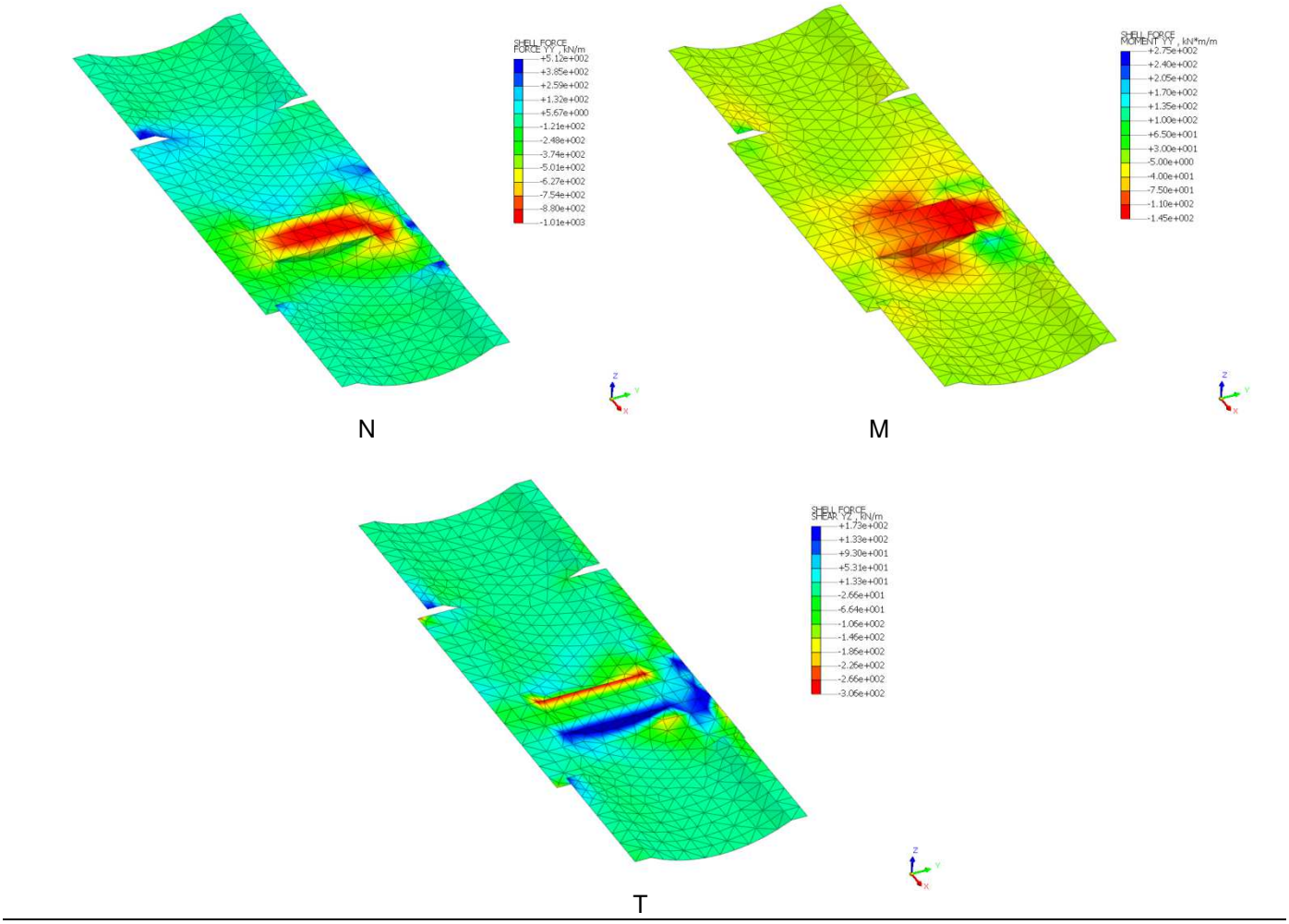


Figura 5.30: Sollecitazioni sul sostegno definitivo della galleria di linea nell'intorno del nodo d'innesto – arco rovescio – (N<0 se di compressione) – stage finale.

5.3.5.2.2 Armatura disposta

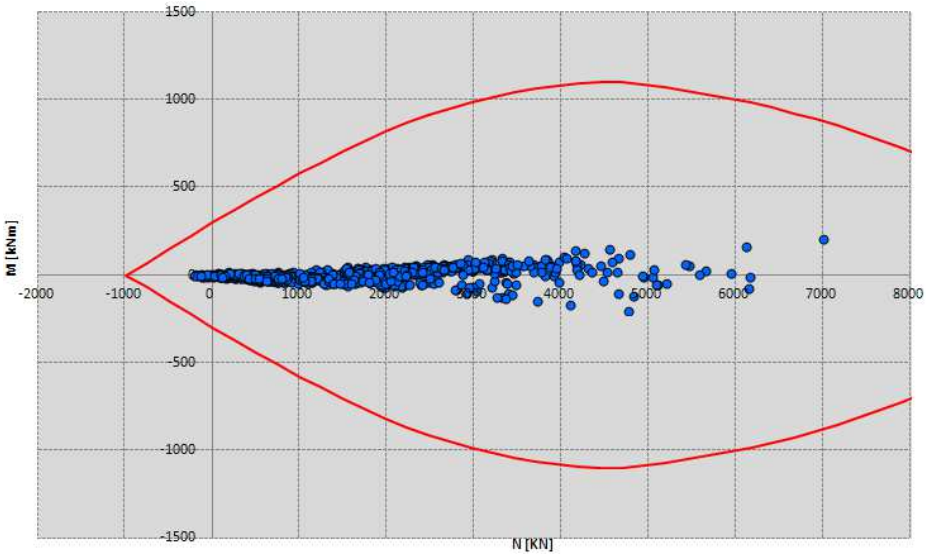
Nella tabella seguente sono riassunte le armature previste per la sezione tipo A2.

Tabella 20: armatura prevista per la sezione tipo A2.

Posizione	Armatura flettente Intradosso	Armatura flettente estradosso	Armatura a taglio	Classe calcestruzzo	Copriferro [cm]
Calotta	5Ø18/m	5Ø18/m	1Ø14/50/33	C25/30	8
Murette	5Ø18/m	5Ø18/m	1Ø14/50/33	C25/30	8
Arco rovescio	5Ø20/m	5Ø20/m	1Ø12/50/33	C25/30	8

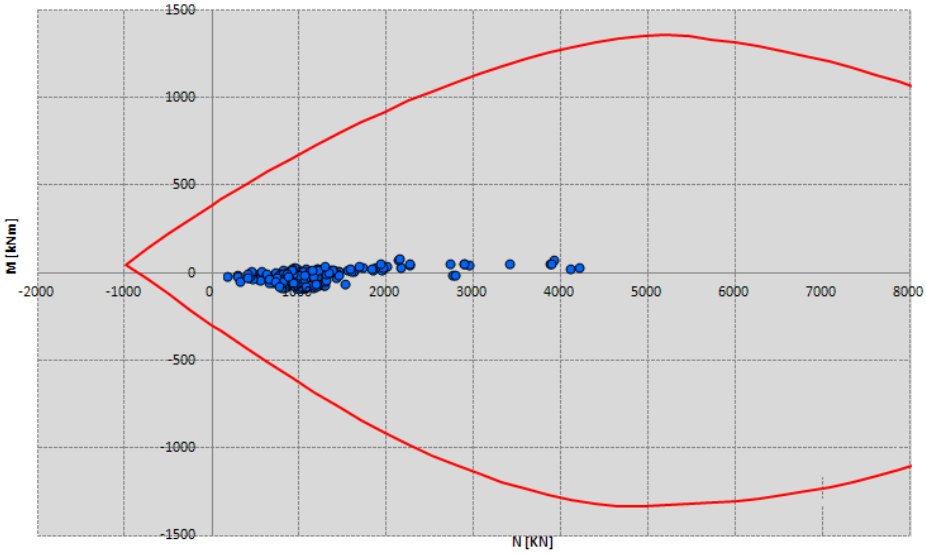
5.3.5.2.3 Calotta – verifiche allo SLU – pressoflessione

Le verifiche allo SLU del rivestimento definitivo prevedono il confronto tra le sollecitazioni di calcolo, ottenute moltiplicando i valori caratteristici restituiti dal modello di calcolo per il coefficiente parziale γ_G = 1.3, e le resistenze di calcolo definite dai punti M_{Rd}, N_{Rd} che individuano il dominio resistente della sezione nel piano M-N.



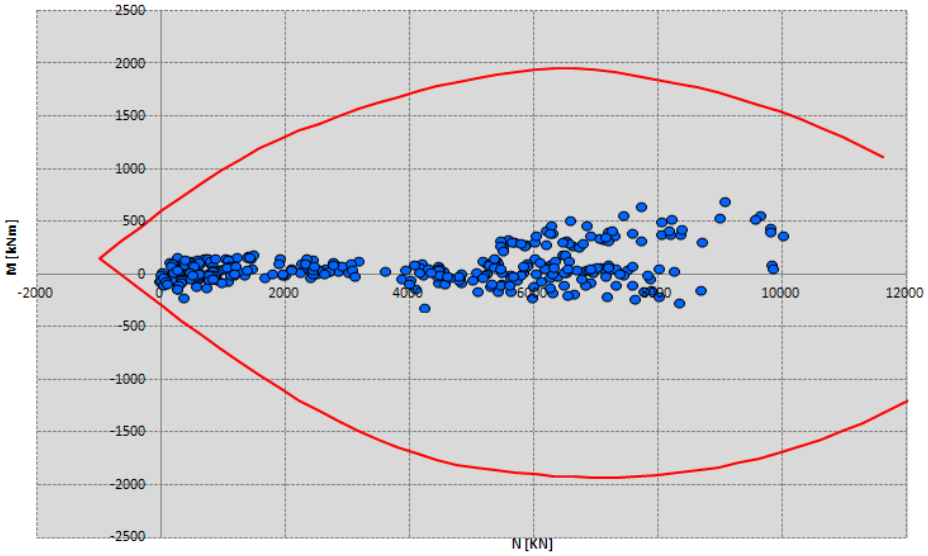
Calotta – spessore totale 70cm – armatura: 5Φ18 in intradosso + 5Φ18 in estradosso

Figura 5.31: Verifiche allo S.L.U. per pressoflessione – calotta – dominio di resistenza della sezione e sollecitazioni di calcolo.



Calotta – spessore armato 70cm, spessore totale 80cm – armatura: 5Φ18 in intradosso + 5Φ18 in estradosso

Figura 5.32: Verifiche allo S.L.U. per pressoflessione – calotta – – dominio di resistenza della sezione e sollecitazioni di calcolo.



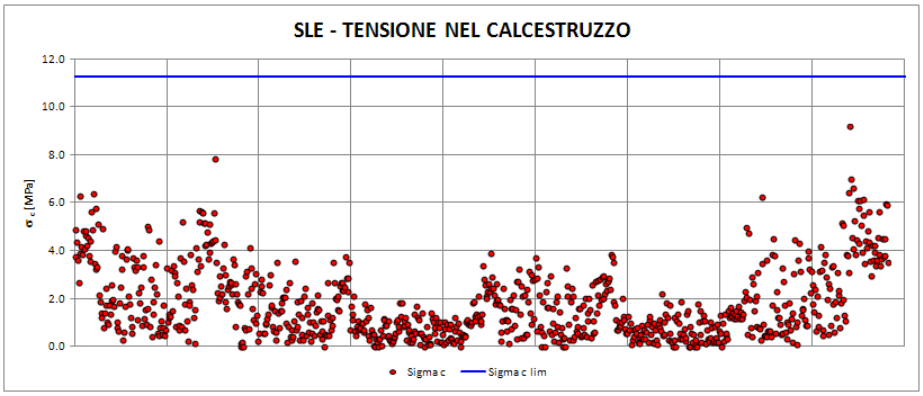
Calotta – spessore armato 70cm, spessore totale 100cm – armatura: 5Φ18 in intradosso + 5Φ18 in estradosso

Figura 5.33: Verifiche allo S.L.U. per pressoflessione – calotta – – dominio di resistenza della sezione e sollecitazioni di calcolo.

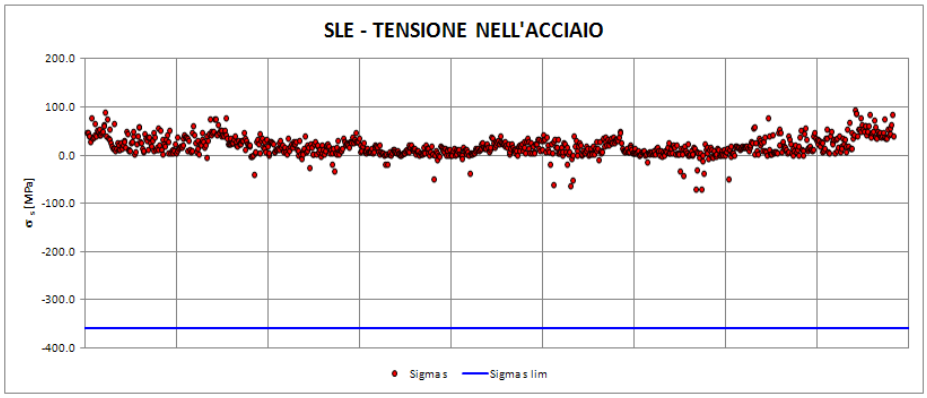
Le verifiche sono soddisfatte.

5.3.5.2.4 Calotta – verifiche allo SLE

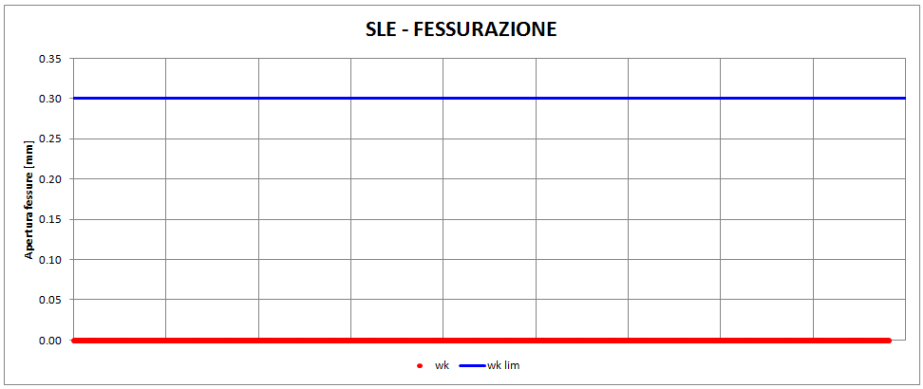
Le verifiche allo S.L.E. risultano soddisfatte quando l'ampiezza delle fessure w<0.3mm, la tensione massima nel calcestruzzo $\sigma_{c\,max} \leq 0.45 f_{ck}$ = 11.25MPa e la tensione massima nell'acciaio $\sigma_{s\,max} \leq 0.8 f_{yk}$ = 360MPa.



Tensioni di compressione nel calcestruzzo - $\sigma_c < \sigma_{c,max}$

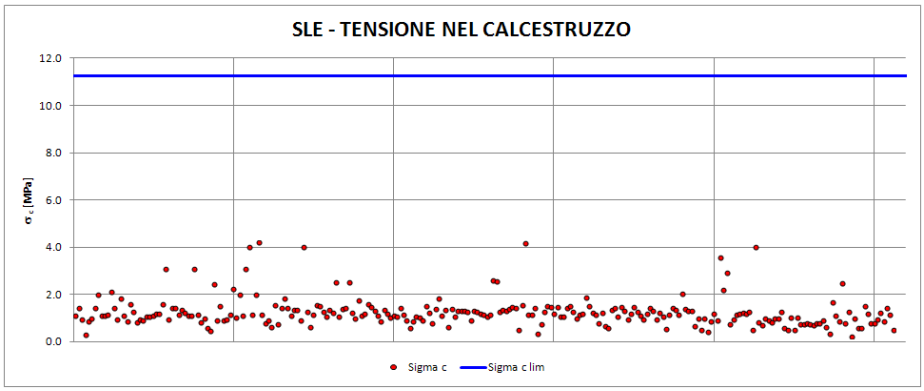


Tensioni nell'acciaio - $\sigma_s < \sigma_{s,max}$

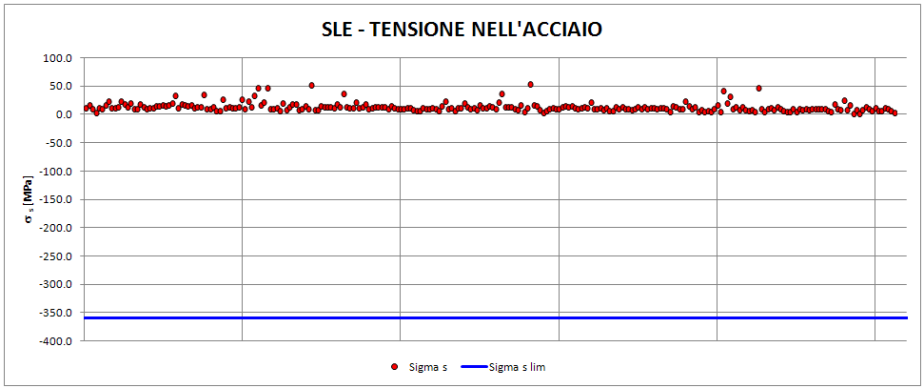


Apertura delle fessure – $w < w_{lim} = 0.3mm$

Figura 5.34: Verifiche allo S.L.E. della sezione – calotta – spessore 70cm.



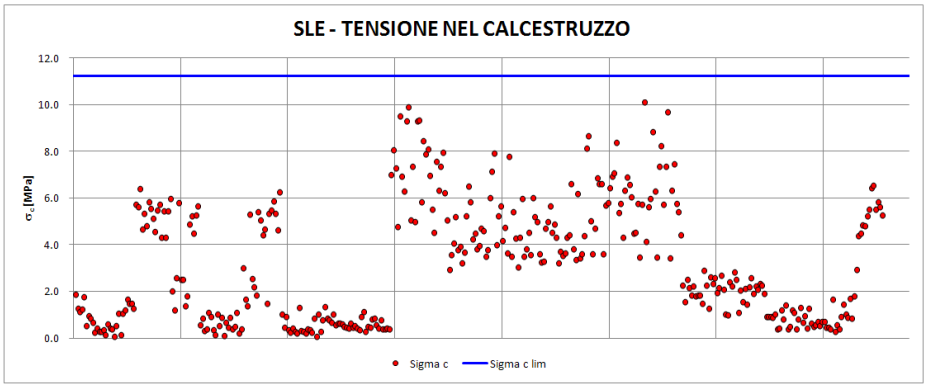
Tensioni di compressione nel calcestruzzo - $\sigma_c < \sigma_{c,max}$



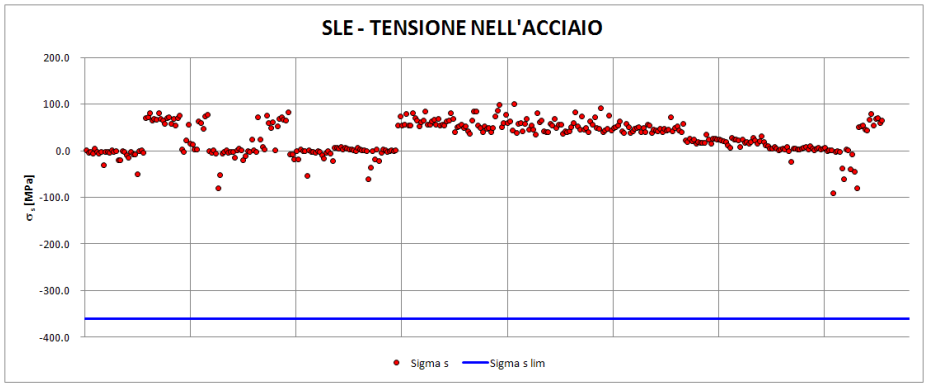
Tensioni nell'acciaio - $\sigma_s < \sigma_{s,max}$

Apertura delle fessure – $w < w_{lim} = 0.3mm$

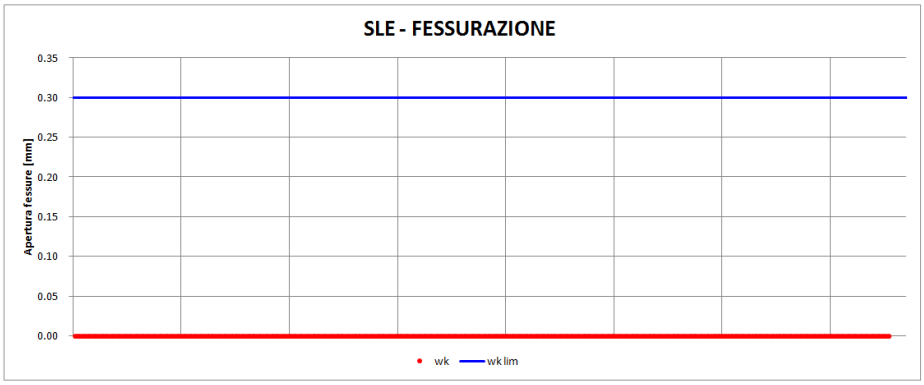
Figura 5.35: Verifiche allo S.L.E. della sezione – calotta – spessore armato 70cm, spessore totale 80cm.



Tensioni di compressione nel calcestruzzo - $\sigma_c < \sigma_{c,max}$



Tensioni nell'acciaio - $\sigma_s < \sigma_{s,max}$



Apertura delle fessure – $w < w_{lim} = 0.3mm$

Figura 5.36: Verifiche allo S.L.E. della sezione – calotta – spessore armato 70cm, spessore totale 100cm.

Le verifiche sono soddisfatte.

5.3.5.2.5 Calotta – verifiche allo SLU per sollecitazioni taglianti

Nel caso di elementi strutturali dotati di armature trasversali a taglio occorre verificare che il taglio sollecitante di progetto (V_{Ed}) sia minore di quello resistente (V_{Rd}); essendo:

$V_{Rd} = \min (V_{Rsd}, V_{Rcd})$

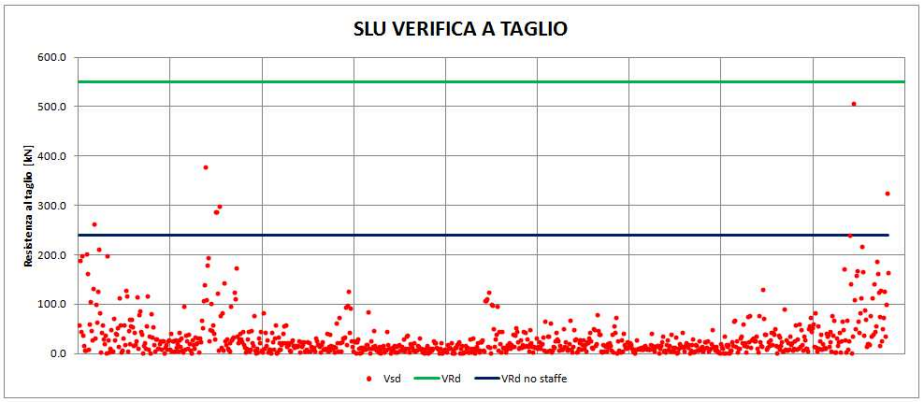
V_{Rsd}, è la resistenza di calcolo a "taglio trazione" dell'armatura trasversale

$V_{Rsd} = 0.9 \cdot d \cdot (A_{sw}/s) \cdot f_{yd} \cdot (\text{ctg}\alpha + \text{ctg}\theta) \cdot \sin\alpha$

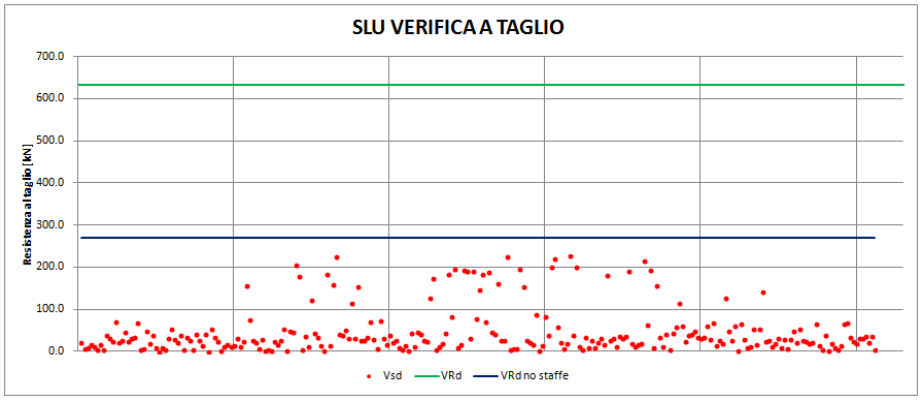
V_{Rcd}, è la resistenza di calcolo a "taglio compressione" del calcestruzzo

$V_{Rcd} = 0.9 \cdot d \cdot b_w \cdot \alpha_c f'_{cd} (\text{ctg}\alpha + \text{ctg}\theta) / (1 + \text{ctg}^2\theta)$

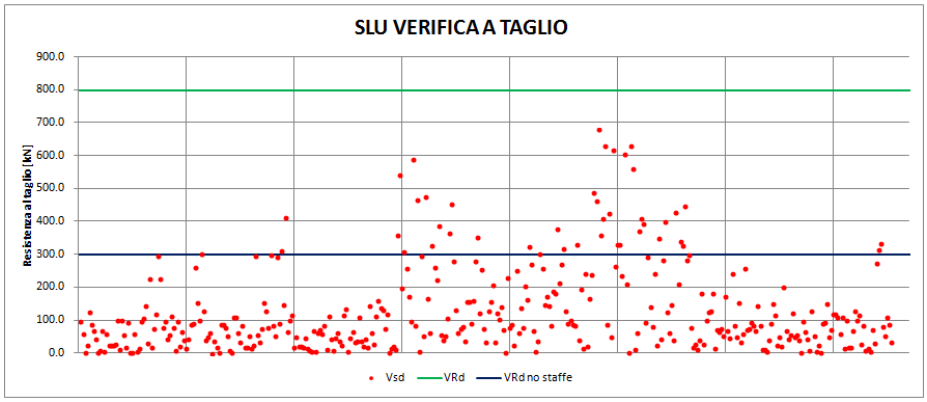
Per il significato delle diverse entità si rimanda al paragrafo 4.1.2.1.3.1 del NTC2008.



Calotta – spessore 70cm – armatura a taglio: 1Φ14/50/33



Calotta – spessore armato 70cm, spessore totale 80cm – armatura a taglio: 1Φ14/50/33



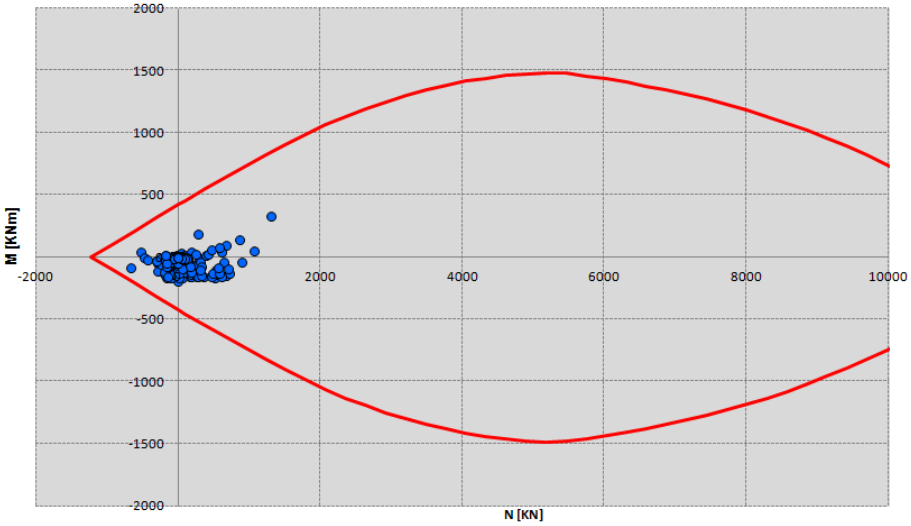
Calotta – spessore armato 70cm, spessore totale 100cm – armatura a taglio: 1Φ14/50/33

Figura 5.37: Verifiche allo S.L.U. per sollecitazioni taglianti – calotta.

Le verifiche sono soddisfatte.

5.3.5.2.6 Arco rovescio – verifiche allo SLU – pressoflessione

Le verifiche allo SLU del rivestimento definitivo prevedono il confronto tra le sollecitazioni di calcolo, ottenute moltiplicando i valori caratteristici, restituiti dal modello di calcolo, per il coefficiente parziale γ_G = 1.3, e le resistenze di calcolo definite dai punti M_{Rd}, N_{Rd} che individuano il dominio resistente della sezione nel piano M-N.



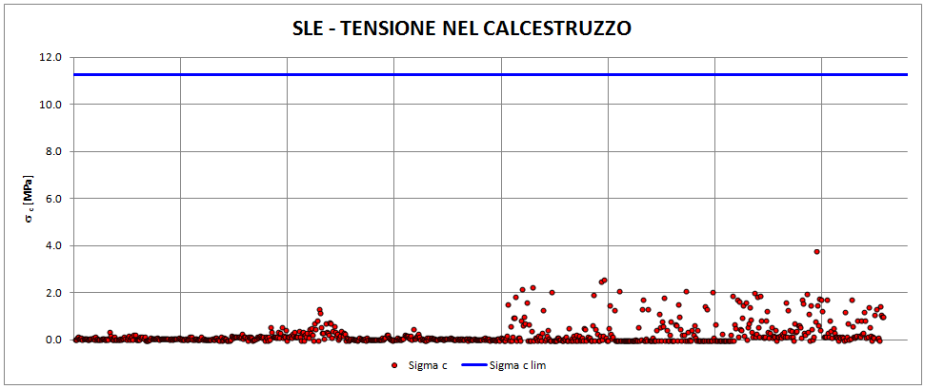
Arco rovescio – spessore 80cm – armatura: 5Φ20 in intradosso + 5Φ20 in estradosso

Figura 5.38: Verifiche allo S.L.U. per pressoflessione – arco rovescio – dominio di resistenza della sezione e sollecitazioni di calcolo.

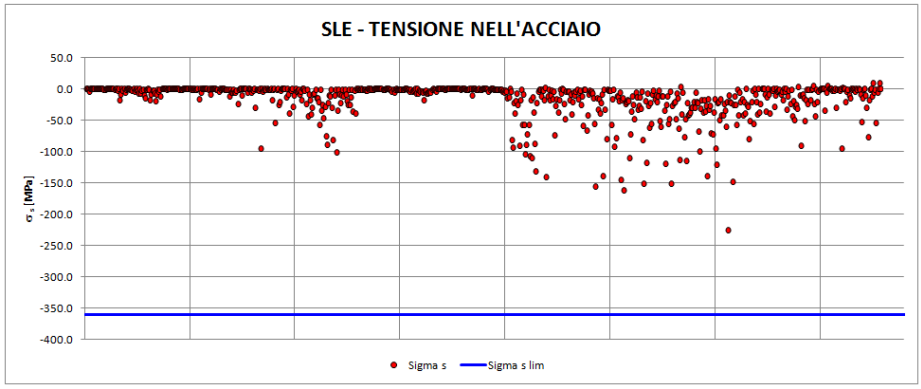
Le verifiche sono soddisfatte.

5.3.5.2.7 Arco rovescio – verifiche allo SLE

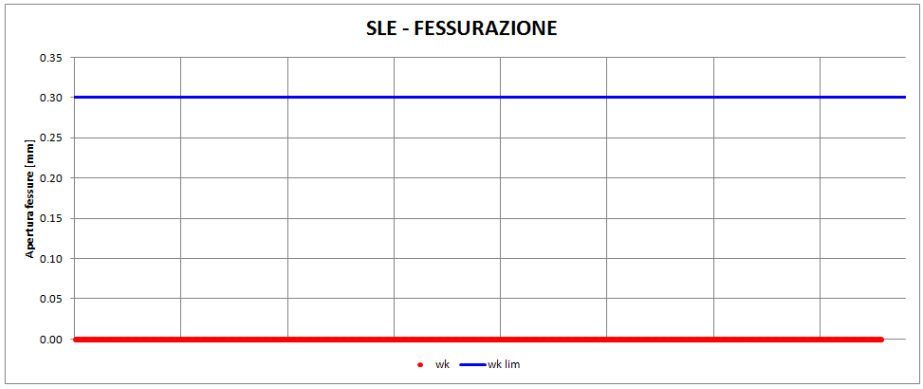
Le verifiche allo S.L.E. risultano soddisfatte quando l'ampiezza delle fessure w<0.3mm, la tensione massima nel calcestruzzo $\sigma_{c\,max} \leq 0.45 f_{ck}$ = 11.25MPa e la tensione massima nell'acciaio $\sigma_{s\,max} \leq 0.8 f_{yk}$ = 360MPa.



Tensioni di compressione nel calcestruzzo - $\sigma_c < \sigma_{c,max}$



Tensioni nell'acciaio - $\sigma_s < \sigma_{s,max}$



Apertura delle fessure – $w < w_{lim} = 0.3mm$

Figura 5.39: Verifiche allo S.L.E. della sezione – arco rovescio.

Il controllo della fessurazione è stato effettuato, oltre che confrontando il momento di prima fessurazione con il momento agente, anche attraverso il confronto della massima tensione normale di trazione nella fibra più sollecitata con la resistenza a trazione del calcestruzzo f_{ctm}, secondo la seguente correlazione:

dove:
f_{ctm} è la resistenza a trazione del calcestruzzo, calcolata come $0.7x0.3xf_{ck}^{2/3} = 1.80MPa$.

Per il rivestimento definitivo dell'arco rovescio della galleria di linea la massima tensione normale di trazione nella fibra più sollecitata vale 1.35MPa, valore inferiore alla resistenza a trazione del calcestruzzo divisa per 1.2, pari a 1.5MPa.

Le verifiche sono soddisfatte.

5.3.5.2.8 Arco rovescio – verifiche allo SLU per sollecitazioni taglianti

Nel caso di elementi strutturali dotati di armature trasversali a taglio occorre verificare che il taglio sollecitante di progetto (V_{Ed}) sia minore di quello resistente (V_{Rd}); essendo:

$V_{Rd} = \min (V_{Rsd}, V_{Rcd})$

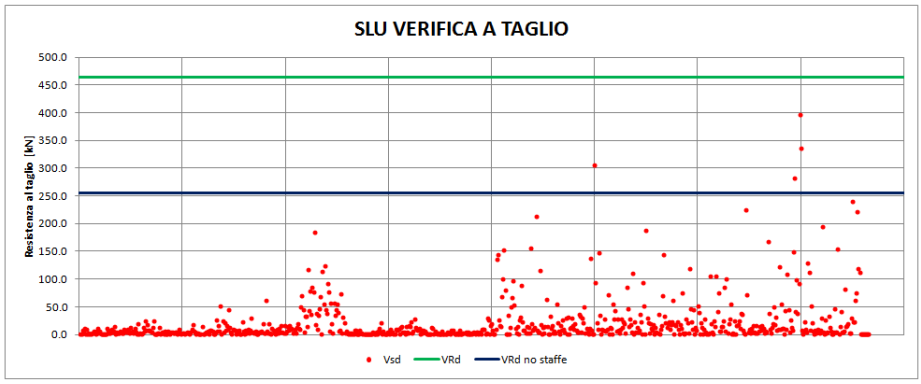
V_{Rsd}, è la resistenza di calcolo a "taglio trazione" dell'armatura trasversale

$V_{Rsd} = 0.9 \cdot d \cdot (A_{sw}/s) \cdot f_{yd} \cdot (\mathrm{ctg}\alpha + \mathrm{ctg}\theta) \cdot \sin\alpha$

V_{Rcd}, è la resistenza di calcolo a "taglio compressione" del calcestruzzo

$V_{Rcd} = 0.9 \cdot d \cdot b_w \cdot \alpha_c f'_{cd} (\mathrm{ctg}\alpha + \mathrm{ctg}\theta) / (1 + \mathrm{ctg}^2\theta)$

Per il significato delle diverse entità si rimanda al paragrafo 4.1.2.1.3.1 del NTC2008.



Arco rovescio – spessore 80cm – armatura a taglio: 1Φ12/50/33

Figura 5.40: Verifiche allo S.L.U. per sollecitazioni taglianti – arco rovescio.

Le verifiche sono soddisfatte.

5.3.5.3 SEZIONE TIPO CAMERA DI ESODO IN CALCARI

Nel presente paragrafo si illustrano le verifiche di resistenza del rivestimento definitivo della sezione camera di esodo del nodo d'innesto; tali verifiche sono riportate per via grafica.

5.3.5.3.1 Sollecitazioni agenti

Di seguito sono riportate le sollecitazioni (N, M e T) nel rivestimento definitivo della sezione in esame; i valori numerici (caratteristici e di calcolo) sono riportati nell'allegato specifico.

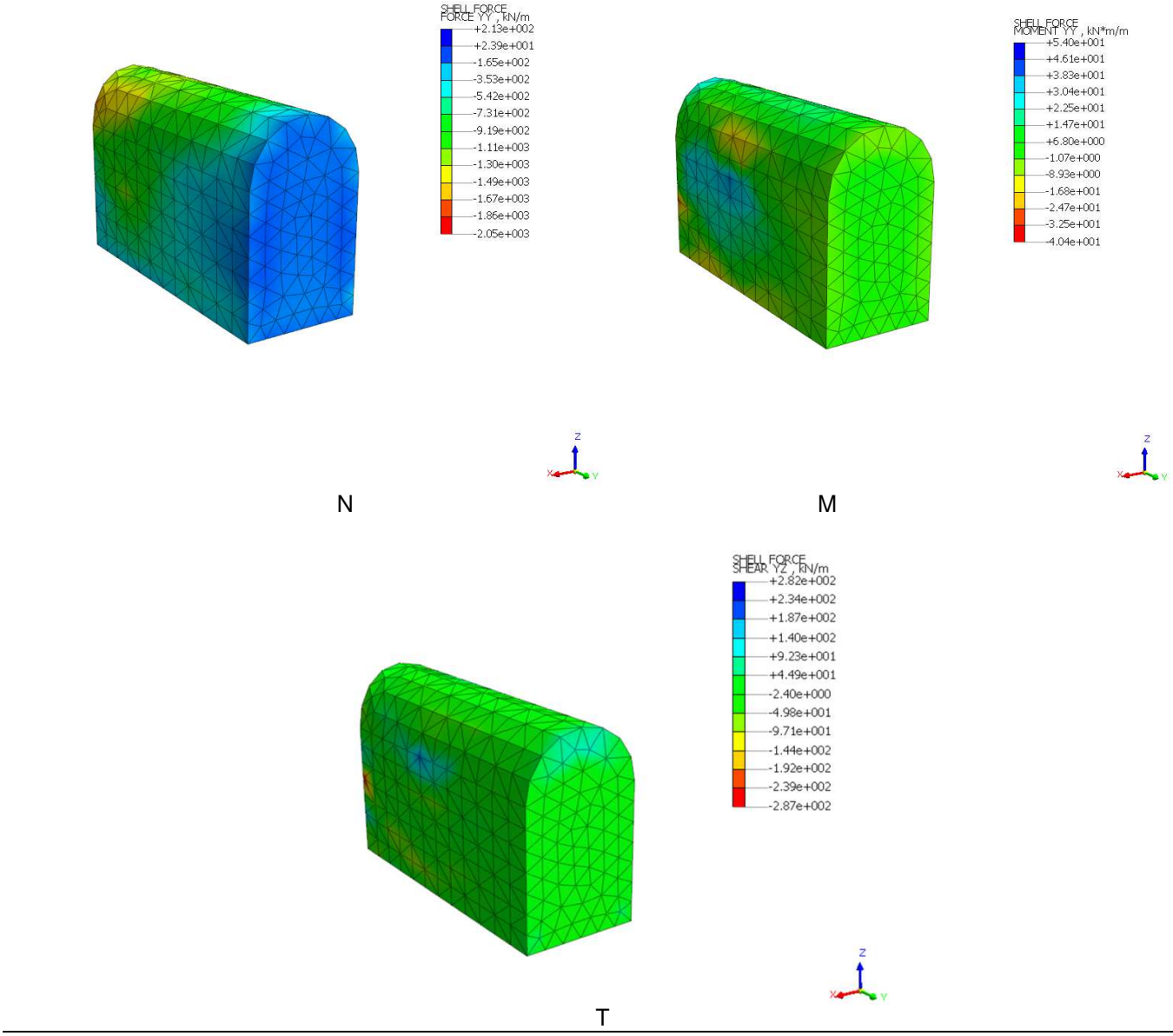


Figura 5.41: Sollecitazioni sul rivestimento definitivo della camera di esodo – (N<0 se di compressione) – stage finale.

5.3.5.3.2 Armatura disposta

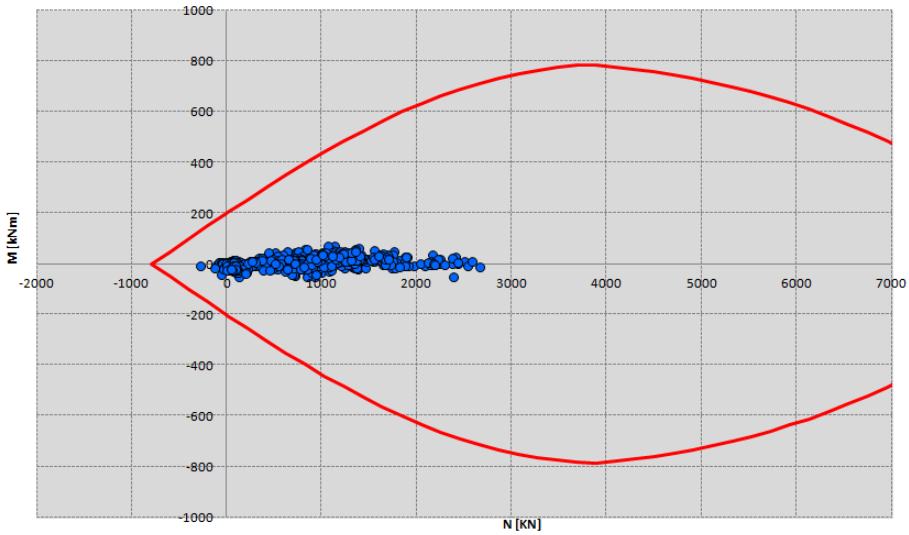
Nella tabella seguente sono riassunte le armature previste per la sezione tipo camera di esodo.

Tabella 21: armatura prevista per la sezione tipo camera di esodo

Posizione	Armatura flettente Intradosso	Armatura flettente estradosso	Armatura a taglio	Classe calcestruzzo	Copriferro [cm]
Calotta	5Ø16/m	5Ø16/m	1Ø14/50/33	C25/30	8
Murette	5Ø16/m	5Ø16/m	1Ø14/50/33	C25/30	8
Arco rovescio	5Ø16/m	5Ø16/m	1Ø14/50/33	C25/30	8

5.3.5.3.3 Calotta e arco rovescio – verifiche allo SLU – pressoflessione

Le verifiche allo SLU del rivestimento definitivo prevedono il confronto tra le sollecitazioni di calcolo, ottenute moltiplicando i valori caratteristici restituiti dal modello di calcolo per il coefficiente parziale γ_G = 1.3, e le resistenze di calcolo definite dai punti M_{Rd}, N_{Rd} che individuano il dominio resistente della sezione nel piano M-N.



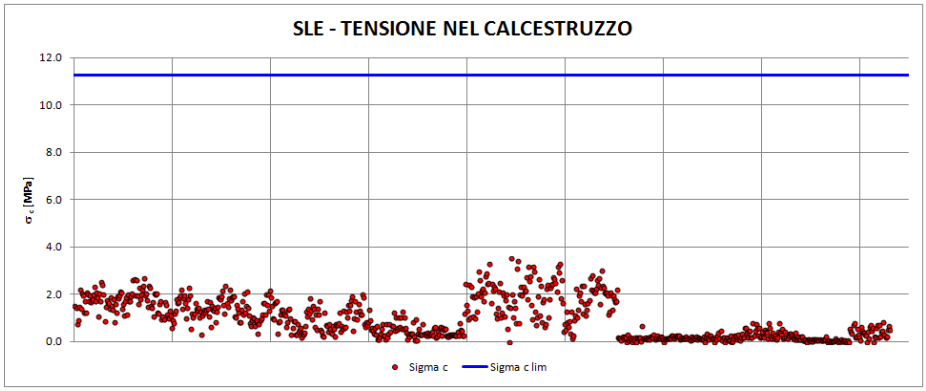
Calotta e arco rovescio – spessore 60cm – armatura: 5Φ16 in intradosso + 5Φ16 in estradosso

Figura 5.42: Verifiche allo S.L.U. per pressoflessione – calotta e arco rovescio – dominio di resistenza della sezione e sollecitazioni di calcolo.

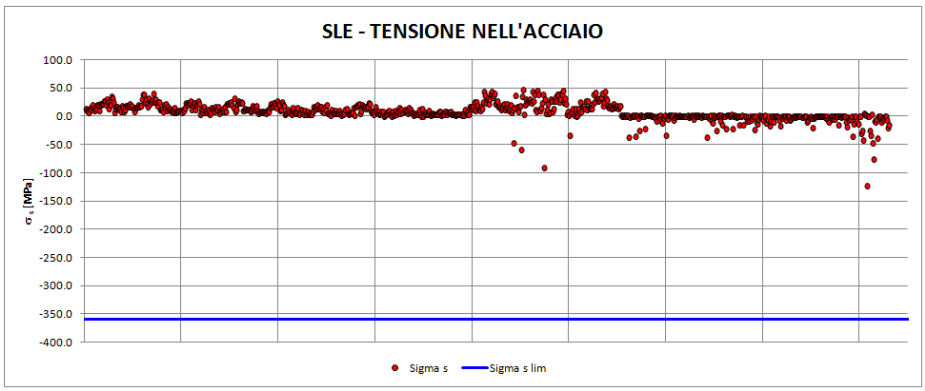
Le verifiche sono soddisfatte.

5.3.5.3.4 Calotta e arco rovescio – verifiche allo SLE

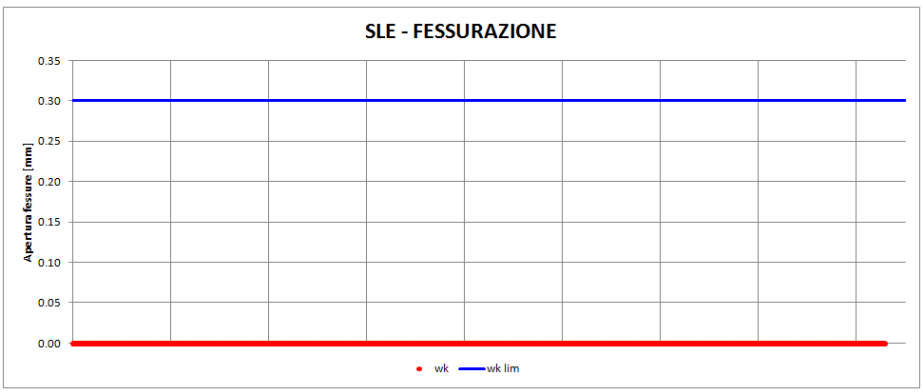
Le verifiche allo S.L.E. risultano soddisfatte quando l'ampiezza delle fessure w<0.3mm, la tensione massima nel calcestruzzo $\sigma_{c\,max} \leq 0.45 f_{ck}$ = 11.25MPa e la tensione massima nell'acciaio $\sigma_{s\,max} \leq 0.8 f_{yk}$ = 360MPa.



Tensioni di compressione nel calcestruzzo - $\sigma_c < \sigma_{c,max}$



Tensioni nell'acciaio - $\sigma_s < \sigma_{s,max}$



Apertura delle fessure – $w < w_{lim} = 0.3mm$

Figura 5.43: Verifiche allo S.L.E. della sezione – calotta e arco rovescio.

Le verifiche sono soddisfatte.

5.3.5.3.5 Calotta e arco rovescio – verifiche allo SLU per sollecitazioni taglianti

Nel caso di elementi strutturali dotati di armature trasversali a taglio occorre verificare che il taglio sollecitante di progetto (V_{Ed}) sia minore di quello resistente (V_{Rd}); essendo:

$V_{Rd} = \min (V_{Rsd}, V_{Rcd})$

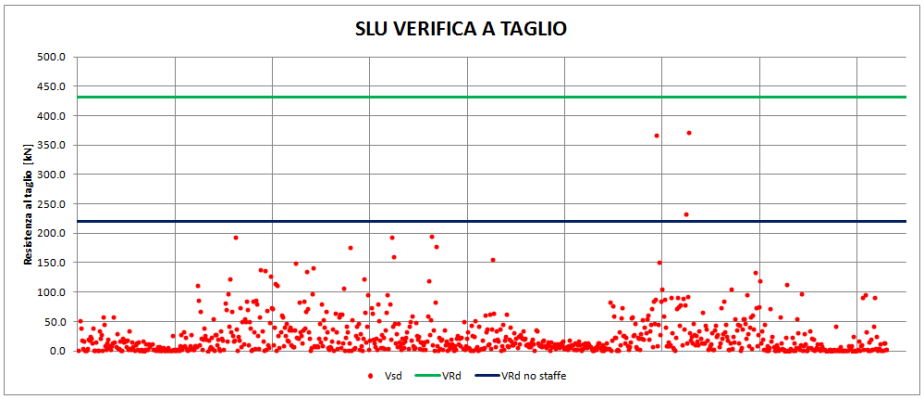
V_{Rsd}, è la resistenza di calcolo a "taglio trazione" dell'armatura trasversale

$V_{Rsd} = 0.9 \cdot d \cdot (A_{sw}/s) \cdot f_{yd} \cdot (\mathrm{ctg}\alpha + \mathrm{ctg}\theta) \cdot \sin\alpha$

V_{Rcd}, è la resistenza di calcolo a "taglio compressione" del calcestruzzo

$V_{Rcd} = 0.9 \cdot d \cdot b_w \cdot \alpha_c f'_{cd} (\mathrm{ctg}\alpha + \mathrm{ctg}\theta) / (1 + \mathrm{ctg}^2\theta)$

Per il significato delle diverse entità si rimanda al paragrafo 4.1.2.1.3.1 del NTC2008.



Calotta e arco rovescio – spessore 60cm – armatura a taglio: 1Φ14/50/33

Figura 5.44: Verifiche allo S.L.U. per sollecitazioni taglianti – calotta e arco rovescio.

Le verifiche sono soddisfatte.

5.3.5.4 SEZIONE TIPO SOTTO ATTRAVERSAMENTO

Nel presente paragrafo si illustrano le verifiche di resistenza del rivestimento definitivo della sezione sotto attraversamento del nodo d'innesto; tali verifiche sono riportate per via grafica.

5.3.5.4.1 Sollecitazioni agenti

Di seguito sono riportate le sollecitazioni (N, M e T) nel rivestimento definitivo della tratta in esame; i valori numerici (caratteristici e di calcolo) sono riportati nell'allegato specifico.

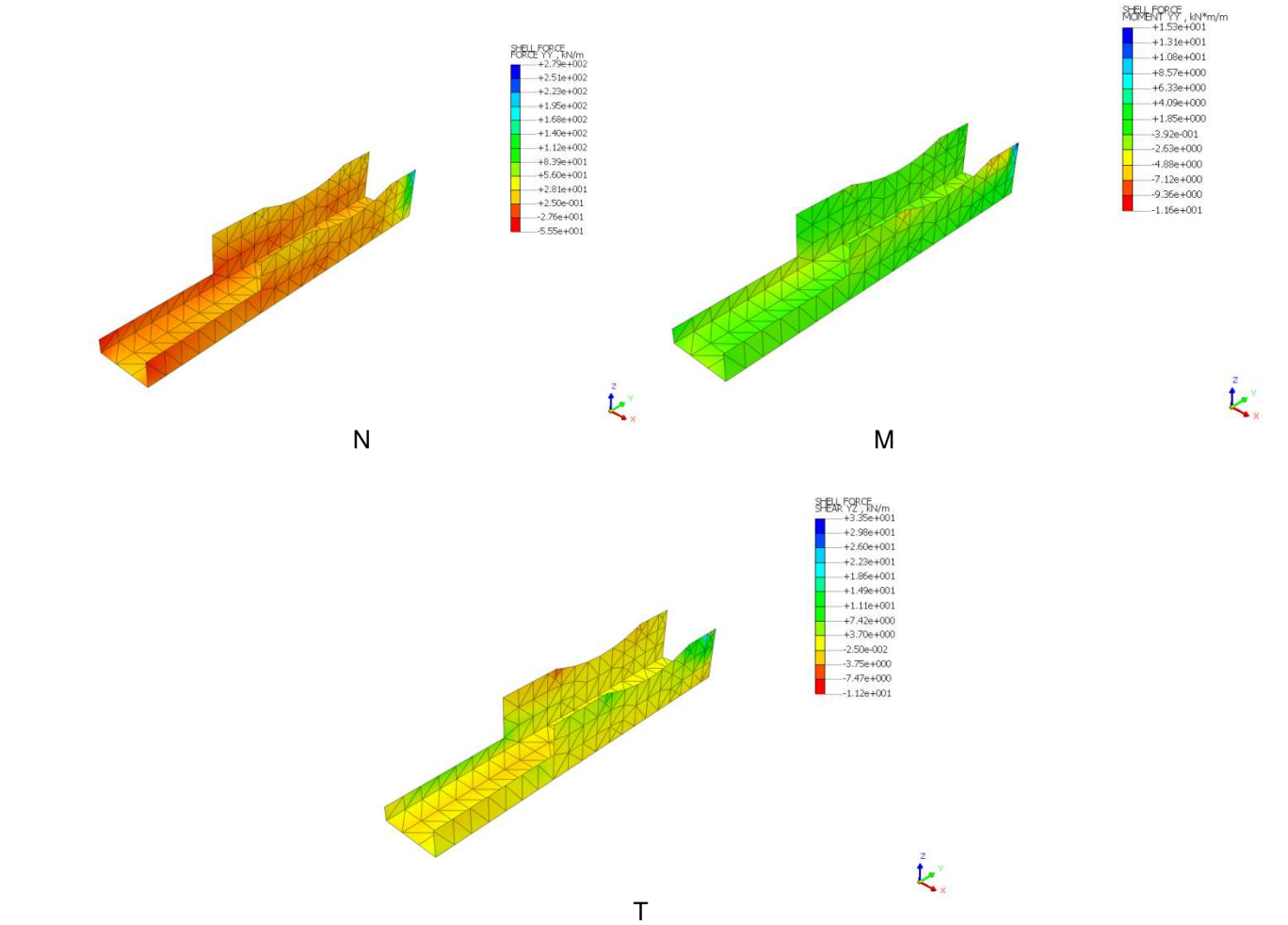


Figura 5.45: Sollecitazioni sul rivestimento definitivo del sottoattraversamento del nodo d'innesto – (N<0 se di compressione) – stage finale.

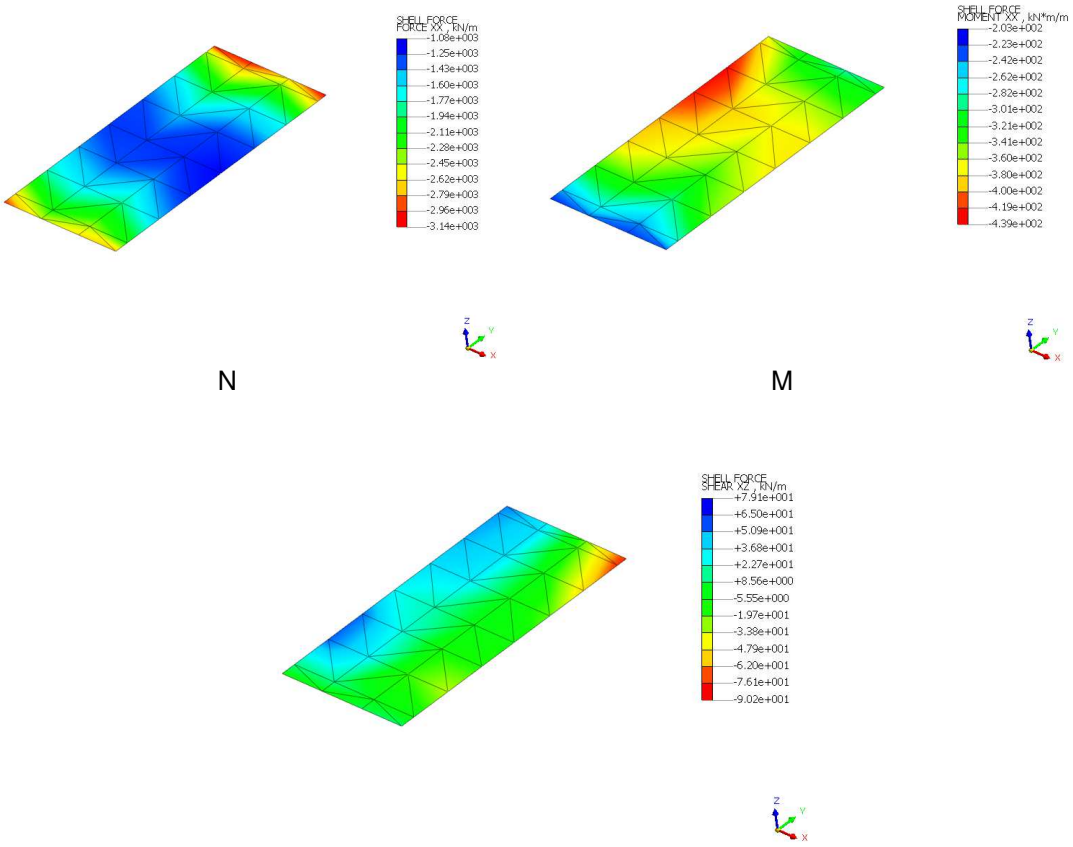


Figura 5.46: Sollecitazioni sulla soletta superiore del rivestimento definitivo del sottoattraversamento – (N<0 se di compressione) – stage finale.

Per la tratta centrale della soletta superiore del sottoattraversamento si verifica nel dettaglio la sezione forata di dimensioni 150cm x 80cm (bxh), in quanto presenta gli alloggiamenti per le due tubazioni di diametro ∅44cm. La geometria di questo dettaglio è riportata nella figura seguente.

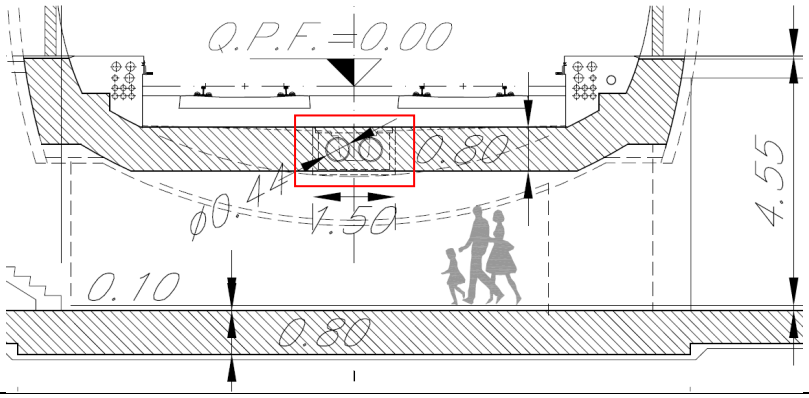


Figura 5.47: Dettaglio della soletta superiore del sottoattraversamento forata per l'alloggiamento di due tubazioni di diametro ∅44cm.

5.3.5.4.2 Armatura disposta

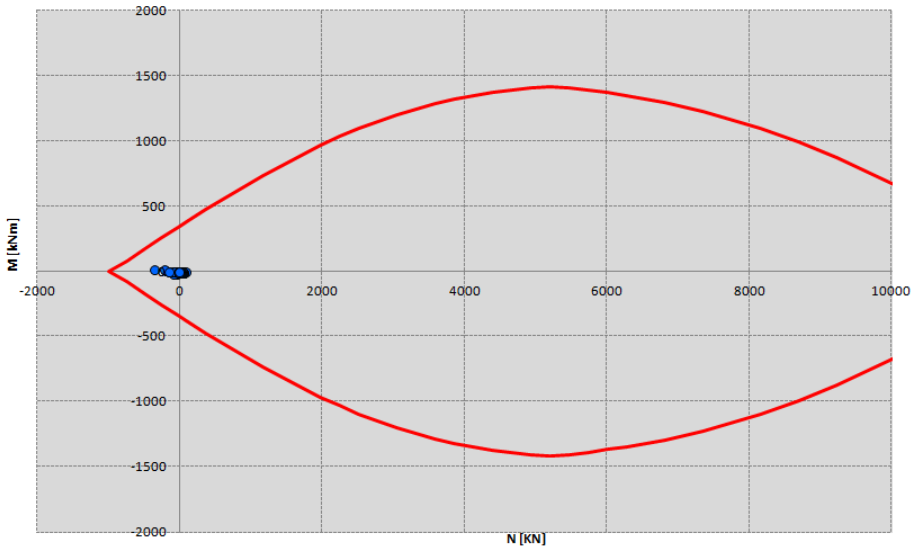
Nella tabella seguente sono riassunte le armature previste per la sezione tipo camera di esodo.

Tabella 22: armatura prevista per la sezione tipo sotto attraversamento.

Posizione	Armatura flettente Intradosso	Armatura flettente estradosso	Armatura a taglio	Classe calcestruzzo	Copriferro [cm]
Setti verticali	5Ø18/m	5Ø18/m	-	C25/30	8
Soletta di fondo	5Ø18/m	5Ø18/m	-	C25/30	8
Soletta superiore	5Ø20/m	5Ø20/m	-	C25/30	8
Soletta forata	5Ø20/m	5Ø20/m	-	C25/30	8

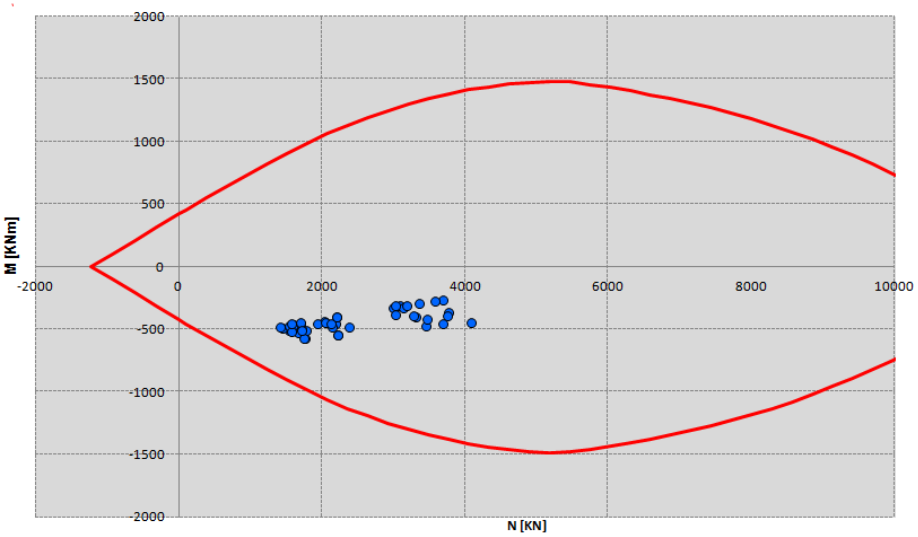
5.3.5.4.3 Setti verticali, soletta di fondo e soletta superiore – verifiche allo SLU – pressoflessione

Le verifiche allo SLU del rivestimento definitivo prevedono il confronto tra le sollecitazioni di calcolo, ottenute moltiplicando i valori caratteristici restituiti dal modello di calcolo per il coefficiente parziale γ_G = 1.3, e le resistenze di calcolo definite dai punti M_{Rd}, N_{Rd} che individuano il dominio resistente della sezione nel piano M-N.



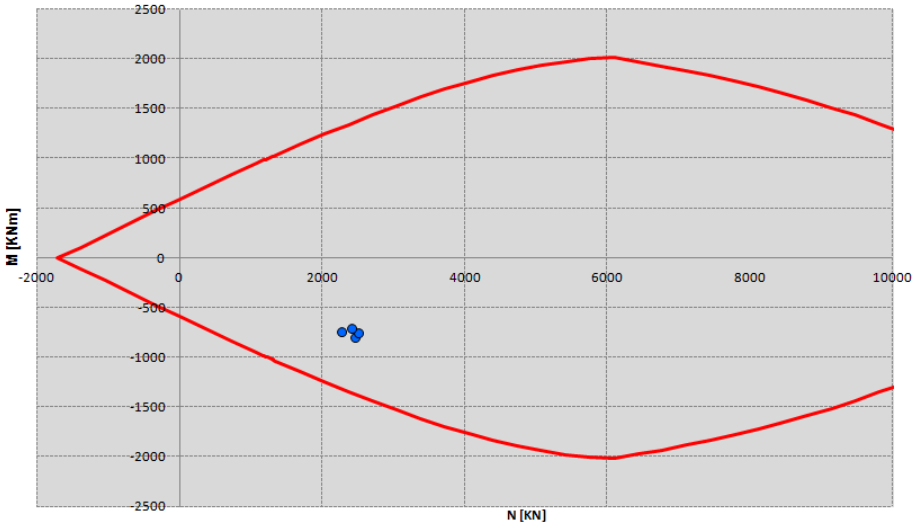
Setti verticali e soletta di fondo – spessore 80cm – armatura: 5Φ18 in intradosso + 5Φ18 in estradosso

Figura 5.48: Verifiche allo S.L.U. per pressoflessione – setti verticali e soletta di fondo – dominio di resistenza della sezione e sollecitazioni di calcolo.



Soletta superiore – spessore 80cm – armatura: 5Φ20 in intradosso + 5Φ20 in estradosso

Figura 5.49: Verifiche allo S.L.U. per pressoflessione – soletta superiore in direzione trasversale al sottoattraversamento – dominio di resistenza della sezione e sollecitazioni di calcolo.



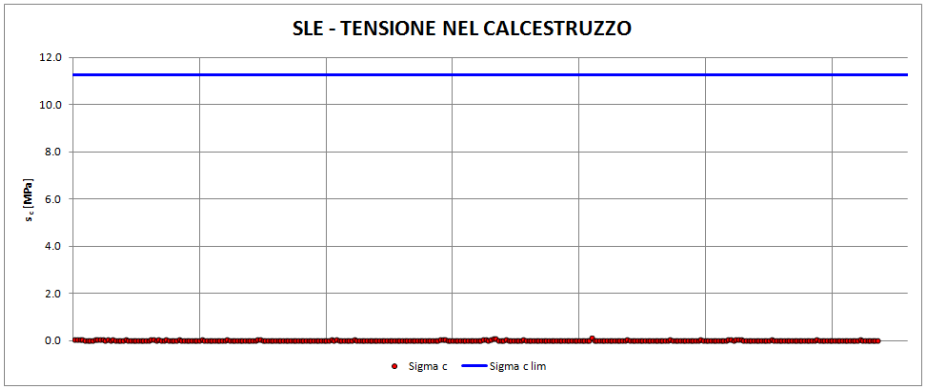
Soletta superiore forata – larghezza 150cm/spessore 80cm – armatura: 5Φ20 in intradosso + 5Φ20 in estradosso

Figura 5.50: Verifiche allo S.L.U. per pressoflessione – soletta superiore forata in direzione trasversale al sottoattraversamento – dominio di resistenza della sezione e sollecitazioni di calcolo.

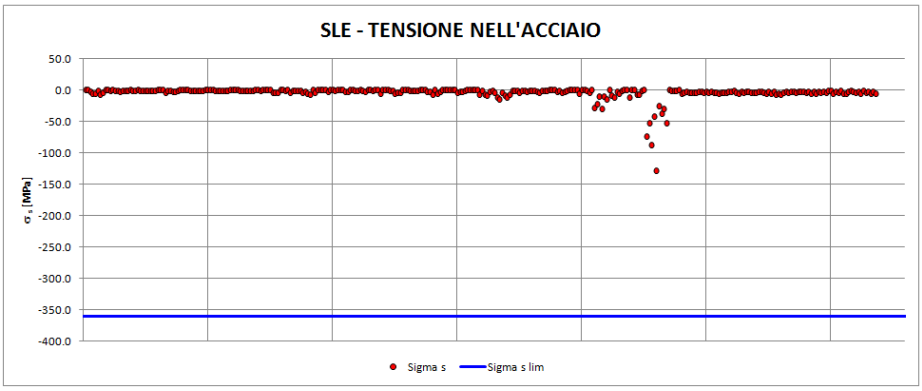
Le verifiche sono soddisfatte.

5.3.5.4.4 Setti verticali, soletta superiore e di fondo – verifiche allo SLE

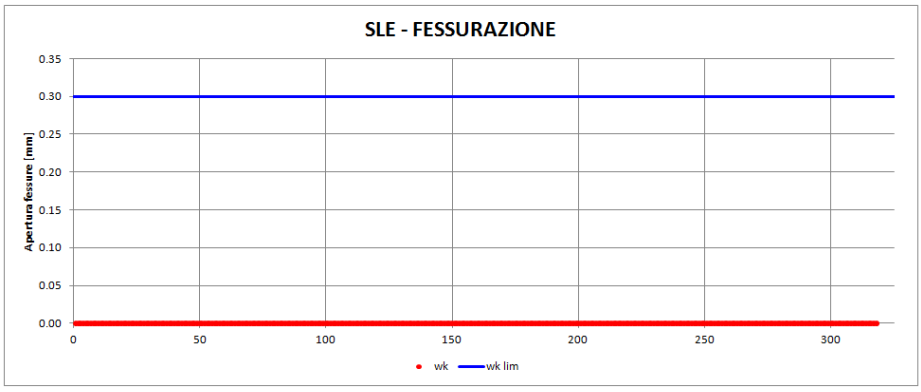
Le verifiche allo S.L.E. risultano soddisfatte quando l'ampiezza delle fessure w<0.3mm, la tensione massima nel calcestruzzo $\sigma_{c\,max} \leq 0.45 f_{ck} = 11.25MPa$ e la tensione massima nell'acciaio $\sigma_{s\,max} \leq 0.8 f_{yk} = 360MPa$.



Tensioni di compressione nel calcestruzzo - $\sigma_c < \sigma_{c,max}$

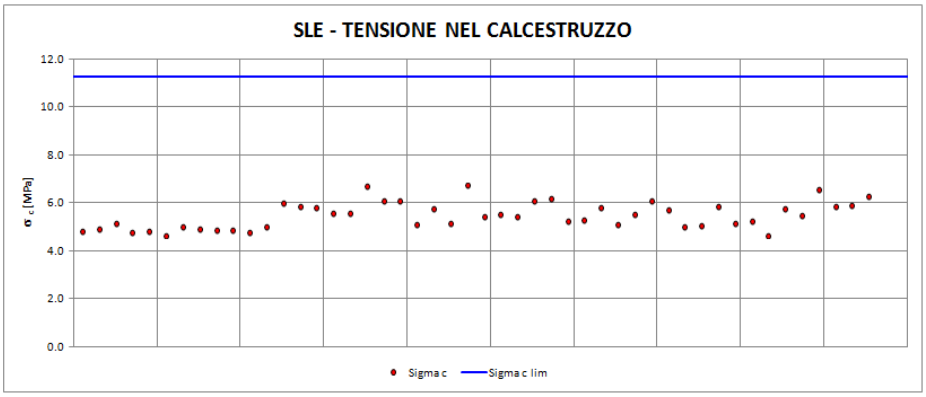


Tensioni nell'acciaio - $\sigma_s < \sigma_{s,max}$

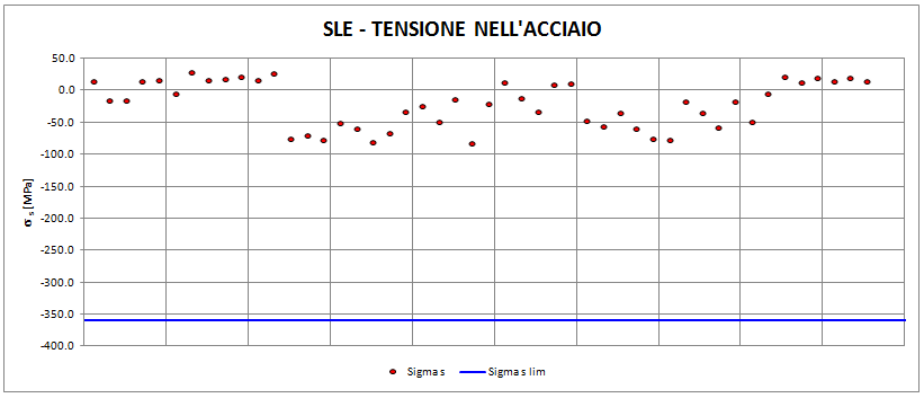


Apertura delle fessure – $w < w_{lim} = 0.3mm$

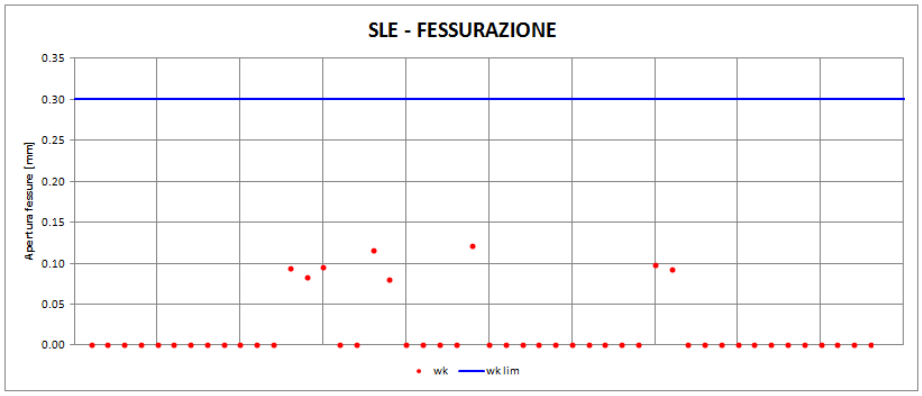
Figura 5.51: Verifiche allo S.L.E. della sezione – setti verticali e soletta di fondo.



Tensioni di compressione nel calcestruzzo - $\sigma_c < \sigma_{c,max}$

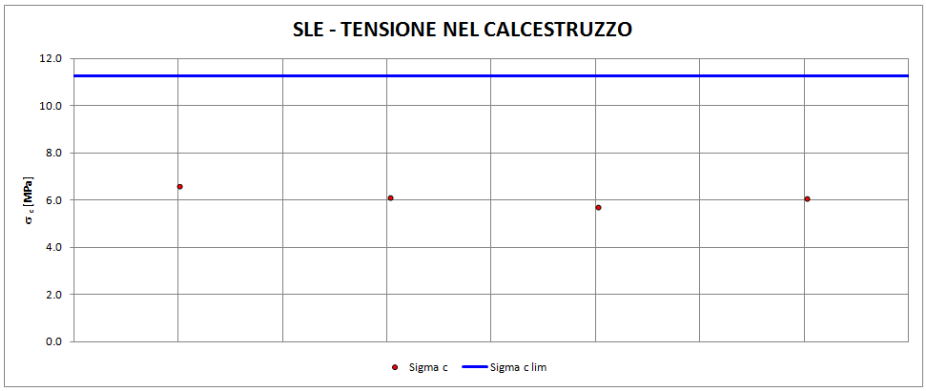


Tensioni nell'acciaio - $\sigma_s < \sigma_{s,max}$

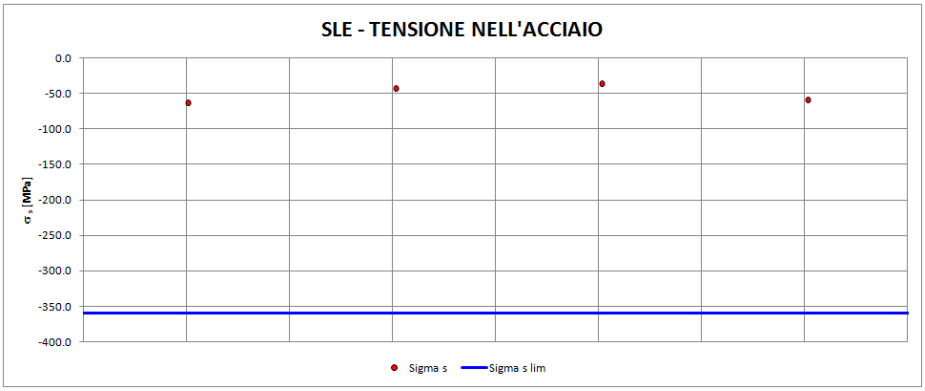


Apertura delle fessure – $w < w_{lim} = 0.3mm$

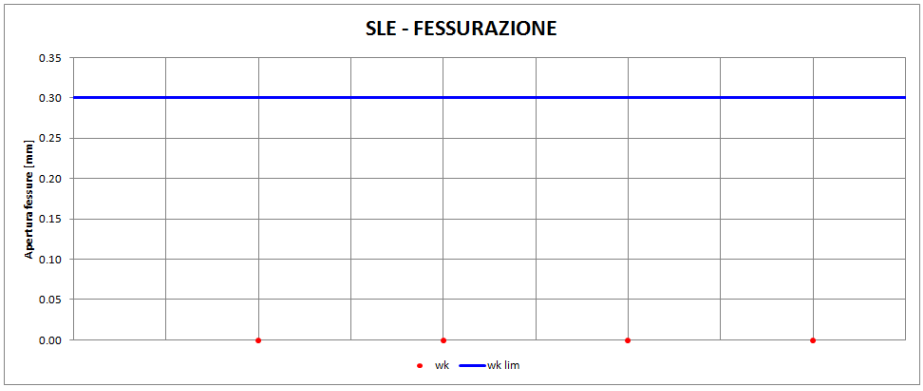
Figura 5.52: Verifiche allo S.L.E. – soletta superiore in direzione trasversale al sottoattraversamento.



Tensioni di compressione nel calcestruzzo - $\sigma_c < \sigma_{c,max}$



Tensioni nell'acciaio - $\sigma_s < \sigma_{s,max}$



Apertura delle fessure – $w < w_{lim} = 0.3mm$

Figura 5.53: Verifiche allo S.L.E. – soletta superiore forata in direzione trasversale al sottoattraversamento.

Le verifiche sono soddisfatte.

5.3.5.4.5 Setti verticali, soletta superiore e di fondo – verifiche allo SLU per sollecitazioni taglianti

Nel caso di elementi strutturali privi di armature trasversali a taglio, occorre verificare che il taglio di progetto (V_{Ed}) sia minore di quello resistente (V_{Rd}); essendo:

$$V_{Rd} = 0{,}18 \cdot k \cdot (100 \cdot \rho_1 \cdot f_{ck}) / \gamma_c + 0{,}15 \cdot \sigma_{cp} \cdot b_w \cdot d \geq (v_{min} + 0{,}15 \cdot \sigma_{cp}) \cdot b_w \cdot d$$

con

$$k = 1 + (200/d) \cdot 1/2 \leq 2$$

$$v_{min} = 0{,}035 \cdot k^{3/2} \cdot f_{ck}^{1/2}$$

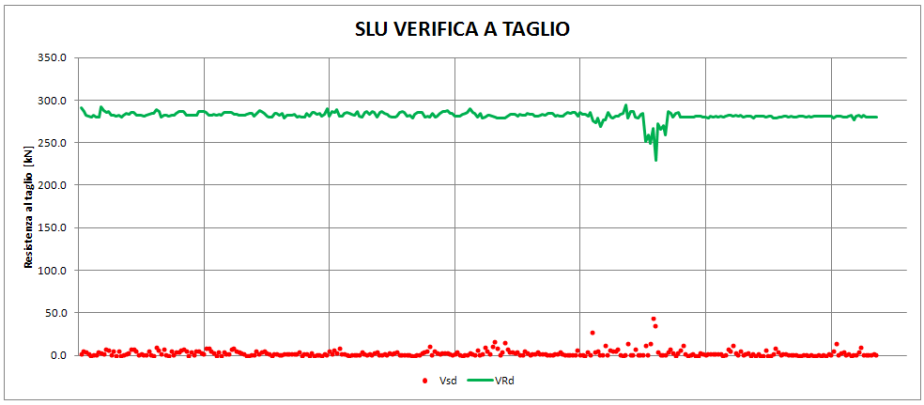
d è l'altezza utile della sezione (mm);

$\rho_1 = A_{sl} / (b_w \cdot d)$ è il rapporto geometrico di armatura longitudinale ($\leq$ 0.02);

$\sigma_{cp} = N_{Ed}/A_c$ è la tensione media di compressione nella sezione ($\leq$ 0.2 f_{cd});

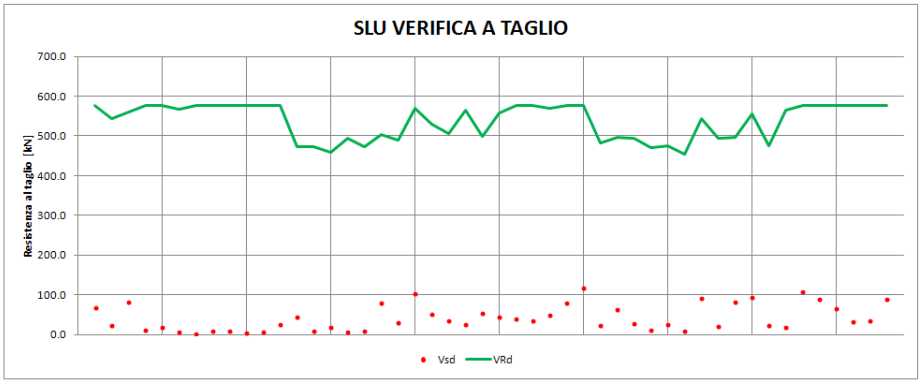
b_w è la larghezza minima della sezione (mm).

Per il significato delle diverse entità si rimanda al paragrafo 4.1.2.1.3.1 del NTC2008.



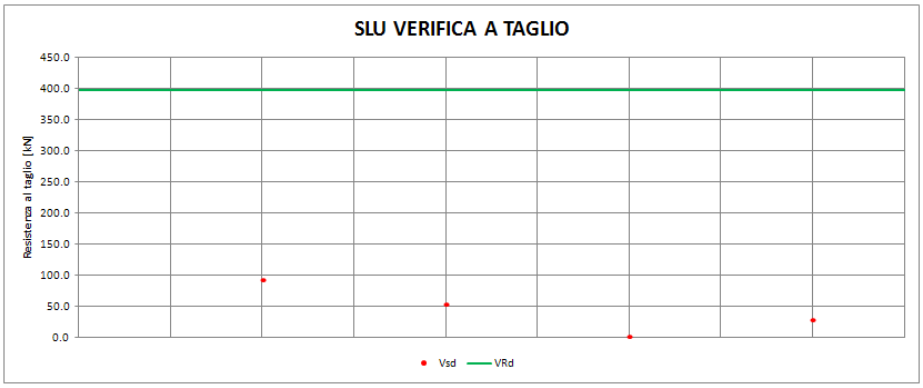
Setti verticali e soletta di fondo – spessore 80cm

Figura 5.54: Verifiche allo S.L.U. per sollecitazioni taglianti – setti verticali e soletta di fondo.



Soletta superiore – spessore 80cm

Figura 5.55: Verifiche allo S.L.U. per sollecitazioni taglianti –soletta superiore.



Soletta superiore forata – larghezza 150cm/spessore 80cm

Figura 5.56: Verifiche allo S.L.U. per sollecitazioni taglianti –soletta superiore forata.

Le verifiche sono soddisfatte.

5.3.6 VERIFICHE DELLA BULLONATURA

Nella figura seguente è riportato l'andamento degli sforzi di trazione nelle bullonature di lunghezza minima 3.0m e 4.5m nell'intorno del nodo di innesto per la condizione più sfavorevole (fase precedente a quella di getto del rivestimento definitivo).

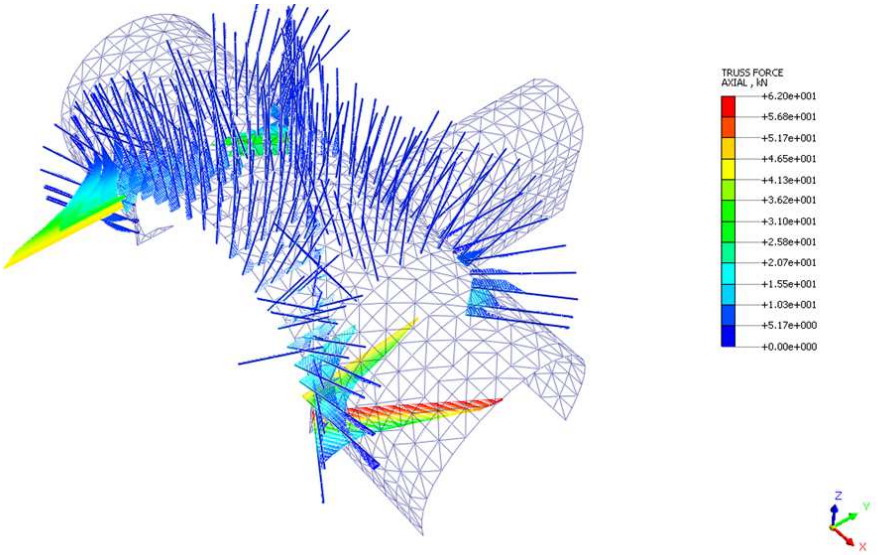


Figura 5.57: andamento degli sforzi di trazione nella bullonatura nell'intorno del nodo d'innesto per la condizione più sfavorevole (stage precedente alla fase di getto del rivestimento definitivo), $N_{Ed,max}$ = 62KN.

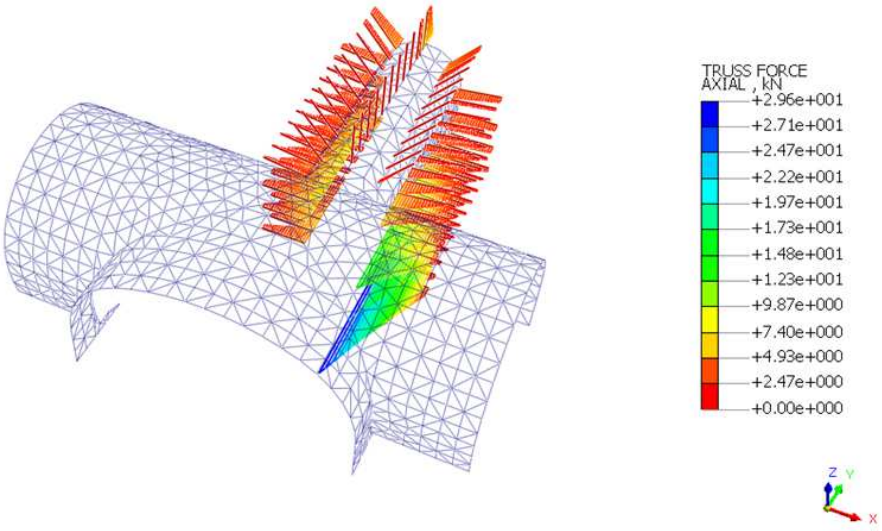


Figura 5.58: andamento degli sforzi di trazione nella bullonatura nell'intorno del nodo d'innesto per la condizione più sfavorevole (stage precedente alla fase di getto del rivestimento definitivo), $N_{Ed,max}$ = 29.6KN.

5.3.6.1 VERIFICA DI RESISTENZA DEI BULLONI SWELLEX

Per la bullonatura realizzata tramite Swellex, il carico assiale agente deve rispettare la condizione seguente:

—

dove:
N_{Ed} è il carico assiale ricavato dal modello di calcolo e amplificato per il coefficiente parziale delle azioni γ_G = 1.3;
N_{Rd} è la resistenza a trazione di calcolo dello Swellex;
σ_s è la tensione di snervamento dello Swellex;
A è l'area netta dello Swellex (320mm^2);
γ_M è il coefficiente di sicurezza per la resistenza dell'acciaio pari a 1.05.

Il massimo carico assiale da modello di calcolo risulta pari a N_{Ed} = 62 x 1.3 = 80.6kN, valore inferiore alla resistenza a trazione del bullone. La verifica è soddisfatta.

5.3.6.2 RESISTENZA ULTIMA ALLO SFILAMENTO

Per il calcolo della resistenza ultima allo sfilamento si ricorre a quanto indicato per i bulloni Swellex nel testo di riferimento "Professional Users Handbook fo Rock Bolting" [B. Sillborg, 1994]. Per il caso in esame, nel quale i bulloni Swellex hanno un diametro di perforazione di 48mm, è indicata una resistenza allo sfilamento limite pari a 130kN/m. La resistenza ultima allo sfilamento è definita tramite la formula seguente:

dove:
L_b è la lunghezza del bulbo;
R_s è la resistenza allo sfilamento limite;

In assenza di prove dirette il calcolo del valore di resistenza caratteristica R_{ak} deriva dalla seguente espressione:

——— ———

dove:
$R_{ac\ medio}$ e $R_{a,c\ min}$ sono i valori medio e minimo della resistenza R_{ac} ottenuta dal calcolo;
ξ_a sono i fattori di correlazione che dipendono dalla conoscenza del modello geotecnico di riferimento, funzione del numero dei profili di indagine eseguiti (vedi tabella seguente).

Tabella 23: fattori di correlazione per derivare la resistenza caratteristica delle prove geotecniche, in funzione del numero n di profili di indagine (Tabella 6.6 III del D.M.).

Numero di profili d'indagine	1	2	3	4	>5
ξa3	1.80	1.75	1.70	1.65	1.60
ξa4	1.80	1.70	1.65	1.60	1.55

La resistenza di calcolo, $R_{a,d}$ viene definita mediante la relazione:

—

con γ_R definito nella tabella seguente.

Tabella 24: coefficienti parziali per la resistenza degli ancoraggi (Tabella 6.6.I del D.M.).

Tipologia bulloni	γ_R	Coefficiente parziale
Temporaneo	$\gamma_{R,t}$	1.1
Permanente	$\gamma_{R,p}$	1.2

Nella tabella seguente si riassumono i valori scelti per le verifiche di sfilamento.

Tabella 25: valori di progetto per le verifiche allo sfilamento.

DESCRIZIONE DELL'AMMASSO ROCCIOSO	PARAMETRO				
	Diametro perforazione, D_p [mm]	Fattore di sbulbamento, α [-]	resistenza allo sfilamento limite, R_s [kN/m]	Fattore ξ_{a3} [-]	Coefficiente parziale $\gamma_{R,t}$ [-]
Calcari	48	1.0	130	1.8	1.1

Si ottengono le resistenze di calcolo a sfilamento dei bullone di lunghezza 3m e 4.5m rispettivamente di 197kN e 295kN. Il carico massimo di calcolo agente sui bulloni di lunghezza 3m, 4.5m è rispettivamente pari a N_{Ed} (3m) = 29.6kN·1.3 = 38.48kN e N_{Ed} (4.5m) = 62kN·1.3 = 80.6kN, le verifiche allo sfilamento sono quindi soddisfatte.

ALLEGATO 1

SOLLECITAZIONI E VERIFICHE DEI SOSTEGNI DI PRIMA FASE

Tabella 1: verifiche del sostegno di prima fase (M>0 fibre tese in intradosso) – Galleria di Linea

Sollecitazioni caratteristiche				Sollecitazioni SLU				Verifica calcestruzzo proiettato			Verifica centine				
N_{clsp}	N_{cen}	M_{cen}	T_{cen}	$N_{clsp,d}$	$N_{cen,d}$	$M_{cen,d}$	$T_{cen,d}$	$\sigma_{c\_clsp,d}$	f_{cd}	Verifica	$\sigma_{cen,d}$	$\tau_{cen,d}$	$\sigma_{id,cen,d}$	f_{yd}	Verifica
[kN]	[kN]	[kNm]	[kN]	[kN]	[kN]	[kNm]	[kN]	[MPa]	[MPa]	-	[MPa]	[MPa]	[MPa]	[MPa]	-
451.0	63.0	-10.9	34.8	586.4	81.9	-14.1	45.3	2.9	13.8	OK	70.3	20.9	79.0	261.9	OK
0.0	-154.6	-1.8	3.4	0.0	-201.0	-2.4	4.4	0.0	13.8	OK	52.2	2.0	52.3	261.9	OK
244.0	34.1	-16.9	10.1	317.2	44.3	-22.0	13.1	1.6	13.8	OK	91.4	6.0	92.0	261.9	OK
127.4	17.8	-3.2	-58.0	165.6	23.1	-4.1	-75.5	0.8	13.8	OK	20.3	-34.8	63.7	261.9	OK
95.4	13.3	-0.9	5.2	124.0	17.3	-1.1	6.7	0.6	13.8	OK	8.0	3.1	9.6	261.9	OK
8.4	1.2	-6.1	-5.9	11.0	1.5	-7.9	-7.7	0.1	13.8	OK	29.7	-3.6	30.3	261.9	OK
39.5	5.5	-8.2	-0.2	51.4	7.2	-10.6	-0.2	0.3	13.8	OK	41.1	-0.1	41.1	261.9	OK
0.0	-94.6	-2.0	-3.2	0.0	-123.0	-2.6	-4.2	0.0	13.8	OK	36.3	-1.9	36.4	261.9	OK
154.0	21.5	-4.1	-15.0	200.2	28.0	-5.3	-19.5	1.0	13.8	OK	25.9	-9.0	30.3	261.9	OK
175.9	24.6	-3.2	49.5	228.6	31.9	-4.1	64.4	1.1	13.8	OK	22.3	29.7	56.1	261.9	OK
48.5	6.8	-7.7	-1.0	63.0	8.8	-10.0	-1.2	0.3	13.8	OK	39.0	-0.6	39.0	261.9	OK
44.7	6.2	-11.4	0.7	58.1	8.1	-14.8	0.9	0.3	13.8	OK	56.9	0.4	56.9	261.9	OK
0.0	-3.2	-2.2	-16.2	0.0	-4.1	-2.8	-21.1	0.0	13.8	OK	11.4	-9.7	20.3	261.9	OK
91.2	12.7	-7.8	39.6	118.5	16.6	-10.2	51.5	0.6	13.8	OK	41.4	23.8	58.4	261.9	OK
15.4	2.2	-7.9	-3.0	20.1	2.8	-10.2	-4.0	0.1	13.8	OK	38.8	-1.8	38.9	261.9	OK
0.0	-19.5	-3.5	-2.6	0.0	-25.4	-4.5	-3.3	0.0	13.8	OK	22.3	-1.5	22.4	261.9	OK
78.0	10.9	-4.9	10.5	101.4	14.2	-6.4	13.7	0.5	13.8	OK	26.7	6.3	28.9	261.9	OK
39.4	5.5	-7.8	-1.5	51.2	7.2	-10.2	-2.0	0.3	13.8	OK	39.6	-0.9	39.6	261.9	OK
56.9	8.0	-3.0	-1.8	74.0	10.3	-3.9	-2.4	0.4	13.8	OK	16.8	-1.1	16.9	261.9	OK
12.6	1.8	-6.8	-1.1	16.4	2.3	-8.9	-1.5	0.1	13.8	OK	33.5	-0.7	33.5	261.9	OK
101.5	14.2	-0.6	-10.2	132.0	18.4	-0.8	-13.2	0.7	13.8	OK	7.1	-6.1	12.7	261.9	OK
55.9	7.8	-4.0	-7.4	72.7	10.2	-5.2	-9.7	0.4	13.8	OK	21.6	-4.5	22.9	261.9	OK
299.5	41.8	9.9	11.5	389.3	54.4	12.9	15.0	1.9	13.8	OK	59.9	6.9	61.0	261.9	OK
150.8	21.1	1.6	-0.9	196.1	27.4	2.1	-1.2	1.0	13.8	OK	13.7	-0.6	13.7	261.9	OK
125.1	17.5	5.5	-6.2	162.6	22.7	7.1	-8.0	0.8	13.8	OK	31.4	-3.7	32.1	261.9	OK
123.6	17.3	-10.6	-10.8	160.6	22.4	-13.8	-14.0	0.8	13.8	OK	56.4	-6.5	57.5	261.9	OK
215.7	30.1	1.4	6.5	280.4	39.2	1.8	8.5	1.4	13.8	OK	15.0	3.9	16.5	261.9	OK
72.4	10.1	-2.0	-0.2	94.1	13.2	-2.7	-0.2	0.5	13.8	OK	12.7	-0.1	12.7	261.9	OK
3.8	0.5	-5.2	7.6	4.9	0.7	-6.8	9.9	0.0	13.8	OK	25.3	4.6	26.5	261.9	OK
242.4	33.9	3.6	-36.3	315.2	44.0	4.7	-47.2	1.6	13.8	OK	27.1	-21.8	46.5	261.9	OK
63.7	8.9	-1.4	1.6	82.8	11.6	-1.8	2.0	0.4	13.8	OK	9.2	0.9	9.4	261.9	OK
9.8	1.4	1.0	0.2	12.8	1.8	1.3	0.2	0.1	13.8	OK	5.1	0.1	5.1	261.9	OK
8.7	1.2	0.6	2.2	11.3	1.6	0.8	2.9	0.1	13.8	OK	3.1	1.3	3.9	261.9	OK
7.2	1.0	1.9	-0.3	9.4	1.3	2.5	-0.4	0.0	13.8	OK	9.5	-0.2	9.5	261.9	OK
314.8	44.0	0.1	-13.2	409.2	57.2	0.1	-17.2	2.0	13.8	OK	12.7	-7.9	18.7	261.9	OK
25.3	3.5	2.1	-0.3	32.9	4.6	2.8	-0.3	0.2	13.8	OK	11.4	-0.2	11.4	261.9	OK
21.6	3.0	3.3	0.0	28.0	3.9	4.2	0.0	0.1	13.8	OK	16.7	0.0	16.7	261.9	OK
0.2	0.0	-0.3	1.9	0.2	0.0	-0.4	2.5	0.0	13.8	OK	1.3	1.2	2.4	261.9	OK
14.5	2.0	2.0	0.1	18.8	2.6	2.6	0.2	0.1	13.8	OK	10.1	0.1	10.1	261.9	OK
8.5	1.2	1.5	0.1	11.1	1.5	2.0	0.2	0.1	13.8	OK	7.8	0.1	7.8	261.9	OK
8.2	1.2	1.7	0.3	10.7	1.5	2.3	0.4	0.1	13.8	OK	8.8	0.2	8.8	261.9	OK
13.6	1.9	2.8	2.2	17.7	2.5	3.6	2.9	0.1	13.8	OK	13.9	1.3	14.1	261.9	OK

15.2	2.1	1.4	0.3	19.8	2.8	1.8	0.4	0.1	13.8	OK	7.2	0.2	7.2	261.9	OK
10.2	1.4	2.1	1.9	13.3	1.9	2.7	2.4	0.1	13.8	OK	10.3	1.1	10.5	261.9	OK
14.0	2.0	-1.3	2.3	18.2	2.5	-1.7	3.0	0.1	13.8	OK	6.9	1.4	7.3	261.9	OK
11.7	1.6	-0.5	0.8	15.2	2.1	-0.6	1.1	0.1	13.8	OK	2.9	0.5	3.0	261.9	OK
11.7	1.6	1.1	2.0	15.2	2.1	1.4	2.6	0.1	13.8	OK	5.6	1.2	5.9	261.9	OK
20.9	2.9	-6.1	-0.7	27.2	3.8	-7.9	-0.9	0.1	13.8	OK	30.3	-0.4	30.3	261.9	OK
22.7	3.2	-9.4	5.1	29.5	4.1	-12.2	6.6	0.1	13.8	OK	46.2	3.1	46.5	261.9	OK
17.8	2.5	1.9	0.3	23.2	3.2	2.5	0.3	0.1	13.8	OK	10.0	0.2	10.0	261.9	OK
19.3	2.7	1.8	0.0	25.0	3.5	2.3	0.0	0.1	13.8	OK	9.3	0.0	9.3	261.9	OK
18.0	2.5	1.8	-1.0	23.4	3.3	2.3	-1.3	0.1	13.8	OK	9.2	-0.6	9.2	261.9	OK
27.7	3.9	-1.7	2.6	36.0	5.0	-2.2	3.3	0.2	13.8	OK	9.4	1.5	9.8	261.9	OK
13.7	1.9	-0.4	3.2	17.8	2.5	-0.5	4.1	0.1	13.8	OK	2.5	1.9	4.1	261.9	OK
36.2	5.1	-5.2	0.9	47.1	6.6	-6.7	1.2	0.2	13.8	OK	26.4	0.6	26.5	261.9	OK
41.9	5.8	-6.5	3.1	54.4	7.6	-8.5	4.0	0.3	13.8	OK	33.2	1.8	33.3	261.9	OK
35.9	5.0	1.8	-0.6	46.6	6.5	2.4	-0.8	0.2	13.8	OK	10.2	-0.4	10.2	261.9	OK
28.3	4.0	1.6	-0.9	36.8	5.1	2.1	-1.2	0.2	13.8	OK	9.0	-0.6	9.0	261.9	OK
7.2	1.0	1.6	2.0	9.3	1.3	2.0	2.6	0.0	13.8	OK	7.9	1.2	8.2	261.9	OK
22.3	3.1	-1.9	1.7	29.0	4.1	-2.5	2.3	0.1	13.8	OK	10.2	1.0	10.3	261.9	OK
63.9	8.9	-1.8	0.3	83.1	11.6	-2.4	0.4	0.4	13.8	OK	11.3	0.2	11.3	261.9	OK
100.2	14.0	1.1	-19.8	130.3	18.2	1.4	-25.8	0.7	13.8	OK	9.3	-11.9	22.6	261.9	OK
20.8	2.9	-0.6	3.3	27.1	3.8	-0.8	4.3	0.1	13.8	OK	3.7	2.0	5.1	261.9	OK
9.6	1.3	1.7	-0.3	12.5	1.7	2.2	-0.4	0.1	13.8	OK	8.4	-0.2	8.4	261.9	OK
13.0	1.8	2.4	-0.9	16.9	2.4	3.2	-1.1	0.1	13.8	OK	12.3	-0.5	12.3	261.9	OK
33.3	4.7	2.5	-1.1	43.3	6.1	3.2	-1.4	0.2	13.8	OK	13.2	-0.7	13.2	261.9	OK
15.6	2.2	2.3	0.4	20.3	2.8	3.0	0.5	0.1	13.8	OK	11.7	0.2	11.7	261.9	OK
42.8	6.0	-4.2	-0.8	55.6	7.8	-5.4	-1.1	0.3	13.8	OK	21.9	-0.5	21.9	261.9	OK
31.2	4.4	-2.5	1.9	40.5	5.7	-3.2	2.5	0.2	13.8	OK	13.3	1.1	13.4	261.9	OK
2.8	0.4	-1.7	6.9	3.7	0.5	-2.3	8.9	0.0	13.8	OK	8.5	4.1	11.1	261.9	OK
0.0	-4.9	-1.8	3.2	0.0	-6.4	-2.4	4.1	0.0	13.8	OK	10.2	1.9	10.7	261.9	OK
21.7	3.0	2.3	0.1	28.2	3.9	3.0	0.2	0.1	13.8	OK	12.0	0.1	12.0	261.9	OK
110.5	15.4	-2.0	-7.3	143.7	20.1	-2.6	-9.5	0.7	13.8	OK	14.0	-4.4	16.0	261.9	OK
3.5	0.5	1.6	3.7	4.5	0.6	2.1	4.8	0.0	13.8	OK	7.8	2.2	8.7	261.9	OK
16.6	2.3	-0.9	1.4	21.6	3.0	-1.2	1.9	0.1	13.8	OK	5.0	0.9	5.2	261.9	OK
36.9	5.2	-1.4	0.5	48.0	6.7	-1.8	0.6	0.2	13.8	OK	8.1	0.3	8.2	261.9	OK
28.7	4.0	3.0	-0.2	37.3	5.2	3.9	-0.3	0.2	13.8	OK	15.7	-0.1	15.7	261.9	OK
102.6	14.3	-3.7	2.0	133.4	18.6	-4.8	2.7	0.7	13.8	OK	21.9	1.2	22.0	261.9	OK
5.1	0.7	-4.7	3.9	6.6	0.9	-6.1	5.1	0.0	13.8	OK	23.0	2.3	23.4	261.9	OK
8.1	1.1	1.1	0.8	10.5	1.5	1.4	1.0	0.1	13.8	OK	5.6	0.5	5.7	261.9	OK
7.0	1.0	1.3	2.0	9.0	1.3	1.7	2.6	0.0	13.8	OK	6.5	1.2	6.8	261.9	OK
9.7	1.4	1.2	-1.0	12.6	1.8	1.6	-1.3	0.1	13.8	OK	6.2	-0.6	6.3	261.9	OK
190.1	26.6	12.0	25.6	247.1	34.5	15.6	33.3	1.2	13.8	OK	65.5	15.4	70.7	261.9	OK
0.0	-4.1	1.4	2.1	0.0	-5.3	1.8	2.7	0.0	13.8	OK	7.7	1.2	8.0	261.9	OK
95.8	13.4	0.9	-11.3	124.6	17.4	1.2	-14.6	0.6	13.8	OK	8.1	-6.8	14.2	261.9	OK
22.2	3.1	-0.2	0.4	28.9	4.0	-0.3	0.5	0.1	13.8	OK	2.0	0.2	2.1	261.9	OK
0.0	-17.8	1.2	-8.3	0.0	-23.2	1.5	-10.8	0.0	13.8	OK	10.6	-5.0	13.7	261.9	OK
29.1	4.1	0.4	-1.0	37.9	5.3	0.5	-1.2	0.2	13.8	OK	2.9	-0.6	3.0	261.9	OK
21.2	3.0	-1.6	-1.6	27.5	3.8	-2.1	-2.1	0.1	13.8	OK	8.7	-1.0	8.8	261.9	OK

15.4	2.1	1.4	0.2	20.0	2.8	1.9	0.3	0.1	13.8	OK	7.5	0.1	7.5	261.9	OK
51.9	7.2	-1.0	3.4	67.4	9.4	-1.3	4.4	0.3	13.8	OK	6.8	2.0	7.7	261.9	OK
89.5	12.5	3.6	4.4	116.4	16.3	4.7	5.8	0.6	13.8	OK	20.9	2.7	21.4	261.9	OK
36.9	5.2	-2.4	-1.8	48.0	6.7	-3.2	-2.3	0.2	13.8	OK	13.3	-1.1	13.4	261.9	OK
35.9	5.0	0.0	-0.4	46.6	6.5	0.0	-0.6	0.2	13.8	OK	1.6	-0.3	1.6	261.9	OK
53.1	7.4	-0.6	-13.0	69.0	9.6	-0.8	-16.9	0.3	13.8	OK	5.1	-7.8	14.4	261.9	OK
28.8	4.0	1.1	-0.4	37.5	5.2	1.5	-0.5	0.2	13.8	OK	6.7	-0.2	6.7	261.9	OK
19.4	2.7	-0.3	-1.2	25.2	3.5	-0.4	-1.5	0.1	13.8	OK	2.1	-0.7	2.4	261.9	OK
9.9	1.4	0.8	-0.7	12.9	1.8	1.0	-0.9	0.1	13.8	OK	4.2	-0.4	4.2	261.9	OK
19.3	2.7	0.4	-0.9	25.1	3.5	0.5	-1.2	0.1	13.8	OK	2.8	-0.6	2.9	261.9	OK
19.3	2.7	0.8	-0.5	25.1	3.5	1.1	-0.6	0.1	13.8	OK	4.7	-0.3	4.7	261.9	OK
15.2	2.1	1.4	-0.2	19.7	2.8	1.8	-0.3	0.1	13.8	OK	7.2	-0.1	7.2	261.9	OK
19.1	2.7	1.3	-0.5	24.8	3.5	1.6	-0.6	0.1	13.8	OK	6.9	-0.3	6.9	261.9	OK
20.4	2.8	1.2	-1.0	26.5	3.7	1.6	-1.2	0.1	13.8	OK	6.8	-0.6	6.9	261.9	OK
24.3	3.4	-4.2	-6.8	31.6	4.4	-5.5	-8.8	0.2	13.8	OK	21.3	-4.1	22.4	261.9	OK
16.4	2.3	-0.3	-0.7	21.4	3.0	-0.3	-0.9	0.1	13.8	OK	1.9	-0.4	2.1	261.9	OK
18.5	2.6	-0.6	-1.0	24.0	3.4	-0.8	-1.3	0.1	13.8	OK	3.7	-0.6	3.8	261.9	OK
15.7	2.2	0.1	1.8	20.4	2.9	0.2	2.3	0.1	13.8	OK	1.2	1.1	2.2	261.9	OK
11.2	1.6	-0.2	-1.7	14.5	2.0	-0.3	-2.2	0.1	13.8	OK	1.5	-1.0	2.3	261.9	OK
36.6	5.1	-7.8	-11.4	47.6	6.6	-10.1	-14.8	0.2	13.8	OK	39.2	-6.9	41.0	261.9	OK
22.5	3.1	-1.4	0.3	29.2	4.1	-1.8	0.3	0.1	13.8	OK	7.5	0.2	7.5	261.9	OK
27.6	3.9	4.5	5.4	35.9	5.0	5.8	7.0	0.2	13.8	OK	22.7	3.2	23.4	261.9	OK
29.7	4.1	0.8	-2.1	38.6	5.4	1.0	-2.7	0.2	13.8	OK	4.9	-1.3	5.4	261.9	OK
33.2	4.6	2.0	4.2	43.2	6.0	2.6	5.5	0.2	13.8	OK	10.9	2.5	11.7	261.9	OK
18.3	2.6	0.0	-0.2	23.8	3.3	0.0	-0.3	0.1	13.8	OK	0.8	-0.1	0.8	261.9	OK
19.4	2.7	2.7	1.8	25.2	3.5	3.6	2.3	0.1	13.8	OK	14.0	1.1	14.2	261.9	OK
27.1	3.8	-0.9	0.2	35.3	4.9	-1.2	0.3	0.2	13.8	OK	5.5	0.1	5.5	261.9	OK
10.2	1.4	0.5	-1.3	13.3	1.9	0.6	-1.7	0.1	13.8	OK	2.6	-0.8	2.9	261.9	OK
30.6	4.3	0.2	1.4	39.8	5.6	0.2	1.9	0.2	13.8	OK	2.0	0.9	2.5	261.9	OK
125.4	17.5	0.0	9.0	163.0	22.8	0.0	11.7	0.8	13.8	OK	5.0	5.4	10.6	261.9	OK
8.8	1.2	1.3	-0.5	11.4	1.6	1.7	-0.7	0.1	13.8	OK	6.6	-0.3	6.6	261.9	OK
200.9	28.1	6.8	-26.0	261.2	36.5	8.8	-33.8	1.3	13.8	OK	40.7	-15.6	48.8	261.9	OK
48.8	6.8	-4.5	-11.1	63.4	8.9	-5.9	-14.4	0.3	13.8	OK	23.7	-6.6	26.4	261.9	OK
30.5	4.3	-1.4	-2.1	39.6	5.5	-1.9	-2.7	0.2	13.8	OK	8.2	-1.2	8.5	261.9	OK
27.3	3.8	-0.1	-0.1	35.5	5.0	-0.1	-0.1	0.2	13.8	OK	1.3	-0.1	1.3	261.9	OK
0.0	-24.4	2.7	-1.0	0.0	-31.7	3.5	-1.3	0.0	13.8	OK	20.0	-0.6	20.0	261.9	OK
11.7	1.6	-0.4	-1.7	15.2	2.1	-0.5	-2.2	0.1	13.8	OK	2.4	-1.0	3.0	261.9	OK
37.4	5.2	0.9	-1.4	48.6	6.8	1.2	-1.8	0.2	13.8	OK	5.8	-0.8	6.0	261.9	OK
0.0	-22.5	2.8	-5.3	0.0	-29.3	3.6	-6.9	0.0	13.8	OK	19.7	-3.2	20.5	261.9	OK
0.0	-2.1	2.9	0.3	0.0	-2.7	3.8	0.4	0.0	13.8	OK	14.8	0.2	14.8	261.9	OK
109.6	15.3	6.1	6.1	142.4	19.9	8.0	7.9	0.7	13.8	OK	33.9	3.6	34.5	261.9	OK
79.8	11.2	-0.5	1.9	103.8	14.5	-0.6	2.5	0.5	13.8	OK	5.4	1.2	5.8	261.9	OK
0.0	-17.2	1.2	-11.3	0.0	-22.4	1.5	-14.7	0.0	13.8	OK	10.6	-6.8	15.8	261.9	OK
13.6	1.9	0.1	0.2	17.6	2.5	0.2	0.3	0.1	13.8	OK	1.2	0.1	1.2	261.9	OK
16.0	2.2	-0.7	-0.6	20.8	2.9	-1.0	-0.8	0.1	13.8	OK	4.2	-0.4	4.2	261.9	OK
37.8	5.3	0.3	-0.1	49.1	6.9	0.5	-0.1	0.2	13.8	OK	3.2	0.0	3.2	261.9	OK
85.6	12.0	-13.6	-3.5	111.2	15.5	-17.7	-4.5	0.6	13.8	OK	69.3	-2.1	69.4	261.9	OK

115.1	16.1	-14.8	-4.8	149.7	20.9	-19.3	-6.3	0.7	13.8	OK	76.3	-2.9	76.5	261.9	OK
109.7	15.3	-12.5	8.4	142.6	19.9	-16.2	11.0	0.7	13.8	OK	64.8	5.1	65.4	261.9	OK
141.8	19.8	-1.2	1.7	184.4	25.8	-1.5	2.2	0.9	13.8	OK	11.2	1.0	11.4	261.9	OK
91.1	12.7	-9.8	-5.4	118.5	16.6	-12.7	-7.0	0.6	13.8	OK	51.0	-3.2	51.3	261.9	OK
244.0	34.1	-16.9	10.1	317.2	44.3	-22.0	13.1	1.6	13.8	OK	91.4	6.0	92.0	261.9	OK
0.0	-30.8	-11.6	-49.8	0.0	-40.0	-15.1	-64.8	0.0	13.8	OK	64.9	-29.9	83.1	261.9	OK
77.2	10.8	-9.4	-16.4	100.3	14.0	-12.2	-21.3	0.5	13.8	OK	48.5	-9.8	51.4	261.9	OK
133.2	18.6	-3.6	-4.9	173.1	24.2	-4.7	-6.4	0.9	13.8	OK	22.6	-3.0	23.2	261.9	OK
160.4	22.4	-5.8	-47.3	208.5	29.1	-7.6	-61.5	1.0	13.8	OK	34.6	-28.4	60.1	261.9	OK
72.5	10.1	-14.8	2.4	94.2	13.2	-19.2	3.2	0.5	13.8	OK	74.5	1.5	74.6	261.9	OK
78.5	11.0	-13.0	-1.8	102.0	14.3	-16.8	-2.4	0.5	13.8	OK	65.8	-1.1	65.9	261.9	OK
70.7	9.9	-5.4	10.8	92.0	12.8	-7.0	14.1	0.5	13.8	OK	28.9	6.5	31.0	261.9	OK
29.5	4.1	-12.8	7.5	38.4	5.4	-16.6	9.8	0.2	13.8	OK	63.1	4.5	63.6	261.9	OK
72.9	10.2	-12.6	6.9	94.7	13.2	-16.3	8.9	0.5	13.8	OK	63.7	4.1	64.1	261.9	OK
116.5	16.3	-15.0	1.2	151.5	21.2	-19.5	1.6	0.8	13.8	OK	77.2	0.7	77.2	261.9	OK
0.0	-15.4	-8.9	10.5	0.0	-20.0	-11.5	13.6	0.0	13.8	OK	47.3	6.3	48.5	261.9	OK
0.0	-13.7	-2.4	10.5	0.0	-17.8	-3.2	13.6	0.0	13.8	OK	15.7	6.3	19.1	261.9	OK
71.8	10.0	-4.2	27.8	93.3	13.0	-5.5	36.1	0.5	13.8	OK	23.3	16.7	37.1	261.9	OK
55.9	7.8	-14.6	-11.6	72.7	10.2	-19.0	-15.0	0.4	13.8	OK	73.1	-6.9	74.1	261.9	OK
66.9	9.3	7.5	24.4	87.0	12.2	9.7	31.8	0.4	13.8	OK	38.9	14.7	46.5	261.9	OK
0.0	-43.3	-0.8	19.8	0.0	-56.3	-1.1	25.8	0.0	13.8	OK	16.2	11.9	26.2	261.9	OK
287.2	40.1	-7.1	29.0	373.3	52.2	-9.3	37.6	1.9	13.8	OK	45.8	17.4	54.8	261.9	OK
68.8	9.6	-10.6	-0.9	89.5	12.5	-13.8	-1.2	0.4	13.8	OK	54.3	-0.6	54.3	261.9	OK
315.1	44.0	-7.0	-33.5	409.6	57.2	-9.1	-43.6	2.0	13.8	OK	46.3	-20.1	57.9	261.9	OK
113.3	15.8	-13.4	3.7	147.3	20.6	-17.4	4.8	0.7	13.8	OK	69.2	2.2	69.3	261.9	OK
0.0	-96.2	-4.6	0.8	0.0	-125.1	-5.9	1.0	0.0	13.8	OK	49.0	0.5	49.0	261.9	OK
42.2	5.9	-10.7	2.5	54.8	7.7	-14.0	3.2	0.3	13.8	OK	53.7	1.5	53.8	261.9	OK
0.0	-21.6	-9.0	-8.4	0.0	-28.1	-11.7	-10.9	0.0	13.8	OK	49.8	-5.0	50.5	261.9	OK
0.0	-32.0	-6.2	-5.5	0.0	-41.6	-8.0	-7.2	0.0	13.8	OK	38.9	-3.3	39.4	261.9	OK
0.0	-22.2	-3.4	-4.2	0.0	-28.8	-4.4	-5.5	0.0	13.8	OK	22.6	-2.5	23.0	261.9	OK
117.1	16.4	-9.2	-0.3	152.3	21.3	-12.0	-0.4	0.8	13.8	OK	49.2	-0.2	49.2	261.9	OK
0.0	-10.4	-5.9	0.9	0.0	-13.5	-7.7	1.1	0.0	13.8	OK	31.4	0.5	31.4	261.9	OK
263.5	36.8	-15.2	-4.8	342.5	47.9	-19.8	-6.3	1.7	13.8	OK	83.9	-2.9	84.1	261.9	OK
0.0	-71.8	-4.6	-4.3	0.0	-93.3	-6.0	-5.6	0.0	13.8	OK	42.6	-2.6	42.8	261.9	OK
0.0	-154.6	-1.8	3.4	0.0	-201.0	-2.4	4.4	0.0	13.8	OK	52.2	2.0	52.3	261.9	OK
0.0	-95.2	0.9	2.5	0.0	-123.7	1.2	3.2	0.0	13.8	OK	31.1	1.5	31.3	261.9	OK
0.0	-114.3	-1.4	-2.8	0.0	-148.6	-1.8	-3.7	0.0	13.8	OK	38.7	-1.7	38.8	261.9	OK
0.0	-47.8	-4.3	-7.3	0.0	-62.1	-5.5	-9.6	0.0	13.8	OK	34.0	-4.4	34.8	261.9	OK
185.3	25.9	-4.8	-10.2	240.9	33.7	-6.3	-13.3	1.2	13.8	OK	30.7	-6.1	32.5	261.9	OK
0.0	-81.9	-1.2	0.4	0.0	-106.5	-1.6	0.5	0.0	13.8	OK	28.7	0.2	28.7	261.9	OK
2.2	0.3	-2.2	2.1	2.9	0.4	-2.8	2.7	0.0	13.8	OK	10.6	1.3	10.9	261.9	OK
11.7	1.6	1.8	-0.4	15.2	2.1	2.3	-0.5	0.1	13.8	OK	9.2	-0.2	9.2	261.9	OK
3.8	0.5	-0.2	1.8	5.0	0.7	-0.2	2.3	0.0	13.8	OK	1.0	1.1	2.1	261.9	OK
8.1	1.1	-5.0	5.7	10.6	1.5	-6.5	7.4	0.1	13.8	OK	24.6	3.4	25.3	261.9	OK
29.2	4.1	-10.1	9.8	37.9	5.3	-13.2	12.7	0.2	13.8	OK	50.3	5.9	51.3	261.9	OK
0.0	-7.3	-3.8	10.6	0.0	-9.5	-5.0	13.8	0.0	13.8	OK	20.5	6.4	23.3	261.9	OK
7.7	1.1	2.0	0.4	10.1	1.4	2.5	0.5	0.1	13.8	OK	9.8	0.2	9.8	261.9	OK

34.7	4.8	3.0	-0.7	45.1	6.3	3.9	-0.9	0.2	13.8	OK	15.9	-0.4	15.9	261.9	OK
28.8	4.0	1.2	-1.0	37.4	5.2	1.5	-1.2	0.2	13.8	OK	6.8	-0.6	6.8	261.9	OK
43.0	6.0	1.3	-1.3	55.9	7.8	1.7	-1.7	0.3	13.8	OK	7.9	-0.8	8.0	261.9	OK
40.6	5.7	2.0	-1.5	52.8	7.4	2.6	-2.0	0.3	13.8	OK	11.3	-0.9	11.4	261.9	OK
15.0	2.1	3.0	-0.2	19.6	2.7	4.0	-0.3	0.1	13.8	OK	15.3	-0.1	15.3	261.9	OK
26.6	3.7	3.6	0.0	34.6	4.8	4.7	0.0	0.2	13.8	OK	18.4	0.0	18.4	261.9	OK
16.0	2.2	-1.9	3.3	20.8	2.9	-2.5	4.3	0.1	13.8	OK	9.9	2.0	10.5	261.9	OK
21.9	3.1	-4.5	1.9	28.5	4.0	-5.8	2.4	0.1	13.8	OK	22.6	1.1	22.7	261.9	OK
0.0	-0.4	-0.7	4.5	0.0	-0.5	-0.8	5.8	0.0	13.8	OK	3.3	2.7	5.7	261.9	OK
14.2	2.0	3.3	2.5	18.5	2.6	4.4	3.3	0.1	13.8	OK	16.8	1.5	17.0	261.9	OK
0.1	0.0	-4.5	-2.1	0.2	0.0	-5.8	-2.7	0.0	13.8	OK	21.7	-1.2	21.8	261.9	OK
10.6	1.5	0.9	1.1	13.7	1.9	1.2	1.4	0.1	13.8	OK	4.7	0.7	4.9	261.9	OK
16.6	2.3	-6.2	-2.3	21.6	3.0	-8.1	-3.0	0.1	13.8	OK	30.7	-1.4	30.8	261.9	OK
6.7	0.9	2.0	0.4	8.7	1.2	2.6	0.6	0.0	13.8	OK	9.9	0.3	9.9	261.9	OK
11.2	1.6	2.5	0.2	14.5	2.0	3.3	0.3	0.1	13.8	OK	12.7	0.1	12.7	261.9	OK
35.6	5.0	-8.2	4.1	46.3	6.5	-10.6	5.3	0.2	13.8	OK	40.9	2.5	41.1	261.9	OK
11.8	1.6	3.2	0.6	15.3	2.1	4.2	0.8	0.1	13.8	OK	16.2	0.4	16.2	261.9	OK
8.1	1.1	-6.4	1.9	10.5	1.5	-8.3	2.5	0.1	13.8	OK	31.1	1.2	31.2	261.9	OK
1.7	0.2	2.8	4.7	2.2	0.3	3.6	6.0	0.0	13.8	OK	13.5	2.8	14.4	261.9	OK
23.2	3.2	1.3	-0.9	30.2	4.2	1.7	-1.1	0.2	13.8	OK	7.2	-0.5	7.2	261.9	OK
20.7	2.9	1.3	-0.6	26.9	3.8	1.7	-0.8	0.1	13.8	OK	7.1	-0.4	7.2	261.9	OK
4.7	0.7	0.8	2.4	6.1	0.8	1.1	3.2	0.0	13.8	OK	4.2	1.5	4.9	261.9	OK
7.0	1.0	-2.0	2.3	9.1	1.3	-2.6	3.0	0.0	13.8	OK	9.9	1.4	10.2	261.9	OK
11.4	1.6	-0.6	2.0	14.8	2.1	-0.7	2.6	0.1	13.8	OK	3.1	1.2	3.7	261.9	OK
28.8	4.0	-8.0	3.5	37.4	5.2	-10.5	4.6	0.2	13.8	OK	40.1	2.1	40.2	261.9	OK
18.9	2.6	1.9	-0.8	24.6	3.4	2.4	-1.0	0.1	13.8	OK	9.8	-0.5	9.8	261.9	OK
20.2	2.8	2.2	-0.3	26.3	3.7	2.8	-0.4	0.1	13.8	OK	11.4	-0.2	11.4	261.9	OK
16.5	2.3	2.8	-1.3	21.5	3.0	3.6	-1.7	0.1	13.8	OK	14.0	-0.8	14.1	261.9	OK
15.4	2.2	2.5	-0.5	20.1	2.8	3.2	-0.6	0.1	13.8	OK	12.6	-0.3	12.6	261.9	OK
9.0	1.3	2.1	-0.1	11.7	1.6	2.7	-0.2	0.1	13.8	OK	10.4	-0.1	10.4	261.9	OK
11.6	1.6	2.6	0.4	15.1	2.1	3.4	0.5	0.1	13.8	OK	13.2	0.2	13.2	261.9	OK
23.5	3.3	-5.1	3.7	30.5	4.3	-6.7	4.8	0.2	13.8	OK	25.8	2.2	26.1	261.9	OK
8.9	1.2	-4.6	1.9	11.6	1.6	-5.9	2.5	0.1	13.8	OK	22.5	1.2	22.6	261.9	OK
8.2	1.2	3.1	-0.5	10.7	1.5	4.1	-0.6	0.1	13.8	OK	15.4	-0.3	15.4	261.9	OK
7.1	1.0	1.4	2.9	9.3	1.3	1.8	3.8	0.0	13.8	OK	7.2	1.7	7.8	261.9	OK
15.5	2.2	1.4	-0.6	20.2	2.8	1.8	-0.7	0.1	13.8	OK	7.2	-0.3	7.2	261.9	OK
13.3	1.9	1.3	-0.6	17.3	2.4	1.7	-0.8	0.1	13.8	OK	6.8	-0.4	6.9	261.9	OK
9.7	1.3	2.7	-0.5	12.6	1.8	3.5	-0.7	0.1	13.8	OK	13.4	-0.3	13.4	261.9	OK
22.1	3.1	2.6	-0.8	28.7	4.0	3.3	-1.1	0.1	13.8	OK	13.3	-0.5	13.4	261.9	OK
26.1	3.6	2.0	-0.7	33.9	4.7	2.6	-0.9	0.2	13.8	OK	10.7	-0.4	10.7	261.9	OK
6.8	0.9	-3.8	0.7	8.8	1.2	-4.9	1.0	0.0	13.8	OK	18.7	0.4	18.7	261.9	OK
9.1	1.3	2.9	1.1	11.8	1.6	3.8	1.5	0.1	13.8	OK	14.4	0.7	14.5	261.9	OK
13.9	1.9	1.9	-1.1	18.0	2.5	2.5	-1.4	0.1	13.8	OK	9.8	-0.7	9.9	261.9	OK
2.1	0.3	1.3	2.2	2.8	0.4	1.7	2.8	0.0	13.8	OK	6.6	1.3	6.9	261.9	OK
7.9	1.1	2.0	2.0	10.3	1.4	2.6	2.6	0.1	13.8	OK	10.0	1.2	10.2	261.9	OK
0.0	-9.3	-0.9	8.7	0.0	-12.1	-1.1	11.3	0.0	13.8	OK	6.9	5.2	11.3	261.9	OK
2.8	0.4	1.3	1.4	3.6	0.5	1.7	1.8	0.0	13.8	OK	6.3	0.8	6.5	261.9	OK

3.3	0.5	0.9	-0.7	4.2	0.6	1.2	-0.9	0.0	13.8	OK	4.5	-0.4	4.6	261.9	OK
0.0	-8.8	1.0	-0.6	0.0	-11.5	1.3	-0.8	0.0	13.8	OK	7.4	-0.4	7.4	261.9	OK
2.7	0.4	-0.5	-1.6	3.5	0.5	-0.7	-2.0	0.0	13.8	OK	2.6	-0.9	3.0	261.9	OK
11.9	1.7	-0.3	0.1	15.5	2.2	-0.3	0.1	0.1	13.8	OK	1.8	0.1	1.8	261.9	OK
33.1	4.6	0.2	-0.3	43.1	6.0	0.2	-0.3	0.2	13.8	OK	2.1	-0.2	2.1	261.9	OK
11.5	1.6	0.7	0.2	14.9	2.1	0.9	0.2	0.1	13.8	OK	4.0	0.1	4.0	261.9	OK
0.0	-8.3	0.7	-0.9	0.0	-10.8	0.9	-1.2	0.0	13.8	OK	5.8	-0.5	5.9	261.9	OK
27.0	3.8	0.6	-0.2	35.1	4.9	0.7	-0.3	0.2	13.8	OK	3.8	-0.1	3.8	261.9	OK
42.3	5.9	0.0	-0.8	55.0	7.7	0.0	-1.0	0.3	13.8	OK	1.8	-0.5	1.9	261.9	OK
17.7	2.5	0.1	-0.7	23.0	3.2	0.2	-0.9	0.1	13.8	OK	1.3	-0.4	1.5	261.9	OK
30.0	4.2	0.5	-0.9	38.9	5.4	0.6	-1.2	0.2	13.8	OK	3.4	-0.6	3.5	261.9	OK
8.8	1.2	-1.1	-2.1	11.5	1.6	-1.4	-2.8	0.1	13.8	OK	5.5	-1.3	5.9	261.9	OK
2.4	0.3	-2.1	-3.2	3.2	0.4	-2.7	-4.1	0.0	13.8	OK	10.1	-1.9	10.7	261.9	OK
17.8	2.5	-0.1	0.3	23.2	3.2	-0.1	0.3	0.1	13.8	OK	1.2	0.2	1.3	261.9	OK
14.0	2.0	-0.2	-0.3	18.2	2.5	-0.2	-0.4	0.1	13.8	OK	1.3	-0.2	1.4	261.9	OK
7.7	1.1	-2.5	-1.4	10.0	1.4	-3.2	-1.8	0.1	13.8	OK	12.4	-0.8	12.4	261.9	OK
4.1	0.6	-2.4	-1.7	5.3	0.7	-3.1	-2.2	0.0	13.8	OK	11.8	-1.0	12.0	261.9	OK
38.7	5.4	0.0	-0.1	50.3	7.0	0.0	-0.1	0.3	13.8	OK	1.5	-0.1	1.6	261.9	OK
0.0	-0.2	0.6	0.4	0.0	-0.3	0.8	0.6	0.0	13.8	OK	2.9	0.3	3.0	261.9	OK
7.7	1.1	0.4	-1.4	9.9	1.4	0.5	-1.8	0.0	13.8	OK	2.1	-0.8	2.6	261.9	OK
26.7	3.7	-0.1	-0.2	34.6	4.8	-0.2	-0.3	0.2	13.8	OK	1.7	-0.1	1.7	261.9	OK
22.4	3.1	0.7	-0.4	29.1	4.1	0.9	-0.5	0.1	13.8	OK	4.1	-0.2	4.1	261.9	OK
8.1	1.1	-2.6	-1.4	10.5	1.5	-3.4	-1.8	0.1	13.8	OK	12.9	-0.8	13.0	261.9	OK
6.6	0.9	-2.2	-1.9	8.6	1.2	-2.9	-2.5	0.0	13.8	OK	11.1	-1.1	11.3	261.9	OK
22.5	3.1	0.1	-0.6	29.3	4.1	0.1	-0.8	0.1	13.8	OK	1.3	-0.4	1.5	261.9	OK
7.9	1.1	0.3	-0.7	10.3	1.4	0.4	-0.9	0.1	13.8	OK	1.9	-0.4	2.0	261.9	OK
7.5	1.1	0.8	0.0	9.8	1.4	1.0	0.0	0.0	13.8	OK	4.2	0.0	4.2	261.9	OK
14.2	2.0	0.7	-0.7	18.4	2.6	0.9	-0.8	0.1	13.8	OK	3.8	-0.4	3.8	261.9	OK
12.7	1.8	0.2	0.6	16.5	2.3	0.3	0.8	0.1	13.8	OK	1.6	0.3	1.7	261.9	OK
24.6	3.4	0.1	0.0	31.9	4.5	0.2	0.0	0.2	13.8	OK	1.6	0.0	1.6	261.9	OK
23.8	3.3	0.0	-0.3	30.9	4.3	-0.1	-0.4	0.2	13.8	OK	1.2	-0.2	1.2	261.9	OK
1.6	0.2	0.9	-0.1	2.0	0.3	1.1	-0.2	0.0	13.8	OK	4.3	-0.1	4.3	261.9	OK
12.4	1.7	0.8	0.3	16.1	2.2	1.0	0.4	0.1	13.8	OK	4.4	0.2	4.4	261.9	OK
21.1	3.0	-0.1	0.2	27.5	3.8	-0.2	0.2	0.1	13.8	OK	1.5	0.1	1.5	261.9	OK
17.7	2.5	0.0	0.3	23.0	3.2	0.0	0.4	0.1	13.8	OK	0.8	0.2	0.9	261.9	OK
5.3	0.7	0.8	0.1	6.9	1.0	1.0	0.2	0.0	13.8	OK	4.0	0.1	4.0	261.9	OK
7.0	1.0	0.1	0.9	9.1	1.3	0.1	1.1	0.0	13.8	OK	0.7	0.5	1.1	261.9	OK
1.8	0.2	-0.4	-2.6	2.3	0.3	-0.5	-3.4	0.0	13.8	OK	2.0	-1.5	3.3	261.9	OK
6.4	0.9	-0.6	-1.9	8.3	1.2	-0.8	-2.5	0.0	13.8	OK	3.2	-1.1	3.7	261.9	OK
23.4	3.3	0.6	-0.8	30.4	4.3	0.7	-1.0	0.2	13.8	OK	3.6	-0.5	3.7	261.9	OK
17.2	2.4	0.5	0.1	22.4	3.1	0.7	0.1	0.1	13.8	OK	3.2	0.1	3.2	261.9	OK
21.8	3.0	0.1	0.8	28.3	4.0	0.1	1.1	0.1	13.8	OK	1.1	0.5	1.4	261.9	OK
29.5	4.1	0.0	0.0	38.4	5.4	0.1	0.0	0.2	13.8	OK	1.4	0.0	1.4	261.9	OK
15.2	2.1	0.3	-1.8	19.8	2.8	0.4	-2.4	0.1	13.8	OK	2.2	-1.1	2.9	261.9	OK
43.9	6.1	0.6	-1.0	57.0	8.0	0.8	-1.3	0.3	13.8	OK	4.6	-0.6	4.7	261.9	OK
17.2	2.4	0.7	-0.5	22.3	3.1	1.0	-0.6	0.1	13.8	OK	4.2	-0.3	4.3	261.9	OK
14.3	2.0	0.3	-0.3	18.6	2.6	0.3	-0.4	0.1	13.8	OK	1.8	-0.2	1.9	261.9	OK

6.9	1.0	-0.5	-1.2	8.9	1.2	-0.7	-1.5	0.0	13.8	OK	2.9	-0.7	3.2	261.9	OK
8.1	1.1	-2.3	-2.8	10.6	1.5	-3.1	-3.6	0.1	13.8	OK	11.7	-1.7	12.1	261.9	OK
22.8	3.2	0.0	0.5	29.7	4.1	0.0	0.7	0.1	13.8	OK	1.0	0.3	1.2	261.9	OK
16.1	2.2	0.0	-0.1	20.9	2.9	0.0	-0.2	0.1	13.8	OK	0.7	-0.1	0.7	261.9	OK
19.8	2.8	0.6	-1.2	25.7	3.6	0.8	-1.5	0.1	13.8	OK	3.7	-0.7	3.9	261.9	OK
16.2	2.3	0.4	0.2	21.1	2.9	0.6	0.2	0.1	13.8	OK	2.8	0.1	2.8	261.9	OK
13.4	1.9	0.3	1.0	17.5	2.4	0.4	1.3	0.1	13.8	OK	1.9	0.6	2.2	261.9	OK
12.5	1.8	-0.2	1.8	16.3	2.3	-0.2	2.3	0.1	13.8	OK	1.3	1.1	2.3	261.9	OK
3.6	0.5	-1.3	3.3	4.7	0.7	-1.7	4.2	0.0	13.8	OK	6.4	2.0	7.2	261.9	OK
5.4	0.8	-3.7	-0.2	7.0	1.0	-4.8	-0.2	0.0	13.8	OK	18.2	-0.1	18.2	261.9	OK
6.3	0.9	-3.8	0.1	8.2	1.1	-5.0	0.1	0.0	13.8	OK	18.8	0.1	18.8	261.9	OK
0.0	-3.7	-1.3	1.1	0.0	-4.8	-1.7	1.4	0.0	13.8	OK	7.4	0.7	7.5	261.9	OK
0.0	-10.1	-3.2	0.4	0.0	-13.1	-4.1	0.5	0.0	13.8	OK	18.2	0.2	18.2	261.9	OK
0.0	-3.0	-3.4	-0.5	0.0	-3.9	-4.5	-0.7	0.0	13.8	OK	17.5	-0.3	17.5	261.9	OK
22.0	3.1	-3.0	6.5	28.5	4.0	-3.9	8.5	0.1	13.8	OK	15.5	3.9	16.9	261.9	OK
6.9	1.0	-0.5	2.8	9.0	1.3	-0.7	3.7	0.0	13.8	OK	2.7	1.7	4.0	261.9	OK
27.1	3.8	-2.8	6.9	35.3	4.9	-3.6	8.9	0.2	13.8	OK	14.6	4.1	16.3	261.9	OK
21.0	2.9	-4.1	1.5	27.3	3.8	-5.3	2.0	0.1	13.8	OK	20.6	0.9	20.7	261.9	OK
10.2	1.4	-3.6	-0.8	13.3	1.9	-4.7	-1.1	0.1	13.8	OK	18.1	-0.5	18.1	261.9	OK
17.9	2.5	-3.9	1.9	23.3	3.3	-5.1	2.5	0.1	13.8	OK	19.5	1.1	19.6	261.9	OK
25.7	3.6	-4.4	2.0	33.5	4.7	-5.7	2.6	0.2	13.8	OK	22.4	1.2	22.4	261.9	OK
14.3	2.0	-4.3	-0.8	18.6	2.6	-5.6	-1.0	0.1	13.8	OK	21.5	-0.5	21.5	261.9	OK
11.4	1.6	-3.8	2.1	14.8	2.1	-4.9	2.7	0.1	13.8	OK	18.7	1.2	18.8	261.9	OK
18.0	2.5	-4.4	-0.6	23.4	3.3	-5.8	-0.7	0.1	13.8	OK	22.2	-0.3	22.3	261.9	OK
14.9	2.1	-4.4	-0.9	19.3	2.7	-5.7	-1.2	0.1	13.8	OK	21.7	-0.6	21.7	261.9	OK
3.3	0.5	-0.2	0.4	4.2	0.6	-0.2	0.5	0.0	13.8	OK	0.9	0.2	0.9	261.9	OK
0.0	-2.4	-0.3	0.0	0.0	-3.1	-0.4	0.0	0.0	13.8	OK	2.0	0.0	2.0	261.9	OK
0.0	-8.3	-0.2	-0.1	0.0	-10.8	-0.2	-0.1	0.0	13.8	OK	3.1	0.0	3.1	261.9	OK
0.0	-1.1	-0.2	0.3	0.0	-1.5	-0.3	0.4	0.0	13.8	OK	1.3	0.2	1.4	261.9	OK
0.0	-0.8	-0.1	0.2	0.0	-1.0	-0.2	0.3	0.0	13.8	OK	0.9	0.1	1.0	261.9	OK
20.5	2.9	0.1	-1.2	26.6	3.7	0.1	-1.6	0.1	13.8	OK	1.1	-0.7	1.7	261.9	OK
0.0	-0.2	-0.1	-0.3	0.0	-0.3	-0.1	-0.4	0.0	13.8	OK	0.4	-0.2	0.5	261.9	OK
1.4	0.2	-0.1	0.4	1.9	0.3	-0.1	0.6	0.0	13.8	OK	0.5	0.3	0.7	261.9	OK
0.0	-1.4	-0.3	0.2	0.0	-1.8	-0.3	0.3	0.0	13.8	OK	1.7	0.1	1.7	261.9	OK
11.2	1.6	-0.3	0.0	14.5	2.0	-0.4	0.0	0.1	13.8	OK	2.0	0.0	2.0	261.9	OK
0.0	-3.1	-0.1	-0.6	0.0	-4.1	-0.1	-0.8	0.0	13.8	OK	1.2	-0.4	1.3	261.9	OK
0.0	-2.1	-0.4	0.0	0.0	-2.7	-0.5	0.0	0.0	13.8	OK	2.3	0.0	2.3	261.9	OK
0.0	-1.8	-0.2	-0.5	0.0	-2.3	-0.2	-0.6	0.0	13.8	OK	1.4	-0.3	1.5	261.9	OK
0.0	-3.0	-0.3	0.1	0.0	-3.9	-0.5	0.1	0.0	13.8	OK	2.5	0.0	2.5	261.9	OK
21.1	3.0	-0.4	0.9	27.5	3.8	-0.5	1.2	0.1	13.8	OK	2.6	0.6	2.8	261.9	OK
12.9	1.8	0.0	-1.1	16.8	2.3	0.0	-1.4	0.1	13.8	OK	0.7	-0.7	1.3	261.9	OK
2.7	0.4	-0.1	-0.3	3.5	0.5	-0.2	-0.4	0.0	13.8	OK	0.8	-0.2	0.8	261.9	OK
0.0	-7.7	-0.3	0.1	0.0	-10.0	-0.4	0.2	0.0	13.8	OK	3.6	0.1	3.6	261.9	OK
4.7	0.7	0.1	0.0	6.1	0.9	0.2	0.0	0.0	13.8	OK	0.9	0.0	0.9	261.9	OK
10.4	1.5	0.1	0.3	13.6	1.9	0.2	0.4	0.1	13.8	OK	1.1	0.2	1.2	261.9	OK
20.1	2.8	0.1	0.3	26.2	3.7	0.1	0.4	0.1	13.8	OK	1.2	0.2	1.3	261.9	OK
14.5	2.0	0.0	0.0	18.9	2.6	0.0	0.0	0.1	13.8	OK	0.7	0.0	0.7	261.9	OK

7.3	1.0	0.2	0.0	9.5	1.3	0.2	0.0	0.0	13.8	OK	1.2	0.0	1.2	261.9	OK
0.0	-2.8	0.0	0.3	0.0	-3.6	0.0	0.4	0.0	13.8	OK	0.9	0.2	0.9	261.9	OK
0.0	-19.4	-0.1	-0.9	0.0	-25.2	-0.2	-1.2	0.0	13.8	OK	6.1	-0.5	6.1	261.9	OK
0.0	-17.7	-0.1	0.2	0.0	-23.0	-0.1	0.2	0.0	13.8	OK	5.3	0.1	5.3	261.9	OK
9.1	1.3	0.2	0.2	11.8	1.7	0.3	0.2	0.1	13.8	OK	1.4	0.1	1.4	261.9	OK
0.0	-17.8	0.1	0.4	0.0	-23.1	0.2	0.6	0.0	13.8	OK	5.6	0.3	5.6	261.9	OK
7.6	1.1	0.2	0.2	9.9	1.4	0.2	0.3	0.0	13.8	OK	1.1	0.1	1.1	261.9	OK
0.0	-11.5	0.1	-0.2	0.0	-15.0	0.1	-0.2	0.0	13.8	OK	3.6	-0.1	3.6	261.9	OK
0.0	-14.2	0.1	-0.6	0.0	-18.4	0.2	-0.7	0.0	13.8	OK	4.6	-0.3	4.6	261.9	OK
0.0	-16.0	0.1	0.0	0.0	-20.8	0.2	0.0	0.0	13.8	OK	5.1	0.0	5.1	261.9	OK
21.6	3.0	0.0	0.3	28.1	3.9	0.0	0.4	0.1	13.8	OK	0.9	0.2	1.0	261.9	OK
0.0	-2.3	0.2	-0.2	0.0	-3.0	0.3	-0.2	0.0	13.8	OK	1.6	-0.1	1.6	261.9	OK
0.0	-14.6	0.1	0.5	0.0	-19.0	0.2	0.7	0.0	13.8	OK	4.7	0.3	4.8	261.9	OK
15.0	2.1	-0.1	0.0	19.5	2.7	-0.1	0.0	0.1	13.8	OK	0.9	0.0	0.9	261.9	OK
12.3	1.7	0.2	-0.2	16.0	2.2	0.3	-0.2	0.1	13.8	OK	1.5	-0.1	1.5	261.9	OK
11.8	1.7	0.1	0.0	15.4	2.2	0.2	0.0	0.1	13.8	OK	1.1	0.0	1.1	261.9	OK
13.6	1.9	0.3	0.3	17.7	2.5	0.4	0.4	0.1	13.8	OK	1.9	0.2	1.9	261.9	OK
6.0	0.8	0.2	0.2	7.8	1.1	0.3	0.3	0.0	13.8	OK	1.4	0.1	1.4	261.9	OK
14.9	2.1	0.2	0.2	19.3	2.7	0.3	0.3	0.1	13.8	OK	1.6	0.1	1.6	261.9	OK
9.4	1.3	0.2	-0.1	12.2	1.7	0.2	-0.2	0.1	13.8	OK	1.2	-0.1	1.2	261.9	OK
13.1	1.8	0.1	-0.2	17.0	2.4	0.1	-0.2	0.1	13.8	OK	0.8	-0.1	0.8	261.9	OK
19.8	2.8	0.2	-0.4	25.7	3.6	0.2	-0.5	0.1	13.8	OK	1.7	-0.2	1.7	261.9	OK
20.9	2.9	0.1	0.2	27.2	3.8	0.2	0.2	0.1	13.8	OK	1.4	0.1	1.4	261.9	OK
17.4	2.4	0.3	0.1	22.6	3.2	0.4	0.1	0.1	13.8	OK	2.0	0.0	2.0	261.9	OK
17.8	2.5	0.2	0.3	23.2	3.2	0.2	0.4	0.1	13.8	OK	1.6	0.2	1.6	261.9	OK
18.5	2.6	0.2	0.4	24.0	3.4	0.3	0.5	0.1	13.8	OK	1.8	0.2	1.8	261.9	OK
0.0	-10.2	0.1	0.2	0.0	-13.2	0.1	0.3	0.0	13.8	OK	3.2	0.1	3.2	261.9	OK
16.2	2.3	0.2	-0.4	21.1	2.9	0.3	-0.5	0.1	13.8	OK	1.8	-0.2	1.9	261.9	OK
9.6	1.3	0.3	-0.3	12.5	1.7	0.4	-0.3	0.1	13.8	OK	1.8	-0.2	1.9	261.9	OK
6.3	0.9	0.2	0.4	8.2	1.1	0.3	0.5	0.0	13.8	OK	1.2	0.2	1.3	261.9	OK
0.0	-4.2	0.0	0.0	0.0	-5.5	0.0	0.0	0.0	13.8	OK	1.2	0.0	1.2	261.9	OK
8.7	1.2	0.2	0.2	11.3	1.6	0.3	0.2	0.1	13.8	OK	1.5	0.1	1.5	261.9	OK
0.0	-0.1	0.0	0.1	0.0	-0.1	0.0	0.1	0.0	13.8	OK	0.1	0.1	0.2	261.9	OK
6.5	0.9	0.1	0.1	8.4	1.2	0.2	0.1	0.0	13.8	OK	0.9	0.1	0.9	261.9	OK
2.1	0.3	0.0	0.1	2.8	0.4	0.0	0.1	0.0	13.8	OK	0.3	0.0	0.3	261.9	OK
1.3	0.2	0.0	0.4	1.8	0.2	0.0	0.6	0.0	13.8	OK	0.2	0.3	0.5	261.9	OK
3.4	0.5	0.1	0.4	4.4	0.6	0.1	0.5	0.0	13.8	OK	0.4	0.2	0.6	261.9	OK
2.6	0.4	0.2	0.1	3.4	0.5	0.2	0.1	0.0	13.8	OK	1.0	0.1	1.0	261.9	OK
0.0	-0.2	-0.1	0.4	0.0	-0.3	-0.1	0.5	0.0	13.8	OK	0.5	0.2	0.6	261.9	OK
16.3	2.3	0.2	-0.2	21.2	3.0	0.3	-0.3	0.1	13.8	OK	1.8	-0.1	1.8	261.9	OK
15.9	2.2	0.2	0.2	20.7	2.9	0.2	0.3	0.1	13.8	OK	1.5	0.1	1.6	261.9	OK
12.5	1.7	0.3	-0.1	16.3	2.3	0.4	-0.2	0.1	13.8	OK	1.8	-0.1	1.8	261.9	OK
17.8	2.5	0.1	-0.3	23.2	3.2	0.2	-0.4	0.1	13.8	OK	1.3	-0.2	1.3	261.9	OK
9.6	1.3	0.1	0.2	12.5	1.7	0.2	0.2	0.1	13.8	OK	1.0	0.1	1.1	261.9	OK
4.1	0.6	0.2	-0.3	5.3	0.7	0.3	-0.4	0.0	13.8	OK	1.3	-0.2	1.3	261.9	OK
8.0	1.1	0.2	-0.2	10.4	1.4	0.3	-0.2	0.1	13.8	OK	1.2	-0.1	1.3	261.9	OK
21.0	2.9	0.0	-0.4	27.3	3.8	0.1	-0.6	0.1	13.8	OK	1.0	-0.3	1.1	261.9	OK

3.6	0.5	-0.1	0.3	4.7	0.7	-0.1	0.4	0.0	13.8	OK	0.4	0.2	0.5	261.9	OK
3.0	0.4	0.2	0.3	3.9	0.5	0.3	0.3	0.0	13.8	OK	1.1	0.2	1.1	261.9	OK
0.0	-20.4	0.0	-0.5	0.0	-26.5	0.0	-0.6	0.0	13.8	OK	5.7	-0.3	5.7	261.9	OK
1.2	0.2	-0.2	-0.4	1.6	0.2	-0.2	-0.6	0.0	13.8	OK	0.9	-0.3	1.0	261.9	OK
7.2	1.0	0.2	-0.7	9.4	1.3	0.2	-0.9	0.0	13.8	OK	1.2	-0.4	1.4	261.9	OK
6.2	0.9	0.8	0.2	8.0	1.1	1.0	0.3	0.0	13.8	OK	3.9	0.1	3.9	261.9	OK
11.6	1.6	0.2	0.4	15.0	2.1	0.3	0.5	0.1	13.8	OK	1.5	0.2	1.6	261.9	OK
0.0	-33.4	0.3	-1.0	0.0	-43.5	0.3	-1.3	0.0	13.8	OK	10.6	-0.6	10.6	261.9	OK
0.0	-7.9	0.6	0.4	0.0	-10.2	0.8	0.5	0.0	13.8	OK	5.0	0.2	5.1	261.9	OK
3.1	0.4	0.4	-0.5	4.1	0.6	0.5	-0.6	0.0	13.8	OK	1.9	-0.3	2.0	261.9	OK
13.9	1.9	0.0	0.2	18.0	2.5	0.0	0.2	0.1	13.8	OK	0.6	0.1	0.7	261.9	OK
0.0	-35.4	0.1	-0.2	0.0	-46.0	0.1	-0.3	0.0	13.8	OK	10.4	-0.1	10.4	261.9	OK
0.0	-22.9	0.0	-0.6	0.0	-29.7	0.0	-0.7	0.0	13.8	OK	6.4	-0.3	6.5	261.9	OK
22.5	3.1	-0.1	-0.3	29.2	4.1	-0.1	-0.4	0.1	13.8	OK	1.1	-0.2	1.2	261.9	OK
0.0	-23.4	-0.1	1.2	0.0	-30.4	-0.1	1.6	0.0	13.8	OK	6.9	0.7	7.1	261.9	OK
8.5	1.2	0.2	-0.4	11.1	1.5	0.2	-0.5	0.1	13.8	OK	1.1	-0.2	1.1	261.9	OK
10.7	1.5	0.4	0.1	14.0	2.0	0.6	0.2	0.1	13.8	OK	2.5	0.1	2.5	261.9	OK
2.4	0.3	0.3	0.1	3.1	0.4	0.4	0.2	0.0	13.8	OK	1.5	0.1	1.5	261.9	OK
0.0	-30.1	0.2	0.6	0.0	-39.2	0.3	0.7	0.0	13.8	OK	9.4	0.3	9.5	261.9	OK
3.7	0.5	0.7	-0.2	4.8	0.7	0.9	-0.3	0.0	13.8	OK	3.6	-0.1	3.6	261.9	OK
1.8	0.2	0.0	-0.5	2.3	0.3	0.0	-0.6	0.0	13.8	OK	0.1	-0.3	0.5	261.9	OK
1.1	0.2	-0.1	-0.8	1.5	0.2	-0.1	-1.0	0.0	13.8	OK	0.5	-0.5	0.9	261.9	OK
0.0	-2.5	0.4	-0.5	0.0	-3.3	0.5	-0.6	0.0	13.8	OK	2.6	-0.3	2.7	261.9	OK
7.0	1.0	0.6	-0.3	9.1	1.3	0.8	-0.3	0.0	13.8	OK	3.2	-0.2	3.2	261.9	OK
3.5	0.5	0.2	-0.8	4.5	0.6	0.3	-1.1	0.0	13.8	OK	1.1	-0.5	1.4	261.9	OK
14.6	2.0	-0.1	0.0	19.0	2.7	-0.2	-0.1	0.1	13.8	OK	1.2	0.0	1.2	261.9	OK
1.6	0.2	0.3	-0.9	2.1	0.3	0.3	-1.1	0.0	13.8	OK	1.4	-0.5	1.6	261.9	OK
3.2	0.5	0.4	-0.4	4.2	0.6	0.6	-0.5	0.0	13.8	OK	2.2	-0.3	2.3	261.9	OK
20.6	2.9	0.1	-0.2	26.8	3.7	0.1	-0.3	0.1	13.8	OK	1.3	-0.1	1.4	261.9	OK
7.9	1.1	0.6	-0.3	10.3	1.4	0.8	-0.3	0.1	13.8	OK	3.4	-0.2	3.4	261.9	OK
18.5	2.6	0.1	0.3	24.1	3.4	0.2	0.4	0.1	13.8	OK	1.3	0.2	1.4	261.9	OK
11.6	1.6	0.6	0.6	15.1	2.1	0.8	0.8	0.1	13.8	OK	3.3	0.4	3.4	261.9	OK
17.4	2.4	0.2	-0.3	22.6	3.2	0.3	-0.4	0.1	13.8	OK	1.7	-0.2	1.7	261.9	OK
9.2	1.3	0.5	0.3	12.0	1.7	0.6	0.4	0.1	13.8	OK	2.7	0.2	2.7	261.9	OK
2.5	0.3	-0.2	-0.1	3.2	0.4	-0.2	-0.1	0.0	13.8	OK	0.9	0.0	0.9	261.9	OK
20.5	2.9	0.2	0.0	26.6	3.7	0.2	0.0	0.1	13.8	OK	1.6	0.0	1.6	261.9	OK
0.0	-5.3	-0.1	1.2	0.0	-6.9	-0.1	1.5	0.0	13.8	OK	1.9	0.7	2.2	261.9	OK
12.6	1.8	0.5	0.1	16.4	2.3	0.6	0.2	0.1	13.8	OK	2.7	0.1	2.7	261.9	OK
8.3	1.2	0.7	-0.4	10.8	1.5	1.0	-0.6	0.1	13.8	OK	3.9	-0.3	3.9	261.9	OK
4.9	0.7	0.8	0.1	6.4	0.9	1.0	0.1	0.0	13.8	OK	3.9	0.0	3.9	261.9	OK
14.8	2.1	0.5	-0.2	19.2	2.7	0.6	-0.3	0.1	13.8	OK	2.9	-0.1	2.9	261.9	OK
17.6	2.5	0.2	0.6	22.9	3.2	0.3	0.8	0.1	13.8	OK	1.8	0.4	1.9	261.9	OK
14.8	2.1	0.3	0.0	19.2	2.7	0.4	0.0	0.1	13.8	OK	2.2	0.0	2.2	261.9	OK
7.1	1.0	0.1	0.3	9.2	1.3	0.1	0.4	0.0	13.8	OK	0.6	0.2	0.7	261.9	OK
1.8	0.3	0.0	-0.4	2.3	0.3	0.0	-0.5	0.0	13.8	OK	0.1	-0.3	0.4	261.9	OK
0.0	-20.3	0.2	0.0	0.0	-26.4	0.2	0.1	0.0	13.8	OK	6.4	0.0	6.4	261.9	OK
14.1	2.0	0.6	-0.1	18.3	2.6	0.8	-0.2	0.1	13.8	OK	3.5	-0.1	3.5	261.9	OK

21.8	3.0	0.0	0.2	28.4	4.0	0.0	0.3	0.1	13.8	OK	0.9	0.1	0.9	261.9	OK
0.0	-5.9	0.2	-0.1	0.0	-7.7	0.3	-0.1	0.0	13.8	OK	2.8	0.0	2.8	261.9	OK
17.1	2.4	0.4	0.4	22.2	3.1	0.6	0.5	0.1	13.8	OK	2.8	0.2	2.8	261.9	OK
0.0	-0.1	0.4	0.0	0.0	-0.1	0.5	0.0	0.0	13.8	OK	2.0	0.0	2.0	261.9	OK
0.0	-15.7	0.3	-0.5	0.0	-20.4	0.3	-0.6	0.0	13.8	OK	5.6	-0.3	5.6	261.9	OK
0.0	-43.0	0.2	0.6	0.0	-55.9	0.3	0.8	0.0	13.8	OK	13.1	0.4	13.1	261.9	OK
14.9	2.1	-0.1	0.2	19.4	2.7	-0.2	0.2	0.1	13.8	OK	1.3	0.1	1.3	261.9	OK
21.9	3.1	0.1	0.6	28.5	4.0	0.1	0.8	0.1	13.8	OK	1.2	0.4	1.3	261.9	OK
20.0	2.8	0.3	-0.1	26.0	3.6	0.4	-0.2	0.1	13.8	OK	2.3	-0.1	2.3	261.9	OK
0.0	-2.4	0.4	-0.1	0.0	-3.1	0.5	-0.2	0.0	13.8	OK	2.7	-0.1	2.7	261.9	OK
9.2	1.3	-0.3	-0.2	12.0	1.7	-0.3	-0.3	0.1	13.8	OK	1.7	-0.1	1.7	261.9	OK
10.0	1.4	-0.3	-0.2	13.0	1.8	-0.4	-0.3	0.1	13.8	OK	1.9	-0.1	2.0	261.9	OK
8.8	1.2	-0.1	0.5	11.4	1.6	-0.2	0.6	0.1	13.8	OK	1.1	0.3	1.2	261.9	OK
5.3	0.7	-0.3	0.1	6.8	1.0	-0.4	0.1	0.0	13.8	OK	1.7	0.0	1.7	261.9	OK
38.0	5.3	-0.6	-1.3	49.4	6.9	-0.8	-1.7	0.2	13.8	OK	4.4	-0.8	4.6	261.9	OK
13.6	1.9	-0.2	0.8	17.7	2.5	-0.3	1.0	0.1	13.8	OK	1.5	0.5	1.7	261.9	OK
0.0	-2.1	-0.3	-0.5	0.0	-2.7	-0.4	-0.6	0.0	13.8	OK	1.9	-0.3	2.0	261.9	OK
0.0	-1.6	-0.5	-0.2	0.0	-2.1	-0.7	-0.2	0.0	13.8	OK	3.0	-0.1	3.0	261.9	OK
0.0	-2.0	-0.5	-0.1	0.0	-2.6	-0.7	-0.2	0.0	13.8	OK	3.0	-0.1	3.0	261.9	OK
0.0	-2.6	-0.5	0.1	0.0	-3.3	-0.7	0.1	0.0	13.8	OK	3.2	0.1	3.2	261.9	OK
0.0	-4.6	-0.2	-0.1	0.0	-6.0	-0.3	-0.2	0.0	13.8	OK	2.4	-0.1	2.4	261.9	OK
0.8	0.1	-0.3	-0.5	1.0	0.1	-0.4	-0.7	0.0	13.8	OK	1.5	-0.3	1.6	261.9	OK
0.0	-5.7	-0.1	0.0	0.0	-7.3	-0.1	-0.1	0.0	13.8	OK	2.1	0.0	2.1	261.9	OK
0.0	-1.8	-0.4	0.2	0.0	-2.4	-0.5	0.3	0.0	13.8	OK	2.4	0.1	2.4	261.9	OK
0.0	-8.6	-0.4	-0.2	0.0	-11.1	-0.6	-0.3	0.0	13.8	OK	4.5	-0.1	4.5	261.9	OK
0.0	-11.8	-0.3	0.3	0.0	-15.4	-0.4	0.3	0.0	13.8	OK	4.9	0.2	4.9	261.9	OK
0.0	-2.6	-0.2	0.2	0.0	-3.4	-0.2	0.2	0.0	13.8	OK	1.6	0.1	1.6	261.9	OK
0.0	-3.6	-0.3	-0.3	0.0	-4.7	-0.4	-0.4	0.0	13.8	OK	2.3	-0.2	2.3	261.9	OK
0.0	-75.7	-1.7	0.2	0.0	-98.4	-2.2	0.2	0.0	13.8	OK	29.4	0.1	29.4	261.9	OK
0.0	-111.3	0.7	1.8	0.0	-144.7	0.9	2.4	0.0	13.8	OK	34.4	1.1	34.4	261.9	OK
0.0	-35.3	-1.9	-5.4	0.0	-45.9	-2.4	-7.0	0.0	13.8	OK	18.9	-3.2	19.7	261.9	OK
63.7	8.9	-11.2	-1.8	82.8	11.6	-14.6	-2.4	0.4	13.8	OK	56.8	-1.1	56.8	261.9	OK
104.8	14.6	-9.6	-1.2	136.3	19.0	-12.4	-1.5	0.7	13.8	OK	50.4	-0.7	50.4	261.9	OK
42.1	5.9	-11.5	3.4	54.7	7.6	-15.0	4.4	0.3	13.8	OK	57.5	2.0	57.6	261.9	OK
0.0	-0.6	-7.0	1.9	0.0	-0.8	-9.0	2.4	0.0	13.8	OK	33.8	1.1	33.9	261.9	OK
0.0	-3.0	-9.6	-7.5	0.0	-3.9	-12.4	-9.8	0.0	13.8	OK	47.1	-4.5	47.7	261.9	OK
0.0	-61.7	-3.7	0.3	0.0	-80.1	-4.8	0.4	0.0	13.8	OK	35.2	0.2	35.2	261.9	OK
0.0	-19.4	-4.1	-3.8	0.0	-25.2	-5.3	-5.0	0.0	13.8	OK	25.1	-2.3	25.4	261.9	OK
0.0	-17.2	-7.1	-4.9	0.0	-22.4	-9.2	-6.3	0.0	13.8	OK	39.2	-2.9	39.6	261.9	OK
0.0	-20.4	-5.1	-5.2	0.0	-26.6	-6.6	-6.8	0.0	13.8	OK	30.2	-3.1	30.7	261.9	OK
0.0	-59.8	-3.1	-0.7	0.0	-77.8	-4.0	-0.9	0.0	13.8	OK	31.7	-0.4	31.7	261.9	OK
232.8	32.5	-16.0	-9.0	302.7	42.3	-20.7	-11.7	1.5	13.8	OK	86.4	-5.4	86.9	261.9	OK
112.9	15.8	-14.4	-0.2	146.8	20.5	-18.7	-0.3	0.7	13.8	OK	74.3	-0.1	74.3	261.9	OK
0.0	-59.4	-5.2	1.2	0.0	-77.2	-6.8	1.5	0.0	13.8	OK	41.9	0.7	42.0	261.9	OK
157.2	22.0	-3.1	-6.6	204.4	28.6	-4.0	-8.6	1.0	13.8	OK	21.2	-4.0	22.2	261.9	OK
279.5	39.1	-8.8	-39.9	363.4	50.8	-11.4	-51.9	1.8	13.8	OK	53.5	-24.0	67.7	261.9	OK
8.9	1.2	1.8	2.0	11.5	1.6	2.3	2.6	0.1	13.8	OK	9.1	1.2	9.3	261.9	OK

25.3	3.5	1.9	-0.6	32.9	4.6	2.5	-0.8	0.2	13.8	OK	10.4	-0.4	10.4	261.9	OK
16.3	2.3	1.5	-0.4	21.2	3.0	1.9	-0.5	0.1	13.8	OK	7.7	-0.2	7.7	261.9	OK
3.2	0.4	2.4	5.4	4.1	0.6	3.1	7.1	0.0	13.8	OK	11.6	3.3	12.9	261.9	OK
30.8	4.3	-8.9	2.6	40.0	5.6	-11.6	3.4	0.2	13.8	OK	44.5	1.6	44.6	261.9	OK
11.1	1.6	2.5	-0.6	14.5	2.0	3.2	-0.8	0.1	13.8	OK	12.4	-0.3	12.5	261.9	OK
12.7	1.8	2.4	0.4	16.5	2.3	3.1	0.5	0.1	13.8	OK	12.0	0.2	12.0	261.9	OK
8.9	1.2	1.9	0.1	11.5	1.6	2.4	0.1	0.1	13.8	OK	9.3	0.0	9.3	261.9	OK
25.9	3.6	3.6	0.3	33.6	4.7	4.7	0.3	0.2	13.8	OK	18.5	0.2	18.5	261.9	OK
13.3	1.9	2.9	-0.2	17.3	2.4	3.8	-0.2	0.1	13.8	OK	14.7	-0.1	14.7	261.9	OK
28.4	4.0	1.2	-0.9	36.9	5.2	1.6	-1.1	0.2	13.8	OK	6.9	-0.5	7.0	261.9	OK
39.4	5.5	-11.7	7.5	51.3	7.2	-15.3	9.8	0.3	13.8	OK	58.4	4.5	58.9	261.9	OK
6.7	0.9	1.7	0.4	8.6	1.2	2.3	0.5	0.0	13.8	OK	8.7	0.2	8.7	261.9	OK
15.3	2.1	1.9	-0.9	19.9	2.8	2.4	-1.2	0.1	13.8	OK	9.7	-0.6	9.8	261.9	OK
1.8	0.3	1.0	2.7	2.4	0.3	1.3	3.5	0.0	13.8	OK	4.7	1.6	5.5	261.9	OK
0.7	0.1	-1.3	4.6	0.9	0.1	-1.7	6.0	0.0	13.8	OK	6.2	2.7	7.8	261.9	OK
13.8	1.9	3.2	3.2	17.9	2.5	4.1	4.1	0.1	13.8	OK	16.0	1.9	16.3	261.9	OK
9.0	1.3	3.0	-0.4	11.7	1.6	3.9	-0.5	0.1	13.8	OK	14.7	-0.2	14.7	261.9	OK
35.2	4.9	-9.2	4.7	45.8	6.4	-12.0	6.1	0.2	13.8	OK	46.0	2.8	46.2	261.9	OK
21.5	3.0	2.1	-0.3	27.9	3.9	2.8	-0.4	0.1	13.8	OK	11.2	-0.2	11.2	261.9	OK
8.0	1.1	-4.9	1.9	10.4	1.4	-6.4	2.5	0.1	13.8	OK	24.1	1.1	24.2	261.9	OK
18.7	2.6	-7.0	-1.8	24.3	3.4	-9.1	-2.3	0.1	13.8	OK	34.5	-1.1	34.5	261.9	OK
7.4	1.0	2.7	1.4	9.7	1.4	3.6	1.8	0.0	13.8	OK	13.6	0.8	13.7	261.9	OK
12.3	1.7	-1.2	2.7	16.0	2.2	-1.6	3.5	0.1	13.8	OK	6.4	1.6	7.0	261.9	OK
20.5	2.9	1.4	-0.3	26.6	3.7	1.8	-0.4	0.1	13.8	OK	7.7	-0.2	7.7	261.9	OK
3.3	0.5	0.6	2.4	4.2	0.6	0.8	3.1	0.0	13.8	OK	3.0	1.4	3.9	261.9	OK
25.2	3.5	1.3	-0.7	32.8	4.6	1.8	-0.9	0.2	13.8	OK	7.5	-0.4	7.5	261.9	OK
12.0	1.7	-6.0	6.2	15.6	2.2	-7.7	8.0	0.1	13.8	OK	29.3	3.7	30.0	261.9	OK
18.6	2.6	1.8	-0.6	24.2	3.4	2.4	-0.8	0.1	13.8	OK	9.6	-0.4	9.7	261.9	OK
34.5	4.8	3.0	-0.6	44.8	6.3	3.9	-0.8	0.2	13.8	OK	15.9	-0.3	15.9	261.9	OK
24.5	3.4	-6.2	3.5	31.9	4.5	-8.1	4.6	0.2	13.8	OK	31.1	2.1	31.3	261.9	OK
8.1	1.1	1.0	3.1	10.6	1.5	1.3	4.0	0.1	13.8	OK	5.2	1.8	6.1	261.9	OK
9.0	1.3	-7.1	3.0	11.6	1.6	-9.3	3.9	0.1	13.8	OK	34.9	1.8	35.0	261.9	OK
10.9	1.5	2.4	0.5	14.2	2.0	3.1	0.6	0.1	13.8	OK	12.1	0.3	12.1	261.9	OK
5.5	0.8	-4.0	1.3	7.2	1.0	-5.2	1.7	0.0	13.8	OK	19.7	0.8	19.8	261.9	OK
14.9	2.1	2.3	-0.5	19.4	2.7	3.0	-0.6	0.1	13.8	OK	11.8	-0.3	11.8	261.9	OK
5.7	0.8	-2.3	2.8	7.5	1.0	-3.0	3.6	0.0	13.8	OK	11.5	1.7	11.8	261.9	OK
12.5	1.7	3.2	0.7	16.2	2.3	4.1	1.0	0.1	13.8	OK	15.8	0.4	15.8	261.9	OK
19.3	2.7	-4.9	2.6	25.1	3.5	-6.3	3.4	0.1	13.8	OK	24.4	1.6	24.5	261.9	OK
3.1	0.4	-4.8	-1.6	4.1	0.6	-6.3	-2.0	0.0	13.8	OK	23.5	-0.9	23.6	261.9	OK
15.1	2.1	-2.3	3.2	19.7	2.7	-3.0	4.2	0.1	13.8	OK	11.7	1.9	12.2	261.9	OK
17.5	2.4	2.7	-1.4	22.7	3.2	3.5	-1.8	0.1	13.8	OK	13.8	-0.8	13.8	261.9	OK
0.5	0.1	-2.2	2.1	0.7	0.1	-2.9	2.7	0.0	13.8	OK	10.7	1.3	11.0	261.9	OK
3.6	0.5	-5.4	10.4	4.7	0.7	-7.0	13.5	0.0	13.8	OK	26.1	6.2	28.2	261.9	OK
11.2	1.6	1.8	-0.1	14.5	2.0	2.3	-0.2	0.1	13.8	OK	9.0	-0.1	9.0	261.9	OK
20.8	2.9	2.5	-0.7	27.1	3.8	3.3	-1.0	0.1	13.8	OK	13.0	-0.4	13.0	261.9	OK
41.9	5.9	2.0	-1.5	54.5	7.6	2.6	-1.9	0.3	13.8	OK	11.2	-0.9	11.3	261.9	OK
2.0	0.3	1.0	1.2	2.7	0.4	1.3	1.6	0.0	13.8	OK	4.9	0.7	5.1	261.9	OK

12.5	1.7	1.5	-0.4	16.2	2.3	1.9	-0.5	0.1	13.8	OK	7.7	-0.2	7.7	261.9	OK
45.9	6.4	1.3	-1.2	59.7	8.3	1.7	-1.6	0.3	13.8	OK	8.0	-0.7	8.1	261.9	OK
10.5	1.5	0.7	1.2	13.7	1.9	0.9	1.5	0.1	13.8	OK	3.6	0.7	3.8	261.9	OK
2.0	0.3	-0.3	1.6	2.6	0.4	-0.4	2.1	0.0	13.8	OK	1.7	1.0	2.4	261.9	OK
6.5	0.9	1.7	0.4	8.4	1.2	2.2	0.5	0.0	13.8	OK	8.4	0.2	8.4	261.9	OK
0.0	-2.8	-1.9	9.1	0.0	-3.6	-2.5	11.8	0.0	13.8	OK	10.0	5.4	13.7	261.9	OK
11.2	1.6	0.8	-0.2	14.6	2.0	1.0	-0.2	0.1	13.8	OK	4.3	-0.1	4.3	261.9	OK
0.0	-7.6	-1.7	-1.1	0.0	-9.8	-2.2	-1.4	0.0	13.8	OK	10.2	-0.6	10.3	261.9	OK
12.9	1.8	1.2	-0.3	16.8	2.3	1.6	-0.4	0.1	13.8	OK	6.3	-0.2	6.3	261.9	OK
13.6	1.9	1.2	-0.4	17.7	2.5	1.6	-0.6	0.1	13.8	OK	6.5	-0.3	6.5	261.9	OK
9.0	1.3	1.2	-1.7	11.7	1.6	1.5	-2.2	0.1	13.8	OK	6.0	-1.0	6.3	261.9	OK
19.5	2.7	2.8	-0.1	25.3	3.5	3.7	-0.1	0.1	13.8	OK	14.5	-0.1	14.5	261.9	OK
8.4	1.2	2.1	0.7	10.9	1.5	2.8	0.8	0.1	13.8	OK	10.7	0.4	10.7	261.9	OK
20.6	2.9	-7.2	-6.6	26.8	3.7	-9.4	-8.5	0.1	13.8	OK	35.9	-3.9	36.5	261.9	OK
0.0	-4.1	-0.5	-0.8	0.0	-5.3	-0.7	-1.1	0.0	13.8	OK	3.8	-0.5	3.9	261.9	OK
48.1	6.7	0.7	-0.5	62.5	8.7	0.9	-0.7	0.3	13.8	OK	5.2	-0.3	5.2	261.9	OK
8.3	1.2	0.7	-0.1	10.8	1.5	0.9	-0.1	0.1	13.8	OK	3.5	0.0	3.6	261.9	OK
29.2	4.1	0.6	0.6	38.0	5.3	0.8	0.8	0.2	13.8	OK	4.1	0.4	4.1	261.9	OK
5.0	0.7	0.6	-0.1	6.5	0.9	0.7	-0.1	0.0	13.8	OK	2.9	0.0	2.9	261.9	OK
31.6	4.4	1.9	0.5	41.0	5.7	2.5	0.7	0.2	13.8	OK	10.7	0.3	10.7	261.9	OK
0.2	0.0	2.2	-1.2	0.3	0.0	2.9	-1.6	0.0	13.8	OK	10.8	-0.7	10.9	261.9	OK
41.8	5.8	1.0	0.9	54.4	7.6	1.3	1.2	0.3	13.8	OK	6.5	0.5	6.6	261.9	OK
25.0	3.5	1.0	0.5	32.5	4.5	1.3	0.6	0.2	13.8	OK	5.7	0.3	5.7	261.9	OK
18.4	2.6	1.6	1.4	23.9	3.3	2.1	1.8	0.1	13.8	OK	8.4	0.8	8.5	261.9	OK
30.4	4.3	0.7	-0.7	39.6	5.5	0.9	-0.8	0.2	13.8	OK	4.7	-0.4	4.8	261.9	OK
0.0	-6.9	-3.0	-1.3	0.0	-8.9	-3.9	-1.7	0.0	13.8	OK	16.4	-0.8	16.5	261.9	OK
11.1	1.5	0.2	-1.1	14.4	2.0	0.3	-1.4	0.1	13.8	OK	1.5	-0.7	1.9	261.9	OK
9.4	1.3	-5.2	-0.5	12.2	1.7	-6.8	-0.7	0.1	13.8	OK	25.6	-0.3	25.6	261.9	OK
8.5	1.2	1.4	-0.3	11.0	1.5	1.8	-0.3	0.1	13.8	OK	7.1	-0.2	7.1	261.9	OK
24.5	3.4	0.8	-0.4	31.9	4.5	1.1	-0.5	0.2	13.8	OK	5.0	-0.2	5.0	261.9	OK
0.0	-2.7	-2.2	-5.0	0.0	-3.5	-2.8	-6.5	0.0	13.8	OK	11.3	-3.0	12.4	261.9	OK
1.0	0.1	-2.5	-3.3	1.3	0.2	-3.3	-4.3	0.0	13.8	OK	12.2	-2.0	12.7	261.9	OK
14.1	2.0	-2.2	-3.9	18.3	2.6	-2.8	-5.0	0.1	13.8	OK	11.0	-2.3	11.8	261.9	OK
21.2	3.0	0.8	-0.3	27.5	3.8	1.1	-0.4	0.1	13.8	OK	4.8	-0.2	4.8	261.9	OK
25.0	3.5	0.7	0.3	32.5	4.5	0.9	0.4	0.2	13.8	OK	4.4	0.2	4.5	261.9	OK
0.0	-10.3	1.8	-6.5	0.0	-13.4	2.4	-8.5	0.0	13.8	OK	11.8	-3.9	13.6	261.9	OK
16.4	2.3	0.9	0.5	21.4	3.0	1.2	0.6	0.1	13.8	OK	5.1	0.3	5.1	261.9	OK
12.5	1.7	0.9	-0.1	16.2	2.3	1.2	-0.1	0.1	13.8	OK	5.1	0.0	5.1	261.9	OK
11.6	1.6	2.3	-0.5	15.1	2.1	3.0	-0.7	0.1	13.8	OK	11.6	-0.3	11.6	261.9	OK
0.0	-8.0	-3.3	-10.6	0.0	-10.4	-4.4	-13.8	0.0	13.8	OK	18.5	-6.4	21.5	261.9	OK
0.0	-6.8	0.4	-3.1	0.0	-8.9	0.5	-4.1	0.0	13.8	OK	3.9	-1.9	5.1	261.9	OK
22.4	3.1	1.1	0.1	29.1	4.1	1.4	0.1	0.1	13.8	OK	6.2	0.1	6.2	261.9	OK
17.4	2.4	0.8	-0.4	22.6	3.2	1.1	-0.5	0.1	13.8	OK	4.8	-0.2	4.8	261.9	OK
6.8	1.0	0.4	-3.3	8.8	1.2	0.5	-4.3	0.0	13.8	OK	2.2	-2.0	4.1	261.9	OK
14.3	2.0	1.2	0.6	18.6	2.6	1.5	0.8	0.1	13.8	OK	6.3	0.4	6.3	261.9	OK
18.9	2.6	0.9	0.5	24.6	3.4	1.1	0.6	0.1	13.8	OK	5.0	0.3	5.0	261.9	OK
0.0	-3.0	0.1	-2.0	0.0	-3.9	0.2	-2.6	0.0	13.8	OK	1.6	-1.2	2.6	261.9	OK

21.4	3.0	1.0	0.0	27.8	3.9	1.3	0.1	0.1	13.8	OK	5.8	0.0	5.8	261.9	OK
1.8	0.3	1.1	0.1	2.3	0.3	1.4	0.1	0.0	13.8	OK	5.5	0.1	5.5	261.9	OK
7.3	1.0	2.4	0.6	9.4	1.3	3.1	0.7	0.0	13.8	OK	12.0	0.3	12.0	261.9	OK
33.4	4.7	-7.5	-2.0	43.4	6.1	-9.7	-2.6	0.2	13.8	OK	37.4	-1.2	37.5	261.9	OK
46.4	6.5	0.6	0.1	60.3	8.4	0.8	0.1	0.3	13.8	OK	4.8	0.1	4.8	261.9	OK
0.0	-1.9	0.3	-0.6	0.0	-2.5	0.3	-0.8	0.0	13.8	OK	1.8	-0.4	1.9	261.9	OK
19.3	2.7	1.5	0.9	25.1	3.5	1.9	1.2	0.1	13.8	OK	7.8	0.5	7.8	261.9	OK
13.8	1.9	-2.6	-2.4	17.9	2.5	-3.3	-3.2	0.1	13.8	OK	12.9	-1.5	13.2	261.9	OK
2.1	0.3	2.7	-3.4	2.8	0.4	3.5	-4.4	0.0	13.8	OK	13.1	-2.0	13.5	261.9	OK
12.4	1.7	1.4	0.8	16.1	2.2	1.9	1.0	0.1	13.8	OK	7.5	0.5	7.5	261.9	OK
18.1	2.5	1.1	-0.3	23.5	3.3	1.4	-0.4	0.1	13.8	OK	6.0	-0.2	6.0	261.9	OK
11.4	1.6	-5.2	-3.7	14.9	2.1	-6.8	-4.9	0.1	13.8	OK	25.9	-2.2	26.2	261.9	OK
20.3	2.8	-7.8	-11.2	26.4	3.7	-10.2	-14.6	0.1	13.8	OK	38.7	-6.7	40.4	261.9	OK
3.6	0.5	-7.2	-2.3	4.6	0.6	-9.4	-3.0	0.0	13.8	OK	35.2	-1.4	35.3	261.9	OK
60.0	8.4	-10.1	-4.8	78.0	10.9	-13.1	-6.3	0.4	13.8	OK	51.3	-2.9	51.5	261.9	OK
97.9	13.7	-13.7	-5.1	127.2	17.8	-17.8	-6.7	0.6	13.8	OK	70.2	-3.1	70.4	261.9	OK
42.7	6.0	-3.8	5.7	55.5	7.8	-4.9	7.4	0.3	13.8	OK	20.1	3.4	20.9	261.9	OK
451.0	63.0	-10.9	34.8	586.4	81.9	-14.1	45.3	2.9	13.8	OK	70.3	20.9	79.0	261.9	OK
0.0	-14.0	-2.9	5.7	0.0	-18.2	-3.7	7.4	0.0	13.8	OK	17.8	3.4	18.8	261.9	OK
0.0	-46.8	-6.3	5.4	0.0	-60.8	-8.2	7.0	0.0	13.8	OK	43.8	3.2	44.2	261.9	OK
241.5	33.7	-14.9	8.2	314.0	43.9	-19.4	10.7	1.6	13.8	OK	81.6	4.9	82.1	261.9	OK
115.2	16.1	-10.5	5.7	149.7	20.9	-13.7	7.4	0.7	13.8	OK	55.5	3.4	55.8	261.9	OK
16.9	2.4	-7.3	2.5	22.0	3.1	-9.4	3.2	0.1	13.8	OK	35.9	1.5	36.0	261.9	OK
4.7	0.7	-10.9	-2.7	6.1	0.8	-14.2	-3.5	0.0	13.8	OK	53.0	-1.6	53.1	261.9	OK
0.0	-6.4	-6.4	-1.1	0.0	-8.3	-8.3	-1.4	0.0	13.8	OK	32.6	-0.6	32.6	261.9	OK
18.2	2.5	-2.9	5.1	23.7	3.3	-3.8	6.6	0.1	13.8	OK	14.7	3.0	15.6	261.9	OK
0.0	-78.9	-2.5	7.9	0.0	-102.5	-3.3	10.3	0.0	13.8	OK	34.2	4.7	35.2	261.9	OK
36.0	5.0	-10.5	1.4	46.8	6.5	-13.6	1.8	0.2	13.8	OK	52.1	0.8	52.1	261.9	OK
0.0	-124.8	-0.5	-2.9	0.0	-162.3	-0.6	-3.7	0.0	13.8	OK	37.2	-1.7	37.3	261.9	OK
0.0	-36.6	-3.2	4.1	0.0	-47.5	-4.2	5.3	0.0	13.8	OK	25.9	2.4	26.3	261.9	OK
0.0	-17.2	-4.0	-1.1	0.0	-22.4	-5.2	-1.4	0.0	13.8	OK	24.1	-0.7	24.1	261.9	OK
0.0	-0.5	-0.3	0.0	0.0	-0.7	-0.4	0.0	0.0	13.8	OK	1.7	0.0	1.7	261.9	OK
1.5	0.2	-0.1	-0.7	2.0	0.3	-0.2	-0.9	0.0	13.8	OK	0.7	-0.4	1.0	261.9	OK
11.8	1.6	-0.1	-0.9	15.3	2.1	-0.1	-1.1	0.1	13.8	OK	0.9	-0.5	1.3	261.9	OK
0.0	-4.3	-0.3	0.3	0.0	-5.6	-0.4	0.4	0.0	13.8	OK	2.5	0.2	2.5	261.9	OK
0.0	-2.2	-0.3	-0.5	0.0	-2.9	-0.4	-0.7	0.0	13.8	OK	2.2	-0.3	2.2	261.9	OK
0.0	-4.9	-0.2	0.6	0.0	-6.4	-0.3	0.8	0.0	13.8	OK	2.4	0.4	2.5	261.9	OK
0.0	-0.1	-0.3	0.4	0.0	-0.1	-0.4	0.5	0.0	13.8	OK	1.4	0.2	1.5	261.9	OK
0.0	-0.8	-0.3	0.3	0.0	-1.0	-0.4	0.5	0.0	13.8	OK	1.6	0.2	1.7	261.9	OK
14.9	2.1	-0.2	-1.2	19.4	2.7	-0.2	-1.6	0.1	13.8	OK	1.3	-0.7	1.8	261.9	OK
0.0	-0.7	-0.2	0.3	0.0	-0.9	-0.2	0.3	0.0	13.8	OK	1.0	0.2	1.0	261.9	OK
1.7	0.2	-0.3	0.4	2.2	0.3	-0.4	0.5	0.0	13.8	OK	1.4	0.2	1.4	261.9	OK
3.0	0.4	-0.4	0.4	3.9	0.6	-0.5	0.6	0.0	13.8	OK	2.0	0.3	2.1	261.9	OK
0.0	-0.2	0.0	-0.2	0.0	-0.3	0.0	-0.2	0.0	13.8	OK	0.2	-0.1	0.2	261.9	OK
0.0	-17.1	-0.1	-1.7	0.0	-22.3	-0.1	-2.2	0.0	13.8	OK	5.2	-1.0	5.5	261.9	OK
0.0	-5.4	-0.3	0.1	0.0	-7.0	-0.4	0.2	0.0	13.8	OK	2.9	0.1	2.9	261.9	OK
2.7	0.4	-0.4	0.2	3.5	0.5	-0.5	0.3	0.0	13.8	OK	1.9	0.1	1.9	261.9	OK

5.9	0.8	0.0	-0.1	7.6	1.1	-0.1	-0.1	0.0	13.8	OK	0.4	-0.1	0.4	261.9	OK
8.7	1.2	0.0	1.6	11.4	1.6	0.0	2.1	0.1	13.8	OK	0.5	1.0	1.8	261.9	OK
17.3	2.4	0.1	0.1	22.5	3.1	0.2	0.2	0.1	13.8	OK	1.3	0.1	1.3	261.9	OK
5.9	0.8	0.2	0.8	7.6	1.1	0.2	1.1	0.0	13.8	OK	1.0	0.5	1.3	261.9	OK
22.2	3.1	0.1	0.3	28.8	4.0	0.1	0.4	0.1	13.8	OK	1.2	0.2	1.3	261.9	OK
0.0	-21.9	0.2	0.2	0.0	-28.5	0.2	0.3	0.0	13.8	OK	6.9	0.1	6.9	261.9	OK
0.0	-7.3	0.0	0.1	0.0	-9.4	0.0	0.2	0.0	13.8	OK	2.1	0.1	2.1	261.9	OK
19.3	2.7	0.0	-0.3	25.1	3.5	0.0	-0.4	0.1	13.8	OK	0.9	-0.2	0.9	261.9	OK
21.5	3.0	0.0	0.4	28.0	3.9	0.0	0.5	0.1	13.8	OK	0.9	0.2	0.9	261.9	OK
12.7	1.8	0.0	-0.1	16.5	2.3	-0.1	-0.1	0.1	13.8	OK	0.7	-0.1	0.7	261.9	OK
0.0	-13.7	0.2	0.4	0.0	-17.8	0.2	0.5	0.0	13.8	OK	4.6	0.2	4.7	261.9	OK
4.0	0.6	0.2	0.5	5.1	0.7	0.2	0.7	0.0	13.8	OK	0.9	0.3	1.1	261.9	OK
5.1	0.7	0.4	-0.2	6.6	0.9	0.5	-0.3	0.0	13.8	OK	1.9	-0.1	1.9	261.9	OK
0.0	-15.1	-0.1	-0.4	0.0	-19.6	-0.1	-0.6	0.0	13.8	OK	4.5	-0.3	4.5	261.9	OK
14.3	2.0	0.2	0.1	18.6	2.6	0.3	0.1	0.1	13.8	OK	1.7	0.0	1.7	261.9	OK
21.7	3.0	0.1	-0.3	28.3	3.9	0.1	-0.4	0.1	13.8	OK	1.1	-0.2	1.2	261.9	OK
0.0	-2.9	0.2	0.4	0.0	-3.8	0.3	0.5	0.0	13.8	OK	2.0	0.2	2.0	261.9	OK
0.0	-5.2	0.3	-0.3	0.0	-6.7	0.4	-0.4	0.0	13.8	OK	2.8	-0.2	2.8	261.9	OK
0.0	-16.0	0.1	-0.2	0.0	-20.8	0.2	-0.2	0.0	13.8	OK	5.0	-0.1	5.0	261.9	OK
12.1	1.7	0.3	-0.3	15.7	2.2	0.3	-0.4	0.1	13.8	OK	1.7	-0.2	1.7	261.9	OK
0.3	0.0	0.1	0.5	0.4	0.1	0.1	0.6	0.0	13.8	OK	0.3	0.3	0.6	261.9	OK
18.2	2.5	0.2	0.6	23.6	3.3	0.3	0.7	0.1	13.8	OK	1.7	0.3	1.8	261.9	OK
3.0	0.4	0.3	0.2	3.9	0.5	0.4	0.3	0.0	13.8	OK	1.8	0.1	1.8	261.9	OK
4.6	0.6	0.0	0.4	6.0	0.8	-0.1	0.5	0.0	13.8	OK	0.4	0.2	0.6	261.9	OK
0.6	0.1	0.2	-0.6	0.7	0.1	0.3	-0.7	0.0	13.8	OK	1.0	-0.3	1.1	261.9	OK
3.8	0.5	0.3	0.1	4.9	0.7	0.4	0.2	0.0	13.8	OK	1.8	0.1	1.8	261.9	OK
20.8	2.9	0.2	0.1	27.1	3.8	0.3	0.1	0.1	13.8	OK	1.9	0.0	1.9	261.9	OK
10.2	1.4	0.3	-0.2	13.3	1.9	0.4	-0.3	0.1	13.8	OK	2.0	-0.1	2.0	261.9	OK
16.3	2.3	0.4	-0.2	21.2	3.0	0.6	-0.3	0.1	13.8	OK	2.7	-0.1	2.7	261.9	OK
0.0	-6.7	0.1	0.5	0.0	-8.7	0.1	0.6	0.0	13.8	OK	2.3	0.3	2.4	261.9	OK
20.1	2.8	0.2	-0.2	26.2	3.7	0.3	-0.3	0.1	13.8	OK	1.8	-0.1	1.8	261.9	OK
0.0	-13.5	0.1	-0.7	0.0	-17.6	0.1	-1.0	0.0	13.8	OK	4.1	-0.4	4.1	261.9	OK
3.0	0.4	0.2	0.6	3.9	0.5	0.2	0.8	0.0	13.8	OK	0.9	0.4	1.1	261.9	OK
9.3	1.3	0.3	0.3	12.1	1.7	0.4	0.4	0.1	13.8	OK	1.8	0.2	1.9	261.9	OK
1.0	0.1	0.0	0.4	1.3	0.2	0.0	0.5	0.0	13.8	OK	0.2	0.2	0.5	261.9	OK
17.1	2.4	0.2	-0.2	22.2	3.1	0.2	-0.3	0.1	13.8	OK	1.5	-0.1	1.5	261.9	OK
1.0	0.1	0.2	0.2	1.3	0.2	0.2	0.2	0.0	13.8	OK	0.9	0.1	0.9	261.9	OK
19.4	2.7	0.1	0.3	25.3	3.5	0.2	0.4	0.1	13.8	OK	1.4	0.2	1.5	261.9	OK
6.5	0.9	0.3	0.2	8.4	1.2	0.4	0.3	0.0	13.8	OK	1.9	0.1	1.9	261.9	OK
15.3	2.1	0.2	0.4	19.9	2.8	0.3	0.6	0.1	13.8	OK	1.7	0.3	1.8	261.9	OK
6.2	0.9	0.3	0.3	8.0	1.1	0.3	0.4	0.0	13.8	OK	1.5	0.2	1.5	261.9	OK
0.0	-0.1	0.0	0.2	0.0	-0.1	0.1	0.3	0.0	13.8	OK	0.2	0.1	0.3	261.9	OK
10.4	1.4	0.2	0.2	13.5	1.9	0.3	0.3	0.1	13.8	OK	1.6	0.1	1.6	261.9	OK
16.6	2.3	0.2	-0.3	21.6	3.0	0.2	-0.4	0.1	13.8	OK	1.6	-0.2	1.6	261.9	OK
3.8	0.5	0.3	-0.1	5.0	0.7	0.3	-0.1	0.0	13.8	OK	1.4	-0.1	1.4	261.9	OK
0.0	-21.6	0.1	-0.3	0.0	-28.1	0.1	-0.4	0.0	13.8	OK	6.4	-0.2	6.4	261.9	OK
13.6	1.9	0.0	0.2	17.7	2.5	0.0	0.2	0.1	13.8	OK	0.6	0.1	0.6	261.9	OK

5.0	0.7	0.1	-0.7	6.5	0.9	0.2	-0.9	0.0	13.8	OK	0.9	-0.4	1.1	261.9	OK
0.0	-17.6	0.1	0.7	0.0	-22.9	0.2	0.9	0.0	13.8	OK	5.5	0.4	5.6	261.9	OK
9.3	1.3	0.1	-0.2	12.1	1.7	0.1	-0.3	0.1	13.8	OK	0.6	-0.1	0.7	261.9	OK
13.7	1.9	0.0	0.0	17.8	2.5	0.1	0.0	0.1	13.8	OK	0.7	0.0	0.7	261.9	OK
0.0	-16.1	0.3	-0.2	0.0	-21.0	0.5	-0.2	0.0	13.8	OK	6.2	-0.1	6.2	261.9	OK
13.5	1.9	0.2	-0.2	17.5	2.4	0.3	-0.3	0.1	13.8	OK	1.6	-0.1	1.6	261.9	OK
6.7	0.9	0.2	-0.1	8.6	1.2	0.2	-0.1	0.0	13.8	OK	1.1	-0.1	1.1	261.9	OK
11.6	1.6	0.0	0.0	15.1	2.1	0.0	0.0	0.1	13.8	OK	0.6	0.0	0.6	261.9	OK
0.0	-13.6	0.1	-0.3	0.0	-17.6	0.1	-0.4	0.0	13.8	OK	4.1	-0.2	4.1	261.9	OK
12.8	1.8	0.0	0.0	16.7	2.3	0.0	0.0	0.1	13.8	OK	0.6	0.0	0.6	261.9	OK
1.4	0.2	0.4	-0.4	1.9	0.3	0.5	-0.5	0.0	13.8	OK	2.0	-0.2	2.0	261.9	OK
13.7	1.9	0.0	0.0	17.9	2.5	0.0	-0.1	0.1	13.8	OK	0.7	0.0	0.7	261.9	OK
20.8	2.9	0.2	-0.2	27.1	3.8	0.3	-0.2	0.1	13.8	OK	1.8	-0.1	1.8	261.9	OK
13.6	1.9	0.5	-0.1	17.6	2.5	0.7	-0.1	0.1	13.8	OK	3.1	0.0	3.1	261.9	OK
0.0	-28.8	0.2	-0.5	0.0	-37.4	0.2	-0.7	0.0	13.8	OK	8.9	-0.3	8.9	261.9	OK
0.0	-3.8	0.4	-0.4	0.0	-4.9	0.5	-0.6	0.0	13.8	OK	2.8	-0.3	2.8	261.9	OK
2.6	0.4	-0.3	-0.3	3.4	0.5	-0.4	-0.4	0.0	13.8	OK	1.5	-0.2	1.6	261.9	OK
2.5	0.4	0.6	-0.2	3.3	0.5	0.8	-0.2	0.0	13.8	OK	3.0	-0.1	3.0	261.9	OK
0.0	-19.5	0.1	-0.8	0.0	-25.4	0.1	-1.1	0.0	13.8	OK	5.7	-0.5	5.8	261.9	OK
11.3	1.6	0.1	0.3	14.7	2.0	0.2	0.4	0.1	13.8	OK	1.1	0.2	1.1	261.9	OK
2.5	0.4	0.2	0.9	3.3	0.5	0.3	1.2	0.0	13.8	OK	1.2	0.6	1.5	261.9	OK
9.0	1.3	0.3	0.2	11.7	1.6	0.4	0.3	0.1	13.8	OK	1.9	0.1	1.9	261.9	OK
0.0	-23.1	0.1	0.3	0.0	-30.0	0.2	0.4	0.0	13.8	OK	7.0	0.2	7.0	261.9	OK
0.0	-8.1	0.5	0.8	0.0	-10.5	0.7	1.1	0.0	13.8	OK	4.7	0.5	4.8	261.9	OK
0.0	-30.4	0.3	-0.8	0.0	-39.5	0.3	-1.1	0.0	13.8	OK	9.7	-0.5	9.7	261.9	OK
0.0	-0.4	0.3	-0.7	0.0	-0.6	0.4	-0.9	0.0	13.8	OK	1.6	-0.4	1.8	261.9	OK
13.2	1.8	0.3	0.2	17.1	2.4	0.5	0.3	0.1	13.8	OK	2.2	0.1	2.2	261.9	OK
4.8	0.7	0.1	-0.6	6.2	0.9	0.2	-0.7	0.0	13.8	OK	0.8	-0.3	1.0	261.9	OK
0.5	0.1	-0.2	-0.6	0.7	0.1	-0.2	-0.8	0.0	13.8	OK	0.9	-0.4	1.1	261.9	OK
8.3	1.2	0.6	-0.3	10.7	1.5	0.8	-0.4	0.1	13.8	OK	3.4	-0.2	3.5	261.9	OK
3.4	0.5	-0.1	-0.8	4.4	0.6	-0.1	-1.0	0.0	13.8	OK	0.5	-0.5	0.9	261.9	OK
13.5	1.9	0.5	0.4	17.6	2.5	0.6	0.6	0.1	13.8	OK	2.8	0.3	2.9	261.9	OK
19.1	2.7	0.2	-0.2	24.9	3.5	0.2	-0.2	0.1	13.8	OK	1.6	-0.1	1.6	261.9	OK
0.0	-2.1	0.2	-0.1	0.0	-2.7	0.3	-0.1	0.0	13.8	OK	1.6	-0.1	1.6	261.9	OK
4.2	0.6	0.2	-0.8	5.5	0.8	0.2	-1.1	0.0	13.8	OK	1.0	-0.5	1.3	261.9	OK
0.2	0.0	0.3	-0.9	0.3	0.0	0.4	-1.1	0.0	13.8	OK	1.4	-0.5	1.6	261.9	OK
20.3	2.8	0.2	-0.1	26.4	3.7	0.3	-0.2	0.1	13.8	OK	1.9	-0.1	1.9	261.9	OK
16.8	2.3	0.3	0.6	21.8	3.1	0.4	0.8	0.1	13.8	OK	2.0	0.4	2.1	261.9	OK
0.0	-32.5	0.3	0.4	0.0	-42.2	0.4	0.6	0.0	13.8	OK	10.5	0.3	10.5	261.9	OK
22.0	3.1	0.1	0.4	28.6	4.0	0.1	0.5	0.1	13.8	OK	1.3	0.2	1.4	261.9	OK
13.7	1.9	0.0	0.2	17.8	2.5	0.0	0.2	0.1	13.8	OK	0.7	0.1	0.7	261.9	OK
11.8	1.7	0.4	-0.2	15.4	2.1	0.5	-0.2	0.1	13.8	OK	2.5	-0.1	2.5	261.9	OK
0.4	0.1	0.0	0.7	0.5	0.1	0.0	1.0	0.0	13.8	OK	0.1	0.4	0.8	261.9	OK
0.0	-8.0	0.4	-0.8	0.0	-10.4	0.5	-1.0	0.0	13.8	OK	4.2	-0.5	4.2	261.9	OK
15.6	2.2	0.4	-0.5	20.3	2.8	0.5	-0.6	0.1	13.8	OK	2.4	-0.3	2.4	261.9	OK
23.3	3.3	0.1	-0.3	30.3	4.2	0.1	-0.4	0.2	13.8	OK	1.2	-0.2	1.2	261.9	OK
4.6	0.6	0.5	-0.8	6.0	0.8	0.6	-1.0	0.0	13.8	OK	2.5	-0.5	2.6	261.9	OK

16.6	2.3	0.4	-0.2	21.5	3.0	0.5	-0.2	0.1	13.8	OK	2.4	-0.1	2.4	261.9	OK
18.4	2.6	0.3	0.3	23.9	3.3	0.4	0.4	0.1	13.8	OK	2.0	0.2	2.1	261.9	OK
6.1	0.8	0.8	-0.2	7.9	1.1	1.0	-0.2	0.0	13.8	OK	3.9	-0.1	4.0	261.9	OK
20.9	2.9	0.2	0.1	27.2	3.8	0.3	0.1	0.1	13.8	OK	1.9	0.1	1.9	261.9	OK
9.5	1.3	0.7	-0.1	12.3	1.7	0.9	-0.2	0.1	13.8	OK	3.5	-0.1	3.6	261.9	OK
5.5	0.8	0.6	0.0	7.1	1.0	0.7	0.0	0.0	13.8	OK	3.0	0.0	3.0	261.9	OK
1.3	0.2	-0.3	-1.1	1.7	0.2	-0.3	-1.4	0.0	13.8	OK	1.3	-0.6	1.7	261.9	OK
0.0	-22.9	0.2	0.7	0.0	-29.8	0.2	0.9	0.0	13.8	OK	7.2	0.4	7.3	261.9	OK
5.8	0.8	0.6	0.3	7.6	1.1	0.8	0.4	0.0	13.8	OK	3.1	0.2	3.1	261.9	OK
0.0	-1.2	0.3	0.6	0.0	-1.6	0.4	0.8	0.0	13.8	OK	1.8	0.4	1.9	261.9	OK
5.9	0.8	0.2	-0.7	7.7	1.1	0.2	-0.9	0.0	13.8	OK	1.0	-0.4	1.2	261.9	OK
0.0	-27.4	0.2	0.7	0.0	-35.6	0.3	0.9	0.0	13.8	OK	8.7	0.4	8.8	261.9	OK
17.5	2.4	0.3	0.3	22.7	3.2	0.4	0.4	0.1	13.8	OK	2.2	0.2	2.3	261.9	OK
24.1	3.4	0.0	0.1	31.4	4.4	0.0	0.2	0.2	13.8	OK	1.1	0.1	1.1	261.9	OK
2.9	0.4	-0.1	-0.8	3.8	0.5	-0.1	-1.0	0.0	13.8	OK	0.5	-0.5	1.0	261.9	OK
0.0	-0.5	-0.2	1.1	0.0	-0.7	-0.2	1.5	0.0	13.8	OK	1.0	0.7	1.5	261.9	OK
2.3	0.3	-0.6	-0.5	2.9	0.4	-0.8	-0.6	0.0	13.8	OK	3.1	-0.3	3.1	261.9	OK
9.4	1.3	-0.6	0.1	12.2	1.7	-0.7	0.2	0.1	13.8	OK	3.1	0.1	3.1	261.9	OK
9.7	1.4	0.0	1.4	12.7	1.8	0.0	1.8	0.1	13.8	OK	0.4	0.8	1.5	261.9	OK
25.4	3.6	-0.4	1.5	33.1	4.6	-0.5	1.9	0.2	13.8	OK	2.7	0.9	3.1	261.9	OK
34.3	4.8	-0.5	-0.1	44.6	6.2	-0.6	-0.2	0.2	13.8	OK	3.7	-0.1	3.7	261.9	OK
8.3	1.2	-0.4	1.4	10.8	1.5	-0.5	1.8	0.1	13.8	OK	2.1	0.8	2.5	261.9	OK
1.1	0.2	-0.8	0.2	1.4	0.2	-1.1	0.2	0.0	13.8	OK	4.0	0.1	4.0	261.9	OK
39.4	5.5	-0.4	-1.9	51.2	7.2	-0.6	-2.5	0.3	13.8	OK	3.6	-1.1	4.1	261.9	OK
21.3	3.0	-0.9	-0.8	27.7	3.9	-1.1	-1.1	0.1	13.8	OK	5.0	-0.5	5.0	261.9	OK
6.8	1.0	-0.7	-0.7	8.8	1.2	-0.9	-0.9	0.0	13.8	OK	3.5	-0.4	3.6	261.9	OK
4.7	0.7	-0.8	0.2	6.1	0.9	-1.0	0.3	0.0	13.8	OK	3.9	0.1	3.9	261.9	OK
8.1	1.1	-0.9	0.4	10.6	1.5	-1.1	0.6	0.1	13.8	OK	4.5	0.3	4.5	261.9	OK
12.5	1.7	-0.4	1.7	16.3	2.3	-0.5	2.3	0.1	13.8	OK	2.5	1.0	3.1	261.9	OK
11.3	1.6	-0.2	1.7	14.7	2.0	-0.3	2.2	0.1	13.8	OK	1.5	1.0	2.3	261.9	OK
5.7	0.8	-0.5	-0.9	7.4	1.0	-0.6	-1.2	0.0	13.8	OK	2.5	-0.6	2.7	261.9	OK
5.2	0.7	-0.2	1.2	6.7	0.9	-0.3	1.6	0.0	13.8	OK	1.3	0.7	1.8	261.9	OK
3.6	0.5	-0.9	0.2	4.7	0.7	-1.2	0.3	0.0	13.8	OK	4.6	0.1	4.6	261.9	OK
1.4	0.2	-0.7	-0.3	1.8	0.2	-0.9	-0.4	0.0	13.8	OK	3.4	-0.2	3.4	261.9	OK
152.6	21.3	2.7	0.7	198.3	27.7	3.6	0.9	1.0	13.8	OK	19.3	0.4	19.3	261.9	OK
24.4	3.4	0.5	-0.5	31.8	4.4	0.6	-0.7	0.2	13.8	OK	3.2	-0.3	3.2	261.9	OK
168.2	23.5	0.5	13.6	218.7	30.6	0.7	17.6	1.1	13.8	OK	9.2	8.1	16.8	261.9	OK
0.0	-15.5	-0.3	-1.0	0.0	-20.2	-0.3	-1.3	0.0	13.8	OK	5.6	-0.6	5.7	261.9	OK
6.6	0.9	1.1	-1.5	8.6	1.2	1.4	-1.9	0.0	13.8	OK	5.4	-0.9	5.6	261.9	OK
27.8	3.9	1.5	-0.9	36.1	5.0	1.9	-1.1	0.2	13.8	OK	8.3	-0.5	8.3	261.9	OK
0.0	-16.1	-1.1	-2.2	0.0	-20.9	-1.5	-2.9	0.0	13.8	OK	10.0	-1.3	10.3	261.9	OK
0.0	-7.9	-2.4	-9.8	0.0	-10.2	-3.1	-12.7	0.0	13.8	OK	13.8	-5.9	17.1	261.9	OK
31.4	4.4	-1.5	0.2	40.8	5.7	-1.9	0.3	0.2	13.8	OK	8.5	0.1	8.5	261.9	OK
70.7	9.9	-1.9	1.7	91.9	12.8	-2.5	2.2	0.5	13.8	OK	12.1	1.0	12.2	261.9	OK
10.5	1.5	0.5	-1.0	13.7	1.9	0.6	-1.3	0.1	13.8	OK	2.7	-0.6	2.9	261.9	OK
62.3	8.7	-1.0	-0.7	81.0	11.3	-1.3	-0.9	0.4	13.8	OK	7.3	-0.4	7.3	261.9	OK
97.7	13.6	-1.4	4.5	127.0	17.7	-1.9	5.9	0.6	13.8	OK	10.7	2.7	11.7	261.9	OK

9.9	1.4	0.0	0.7	12.9	1.8	0.0	0.9	0.1	13.8	OK	0.6	0.4	0.9	261.9	OK
6.7	0.9	1.7	-0.5	8.7	1.2	2.2	-0.7	0.0	13.8	OK	8.5	-0.3	8.5	261.9	OK
38.2	5.3	0.9	-0.6	49.7	6.9	1.2	-0.8	0.2	13.8	OK	5.9	-0.4	5.9	261.9	OK
238.5	33.3	5.0	6.8	310.1	43.3	6.4	8.9	1.6	13.8	OK	33.3	4.1	34.1	261.9	OK
127.3	17.8	1.6	7.9	165.5	23.1	2.1	10.3	0.8	13.8	OK	12.7	4.8	15.2	261.9	OK
18.6	2.6	-1.1	-2.8	24.2	3.4	-1.4	-3.7	0.1	13.8	OK	6.1	-1.7	6.7	261.9	OK
19.2	2.7	0.3	-0.4	24.9	3.5	0.4	-0.5	0.1	13.8	OK	2.2	-0.2	2.2	261.9	OK
29.6	4.1	1.0	0.1	38.4	5.4	1.4	0.2	0.2	13.8	OK	6.2	0.1	6.2	261.9	OK
18.2	2.5	-4.5	-8.0	23.6	3.3	-5.9	-10.4	0.1	13.8	OK	22.7	-4.8	24.2	261.9	OK
18.9	2.6	1.6	-0.6	24.6	3.4	2.1	-0.8	0.1	13.8	OK	8.4	-0.4	8.5	261.9	OK
17.5	2.4	0.5	-1.3	22.7	3.2	0.6	-1.6	0.1	13.8	OK	3.0	-0.8	3.3	261.9	OK
17.3	2.4	-1.0	-1.0	22.5	3.2	-1.3	-1.3	0.1	13.8	OK	5.5	-0.6	5.6	261.9	OK
15.9	2.2	0.3	0.3	20.6	2.9	0.4	0.3	0.1	13.8	OK	2.2	0.2	2.2	261.9	OK
18.0	2.5	1.0	-1.2	23.5	3.3	1.3	-1.5	0.1	13.8	OK	5.6	-0.7	5.7	261.9	OK
56.8	7.9	0.2	1.5	73.8	10.3	0.3	2.0	0.4	13.8	OK	3.2	0.9	3.6	261.9	OK
20.5	2.9	0.3	1.5	26.7	3.7	0.3	1.9	0.1	13.8	OK	2.1	0.9	2.6	261.9	OK
86.7	12.1	-0.5	4.0	112.7	15.7	-0.6	5.2	0.6	13.8	OK	5.7	2.4	7.0	261.9	OK
55.7	7.8	-5.1	-0.1	72.4	10.1	-6.7	-0.2	0.4	13.8	OK	27.0	-0.1	27.0	261.9	OK
15.9	2.2	0.5	-1.2	20.7	2.9	0.7	-1.6	0.1	13.8	OK	3.2	-0.7	3.4	261.9	OK
29.8	4.2	-0.4	-1.9	38.7	5.4	-0.5	-2.4	0.2	13.8	OK	3.0	-1.1	3.6	261.9	OK
0.0	-2.0	0.3	-1.0	0.0	-2.6	0.4	-1.3	0.0	13.8	OK	2.1	-0.6	2.4	261.9	OK
2.5	0.4	2.1	-1.9	3.3	0.5	2.7	-2.5	0.0	13.8	OK	10.3	-1.1	10.5	261.9	OK
18.8	2.6	-1.4	-2.0	24.4	3.4	-1.8	-2.6	0.1	13.8	OK	7.6	-1.2	7.8	261.9	OK
16.3	2.3	0.0	-2.0	21.2	3.0	-0.1	-2.5	0.1	13.8	OK	0.9	-1.2	2.2	261.9	OK
26.4	3.7	1.1	-0.1	34.4	4.8	1.4	-0.1	0.2	13.8	OK	6.4	-0.1	6.4	261.9	OK
43.0	6.0	-1.2	-1.6	55.8	7.8	-1.6	-2.1	0.3	13.8	OK	7.6	-1.0	7.8	261.9	OK
18.4	2.6	1.9	-0.2	23.9	3.3	2.5	-0.3	0.1	13.8	OK	10.1	-0.1	10.1	261.9	OK
37.4	5.2	-2.0	0.7	48.6	6.8	-2.6	0.9	0.2	13.8	OK	11.2	0.4	11.2	261.9	OK
29.4	4.1	-1.6	0.5	38.2	5.3	-2.0	0.7	0.2	13.8	OK	8.7	0.3	8.7	261.9	OK
18.4	2.6	1.2	-0.4	23.9	3.3	1.6	-0.5	0.1	13.8	OK	6.6	-0.2	6.6	261.9	OK
35.4	4.9	0.8	0.2	46.0	6.4	1.0	0.3	0.2	13.8	OK	5.2	0.1	5.2	261.9	OK
18.2	2.5	-1.5	-2.5	23.7	3.3	-2.0	-3.2	0.1	13.8	OK	8.1	-1.5	8.5	261.9	OK
10.9	1.5	-0.5	-1.9	14.2	2.0	-0.7	-2.5	0.1	13.8	OK	3.1	-1.1	3.6	261.9	OK
0.0	-14.5	1.6	-4.7	0.0	-18.8	2.1	-6.1	0.0	13.8	OK	11.9	-2.8	12.9	261.9	OK
10.0	1.4	0.9	-1.6	13.0	1.8	1.2	-2.1	0.1	13.8	OK	5.0	-1.0	5.3	261.9	OK
18.0	2.5	1.7	0.6	23.4	3.3	2.2	0.8	0.1	13.8	OK	8.7	0.4	8.8	261.9	OK
40.9	5.7	-3.1	-1.3	53.2	7.4	-4.0	-1.7	0.3	13.8	OK	16.7	-0.8	16.7	261.9	OK
38.6	5.4	1.4	-0.7	50.2	7.0	1.8	-0.9	0.3	13.8	OK	8.3	-0.4	8.3	261.9	OK
23.5	3.3	-7.0	-11.3	30.5	4.3	-9.1	-14.7	0.2	13.8	OK	34.9	-6.8	36.8	261.9	OK
141.9	19.8	3.2	5.5	184.5	25.8	4.1	7.2	0.9	13.8	OK	20.9	3.3	21.7	261.9	OK
8.4	1.2	1.9	-0.4	10.9	1.5	2.5	-0.6	0.1	13.8	OK	9.7	-0.3	9.7	261.9	OK
21.4	3.0	2.4	0.2	27.8	3.9	3.1	0.3	0.1	13.8	OK	12.3	0.1	12.3	261.9	OK
37.4	5.2	1.9	-0.9	48.6	6.8	2.5	-1.1	0.2	13.8	OK	10.9	-0.5	10.9	261.9	OK
89.3	12.5	-3.7	2.5	116.1	16.2	-4.8	3.3	0.6	13.8	OK	21.6	1.5	21.7	261.9	OK
79.0	11.0	1.8	-24.0	102.7	14.3	2.4	-31.2	0.5	13.8	OK	11.9	-14.4	27.7	261.9	OK
0.5	0.1	-2.3	9.2	0.6	0.1	-3.0	12.0	0.0	13.8	OK	11.2	5.5	14.8	261.9	OK
20.8	2.9	3.6	-0.2	27.0	3.8	4.7	-0.3	0.1	13.8	OK	18.2	-0.1	18.2	261.9	OK

12.9	1.8	2.0	-0.2	16.7	2.3	2.7	-0.2	0.1	13.8	OK	10.4	-0.1	10.4	261.9	OK
8.3	1.2	1.2	2.4	10.8	1.5	1.6	3.1	0.1	13.8	OK	6.1	1.4	6.6	261.9	OK
18.7	2.6	-1.3	1.5	24.3	3.4	-1.7	1.9	0.1	13.8	OK	6.9	0.9	7.1	261.9	OK
6.8	1.0	1.3	1.2	8.9	1.2	1.7	1.5	0.0	13.8	OK	6.4	0.7	6.6	261.9	OK
6.4	0.9	2.0	0.3	8.4	1.2	2.7	0.4	0.0	13.8	OK	10.1	0.2	10.2	261.9	OK
8.4	1.2	2.0	0.2	10.9	1.5	2.7	0.3	0.1	13.8	OK	10.2	0.1	10.2	261.9	OK
45.3	6.3	-11.7	4.9	58.9	8.2	-15.2	6.3	0.3	13.8	OK	58.5	2.9	58.7	261.9	OK
42.8	6.0	-7.4	-1.2	55.7	7.8	-9.6	-1.6	0.3	13.8	OK	37.4	-0.7	37.4	261.9	OK
103.8	14.5	-1.9	-8.1	134.9	18.8	-2.5	-10.5	0.7	13.8	OK	13.4	-4.8	15.8	261.9	OK
64.2	9.0	-1.4	0.9	83.5	11.7	-1.8	1.1	0.4	13.8	OK	9.4	0.5	9.4	261.9	OK
0.0	-8.5	-1.9	4.0	0.0	-11.1	-2.5	5.2	0.0	13.8	OK	11.6	2.4	12.3	261.9	OK
4.3	0.6	1.7	2.2	5.6	0.8	2.2	2.8	0.0	13.8	OK	8.4	1.3	8.7	261.9	OK
0.0	-5.2	-0.1	2.1	0.0	-6.8	-0.2	2.7	0.0	13.8	OK	2.1	1.3	3.0	261.9	OK
9.4	1.3	3.2	2.7	12.2	1.7	4.2	3.4	0.1	13.8	OK	15.9	1.6	16.2	261.9	OK
0.0	-2.7	2.0	4.9	0.0	-3.5	2.6	6.3	0.0	13.8	OK	10.5	2.9	11.7	261.9	OK
17.8	2.5	2.1	0.1	23.1	3.2	2.7	0.1	0.1	13.8	OK	10.7	0.1	10.7	261.9	OK
10.5	1.5	1.8	-0.8	13.7	1.9	2.4	-1.0	0.1	13.8	OK	9.3	-0.5	9.3	261.9	OK
16.6	2.3	2.4	0.6	21.6	3.0	3.1	0.7	0.1	13.8	OK	12.3	0.3	12.3	261.9	OK
15.2	2.1	1.3	0.4	19.7	2.8	1.7	0.6	0.1	13.8	OK	6.8	0.3	6.8	261.9	OK
23.0	3.2	-1.9	2.2	29.9	4.2	-2.5	2.8	0.1	13.8	OK	10.3	1.3	10.5	261.9	OK
89.0	12.4	-1.7	1.3	115.7	16.2	-2.3	1.8	0.6	13.8	OK	11.9	0.8	12.0	261.9	OK
25.5	3.6	-2.4	1.7	33.2	4.6	-3.1	2.3	0.2	13.8	OK	12.5	1.0	12.6	261.9	OK
25.0	3.5	2.3	-0.1	32.5	4.5	2.9	-0.1	0.2	13.8	OK	11.9	-0.1	11.9	261.9	OK
27.7	3.9	2.0	-0.6	36.1	5.0	2.6	-0.8	0.2	13.8	OK	10.8	-0.4	10.8	261.9	OK
35.8	5.0	-4.3	-1.1	46.5	6.5	-5.6	-1.5	0.2	13.8	OK	22.3	-0.7	22.3	261.9	OK
54.2	7.6	-7.7	4.3	70.5	9.9	-10.0	5.6	0.4	13.8	OK	39.5	2.6	39.8	261.9	OK
12.6	1.8	-6.7	10.0	16.3	2.3	-8.7	13.0	0.1	13.8	OK	32.8	6.0	34.4	261.9	OK
11.9	1.7	-0.6	0.4	15.5	2.2	-0.8	0.5	0.1	13.8	OK	3.5	0.2	3.6	261.9	OK
14.0	2.0	-0.2	3.3	18.2	2.5	-0.2	4.3	0.1	13.8	OK	1.5	2.0	3.7	261.9	OK
35.1	4.9	2.6	-1.3	45.6	6.4	3.3	-1.7	0.2	13.8	OK	13.7	-0.8	13.8	261.9	OK
12.4	1.7	-1.4	2.0	16.1	2.3	-1.9	2.7	0.1	13.8	OK	7.5	1.2	7.8	261.9	OK
17.3	2.4	2.1	0.5	22.5	3.1	2.8	0.6	0.1	13.8	OK	11.0	0.3	11.1	261.9	OK
14.2	2.0	-5.7	5.6	18.4	2.6	-7.5	7.3	0.1	13.8	OK	28.3	3.4	28.9	261.9	OK
12.5	1.8	0.9	2.2	16.3	2.3	1.1	2.9	0.1	13.8	OK	4.7	1.3	5.2	261.9	OK
42.4	5.9	-6.1	1.3	55.1	7.7	-7.9	1.7	0.3	13.8	OK	31.2	0.8	31.2	261.9	OK
18.7	2.6	2.1	-0.4	24.3	3.4	2.8	-0.6	0.1	13.8	OK	11.1	-0.3	11.1	261.9	OK
11.0	1.5	2.2	2.0	14.3	2.0	2.8	2.6	0.1	13.8	OK	10.9	1.2	11.1	261.9	OK
14.0	2.0	2.5	-0.9	18.2	2.5	3.3	-1.2	0.1	13.8	OK	12.7	-0.5	12.7	261.9	OK
69.8	9.7	-1.8	-0.7	90.7	12.7	-2.4	-1.0	0.5	13.8	OK	11.5	-0.4	11.5	261.9	OK
23.9	3.3	-0.7	3.3	31.1	4.3	-0.9	4.3	0.2	13.8	OK	4.4	2.0	5.6	261.9	OK
39.6	5.5	-1.5	-0.2	51.5	7.2	-1.9	-0.3	0.3	13.8	OK	8.8	-0.1	8.8	261.9	OK
29.6	4.1	3.2	-0.4	38.5	5.4	4.2	-0.6	0.2	13.8	OK	16.7	-0.3	16.7	261.9	OK
32.4	4.5	-2.2	2.5	42.1	5.9	-2.8	3.2	0.2	13.8	OK	11.8	1.5	12.0	261.9	OK
218.8	30.6	4.5	-38.6	284.4	39.7	5.8	-50.2	1.4	13.8	OK	30.3	-23.2	50.3	261.9	OK
12.4	1.7	0.8	0.1	16.1	2.2	1.0	0.1	0.1	13.8	OK	4.3	0.1	4.3	261.9	OK
259.5	36.3	3.3	-17.6	337.4	47.1	4.3	-22.8	1.7	13.8	OK	26.1	-10.5	31.9	261.9	OK
8.9	1.2	0.5	2.6	11.6	1.6	0.6	3.4	0.1	13.8	OK	2.6	1.6	3.7	261.9	OK

7.7	1.1	2.1	0.0	10.0	1.4	2.7	0.0	0.1	13.8	OK	10.5	0.0	10.5	261.9	OK
75.8	10.6	-9.7	5.7	98.5	13.8	-12.6	7.4	0.5	13.8	OK	50.0	3.4	50.3	261.9	OK
203.1	28.4	-6.4	25.0	264.0	36.9	-8.3	32.5	1.3	13.8	OK	38.9	15.0	46.8	261.9	OK
83.5	11.7	-14.2	-0.4	108.5	15.2	-18.5	-0.6	0.5	13.8	OK	72.0	-0.3	72.0	261.9	OK
127.4	17.8	-3.2	-58.0	165.6	23.1	-4.1	-75.5	0.8	13.8	OK	20.3	-34.8	63.7	261.9	OK
286.8	40.1	9.0	0.6	372.8	52.1	11.7	0.8	1.9	13.8	OK	55.0	0.3	55.0	261.9	OK
204.5	28.6	0.4	5.7	265.8	37.1	0.5	7.4	1.3	13.8	OK	10.0	3.4	11.6	261.9	OK
42.1	5.9	-3.4	16.9	54.7	7.6	-4.5	22.0	0.3	13.8	OK	18.3	10.1	25.4	261.9	OK
129.5	18.1	-13.5	-52.9	168.4	23.5	-17.6	-68.8	0.8	13.8	OK	70.5	-31.8	89.4	261.9	OK
50.7	7.1	-10.4	0.8	66.0	9.2	-13.6	1.1	0.3	13.8	OK	52.6	0.5	52.6	261.9	OK
184.0	25.7	2.1	-8.5	239.2	33.4	2.7	-11.1	1.2	13.8	OK	17.4	-5.1	19.5	261.9	OK
103.0	14.4	-10.3	-2.6	133.9	18.7	-13.4	-3.4	0.7	13.8	OK	53.9	-1.6	54.0	261.9	OK
27.0	3.8	-5.2	2.0	35.1	4.9	-6.7	2.6	0.2	13.8	OK	26.1	1.2	26.2	261.9	OK
127.0	17.7	0.4	-11.6	165.1	23.1	0.5	-15.1	0.8	13.8	OK	6.8	-7.0	13.8	261.9	OK
54.6	7.6	-8.5	-2.9	71.0	9.9	-11.1	-3.7	0.4	13.8	OK	43.5	-1.7	43.6	261.9	OK
101.9	14.2	-3.4	-3.2	132.4	18.5	-4.4	-4.1	0.7	13.8	OK	20.5	-1.9	20.8	261.9	OK
95.9	13.4	-4.2	-8.5	124.7	17.4	-5.5	-11.1	0.6	13.8	OK	24.1	-5.1	25.7	261.9	OK
216.0	30.2	-5.8	14.3	280.8	39.2	-7.5	18.6	1.4	13.8	OK	36.4	8.6	39.4	261.9	OK
57.6	8.1	-10.2	-0.2	74.9	10.5	-13.2	-0.3	0.4	13.8	OK	51.5	-0.1	51.5	261.9	OK
101.5	14.2	-4.3	6.0	132.0	18.4	-5.6	7.8	0.7	13.8	OK	24.9	3.6	25.6	261.9	OK
269.2	37.6	4.0	2.4	350.0	48.9	5.2	3.1	1.7	13.8	OK	29.8	1.4	29.9	261.9	OK
183.8	25.7	-15.4	9.1	238.9	33.4	-20.0	11.9	1.2	13.8	OK	81.7	5.5	82.3	261.9	OK
0.0	-40.1	-3.9	6.7	0.0	-52.1	-5.1	8.7	0.0	13.8	OK	30.3	4.0	31.1	261.9	OK
70.8	9.9	-9.1	-1.6	92.0	12.9	-11.9	-2.1	0.5	13.8	OK	47.0	-1.0	47.0	261.9	OK
97.7	13.6	0.0	1.2	127.0	17.7	-0.1	1.5	0.6	13.8	OK	4.0	0.7	4.2	261.9	OK
178.3	24.9	-4.2	38.8	231.8	32.4	-5.5	50.5	1.2	13.8	OK	27.3	23.3	48.7	261.9	OK
128.8	18.0	-9.5	35.4	167.4	23.4	-12.4	46.0	0.8	13.8	OK	51.2	21.2	63.0	261.9	OK
34.9	4.9	-8.9	-1.9	45.4	6.3	-11.5	-2.4	0.2	13.8	OK	44.2	-1.1	44.3	261.9	OK
235.0	32.8	-7.0	-30.3	305.4	42.7	-9.1	-39.4	1.5	13.8	OK	43.0	-18.2	53.3	261.9	OK
15.6	2.2	-3.9	-9.1	20.3	2.8	-5.1	-11.9	0.1	13.8	OK	19.4	-5.5	21.6	261.9	OK
0.0	-6.8	-5.5	-1.8	0.0	-8.9	-7.1	-2.4	0.0	13.8	OK	28.5	-1.1	28.6	261.9	OK
47.7	6.7	-10.1	-0.8	62.0	8.7	-13.1	-1.1	0.3	13.8	OK	50.9	-0.5	50.9	261.9	OK
0.0	-33.8	-3.3	-2.5	0.0	-43.9	-4.3	-3.3	0.0	13.8	OK	25.6	-1.5	25.7	261.9	OK
153.1	21.4	-3.7	-16.3	199.1	27.8	-4.8	-21.2	1.0	13.8	OK	23.7	-9.8	29.1	261.9	OK
0.0	-43.3	0.7	-2.1	0.0	-56.2	0.9	-2.8	0.0	13.8	OK	15.5	-1.3	15.7	261.9	OK
92.4	12.9	-2.5	9.8	120.1	16.8	-3.2	12.8	0.6	13.8	OK	15.7	5.9	18.7	261.9	OK
187.7	26.2	2.3	15.0	244.0	34.1	3.0	19.4	1.2	13.8	OK	18.6	9.0	24.2	261.9	OK
74.2	10.4	-14.1	-1.8	96.4	13.5	-18.3	-2.4	0.5	13.8	OK	71.2	-1.1	71.3	261.9	OK
130.3	18.2	-12.6	-12.5	169.4	23.7	-16.4	-16.3	0.8	13.8	OK	66.2	-7.5	67.5	261.9	OK
36.7	5.1	-7.9	-5.9	47.7	6.7	-10.3	-7.7	0.2	13.8	OK	39.8	-3.6	40.3	261.9	OK
68.6	9.6	-3.2	-1.0	89.2	12.5	-4.2	-1.3	0.4	13.8	OK	18.1	-0.6	18.2	261.9	OK
59.2	8.3	-8.4	-3.3	77.0	10.8	-10.9	-4.3	0.4	13.8	OK	43.1	-2.0	43.2	261.9	OK
0.0	-5.3	-4.9	-2.1	0.0	-6.9	-6.4	-2.7	0.0	13.8	OK	25.3	-1.3	25.4	261.9	OK
189.8	26.5	2.5	19.4	246.8	34.5	3.3	25.2	1.2	13.8	OK	19.6	11.7	28.2	261.9	OK
260.3	36.4	13.5	18.1	338.5	47.3	17.5	23.6	1.7	13.8	OK	75.5	10.9	77.8	261.9	OK
67.1	9.4	8.5	-5.5	87.2	12.2	11.0	-7.1	0.4	13.8	OK	43.7	-3.3	44.0	261.9	OK
0.0	-131.7	-1.3	8.1	0.0	-171.3	-1.6	10.5	0.0	13.8	OK	43.0	4.9	43.8	261.9	OK

Tabella 2: verifiche del sostegno di prima fase (M>0 fibre tese in intradosso) – Camera d'esodo

Sollecitazioni caratteristiche				Sollecitazioni SLU				Verifica calcestruzzo proiettato			Verifica centine				
N_{clsp}	N_{cen}	M_{cen}	T_{cen}	$N_{clsp,d}$	$N_{cen,d}$	$M_{cen,d}$	$T_{cen,d}$	$\sigma_{c\_clsp,d}$	f_{cd}	Verifica	$\sigma_{cen,d}$	$\tau_{cen,d}$	$\sigma_{id,cen,d}$	f_{yd}	Verifica
[kN]	[kN]	[kNm]	[kN]	[kN]	[kN]	[kNm]	[kN]	[MPa]	[MPa]	-	[MPa]	[MPa]	[MPa]	[MPa]	-
358.7	26.3	-0.4	-2.8	466.3	34.2	-0.6	-3.7	1.9	13.8	OK	15.5	-2.6	16.1	261.9	OK
0.0	-338.7	-10.1	14.3	0.0	-440.4	-13.1	18.6	0.0	13.8	OK	240.3	13.2	241.4	261.9	OK
0.3	0.0	11.6	0.6	0.4	0.0	15.1	0.8	0.0	13.8	OK	110.5	0.5	110.5	261.9	OK
93.3	6.8	0.9	26.3	121.3	8.9	1.2	34.1	0.5	13.8	OK	11.9	24.3	43.8	261.9	OK
27.4	2.0	-3.3	1.3	35.6	2.6	-4.3	1.7	0.1	13.8	OK	32.1	1.2	32.2	261.9	OK
22.0	1.6	-1.8	1.0	28.6	2.1	-2.4	1.3	0.1	13.8	OK	18.3	0.9	18.4	261.9	OK
124.4	9.1	0.9	-0.1	161.7	11.9	1.1	-0.1	0.6	13.8	OK	12.1	-0.1	12.1	261.9	OK
0.0	-91.6	-1.7	3.3	0.0	-119.1	-2.2	4.2	0.0	13.8	OK	55.0	3.0	55.2	261.9	OK
15.1	1.1	-5.6	3.0	19.7	1.4	-7.3	3.9	0.1	13.8	OK	53.6	2.8	53.9	261.9	OK
22.2	1.6	-6.1	0.9	28.8	2.1	-7.9	1.2	0.1	13.8	OK	58.8	0.9	58.9	261.9	OK
0.0	-27.6	-1.3	0.5	0.0	-35.9	-1.7	0.6	0.0	13.8	OK	24.3	0.4	24.3	261.9	OK
23.3	1.7	-3.2	1.7	30.3	2.2	-4.2	2.2	0.1	13.8	OK	31.5	1.6	31.6	261.9	OK
16.9	1.2	-4.0	0.3	22.0	1.6	-5.2	0.4	0.1	13.8	OK	38.9	0.3	38.9	261.9	OK
79.2	5.8	-1.0	2.0	103.0	7.5	-1.2	2.6	0.4	13.8	OK	11.6	1.9	12.1	261.9	OK
21.3	1.6	-4.2	2.3	27.7	2.0	-5.5	3.0	0.1	13.8	OK	40.7	2.2	40.8	261.9	OK
28.5	2.1	-1.8	1.9	37.1	2.7	-2.3	2.5	0.1	13.8	OK	18.0	1.8	18.3	261.9	OK
22.5	1.7	-7.4	2.9	29.3	2.1	-9.7	3.8	0.1	13.8	OK	71.4	2.7	71.6	261.9	OK
19.6	1.4	-2.2	0.3	25.4	1.9	-2.9	0.4	0.1	13.8	OK	21.6	0.2	21.6	261.9	OK
25.8	1.9	-7.8	-1.2	33.6	2.5	-10.1	-1.6	0.1	13.8	OK	75.1	-1.1	75.2	261.9	OK
7.8	0.6	-2.4	-5.6	10.2	0.7	-3.1	-7.2	0.0	13.8	OK	23.2	-5.1	24.9	261.9	OK
0.7	0.0	11.5	-1.1	0.9	0.1	15.0	-1.4	0.0	13.8	OK	109.9	-1.0	110.0	261.9	OK
18.5	1.4	-1.7	-8.3	24.1	1.8	-2.2	-10.7	0.1	13.8	OK	16.3	-7.6	21.0	261.9	OK
9.0	0.7	4.7	-9.7	11.7	0.9	6.1	-12.6	0.0	13.8	OK	44.7	-9.0	47.3	261.9	OK
0.0	-6.2	4.4	-6.7	0.0	-8.1	5.7	-8.7	0.0	13.8	OK	44.6	-6.2	45.9	261.9	OK
0.0	-12.1	8.0	-0.9	0.0	-15.8	10.4	-1.2	0.0	13.8	OK	81.5	-0.8	81.5	261.9	OK
15.3	1.1	-5.2	0.3	19.8	1.5	-6.8	0.4	0.1	13.8	OK	50.2	0.3	50.2	261.9	OK
0.0	-3.3	4.7	6.8	0.0	-4.3	6.1	8.9	0.0	13.8	OK	46.4	6.3	47.7	261.9	OK
15.5	1.1	-0.9	7.4	20.1	1.5	-1.1	9.6	0.1	13.8	OK	8.7	6.8	14.7	261.9	OK
20.2	1.5	-6.5	1.3	26.3	1.9	-8.4	1.7	0.1	13.8	OK	62.3	1.2	62.4	261.9	OK
0.3	0.0	11.6	0.6	0.4	0.0	15.1	0.8	0.0	13.8	OK	110.5	0.5	110.5	261.9	OK
16.4	1.2	-4.6	0.3	21.3	1.6	-6.0	0.5	0.1	13.8	OK	44.7	0.3	44.8	261.9	OK
9.9	0.7	-1.9	5.4	12.9	0.9	-2.4	7.1	0.1	13.8	OK	18.2	5.0	20.2	261.9	OK
6.8	0.5	5.1	9.2	8.9	0.6	6.6	11.9	0.0	13.8	OK	48.7	8.5	50.8	261.9	OK
0.0	-13.0	8.2	0.9	0.0	-16.9	10.6	1.1	0.0	13.8	OK	83.2	0.8	83.2	261.9	OK
14.5	1.1	-4.7	-0.5	18.9	1.4	-6.1	-0.7	0.1	13.8	OK	44.8	-0.5	44.8	261.9	OK
15.1	1.1	-4.8	-2.2	19.6	1.4	-6.2	-2.8	0.1	13.8	OK	45.9	-2.0	46.0	261.9	OK
22.1	1.6	-2.4	-2.0	28.7	2.1	-3.1	-2.6	0.1	13.8	OK	23.5	-1.8	23.7	261.9	OK
14.1	1.0	-3.7	-2.0	18.3	1.3	-4.9	-2.6	0.1	13.8	OK	36.1	-1.8	36.3	261.9	OK
63.2	4.6	-0.2	-1.4	82.1	6.0	-0.3	-1.9	0.3	13.8	OK	4.0	-1.3	4.6	261.9	OK
67.3	4.9	-0.6	-1.0	87.6	6.4	-0.7	-1.3	0.4	13.8	OK	7.5	-1.0	7.7	261.9	OK
19.4	1.4	-0.9	-0.2	25.2	1.8	-1.2	-0.3	0.1	13.8	OK	9.2	-0.2	9.2	261.9	OK
36.3	2.7	-1.9	-1.4	47.2	3.5	-2.5	-1.8	0.2	13.8	OK	19.4	-1.3	19.5	261.9	OK

36.1	2.6	-0.9	-1.7	46.9	3.4	-1.2	-2.2	0.2	13.8	OK	10.1	-1.6	10.4	261.9	OK
12.3	0.9	-2.4	-0.4	16.0	1.2	-3.2	-0.5	0.1	13.8	OK	23.7	-0.4	23.7	261.9	OK
18.2	1.3	-6.6	-0.7	23.7	1.7	-8.5	-0.9	0.1	13.8	OK	63.0	-0.6	63.0	261.9	OK
18.1	1.3	-3.8	-1.1	23.5	1.7	-5.0	-1.5	0.1	13.8	OK	37.1	-1.1	37.2	261.9	OK
55.4	4.1	-0.5	-1.8	72.0	5.3	-0.7	-2.3	0.3	13.8	OK	6.9	-1.7	7.5	261.9	OK
14.7	1.1	-1.8	-1.5	19.2	1.4	-2.3	-2.0	0.1	13.8	OK	17.6	-1.4	17.8	261.9	OK
14.0	1.0	-4.5	-1.2	18.2	1.3	-5.9	-1.6	0.1	13.8	OK	43.7	-1.1	43.8	261.9	OK
0.0	-13.3	-1.6	-2.6	0.0	-17.3	-2.1	-3.4	0.0	13.8	OK	20.9	-2.4	21.3	261.9	OK
0.0	-7.4	-0.5	-0.1	0.0	-9.7	-0.7	-0.2	0.0	13.8	OK	8.3	-0.1	8.3	261.9	OK
6.8	0.5	-2.6	-0.4	8.8	0.6	-3.3	-0.6	0.0	13.8	OK	24.5	-0.4	24.5	261.9	OK
0.0	-28.3	-2.0	-2.1	0.0	-36.8	-2.6	-2.7	0.0	13.8	OK	30.9	-1.9	31.1	261.9	OK
0.0	-38.0	-2.5	-11.4	0.0	-49.4	-3.2	-14.9	0.0	13.8	OK	39.7	-10.6	43.7	261.9	OK
16.9	1.2	-5.6	-3.1	21.9	1.6	-7.3	-4.0	0.1	13.8	OK	54.0	-2.9	54.2	261.9	OK
4.9	0.4	-1.8	-1.6	6.3	0.5	-2.3	-2.1	0.0	13.8	OK	16.9	-1.5	17.1	261.9	OK
5.8	0.4	-2.9	-2.5	7.5	0.5	-3.8	-3.2	0.0	13.8	OK	27.8	-2.3	28.1	261.9	OK
0.0	-31.3	2.6	7.2	0.0	-40.8	3.4	9.4	0.0	13.8	OK	38.1	6.7	39.8	261.9	OK
3.7	0.3	-2.4	-1.2	4.8	0.4	-3.1	-1.5	0.0	13.8	OK	22.5	-1.1	22.6	261.9	OK
13.2	1.0	-4.1	-2.5	17.2	1.3	-5.4	-3.2	0.1	13.8	OK	39.7	-2.3	39.9	261.9	OK
0.0	-33.3	0.9	1.2	0.0	-43.3	1.2	1.5	0.0	13.8	OK	23.1	1.1	23.2	261.9	OK
0.0	-14.4	0.4	-1.1	0.0	-18.7	0.6	-1.5	0.0	13.8	OK	10.3	-1.0	10.4	261.9	OK
9.4	0.7	5.4	4.6	12.2	0.9	7.1	6.0	0.0	13.8	OK	52.0	4.3	52.5	261.9	OK
15.6	1.1	-2.7	5.7	20.3	1.5	-3.5	7.5	0.1	13.8	OK	25.8	5.3	27.4	261.9	OK
9.7	0.7	-1.3	4.1	12.6	0.9	-1.7	5.3	0.1	13.8	OK	12.8	3.8	14.4	261.9	OK
2.5	0.2	9.4	5.3	3.2	0.2	12.2	7.0	0.0	13.8	OK	89.4	5.0	89.8	261.9	OK
0.0	-9.2	6.8	4.0	0.0	-12.0	8.9	5.3	0.0	13.8	OK	68.8	3.7	69.1	261.9	OK
19.4	1.4	-5.7	1.7	25.2	1.8	-7.5	2.2	0.1	13.8	OK	55.2	1.6	55.3	261.9	OK
14.4	1.1	-4.3	1.4	18.7	1.4	-5.6	1.9	0.1	13.8	OK	41.7	1.3	41.8	261.9	OK
0.7	0.1	2.5	3.8	0.9	0.1	3.3	4.9	0.0	13.8	OK	24.0	3.5	24.7	261.9	OK
6.0	0.4	-4.5	-1.6	7.7	0.6	-5.9	-2.1	0.0	13.8	OK	43.4	-1.5	43.5	261.9	OK
10.7	0.8	5.5	-5.1	14.0	1.0	7.1	-6.6	0.1	13.8	OK	52.7	-4.7	53.3	261.9	OK
0.0	-11.9	6.9	-3.7	0.0	-15.5	9.0	-4.8	0.0	13.8	OK	70.7	-3.4	71.0	261.9	OK
3.7	0.3	9.4	-5.5	4.9	0.4	12.2	-7.2	0.0	13.8	OK	89.8	-5.1	90.2	261.9	OK
4.3	0.3	-1.4	-3.8	5.6	0.4	-1.8	-4.9	0.0	13.8	OK	13.5	-3.5	14.8	261.9	OK
18.2	1.3	-2.8	-6.2	23.7	1.7	-3.7	-8.1	0.1	13.8	OK	27.7	-5.7	29.4	261.9	OK
0.0	-1.2	2.6	-3.7	0.0	-1.5	3.4	-4.8	0.0	13.8	OK	25.4	-3.4	26.1	261.9	OK
20.5	1.5	-6.1	-2.9	26.7	2.0	-7.9	-3.8	0.1	13.8	OK	58.4	-2.7	58.6	261.9	OK
0.0	-37.0	-0.8	0.2	0.0	-48.1	-1.1	0.2	0.0	13.8	OK	23.7	0.1	23.7	261.9	OK
10.0	0.7	-2.0	0.0	13.1	1.0	-2.6	0.0	0.1	13.8	OK	19.5	0.0	19.5	261.9	OK
27.5	2.0	-1.5	1.2	35.7	2.6	-2.0	1.5	0.1	13.8	OK	15.4	1.1	15.6	261.9	OK
0.0	-6.5	-1.8	0.0	0.0	-8.5	-2.3	0.0	0.0	13.8	OK	19.9	0.0	19.9	261.9	OK
14.7	1.1	-0.9	0.3	19.1	1.4	-1.2	0.4	0.1	13.8	OK	9.3	0.3	9.3	261.9	OK
6.4	0.5	-3.9	0.0	8.3	0.6	-5.1	0.0	0.0	13.8	OK	37.6	0.0	37.6	261.9	OK
5.4	0.4	-1.0	1.9	7.0	0.5	-1.4	2.5	0.0	13.8	OK	10.2	1.8	10.6	261.9	OK
11.1	0.8	-3.6	0.2	14.5	1.1	-4.7	0.3	0.1	13.8	OK	34.5	0.2	34.5	261.9	OK
12.9	0.9	-4.6	2.1	16.8	1.2	-5.9	2.7	0.1	13.8	OK	44.0	1.9	44.1	261.9	OK
0.0	-2.0	-2.3	1.1	0.0	-2.6	-3.0	1.4	0.0	13.8	OK	22.6	1.0	22.7	261.9	OK
8.2	0.6	0.5	-1.0	10.6	0.8	0.6	-1.3	0.0	13.8	OK	4.8	-0.9	5.1	261.9	OK

15.8	1.2	-0.7	1.4	20.6	1.5	-0.9	1.9	0.1	13.8	OK	6.9	1.3	7.3	261.9	OK
20.6	1.5	-6.4	0.0	26.8	2.0	-8.4	0.0	0.1	13.8	OK	62.0	0.0	62.0	261.9	OK
9.2	0.7	-3.1	1.9	11.9	0.9	-4.0	2.5	0.0	13.8	OK	29.7	1.8	29.9	261.9	OK
0.0	-37.7	-0.4	0.9	0.0	-49.0	-0.5	1.2	0.0	13.8	OK	19.9	0.8	20.0	261.9	OK
0.0	-2.5	-3.1	1.5	0.0	-3.2	-4.0	1.9	0.0	13.8	OK	30.2	1.4	30.3	261.9	OK
0.0	-52.1	-1.7	0.7	0.0	-67.8	-2.2	1.0	0.0	13.8	OK	38.1	0.7	38.1	261.9	OK
1.0	0.1	-4.0	0.4	1.3	0.1	-5.3	0.5	0.0	13.8	OK	38.5	0.4	38.5	261.9	OK
8.8	0.6	-5.2	2.2	11.4	0.8	-6.7	2.8	0.0	13.8	OK	49.7	2.0	49.8	261.9	OK
16.7	1.2	-5.5	1.5	21.7	1.6	-7.1	2.0	0.1	13.8	OK	52.8	1.4	52.9	261.9	OK
4.8	0.4	-4.2	1.6	6.3	0.5	-5.4	2.1	0.0	13.8	OK	40.0	1.5	40.1	261.9	OK
0.0	-121.0	-1.0	0.2	0.0	-157.4	-1.4	0.3	0.0	13.8	OK	61.5	0.2	61.5	261.9	OK
0.0	-7.3	-3.3	1.3	0.0	-9.5	-4.3	1.7	0.0	13.8	OK	34.7	1.2	34.8	261.9	OK
0.0	-35.8	-2.3	0.5	0.0	-46.5	-3.0	0.6	0.0	13.8	OK	37.5	0.4	37.5	261.9	OK
5.3	0.4	-1.1	1.6	6.9	0.5	-1.4	2.1	0.0	13.8	OK	10.5	1.5	10.9	261.9	OK
0.0	-22.2	-2.1	1.5	0.0	-28.9	-2.8	1.9	0.0	13.8	OK	29.9	1.4	30.0	261.9	OK
0.0	-176.3	-0.5	0.2	0.0	-229.2	-0.6	0.2	0.0	13.8	OK	79.6	0.2	79.6	261.9	OK
22.5	1.6	-6.9	1.4	29.2	2.1	-9.0	1.9	0.1	13.8	OK	66.5	1.3	66.6	261.9	OK
25.4	1.9	-6.7	-2.5	33.0	2.4	-8.7	-3.3	0.1	13.8	OK	64.4	-2.4	64.5	261.9	OK
6.2	0.5	-2.1	-5.2	8.0	0.6	-2.7	-6.8	0.0	13.8	OK	19.8	-4.9	21.5	261.9	OK
2.4	0.2	9.8	-2.4	3.1	0.2	12.8	-3.1	0.0	13.8	OK	93.8	-2.2	93.9	261.9	OK
17.0	1.2	-1.9	-7.1	22.1	1.6	-2.4	-9.3	0.1	13.8	OK	18.2	-6.6	21.5	261.9	OK
11.2	0.8	5.1	-7.4	14.6	1.1	6.6	-9.6	0.1	13.8	OK	48.5	-6.8	49.9	261.9	OK
0.0	-4.6	4.2	-5.8	0.0	-5.9	5.5	-7.5	0.0	13.8	OK	42.0	-5.3	43.0	261.9	OK
0.0	-9.7	7.2	-1.3	0.0	-12.6	9.3	-1.8	0.0	13.8	OK	72.4	-1.2	72.5	261.9	OK
11.2	0.8	-4.6	-0.1	14.6	1.1	-5.9	-0.2	0.1	13.8	OK	43.9	-0.1	43.9	261.9	OK
2.6	0.2	9.8	1.9	3.4	0.3	12.7	2.5	0.0	13.8	OK	93.4	1.8	93.4	261.9	OK
0.0	-2.6	4.4	5.6	0.0	-3.4	5.8	7.3	0.0	13.8	OK	43.4	5.2	44.3	261.9	OK
16.1	1.2	-1.0	5.7	20.9	1.5	-1.3	7.4	0.1	13.8	OK	9.9	5.3	13.5	261.9	OK
18.7	1.4	-5.0	1.9	24.2	1.8	-6.5	2.5	0.1	13.8	OK	48.1	1.8	48.2	261.9	OK
9.1	0.7	-3.5	0.5	11.8	0.9	-4.6	0.6	0.0	13.8	OK	33.8	0.4	33.8	261.9	OK
6.3	0.5	-1.3	4.7	8.2	0.6	-1.7	6.1	0.0	13.8	OK	12.5	4.4	14.6	261.9	OK
11.5	0.8	5.3	6.4	14.9	1.1	6.9	8.3	0.1	13.8	OK	51.0	5.9	52.0	261.9	OK
0.0	-9.3	7.3	1.5	0.0	-12.0	9.4	1.9	0.0	13.8	OK	73.1	1.3	73.1	261.9	OK
3.4	0.2	-3.9	0.1	4.4	0.3	-5.0	0.1	0.0	13.8	OK	37.1	0.0	37.1	261.9	OK
0.0	-5.5	-4.4	-0.9	0.0	-7.1	-5.7	-1.1	0.0	13.8	OK	44.1	-0.8	44.1	261.9	OK
0.0	-45.8	-2.5	-0.8	0.0	-59.5	-3.2	-1.0	0.0	13.8	OK	43.0	-0.7	43.0	261.9	OK
0.0	-2.3	-3.4	-1.1	0.0	-3.0	-4.4	-1.5	0.0	13.8	OK	33.5	-1.1	33.5	261.9	OK
0.0	-18.7	-0.3	-0.4	0.0	-24.3	-0.4	-0.6	0.0	13.8	OK	11.2	-0.4	11.2	261.9	OK
7.3	0.5	-0.2	-0.8	9.5	0.7	-0.2	-1.0	0.0	13.8	OK	1.9	-0.7	2.3	261.9	OK
0.0	-43.3	-1.4	-0.4	0.0	-56.3	-1.8	-0.6	0.0	13.8	OK	31.5	-0.4	31.5	261.9	OK
0.0	-47.0	-1.6	-0.7	0.0	-61.1	-2.1	-0.9	0.0	13.8	OK	35.6	-0.6	35.6	261.9	OK
0.0	-42.0	-1.0	-0.5	0.0	-54.6	-1.3	-0.7	0.0	13.8	OK	27.7	-0.5	27.7	261.9	OK
0.0	-20.6	-2.6	-0.3	0.0	-26.8	-3.4	-0.4	0.0	13.8	OK	33.5	-0.3	33.5	261.9	OK
12.5	0.9	-5.4	-0.7	16.2	1.2	-7.0	-0.9	0.1	13.8	OK	51.7	-0.6	51.7	261.9	OK
0.0	-16.5	-3.3	-0.7	0.0	-21.5	-4.4	-1.0	0.0	13.8	OK	38.9	-0.7	38.9	261.9	OK
0.0	-44.0	-0.9	-0.6	0.0	-57.2	-1.2	-0.7	0.0	13.8	OK	27.2	-0.5	27.3	261.9	OK
0.0	-26.3	-2.1	-0.9	0.0	-34.2	-2.7	-1.1	0.0	13.8	OK	31.1	-0.8	31.1	261.9	OK

0.0	-1.5	-4.5	-0.3	0.0	-1.9	-5.8	-0.3	0.0	13.8	OK	43.0	-0.2	43.0	261.9	OK
0.0	-30.4	-1.5	-1.0	0.0	-39.5	-1.9	-1.3	0.0	13.8	OK	27.2	-0.9	27.3	261.9	OK
0.0	-25.3	-1.8	-0.3	0.0	-32.9	-2.3	-0.3	0.0	13.8	OK	27.7	-0.2	27.7	261.9	OK
0.0	-4.0	-3.1	-0.1	0.0	-5.2	-4.1	-0.1	0.0	13.8	OK	31.5	-0.1	31.5	261.9	OK
0.0	-16.5	-1.0	-0.9	0.0	-21.4	-1.3	-1.2	0.0	13.8	OK	16.5	-0.8	16.6	261.9	OK
0.0	-8.7	0.1	-0.8	0.0	-11.3	0.1	-1.1	0.0	13.8	OK	4.7	-0.8	4.9	261.9	OK
7.5	0.6	-5.3	-1.4	9.8	0.7	-6.8	-1.8	0.0	13.8	OK	50.3	-1.3	50.3	261.9	OK
0.0	-10.2	-2.6	-1.1	0.0	-13.2	-3.4	-1.5	0.0	13.8	OK	28.9	-1.0	29.0	261.9	OK
0.0	-19.4	-3.2	-1.3	0.0	-25.2	-4.2	-1.6	0.0	13.8	OK	39.2	-1.2	39.2	261.9	OK
0.0	-55.4	-0.7	-1.2	0.0	-72.0	-0.9	-1.6	0.0	13.8	OK	30.2	-1.1	30.3	261.9	OK
0.0	-24.0	-2.6	-0.6	0.0	-31.2	-3.3	-0.8	0.0	13.8	OK	34.6	-0.5	34.6	261.9	OK
8.5	0.6	-3.9	-1.4	11.1	0.8	-5.1	-1.9	0.0	13.8	OK	37.5	-1.3	37.6	261.9	OK
0.0	-38.8	-0.7	-0.5	0.0	-50.4	-0.9	-0.6	0.0	13.8	OK	23.4	-0.4	23.4	261.9	OK
0.0	-29.0	-1.4	-0.9	0.0	-37.6	-1.8	-1.2	0.0	13.8	OK	25.6	-0.9	25.6	261.9	OK
8.6	0.6	6.2	4.5	11.2	0.8	8.1	5.9	0.0	13.8	OK	59.6	4.2	60.0	261.9	OK
16.3	1.2	-1.7	5.9	21.2	1.6	-2.2	7.7	0.1	13.8	OK	16.5	5.5	19.0	261.9	OK
7.9	0.6	-0.5	4.4	10.2	0.7	-0.7	5.8	0.0	13.8	OK	5.4	4.1	8.9	261.9	OK
2.5	0.2	9.9	4.8	3.2	0.2	12.8	6.2	0.0	13.8	OK	93.9	4.4	94.2	261.9	OK
0.0	-9.3	7.8	3.6	0.0	-12.0	10.1	4.6	0.0	13.8	OK	78.3	3.3	78.5	261.9	OK
16.2	1.2	-4.7	2.3	21.1	1.5	-6.1	3.0	0.1	13.8	OK	45.2	2.2	45.3	261.9	OK
11.1	0.8	-3.8	1.5	14.4	1.1	-4.9	1.9	0.1	13.8	OK	36.2	1.4	36.2	261.9	OK
0.0	-1.0	3.6	4.1	0.0	-1.3	4.6	5.3	0.0	13.8	OK	34.3	3.8	34.9	261.9	OK
11.4	0.8	-5.1	-1.9	14.8	1.1	-6.6	-2.5	0.1	13.8	OK	49.0	-1.8	49.1	261.9	OK
20.5	1.5	-6.4	-3.4	26.6	2.0	-8.4	-4.4	0.1	13.8	OK	61.9	-3.1	62.1	261.9	OK
0.0	-10.7	7.7	-3.6	0.0	-13.9	10.0	-4.7	0.0	13.8	OK	78.2	-3.3	78.4	261.9	OK
2.8	0.2	9.7	-5.4	3.6	0.3	12.6	-7.0	0.0	13.8	OK	92.7	-5.0	93.1	261.9	OK
5.8	0.4	-1.4	-4.5	7.5	0.6	-1.8	-5.9	0.0	13.8	OK	13.7	-4.2	15.5	261.9	OK
18.9	1.4	-2.9	-7.0	24.5	1.8	-3.8	-9.1	0.1	13.8	OK	28.5	-6.5	30.6	261.9	OK
0.0	-2.3	3.1	-4.3	0.0	-3.0	4.0	-5.6	0.0	13.8	OK	30.2	-4.0	31.0	261.9	OK
9.4	0.7	5.9	-5.4	12.2	0.9	7.7	-7.0	0.0	13.8	OK	56.6	-5.0	57.3	261.9	OK
0.0	-71.9	-1.2	1.0	0.0	-93.4	-1.6	1.3	0.0	13.8	OK	42.2	0.9	42.2	261.9	OK
0.0	-31.7	-2.2	0.8	0.0	-41.3	-2.9	1.1	0.0	13.8	OK	34.5	0.8	34.5	261.9	OK
0.0	-3.3	-3.2	0.2	0.0	-4.3	-4.1	0.3	0.0	13.8	OK	31.6	0.2	31.6	261.9	OK
0.0	-9.0	-2.5	1.0	0.0	-11.7	-3.2	1.4	0.0	13.8	OK	27.3	1.0	27.3	261.9	OK
0.0	-45.8	-1.6	0.5	0.0	-59.6	-2.1	0.7	0.0	13.8	OK	35.2	0.5	35.2	261.9	OK
0.0	-133.1	-0.1	-1.9	0.0	-173.0	-0.2	-2.4	0.0	13.8	OK	58.0	-1.7	58.0	261.9	OK
0.0	-34.9	-0.6	2.2	0.0	-45.4	-0.8	2.8	0.0	13.8	OK	20.9	2.0	21.2	261.9	OK
1.8	0.1	-4.5	0.8	2.3	0.2	-5.8	1.1	0.0	13.8	OK	42.5	0.8	42.6	261.9	OK
10.5	0.8	-5.5	2.1	13.7	1.0	-7.1	2.8	0.1	13.8	OK	52.5	2.0	52.6	261.9	OK
0.0	-20.7	-3.0	1.6	0.0	-26.9	-3.9	2.1	0.0	13.8	OK	37.1	1.5	37.2	261.9	OK
11.0	0.8	-4.9	-0.1	14.3	1.0	-6.4	-0.1	0.1	13.8	OK	47.2	-0.1	47.2	261.9	OK
0.0	-62.2	-0.8	0.3	0.0	-80.9	-1.1	0.4	0.0	13.8	OK	34.2	0.3	34.2	261.9	OK
20.1	1.5	-7.4	0.1	26.2	1.9	-9.6	0.1	0.1	13.8	OK	70.8	0.1	70.8	261.9	OK
8.8	0.6	-4.2	1.7	11.5	0.8	-5.5	2.2	0.0	13.8	OK	40.2	1.6	40.3	261.9	OK
48.0	3.5	-0.8	5.1	62.4	4.6	-1.1	6.7	0.2	13.8	OK	9.3	4.8	12.4	261.9	OK
0.0	-213.9	0.1	-0.9	0.0	-278.1	0.1	-1.2	0.0	13.8	OK	91.8	-0.9	91.8	261.9	OK
4.6	0.3	-2.9	1.6	6.0	0.4	-3.8	2.0	0.0	13.8	OK	28.0	1.5	28.1	261.9	OK

0.0	-164.1	-0.7	0.4	0.0	-213.4	-0.9	0.5	0.0	13.8	OK	76.7	0.3	76.7	261.9	OK
0.0	-81.8	-1.5	0.8	0.0	-106.3	-1.9	1.0	0.0	13.8	OK	48.9	0.7	48.9	261.9	OK
0.0	-2.4	-3.8	0.8	0.0	-3.2	-4.9	1.0	0.0	13.8	OK	36.9	0.7	36.9	261.9	OK
6.6	0.5	-4.7	1.3	8.6	0.6	-6.1	1.7	0.0	13.8	OK	44.8	1.2	44.8	261.9	OK
24.3	1.8	-5.2	1.2	31.6	2.3	-6.8	1.6	0.1	13.8	OK	50.5	1.1	50.5	261.9	OK
13.9	1.0	-3.6	1.9	18.1	1.3	-4.7	2.5	0.1	13.8	OK	34.6	1.8	34.8	261.9	OK
0.0	-16.7	-3.0	0.9	0.0	-21.7	-3.9	1.1	0.0	13.8	OK	35.6	0.8	35.6	261.9	OK
25.6	1.9	-6.3	2.5	33.3	2.4	-8.2	3.2	0.1	13.8	OK	60.8	2.3	61.0	261.9	OK
0.0	-17.4	-1.5	2.4	0.0	-22.7	-2.0	3.1	0.0	13.8	OK	22.0	2.2	22.4	261.9	OK
0.0	-31.6	-1.8	1.9	0.0	-41.1	-2.4	2.5	0.0	13.8	OK	30.9	1.8	31.0	261.9	OK
0.0	-53.0	-2.2	0.7	0.0	-68.9	-2.8	1.0	0.0	13.8	OK	43.4	0.7	43.4	261.9	OK
29.7	2.2	-6.4	-1.7	38.6	2.8	-8.3	-2.2	0.2	13.8	OK	61.7	-1.6	61.7	261.9	OK
6.4	0.5	-1.3	-4.5	8.3	0.6	-1.6	-5.9	0.0	13.8	OK	12.2	-4.2	14.3	261.9	OK
3.1	0.2	9.6	-0.9	4.0	0.3	12.4	-1.2	0.0	13.8	OK	91.2	-0.8	91.2	261.9	OK
17.6	1.3	-0.5	-6.6	22.9	1.7	-0.6	-8.6	0.1	13.8	OK	5.1	-6.1	11.8	261.9	OK
0.0	-6.5	3.8	-5.0	0.0	-8.4	4.9	-6.4	0.0	13.8	OK	38.9	-4.6	39.7	261.9	OK
0.0	-8.2	7.2	-1.3	0.0	-10.6	9.4	-1.7	0.0	13.8	OK	72.5	-1.2	72.5	261.9	OK
9.1	0.7	4.3	-7.5	11.8	0.9	5.6	-9.8	0.0	13.8	OK	41.5	-7.0	43.2	261.9	OK
7.7	0.6	-4.5	-0.7	10.0	0.7	-5.8	-0.9	0.0	13.8	OK	42.8	-0.6	42.8	261.9	OK
0.0	-5.7	3.7	5.0	0.0	-7.4	4.9	6.5	0.0	13.8	OK	38.0	4.6	38.9	261.9	OK
3.2	0.2	9.5	0.6	4.1	0.3	12.3	0.8	0.0	13.8	OK	90.2	0.5	90.2	261.9	OK
16.7	1.2	-0.4	5.9	21.7	1.6	-0.5	7.6	0.1	13.8	OK	4.2	5.4	10.3	261.9	OK
25.6	1.9	-5.8	1.3	33.2	2.4	-7.6	1.7	0.1	13.8	OK	56.5	1.2	56.5	261.9	OK
7.9	0.6	-4.1	0.8	10.3	0.8	-5.4	1.1	0.0	13.8	OK	39.6	0.8	39.7	261.9	OK
6.4	0.5	-1.1	4.6	8.3	0.6	-1.5	6.0	0.0	13.8	OK	10.9	4.2	13.1	261.9	OK
9.9	0.7	4.2	6.8	12.9	0.9	5.5	8.9	0.1	13.8	OK	40.4	6.3	41.9	261.9	OK
0.0	-7.2	7.2	1.6	0.0	-9.3	9.4	2.0	0.0	13.8	OK	71.7	1.4	71.7	261.9	OK
8.4	0.6	-4.4	-0.7	10.9	0.8	-5.7	-0.9	0.0	13.8	OK	41.7	-0.6	41.8	261.9	OK
0.0	-18.3	-2.4	-0.9	0.0	-23.8	-3.1	-1.1	0.0	13.8	OK	30.6	-0.8	30.7	261.9	OK
18.1	1.3	-4.4	-1.4	23.5	1.7	-5.7	-1.9	0.1	13.8	OK	42.6	-1.3	42.7	261.9	OK
5.5	0.4	-3.6	-0.8	7.1	0.5	-4.7	-1.1	0.0	13.8	OK	34.4	-0.8	34.4	261.9	OK
0.0	-38.6	-0.4	0.1	0.0	-50.2	-0.5	0.2	0.0	13.8	OK	20.1	0.1	20.1	261.9	OK
0.0	-39.6	-1.5	-0.5	0.0	-51.5	-1.9	-0.7	0.0	13.8	OK	31.1	-0.5	31.1	261.9	OK
0.0	-39.5	-1.8	-0.5	0.0	-51.4	-2.3	-0.6	0.0	13.8	OK	33.6	-0.4	33.6	261.9	OK
0.0	-29.2	-0.9	-0.5	0.0	-37.9	-1.1	-0.7	0.0	13.8	OK	20.5	-0.5	20.5	261.9	OK
0.0	-5.5	-2.8	-0.7	0.0	-7.1	-3.7	-0.9	0.0	13.8	OK	29.2	-0.6	29.2	261.9	OK
21.0	1.5	-6.1	-0.4	27.4	2.0	-7.9	-0.5	0.1	13.8	OK	58.6	-0.3	58.6	261.9	OK
7.1	0.5	-3.6	-0.5	9.3	0.7	-4.7	-0.7	0.0	13.8	OK	34.3	-0.5	34.3	261.9	OK
0.0	-10.5	-0.3	-0.9	0.0	-13.6	-0.4	-1.1	0.0	13.8	OK	7.3	-0.8	7.4	261.9	OK
0.0	-72.4	-0.9	-0.6	0.0	-94.1	-1.1	-0.7	0.0	13.8	OK	39.0	-0.5	39.0	261.9	OK
0.0	-10.1	-2.1	-0.6	0.0	-13.2	-2.7	-0.8	0.0	13.8	OK	24.1	-0.6	24.2	261.9	OK
160.3	11.8	-2.1	1.3	208.4	15.3	-2.7	1.7	0.8	13.8	OK	24.8	1.2	24.9	261.9	OK
102.7	7.5	-1.0	0.5	133.5	9.8	-1.3	0.7	0.5	13.8	OK	12.7	0.5	12.8	261.9	OK
231.0	16.9	-0.1	2.0	300.3	22.0	-0.1	2.6	1.2	13.8	OK	8.2	1.9	8.8	261.9	OK
28.0	2.1	-0.3	0.0	36.5	2.7	-0.3	0.0	0.1	13.8	OK	3.3	0.0	3.3	261.9	OK
23.2	1.7	-4.4	2.7	30.1	2.2	-5.7	3.4	0.1	13.8	OK	42.6	2.5	42.8	261.9	OK
75.1	5.5	-4.0	1.4	97.6	7.2	-5.2	1.9	0.4	13.8	OK	40.7	1.3	40.8	261.9	OK

69.0	5.1	-0.6	0.0	89.8	6.6	-0.8	0.1	0.4	13.8	OK	8.3	0.0	8.3	261.9	OK
61.7	4.5	-2.2	1.1	80.1	5.9	-2.9	1.5	0.3	13.8	OK	23.3	1.0	23.4	261.9	OK
46.8	3.4	-2.9	0.8	60.9	4.5	-3.7	1.0	0.2	13.8	OK	28.8	0.7	28.8	261.9	OK
268.6	19.7	-0.9	1.6	349.1	25.6	-1.1	2.1	1.4	13.8	OK	16.8	1.5	17.0	261.9	OK
121.8	8.9	-2.5	1.7	158.3	11.6	-3.3	2.3	0.6	13.8	OK	27.8	1.6	27.9	261.9	OK
211.6	15.5	-1.2	1.6	275.1	20.2	-1.5	2.1	1.1	13.8	OK	17.7	1.5	17.9	261.9	OK
50.0	3.7	-5.1	2.5	65.0	4.8	-6.7	3.3	0.3	13.8	OK	50.3	2.3	50.5	261.9	OK
85.1	6.2	-1.4	0.4	110.6	8.1	-1.9	0.6	0.4	13.8	OK	16.4	0.4	16.4	261.9	OK
29.5	2.2	-5.3	-3.0	38.3	2.8	-6.9	-3.9	0.2	13.8	OK	51.4	-2.8	51.6	261.9	OK
1.8	0.1	-1.0	-4.5	2.3	0.2	-1.3	-5.8	0.0	13.8	OK	9.6	-4.1	12.0	261.9	OK
6.6	0.5	6.9	0.0	8.6	0.6	9.0	0.0	0.0	13.8	OK	65.8	0.0	65.8	261.9	OK
11.4	0.8	0.1	-6.0	14.8	1.1	0.1	-7.9	0.1	13.8	OK	0.9	-5.6	9.7	261.9	OK
7.1	0.5	3.7	-5.7	9.3	0.7	4.8	-7.4	0.0	13.8	OK	35.5	-5.3	36.7	261.9	OK
0.0	-5.6	3.7	-3.8	0.0	-7.3	4.8	-5.0	0.0	13.8	OK	37.4	-3.5	37.9	261.9	OK
0.0	-6.4	5.4	-0.3	0.0	-8.4	7.0	-0.4	0.0	13.8	OK	54.2	-0.3	54.3	261.9	OK
11.5	0.8	-3.5	-1.2	14.9	1.1	-4.5	-1.6	0.1	13.8	OK	33.6	-1.2	33.7	261.9	OK
0.0	-3.8	3.2	4.1	0.0	-5.0	4.1	5.3	0.0	13.8	OK	31.7	3.8	32.4	261.9	OK
11.5	0.8	-0.5	5.4	15.0	1.1	-0.6	7.0	0.1	13.8	OK	4.7	5.0	9.8	261.9	OK
24.9	1.8	-4.9	2.5	32.4	2.4	-6.4	3.3	0.1	13.8	OK	47.9	2.3	48.0	261.9	OK
6.8	0.5	6.7	0.6	8.9	0.6	8.6	0.8	0.0	13.8	OK	63.6	0.6	63.6	261.9	OK
9.7	0.7	-3.6	1.2	12.6	0.9	-4.7	1.5	0.1	13.8	OK	34.7	1.1	34.7	261.9	OK
4.2	0.3	-1.4	4.3	5.5	0.4	-1.8	5.6	0.0	13.8	OK	13.2	4.0	14.9	261.9	OK
9.3	0.7	3.0	5.6	12.1	0.9	3.9	7.3	0.0	13.8	OK	28.8	5.2	30.2	261.9	OK
0.0	-5.0	5.1	1.0	0.0	-6.5	6.7	1.3	0.0	13.8	OK	51.0	0.9	51.0	261.9	OK
24.5	1.8	-3.9	-0.9	31.8	2.3	-5.1	-1.2	0.1	13.8	OK	38.2	-0.8	38.2	261.9	OK
62.7	4.6	-3.5	-1.6	81.4	6.0	-4.6	-2.1	0.3	13.8	OK	35.4	-1.5	35.5	261.9	OK
116.1	8.5	-1.8	-1.4	150.9	11.1	-2.3	-1.8	0.6	13.8	OK	20.5	-1.3	20.7	261.9	OK
30.5	2.2	-3.1	-1.4	39.7	2.9	-4.0	-1.8	0.2	13.8	OK	30.5	-1.3	30.6	261.9	OK
0.0	-95.3	-0.4	0.1	0.0	-123.9	-0.5	0.2	0.0	13.8	OK	44.5	0.1	44.5	261.9	OK
136.4	10.0	-0.2	-0.9	177.3	13.0	-0.3	-1.1	0.7	13.8	OK	6.4	-0.8	6.6	261.9	OK
40.4	3.0	-1.0	-0.3	52.6	3.9	-1.3	-0.4	0.2	13.8	OK	11.1	-0.3	11.1	261.9	OK
132.3	9.7	-1.4	-1.0	171.9	12.6	-1.8	-1.3	0.7	13.8	OK	17.5	-0.9	17.6	261.9	OK
19.6	1.4	-0.6	-0.2	25.5	1.9	-0.8	-0.3	0.1	13.8	OK	6.5	-0.2	6.5	261.9	OK
47.7	3.5	-2.1	-0.5	62.0	4.5	-2.8	-0.6	0.2	13.8	OK	21.6	-0.5	21.7	261.9	OK
35.1	2.6	-5.2	-1.2	45.6	3.3	-6.8	-1.5	0.2	13.8	OK	50.7	-1.1	50.7	261.9	OK
82.3	6.0	-2.8	-1.1	106.9	7.8	-3.7	-1.4	0.4	13.8	OK	29.6	-1.0	29.7	261.9	OK
109.8	8.1	-0.6	-1.2	142.8	10.5	-0.8	-1.5	0.6	13.8	OK	9.3	-1.1	9.5	261.9	OK
50.8	3.7	-1.6	-0.7	66.0	4.8	-2.1	-1.0	0.3	13.8	OK	17.0	-0.7	17.0	261.9	OK
51.9	3.8	-5.2	-1.3	67.5	4.9	-6.7	-1.6	0.3	13.8	OK	50.7	-1.2	50.7	261.9	OK
64.0	4.7	-1.6	-1.3	83.2	6.1	-2.1	-1.7	0.3	13.8	OK	17.2	-1.2	17.3	261.9	OK
38.9	2.9	-2.1	-0.5	50.6	3.7	-2.7	-0.7	0.2	13.8	OK	21.0	-0.5	21.0	261.9	OK
32.2	2.4	-3.7	-0.6	41.9	3.1	-4.9	-0.8	0.2	13.8	OK	36.7	-0.6	36.7	261.9	OK
68.4	5.0	-1.1	-1.1	88.9	6.5	-1.4	-1.4	0.4	13.8	OK	12.4	-1.0	12.5	261.9	OK
47.7	3.5	-0.2	-1.7	62.0	4.5	-0.3	-2.2	0.2	13.8	OK	3.6	-1.6	4.5	261.9	OK
43.0	3.2	-6.5	-2.6	55.9	4.1	-8.5	-3.4	0.2	13.8	OK	63.6	-2.4	63.7	261.9	OK
36.5	2.7	-3.1	-1.2	47.5	3.5	-4.0	-1.6	0.2	13.8	OK	30.3	-1.1	30.3	261.9	OK
70.6	5.2	-3.4	-1.7	91.7	6.7	-4.5	-2.3	0.4	13.8	OK	35.0	-1.6	35.1	261.9	OK

0.0	-21.0	-0.3	0.1	0.0	-27.3	-0.5	0.1	0.0	13.8	OK	12.3	0.1	12.3	261.9	OK
73.1	5.4	-2.7	-1.1	95.0	7.0	-3.5	-1.5	0.4	13.8	OK	28.0	-1.1	28.1	261.9	OK
20.5	1.5	-5.2	-2.4	26.6	2.0	-6.7	-3.2	0.1	13.8	OK	50.0	-2.3	50.2	261.9	OK
1.4	0.1	-0.8	-0.4	1.8	0.1	-1.1	-0.6	0.0	13.8	OK	8.0	-0.4	8.0	261.9	OK
41.1	3.0	-1.5	-0.7	53.4	3.9	-2.0	-0.9	0.2	13.8	OK	16.0	-0.6	16.0	261.9	OK
6.8	0.5	5.2	4.4	8.8	0.6	6.8	5.8	0.0	13.8	OK	49.7	4.1	50.2	261.9	OK
16.1	1.2	-2.2	7.1	21.0	1.5	-2.8	9.2	0.1	13.8	OK	21.2	6.6	24.1	261.9	OK
1.0	0.1	-0.9	4.9	1.3	0.1	-1.1	6.4	0.0	13.8	OK	8.2	4.6	11.4	261.9	OK
5.1	0.4	8.1	3.8	6.7	0.5	10.6	5.0	0.0	13.8	OK	77.6	3.5	77.8	261.9	OK
0.0	-8.5	7.0	3.0	0.0	-11.1	9.1	3.9	0.0	13.8	OK	70.2	2.7	70.4	261.9	OK
23.9	1.7	-5.8	3.9	31.0	2.3	-7.5	5.1	0.1	13.8	OK	55.9	3.6	56.3	261.9	OK
14.0	1.0	-5.0	2.6	18.2	1.3	-6.5	3.3	0.1	13.8	OK	48.1	2.4	48.3	261.9	OK
0.0	-2.9	2.9	4.0	0.0	-3.7	3.7	5.1	0.0	13.8	OK	28.6	3.7	29.3	261.9	OK
7.4	0.5	-4.2	-2.5	9.6	0.7	-5.4	-3.3	0.0	13.8	OK	40.1	-2.3	40.3	261.9	OK
24.3	1.8	-4.9	-4.4	31.5	2.3	-6.3	-5.7	0.1	13.8	OK	47.1	-4.1	47.6	261.9	OK
0.0	-8.6	7.2	-2.4	0.0	-11.1	9.3	-3.1	0.0	13.8	OK	71.9	-2.2	72.0	261.9	OK
4.7	0.3	8.5	-3.5	6.1	0.4	11.1	-4.5	0.0	13.8	OK	81.1	-3.2	81.3	261.9	OK
0.0	-1.3	-0.1	-4.6	0.0	-1.7	-0.1	-6.0	0.0	13.8	OK	1.1	-4.3	7.5	261.9	OK
15.7	1.2	-1.2	-7.1	20.4	1.5	-1.6	-9.2	0.1	13.8	OK	11.9	-6.6	16.5	261.9	OK
0.0	-4.5	3.5	-3.3	0.0	-5.9	4.6	-4.3	0.0	13.8	OK	35.6	-3.0	36.0	261.9	OK
7.6	0.6	5.9	-4.0	9.9	0.7	7.7	-5.2	0.0	13.8	OK	56.6	-3.7	57.0	261.9	OK
67.3	4.9	-0.6	0.0	87.5	6.4	-0.8	0.0	0.3	13.8	OK	7.7	0.0	7.7	261.9	OK
88.2	6.5	-1.5	0.3	114.7	8.4	-1.9	0.3	0.5	13.8	OK	16.8	0.2	16.8	261.9	OK
19.9	1.5	-2.5	0.4	25.9	1.9	-3.3	0.5	0.1	13.8	OK	24.6	0.4	24.6	261.9	OK
18.0	1.3	-2.0	0.7	23.4	1.7	-2.6	0.9	0.1	13.8	OK	19.4	0.7	19.4	261.9	OK
0.0	-6.4	-1.3	0.4	0.0	-8.4	-1.7	0.5	0.0	13.8	OK	15.5	0.3	15.5	261.9	OK
0.0	-6.5	-0.4	0.7	0.0	-8.5	-0.5	0.9	0.0	13.8	OK	6.7	0.6	6.8	261.9	OK
116.1	8.5	0.0	-1.0	150.9	11.1	0.0	-1.3	0.6	13.8	OK	3.9	-0.9	4.2	261.9	OK
72.1	5.3	-3.3	0.6	93.8	6.9	-4.3	0.8	0.4	13.8	OK	33.7	0.6	33.7	261.9	OK
60.1	4.4	-4.2	1.6	78.1	5.7	-5.5	2.1	0.3	13.8	OK	42.1	1.5	42.2	261.9	OK
81.7	6.0	-2.1	0.9	106.2	7.8	-2.8	1.2	0.4	13.8	OK	22.8	0.8	22.8	261.9	OK
17.5	1.3	-4.2	0.2	22.7	1.7	-5.5	0.3	0.1	13.8	OK	40.6	0.2	40.6	261.9	OK
0.0	-3.7	-1.0	0.4	0.0	-4.8	-1.3	0.5	0.0	13.8	OK	10.9	0.3	10.9	261.9	OK
42.9	3.1	-6.3	0.7	55.8	4.1	-8.2	0.9	0.2	13.8	OK	61.2	0.6	61.2	261.9	OK
19.0	1.4	-3.5	1.4	24.7	1.8	-4.5	1.8	0.1	13.8	OK	33.8	1.3	33.8	261.9	OK
32.3	2.4	-2.0	-0.9	42.0	3.1	-2.7	-1.2	0.2	13.8	OK	20.5	-0.9	20.5	261.9	OK
168.1	12.3	-0.7	-1.4	218.5	16.0	-0.9	-1.8	0.9	13.8	OK	11.7	-1.3	12.0	261.9	OK
51.8	3.8	-0.7	-0.3	67.3	4.9	-1.0	-0.4	0.3	13.8	OK	8.7	-0.3	8.7	261.9	OK
24.1	1.8	-1.5	-0.4	31.4	2.3	-1.9	-0.5	0.1	13.8	OK	14.9	-0.3	14.9	261.9	OK
278.7	20.4	-0.7	-1.6	362.3	26.6	-0.9	-2.1	1.4	13.8	OK	15.2	-1.5	15.4	261.9	OK
358.7	26.3	-0.4	-2.8	466.3	34.2	-0.6	-3.7	1.9	13.8	OK	15.5	-2.6	16.1	261.9	OK
21.9	1.6	-2.6	-0.8	28.5	2.1	-3.4	-1.0	0.1	13.8	OK	25.5	-0.7	25.5	261.9	OK
30.0	2.2	-1.2	-0.6	39.0	2.9	-1.5	-0.8	0.2	13.8	OK	12.2	-0.6	12.3	261.9	OK
62.8	4.6	-1.3	-1.1	81.6	6.0	-1.7	-1.5	0.3	13.8	OK	14.7	-1.0	14.8	261.9	OK
0.0	-3.9	0.1	0.8	0.0	-5.0	0.2	1.0	0.0	13.8	OK	3.0	0.7	3.3	261.9	OK
94.3	6.9	-1.1	-1.2	122.6	9.0	-1.5	-1.6	0.5	13.8	OK	13.7	-1.1	13.9	261.9	OK
11.9	0.9	-2.2	-1.1	15.5	1.1	-2.9	-1.5	0.1	13.8	OK	21.3	-1.1	21.3	261.9	OK

44.1	3.2	-0.2	-0.1	57.4	4.2	-0.3	-0.2	0.2	13.8	OK	3.3	-0.1	3.3	261.9	OK
57.6	4.2	-0.5	-0.4	74.9	5.5	-0.7	-0.6	0.3	13.8	OK	6.7	-0.4	6.7	261.9	OK
11.6	0.9	2.2	2.6	15.1	1.1	2.9	3.4	0.1	13.8	OK	21.5	2.4	21.9	261.9	OK
11.8	0.9	-0.8	3.6	15.3	1.1	-1.0	4.7	0.1	13.8	OK	7.8	3.4	9.8	261.9	OK
1.7	0.1	-0.3	2.3	2.3	0.2	-0.4	3.0	0.0	13.8	OK	2.7	2.1	4.5	261.9	OK
13.7	1.0	3.4	1.6	17.8	1.3	4.4	2.1	0.1	13.8	OK	32.8	1.5	32.9	261.9	OK
0.0	-2.3	3.1	1.1	0.0	-2.9	4.0	1.4	0.0	13.8	OK	30.5	1.0	30.5	261.9	OK
11.9	0.9	-2.2	1.9	15.5	1.1	-2.9	2.5	0.1	13.8	OK	21.6	1.8	21.8	261.9	OK
8.6	0.6	-2.1	1.2	11.2	0.8	-2.7	1.6	0.0	13.8	OK	20.3	1.1	20.4	261.9	OK
0.6	0.0	1.4	2.1	0.7	0.1	1.8	2.7	0.0	13.8	OK	13.0	2.0	13.4	261.9	OK
12.2	0.9	-2.7	-1.8	15.8	1.2	-3.5	-2.4	0.1	13.8	OK	26.4	-1.7	26.5	261.9	OK
0.0	-2.4	3.3	-0.5	0.0	-3.2	4.3	-0.6	0.0	13.8	OK	32.4	-0.4	32.4	261.9	OK
11.7	0.9	3.7	-1.1	15.2	1.1	4.8	-1.4	0.1	13.8	OK	35.7	-1.0	35.7	261.9	OK
1.6	0.1	-0.1	-3.0	2.1	0.2	-0.1	-3.8	0.0	13.8	OK	0.9	-2.7	4.8	261.9	OK
8.6	0.6	-0.7	-4.9	11.2	0.8	-0.9	-6.4	0.0	13.8	OK	7.0	-4.5	10.5	261.9	OK
0.0	-2.1	1.8	-2.0	0.0	-2.7	2.3	-2.6	0.0	13.8	OK	18.1	-1.8	18.4	261.9	OK
8.6	0.6	2.8	-2.8	11.1	0.8	3.6	-3.6	0.0	13.8	OK	27.0	-2.6	27.4	261.9	OK
14.0	1.0	-2.7	-3.1	18.1	1.3	-3.5	-4.1	0.1	13.8	OK	25.8	-2.9	26.3	261.9	OK
201.0	14.7	-0.9	1.4	261.4	19.2	-1.2	1.9	1.0	13.8	OK	15.0	1.3	15.1	261.9	OK
273.1	20.0	-0.6	1.6	355.0	26.0	-0.7	2.1	1.4	13.8	OK	13.9	1.5	14.1	261.9	OK
70.8	5.2	-1.2	0.5	92.0	6.7	-1.6	0.6	0.4	13.8	OK	14.1	0.4	14.1	261.9	OK
91.8	6.7	-1.0	0.6	119.4	8.8	-1.3	0.8	0.5	13.8	OK	12.1	0.6	12.1	261.9	OK
126.6	9.3	-0.5	0.4	164.5	12.1	-0.7	0.5	0.7	13.8	OK	8.9	0.4	8.9	261.9	OK
27.8	2.0	-2.6	1.0	36.1	2.6	-3.4	1.2	0.1	13.8	OK	25.5	0.9	25.5	261.9	OK
347.8	25.5	-0.6	3.0	452.2	33.1	-0.8	3.9	1.8	13.8	OK	16.4	2.8	17.1	261.9	OK
61.9	4.5	-2.2	1.3	80.5	5.9	-2.9	1.7	0.3	13.8	OK	23.1	1.2	23.2	261.9	OK
92.6	6.8	-1.7	1.3	120.3	8.8	-2.3	1.7	0.5	13.8	OK	19.5	1.2	19.6	261.9	OK
135.1	9.9	0.0	-1.3	175.6	12.9	0.1	-1.6	0.7	13.8	OK	4.7	-1.2	5.1	261.9	OK
148.7	10.9	-1.0	1.4	193.3	14.2	-1.3	1.8	0.8	13.8	OK	14.4	1.3	14.6	261.9	OK
41.7	3.1	-2.0	1.1	54.2	4.0	-2.6	1.4	0.2	13.8	OK	20.4	1.0	20.4	261.9	OK
153.9	11.3	-0.2	0.3	200.0	14.7	-0.3	0.4	0.8	13.8	OK	6.7	0.3	6.7	261.9	OK
31.5	2.3	-3.6	1.1	40.9	3.0	-4.7	1.5	0.2	13.8	OK	35.4	1.0	35.4	261.9	OK
0.0	-6.2	0.0	-0.1	0.0	-8.1	0.0	-0.2	0.0	13.8	OK	2.8	-0.1	2.8	261.9	OK
0.0	-6.9	0.0	-0.2	0.0	-9.0	0.0	-0.2	0.0	13.8	OK	3.2	-0.2	3.2	261.9	OK
0.0	-0.1	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	13.8	OK	0.1	0.0	0.1	261.9	OK
0.0	-3.8	0.0	0.0	0.0	-4.9	0.0	0.0	0.0	13.8	OK	1.8	0.0	1.8	261.9	OK
0.0	-5.9	0.0	-0.1	0.0	-7.7	0.0	-0.1	0.0	13.8	OK	2.7	-0.1	2.7	261.9	OK
0.0	-6.6	0.0	0.0	0.0	-8.6	0.0	0.0	0.0	13.8	OK	3.1	0.0	3.1	261.9	OK
0.0	-3.0	0.0	0.0	0.0	-3.9	0.0	-0.1	0.0	13.8	OK	1.3	0.0	1.3	261.9	OK
0.0	-6.8	0.0	-0.2	0.0	-8.8	-0.1	-0.3	0.0	13.8	OK	3.3	-0.2	3.3	261.9	OK
0.0	-4.2	0.0	0.0	0.0	-5.5	0.0	0.0	0.0	13.8	OK	2.1	0.0	2.1	261.9	OK
0.0	-6.7	0.0	-0.2	0.0	-8.7	0.0	-0.2	0.0	13.8	OK	3.1	-0.1	3.1	261.9	OK
0.0	-6.9	0.0	-0.2	0.0	-8.9	0.0	-0.2	0.0	13.8	OK	3.1	-0.2	3.1	261.9	OK
0.0	-3.7	0.0	0.1	0.0	-4.9	0.0	0.2	0.0	13.8	OK	1.6	0.1	1.6	261.9	OK
0.0	-2.4	0.0	0.0	0.0	-3.2	0.0	-0.1	0.0	13.8	OK	1.2	0.0	1.2	261.9	OK
0.0	-1.6	0.0	0.0	0.0	-2.0	0.0	0.0	0.0	13.8	OK	0.8	0.0	0.8	261.9	OK
0.1	0.0	-0.1	-0.2	0.1	0.0	-0.1	-0.3	0.0	13.8	OK	0.6	-0.2	0.6	261.9	OK

5.0	0.4	0.0	-0.1	6.5	0.5	0.0	-0.2	0.0	13.8	OK	0.3	-0.1	0.4	261.9	OK
3.5	0.3	0.0	-0.2	4.6	0.3	0.0	-0.2	0.0	13.8	OK	0.1	-0.2	0.3	261.9	OK
2.4	0.2	-0.1	-0.1	3.1	0.2	-0.1	-0.2	0.0	13.8	OK	0.6	-0.1	0.6	261.9	OK
0.0	-4.2	0.0	-0.2	0.0	-5.5	0.0	-0.3	0.0	13.8	OK	2.1	-0.2	2.1	261.9	OK
0.0	-1.7	0.0	0.0	0.0	-2.2	0.1	0.1	0.0	13.8	OK	1.1	0.0	1.1	261.9	OK
1.9	0.1	0.0	0.2	2.5	0.2	0.0	0.2	0.0	13.8	OK	0.4	0.2	0.5	261.9	OK
0.0	-0.7	0.0	-0.4	0.0	-0.9	0.0	-0.5	0.0	13.8	OK	0.4	-0.3	0.7	261.9	OK
2.4	0.2	0.1	-0.1	3.2	0.2	0.1	-0.1	0.0	13.8	OK	0.8	-0.1	0.8	261.9	OK
1.9	0.1	0.0	0.0	2.5	0.2	0.0	0.0	0.0	13.8	OK	0.3	0.0	0.3	261.9	OK
2.8	0.2	0.0	0.4	3.7	0.3	0.0	0.5	0.0	13.8	OK	0.2	0.3	0.6	261.9	OK
2.4	0.2	0.0	0.2	3.1	0.2	0.0	0.3	0.0	13.8	OK	0.1	0.2	0.4	261.9	OK
0.0	-1.0	0.0	0.3	0.0	-1.3	0.0	0.5	0.0	13.8	OK	0.5	0.3	0.7	261.9	OK
3.3	0.2	0.0	0.2	4.3	0.3	0.0	0.3	0.0	13.8	OK	0.2	0.2	0.4	261.9	OK
2.8	0.2	0.0	0.2	3.7	0.3	0.0	0.2	0.0	13.8	OK	0.3	0.2	0.4	261.9	OK
0.0	-1.4	0.0	0.2	0.0	-1.8	0.0	0.3	0.0	13.8	OK	0.7	0.2	0.8	261.9	OK
0.0	-0.3	0.0	0.1	0.0	-0.4	0.0	0.1	0.0	13.8	OK	0.3	0.1	0.4	261.9	OK
0.0	-2.1	0.0	0.1	0.0	-2.7	0.0	0.1	0.0	13.8	OK	0.9	0.1	0.9	261.9	OK
0.0	-0.3	0.0	0.0	0.0	-0.3	0.1	0.0	0.0	13.8	OK	0.5	0.0	0.5	261.9	OK
1.1	0.1	0.0	0.0	1.5	0.1	0.0	0.0	0.0	13.8	OK	0.4	0.0	0.4	261.9	OK
0.0	-0.3	0.0	0.0	0.0	-0.4	0.0	0.0	0.0	13.8	OK	0.5	0.0	0.5	261.9	OK
0.0	-0.2	0.0	-0.1	0.0	-0.3	0.0	-0.1	0.0	13.8	OK	0.2	-0.1	0.2	261.9	OK
0.0	-0.8	0.0	0.1	0.0	-1.1	0.1	0.1	0.0	13.8	OK	0.7	0.1	0.7	261.9	OK
1.4	0.1	0.0	0.0	1.8	0.1	0.0	0.0	0.0	13.8	OK	0.4	0.0	0.4	261.9	OK
0.0	-2.9	0.0	0.1	0.0	-3.8	0.1	0.1	0.0	13.8	OK	1.6	0.1	1.6	261.9	OK
0.8	0.1	0.0	-0.1	1.1	0.1	0.0	-0.1	0.0	13.8	OK	0.1	-0.1	0.2	261.9	OK
0.6	0.0	0.0	0.1	0.8	0.1	0.0	0.1	0.0	13.8	OK	0.2	0.1	0.3	261.9	OK
2.1	0.2	0.0	0.0	2.7	0.2	0.0	0.0	0.0	13.8	OK	0.4	0.0	0.4	261.9	OK
0.0	-2.5	0.0	0.1	0.0	-3.3	0.0	0.1	0.0	13.8	OK	1.3	0.1	1.3	261.9	OK
0.0	-1.0	0.0	0.2	0.0	-1.3	0.1	0.3	0.0	13.8	OK	0.9	0.2	0.9	261.9	OK
0.0	-124.1	-0.4	-0.5	0.0	-161.3	-0.6	-0.7	0.0	13.8	OK	57.0	-0.5	57.0	261.9	OK
0.0	-13.0	0.9	0.1	0.0	-16.9	1.2	0.1	0.0	13.8	OK	14.4	0.1	14.4	261.9	OK
56.0	4.1	0.0	0.2	72.8	5.3	0.0	0.3	0.3	13.8	OK	1.9	0.2	1.9	261.9	OK
27.6	2.0	-0.3	0.1	35.8	2.6	-0.4	0.1	0.1	13.8	OK	4.1	0.1	4.1	261.9	OK
0.0	-3.7	1.7	1.0	0.0	-4.9	2.2	1.3	0.0	13.8	OK	17.5	0.9	17.6	261.9	OK
20.5	1.5	-1.2	3.7	26.7	2.0	-1.6	4.9	0.1	13.8	OK	12.0	3.5	13.4	261.9	OK
0.0	-80.4	-0.1	0.2	0.0	-104.6	-0.1	0.2	0.0	13.8	OK	35.0	0.2	35.0	261.9	OK
29.8	2.2	-0.8	1.6	38.8	2.8	-1.0	2.1	0.2	13.8	OK	8.3	1.5	8.7	261.9	OK
0.0	-24.7	-0.4	4.8	0.0	-32.2	-0.5	6.2	0.0	13.8	OK	14.2	4.5	16.2	261.9	OK
14.6	1.1	-0.4	0.5	19.0	1.4	-0.5	0.6	0.1	13.8	OK	3.8	0.4	3.9	261.9	OK
39.0	2.9	-1.8	1.6	50.6	3.7	-2.3	2.1	0.2	13.8	OK	18.1	1.5	18.3	261.9	OK
0.0	-8.5	-0.1	1.7	0.0	-11.1	-0.1	2.2	0.0	13.8	OK	4.2	1.6	5.0	261.9	OK
34.5	2.5	-3.6	3.8	44.8	3.3	-4.7	5.0	0.2	13.8	OK	35.3	3.5	35.9	261.9	OK
20.8	1.5	0.2	-0.3	27.1	2.0	0.3	-0.4	0.1	13.8	OK	2.7	-0.3	2.8	261.9	OK
3.7	0.3	6.9	-1.9	4.8	0.4	9.0	-2.5	0.0	13.8	OK	66.0	-1.8	66.0	261.9	OK
13.2	1.0	-1.6	-2.6	17.2	1.3	-2.1	-3.4	0.1	13.8	OK	15.8	-2.4	16.3	261.9	OK
18.6	1.4	-2.6	-5.4	24.2	1.8	-3.4	-7.1	0.1	13.8	OK	25.4	-5.0	26.9	261.9	OK
33.8	2.5	-5.3	-0.1	44.0	3.2	-6.9	-0.2	0.2	13.8	OK	52.0	-0.1	52.0	261.9	OK

25.1	1.8	-3.2	0.8	32.6	2.4	-4.1	1.1	0.1	13.8	OK	31.2	0.8	31.2	261.9	OK
0.0	-9.7	1.9	-2.6	0.0	-12.6	2.5	-3.4	0.0	13.8	OK	22.6	-2.4	22.9	261.9	OK
0.0	-8.5	3.1	-0.4	0.0	-11.1	4.0	-0.5	0.0	13.8	OK	32.8	-0.3	32.8	261.9	OK
15.0	1.1	3.3	-5.9	19.5	1.4	4.3	-7.7	0.1	13.8	OK	32.1	-5.5	33.5	261.9	OK
9.9	0.7	-2.1	2.9	12.9	0.9	-2.7	3.8	0.1	13.8	OK	20.1	2.7	20.6	261.9	OK
13.9	1.0	-2.7	5.5	18.1	1.3	-3.5	7.1	0.1	13.8	OK	26.0	5.1	27.4	261.9	OK
8.9	0.7	3.2	5.7	11.6	0.8	4.2	7.5	0.0	13.8	OK	31.1	5.3	32.4	261.9	OK
0.0	-5.0	1.3	3.4	0.0	-6.6	1.8	4.4	0.0	13.8	OK	15.0	3.1	15.9	261.9	OK
24.2	1.8	-3.6	-0.1	31.5	2.3	-4.7	-0.1	0.1	13.8	OK	34.9	-0.1	34.9	261.9	OK
0.0	-10.8	2.6	1.1	0.0	-14.0	3.4	1.5	0.0	13.8	OK	29.7	1.0	29.7	261.9	OK
26.9	2.0	-5.8	0.9	34.9	2.6	-7.6	1.2	0.1	13.8	OK	56.4	0.9	56.4	261.9	OK
4.8	0.4	6.9	1.7	6.3	0.5	9.0	2.3	0.0	13.8	OK	65.7	1.6	65.8	261.9	OK
27.9	2.0	-0.4	-1.8	36.2	2.7	-0.5	-2.4	0.1	13.8	OK	4.4	-1.7	5.3	261.9	OK
54.5	4.0	0.9	-1.2	70.8	5.2	1.1	-1.6	0.3	13.8	OK	10.1	-1.1	10.3	261.9	OK
0.0	-6.1	1.9	0.9	0.0	-7.9	2.4	1.1	0.0	13.8	OK	20.4	0.8	20.4	261.9	OK
0.0	-15.7	1.6	0.8	0.0	-20.4	2.1	1.1	0.0	13.8	OK	22.0	0.8	22.0	261.9	OK
67.3	4.9	1.4	-3.3	87.4	6.4	1.8	-4.3	0.3	13.8	OK	15.6	-3.1	16.5	261.9	OK
32.3	2.4	-0.2	-4.1	42.0	3.1	-0.3	-5.4	0.2	13.8	OK	3.2	-3.8	7.4	261.9	OK
30.1	2.2	-1.3	-2.6	39.2	2.9	-1.7	-3.4	0.2	13.8	OK	13.3	-2.4	13.9	261.9	OK
13.2	1.0	1.2	1.0	17.1	1.3	1.5	1.3	0.1	13.8	OK	11.6	1.0	11.7	261.9	OK
26.1	1.9	1.1	-1.2	33.9	2.5	1.4	-1.6	0.1	13.8	OK	10.9	-1.1	11.0	261.9	OK
49.7	3.6	1.6	-0.5	64.6	4.7	2.1	-0.7	0.3	13.8	OK	16.6	-0.5	16.6	261.9	OK
36.2	2.7	-4.8	-3.8	47.0	3.4	-6.3	-5.0	0.2	13.8	OK	47.0	-3.6	47.4	261.9	OK
0.0	-78.1	-0.6	-0.7	0.0	-101.5	-0.8	-0.9	0.0	13.8	OK	39.3	-0.7	39.4	261.9	OK
39.1	2.9	-2.0	-2.5	50.8	3.7	-2.6	-3.3	0.2	13.8	OK	20.2	-2.4	20.6	261.9	OK
47.7	3.5	-0.8	-2.3	62.0	4.5	-1.0	-3.0	0.2	13.8	OK	8.8	-2.1	9.5	261.9	OK
12.0	0.9	2.7	0.8	15.6	1.1	3.5	1.0	0.1	13.8	OK	26.0	0.7	26.0	261.9	OK
60.5	4.4	0.9	-6.2	78.7	5.8	1.2	-8.1	0.3	13.8	OK	10.7	-5.8	14.7	261.9	OK
35.7	2.6	-2.0	2.0	46.3	3.4	-2.6	2.6	0.2	13.8	OK	20.3	1.9	20.6	261.9	OK
148.8	10.9	1.4	-15.5	193.4	14.2	1.9	-20.1	0.8	13.8	OK	18.3	-14.3	30.8	261.9	OK
71.5	5.2	0.5	-9.7	93.0	6.8	0.7	-12.7	0.4	13.8	OK	7.1	-9.0	17.2	261.9	OK
75.4	5.5	0.0	-19.9	98.0	7.2	-0.1	-25.9	0.4	13.8	OK	2.8	-18.5	32.1	261.9	OK
57.6	4.2	0.1	0.4	74.9	5.5	0.2	0.5	0.3	13.8	OK	3.1	0.3	3.1	261.9	OK
9.0	0.7	1.8	2.8	11.7	0.9	2.4	3.6	0.0	13.8	OK	17.5	2.6	18.1	261.9	OK
12.1	0.9	-2.2	5.0	15.8	1.2	-2.9	6.6	0.1	13.8	OK	21.7	4.7	23.2	261.9	OK
146.3	10.7	-1.7	0.1	190.2	13.9	-2.2	0.1	0.8	13.8	OK	21.0	0.1	21.0	261.9	OK
30.7	2.2	-1.1	1.1	39.9	2.9	-1.4	1.4	0.2	13.8	OK	11.1	1.0	11.3	261.9	OK
147.6	10.8	-0.8	-10.9	191.8	14.1	-1.0	-14.2	0.8	13.8	OK	11.9	-10.1	21.2	261.9	OK
26.6	1.9	-0.5	0.4	34.5	2.5	-0.6	0.6	0.1	13.8	OK	5.3	0.4	5.4	261.9	OK
31.6	2.3	-4.6	7.3	41.1	3.0	-6.0	9.5	0.2	13.8	OK	45.0	6.8	46.5	261.9	OK
133.6	9.8	-1.7	-7.4	173.7	12.7	-2.3	-9.6	0.7	13.8	OK	20.7	-6.8	23.9	261.9	OK
195.4	14.3	-0.2	-1.9	254.0	18.6	-0.2	-2.4	1.0	13.8	OK	7.7	-1.7	8.3	261.9	OK
163.0	12.0	1.9	12.3	212.0	15.5	2.4	16.1	0.8	13.8	OK	23.0	11.4	30.4	261.9	OK
119.3	8.7	0.6	2.0	155.0	11.4	0.8	2.6	0.6	13.8	OK	9.8	1.9	10.4	261.9	OK
141.9	10.4	2.4	4.0	184.5	13.5	3.1	5.2	0.7	13.8	OK	27.3	3.7	28.0	261.9	OK
74.0	5.4	-0.5	-8.5	96.2	7.1	-0.6	-11.0	0.4	13.8	OK	6.9	-7.8	15.2	261.9	OK
9.9	0.7	1.8	3.3	12.9	0.9	2.4	4.2	0.1	13.8	OK	17.8	3.0	18.5	261.9	OK

81.9	6.0	1.7	4.8	106.5	7.8	2.2	6.2	0.4	13.8	OK	18.8	4.4	20.3	261.9	OK
72.9	5.3	-1.4	3.7	94.8	6.9	-1.8	4.8	0.4	13.8	OK	15.2	3.4	16.3	261.9	OK
219.0	16.1	4.3	20.2	284.7	20.9	5.6	26.3	1.1	13.8	OK	47.8	18.7	57.8	261.9	OK
180.6	13.2	1.3	-0.4	234.8	17.2	1.7	-0.5	0.9	13.8	OK	18.3	-0.4	18.3	261.9	OK
96.5	7.1	1.1	2.0	125.5	9.2	1.4	2.6	0.5	13.8	OK	13.1	1.8	13.5	261.9	OK
209.2	15.3	1.8	2.6	271.9	19.9	2.3	3.4	1.1	13.8	OK	23.6	2.4	24.0	261.9	OK
41.9	3.1	0.5	7.3	54.4	4.0	0.6	9.5	0.2	13.8	OK	6.0	6.8	13.2	261.9	OK
95.3	7.0	0.5	-3.6	123.9	9.1	0.7	-4.6	0.5	13.8	OK	7.8	-3.3	9.6	261.9	OK
34.0	2.5	-3.9	-6.8	44.1	3.2	-5.1	-8.8	0.2	13.8	OK	38.4	-6.3	39.9	261.9	OK
12.5	0.9	3.1	-0.3	16.3	1.2	4.0	-0.4	0.1	13.8	OK	29.7	-0.3	29.7	261.9	OK
93.3	6.8	0.9	26.3	121.3	8.9	1.2	34.1	0.5	13.8	OK	11.9	24.3	43.8	261.9	OK
56.9	4.2	1.9	1.9	74.0	5.4	2.4	2.5	0.3	13.8	OK	19.5	1.8	19.7	261.9	OK
100.6	7.4	2.1	14.6	130.8	9.6	2.7	19.0	0.5	13.8	OK	22.8	13.5	32.7	261.9	OK
27.9	2.0	0.2	-1.2	36.3	2.7	0.3	-1.6	0.1	13.8	OK	3.1	-1.1	3.7	261.9	OK
25.7	1.9	-1.6	-4.0	33.4	2.4	-2.1	-5.2	0.1	13.8	OK	16.5	-3.7	17.7	261.9	OK
116.5	8.5	-0.9	4.9	151.4	11.1	-1.1	6.4	0.6	13.8	OK	11.8	4.6	14.3	261.9	OK
40.6	3.0	-1.6	-1.4	52.8	3.9	-2.0	-1.8	0.2	13.8	OK	16.1	-1.3	16.2	261.9	OK
24.8	1.8	0.6	0.9	32.2	2.4	0.8	1.2	0.1	13.8	OK	6.7	0.9	6.9	261.9	OK
19.5	1.4	2.4	-2.5	25.4	1.9	3.2	-3.2	0.1	13.8	OK	23.9	-2.3	24.2	261.9	OK
65.7	4.8	3.3	7.4	85.4	6.3	4.3	9.6	0.3	13.8	OK	33.6	6.9	35.6	261.9	OK
135.2	9.9	3.8	15.8	175.8	12.9	4.9	20.6	0.7	13.8	OK	40.1	14.7	47.4	261.9	OK
83.0	6.1	2.0	10.2	107.9	7.9	2.6	13.3	0.4	13.8	OK	21.7	9.5	27.2	261.9	OK
149.8	11.0	-2.1	8.1	194.7	14.3	-2.7	10.5	0.8	13.8	OK	24.7	7.5	27.9	261.9	OK
78.2	5.7	-0.6	0.2	101.7	7.5	-0.8	0.3	0.4	13.8	OK	8.6	0.2	8.6	261.9	OK
97.7	7.2	0.7	-5.0	127.0	9.3	0.9	-6.5	0.5	13.8	OK	9.5	-4.7	12.5	261.9	OK
0.0	-0.1	-0.9	-18.1	0.0	-0.2	-1.2	-23.5	0.0	13.8	OK	8.7	-16.8	30.3	261.9	OK
68.3	5.0	-4.1	-3.3	88.8	6.5	-5.3	-4.3	0.4	13.8	OK	40.9	-3.0	41.3	261.9	OK
89.9	6.6	2.8	1.2	116.9	8.6	3.7	1.6	0.5	13.8	OK	29.7	1.1	29.8	261.9	OK
153.5	11.3	-0.4	3.3	199.5	14.6	-0.6	4.3	0.8	13.8	OK	8.9	3.1	10.3	261.9	OK
32.0	2.3	0.7	-7.0	41.5	3.0	0.9	-9.0	0.2	13.8	OK	7.3	-6.4	13.3	261.9	OK
125.7	9.2	3.6	-8.8	163.4	12.0	4.7	-11.4	0.7	13.8	OK	38.1	-8.1	40.6	261.9	OK
76.8	5.6	0.5	8.5	99.9	7.3	0.6	11.1	0.4	13.8	OK	7.0	7.9	15.4	261.9	OK
0.0	-69.5	-1.2	-3.8	0.0	-90.4	-1.5	-4.9	0.0	13.8	OK	40.9	-3.5	41.4	261.9	OK
0.0	-46.6	-3.2	-23.5	0.0	-60.6	-4.1	-30.6	0.0	13.8	OK	49.9	-21.8	62.6	261.9	OK
0.0	-2.2	-0.1	-2.1	0.0	-2.9	-0.1	-2.8	0.0	13.8	OK	1.8	-2.0	3.9	261.9	OK
0.0	-338.7	-10.1	14.3	0.0	-440.4	-13.1	18.6	0.0	13.8	OK	240.3	13.2	241.4	261.9	OK
102.4	7.5	0.9	3.6	133.1	9.8	1.2	4.7	0.5	13.8	OK	11.9	3.3	13.2	261.9	OK
144.3	10.6	-0.2	2.6	187.6	13.8	-0.3	3.4	0.8	13.8	OK	6.4	2.4	7.6	261.9	OK
38.2	2.8	-1.7	0.9	49.7	3.6	-2.3	1.2	0.2	13.8	OK	17.8	0.9	17.8	261.9	OK
8.0	0.6	-0.3	-0.8	10.3	0.8	-0.3	-1.0	0.0	13.8	OK	2.7	-0.7	3.0	261.9	OK
43.7	3.2	-0.4	0.3	56.8	4.2	-0.6	0.4	0.2	13.8	OK	5.6	0.3	5.6	261.9	OK
0.0	-7.3	-1.7	1.1	0.0	-9.6	-2.3	1.4	0.0	13.8	OK	19.7	1.0	19.8	261.9	OK
6.1	0.4	-3.2	2.6	7.9	0.6	-4.2	3.4	0.0	13.8	OK	31.1	2.4	31.4	261.9	OK
22.9	1.7	-4.1	1.3	29.8	2.2	-5.3	1.7	0.1	13.8	OK	39.8	1.2	39.8	261.9	OK
24.0	1.8	-2.3	2.4	31.2	2.3	-2.9	3.2	0.1	13.8	OK	22.4	2.2	22.7	261.9	OK
4.6	0.3	-0.4	0.3	6.0	0.4	-0.5	0.3	0.0	13.8	OK	3.5	0.2	3.5	261.9	OK
10.2	0.7	-1.0	1.1	13.3	1.0	-1.3	1.4	0.1	13.8	OK	9.7	1.0	9.9	261.9	OK

28.0	2.1	-0.3	0.2	36.4	2.7	-0.3	0.3	0.1	13.8	OK	3.4	0.2	3.4	261.9	OK
89.4	6.6	-0.9	1.2	116.3	8.5	-1.1	1.6	0.5	13.8	OK	11.2	1.2	11.4	261.9	OK
44.6	3.3	-1.0	1.7	58.0	4.3	-1.3	2.2	0.2	13.8	OK	10.8	1.6	11.2	261.9	OK
21.0	1.5	-5.5	3.8	27.3	2.0	-7.1	5.0	0.1	13.8	OK	53.0	3.6	53.4	261.9	OK
27.5	2.0	-6.6	0.0	35.7	2.6	-8.6	0.0	0.1	13.8	OK	64.1	0.0	64.1	261.9	OK
8.8	0.6	-2.1	-4.1	11.4	0.8	-2.7	-5.3	0.0	13.8	OK	19.9	-3.8	20.9	261.9	OK
2.2	0.2	9.7	-1.0	2.9	0.2	12.6	-1.3	0.0	13.8	OK	92.3	-1.0	92.3	261.9	OK
20.2	1.5	-1.9	-7.1	26.2	1.9	-2.4	-9.2	0.1	13.8	OK	18.5	-6.6	21.7	261.9	OK
11.2	0.8	3.4	-8.7	14.6	1.1	4.4	-11.3	0.1	13.8	OK	32.3	-8.1	35.2	261.9	OK
0.0	-8.0	2.7	-4.9	0.0	-10.4	3.5	-6.4	0.0	13.8	OK	29.2	-4.5	30.3	261.9	OK
0.0	-10.3	5.9	-1.2	0.0	-13.4	7.6	-1.6	0.0	13.8	OK	60.1	-1.1	60.1	261.9	OK
11.5	0.8	-4.4	0.6	15.0	1.1	-5.7	0.8	0.1	13.8	OK	42.3	0.6	42.4	261.9	OK
2.1	0.2	9.8	0.5	2.7	0.2	12.7	0.7	0.0	13.8	OK	93.1	0.5	93.1	261.9	OK
0.0	-5.1	2.7	5.0	0.0	-6.6	3.5	6.5	0.0	13.8	OK	27.5	4.6	28.7	261.9	OK
15.0	1.1	-1.8	7.7	19.5	1.4	-2.3	9.9	0.1	13.8	OK	17.5	7.1	21.4	261.9	OK
24.0	1.8	-7.1	0.7	31.2	2.3	-9.3	1.0	0.1	13.8	OK	68.6	0.7	68.7	261.9	OK
18.2	1.3	-4.9	0.3	23.6	1.7	-6.3	0.3	0.1	13.8	OK	46.9	0.2	46.9	261.9	OK
10.7	0.8	-2.2	4.9	14.0	1.0	-2.9	6.3	0.1	13.8	OK	21.4	4.5	22.8	261.9	OK
5.3	0.4	3.6	8.8	7.0	0.5	4.6	11.4	0.0	13.8	OK	34.0	8.1	36.8	261.9	OK
0.0	-11.5	5.8	1.4	0.0	-14.9	7.6	1.8	0.0	13.8	OK	60.5	1.3	60.5	261.9	OK
19.1	1.4	-4.0	-2.6	24.8	1.8	-5.1	-3.4	0.1	13.8	OK	38.3	-2.4	38.5	261.9	OK
38.0	2.8	-3.5	-3.3	49.4	3.6	-4.5	-4.3	0.2	13.8	OK	34.1	-3.0	34.5	261.9	OK
62.8	4.6	-0.7	-2.2	81.7	6.0	-0.9	-2.9	0.3	13.8	OK	8.7	-2.1	9.4	261.9	OK
26.5	1.9	-2.2	-1.6	34.4	2.5	-2.8	-2.0	0.1	13.8	OK	21.4	-1.4	21.6	261.9	OK
0.0	-25.7	-1.4	3.1	0.0	-33.5	-1.8	4.1	0.0	13.8	OK	24.1	2.9	24.6	261.9	OK
142.9	10.5	2.0	5.2	185.7	13.6	2.6	6.8	0.7	13.8	OK	23.3	4.8	24.7	261.9	OK
31.2	2.3	0.6	0.8	40.6	3.0	0.7	1.1	0.2	13.8	OK	6.3	0.8	6.5	261.9	OK
82.4	6.0	0.2	0.3	107.1	7.9	0.2	0.3	0.4	13.8	OK	4.3	0.2	4.3	261.9	OK
24.9	1.8	1.2	2.3	32.4	2.4	1.5	3.0	0.1	13.8	OK	11.9	2.2	12.5	261.9	OK
35.1	2.6	-1.1	-0.8	45.6	3.3	-1.5	-1.1	0.2	13.8	OK	12.0	-0.8	12.1	261.9	OK
29.7	2.2	-6.6	-2.2	38.6	2.8	-8.6	-2.9	0.2	13.8	OK	63.9	-2.1	64.0	261.9	OK
47.3	3.5	-2.4	-1.4	61.5	4.5	-3.1	-1.8	0.2	13.8	OK	23.9	-1.3	24.0	261.9	OK
102.5	7.5	0.5	-0.5	133.2	9.8	0.7	-0.6	0.5	13.8	OK	8.4	-0.4	8.4	261.9	OK
42.3	3.1	0.5	-0.4	54.9	4.0	0.7	-0.5	0.2	13.8	OK	6.4	-0.4	6.4	261.9	OK
144.1	10.6	0.1	-4.5	187.4	13.7	0.2	-5.8	0.7	13.8	OK	5.7	-4.2	9.2	261.9	OK
0.0	-47.1	-3.0	-12.6	0.0	-61.2	-4.0	-16.4	0.0	13.8	OK	49.1	-11.7	53.1	261.9	OK
93.9	6.9	0.3	-1.4	122.1	9.0	0.4	-1.8	0.5	13.8	OK	6.1	-1.3	6.5	261.9	OK
293.1	21.5	-0.7	-3.1	381.1	27.9	-0.9	-4.1	1.5	13.8	OK	15.4	-2.9	16.2	261.9	OK
0.0	-243.1	-6.4	-14.5	0.0	-316.0	-8.3	-18.8	0.0	13.8	OK	164.4	-13.4	166.0	261.9	OK
74.6	5.5	0.6	2.4	97.0	7.1	0.8	3.2	0.4	13.8	OK	8.2	2.3	9.1	261.9	OK
0.0	-12.0	0.6	1.8	0.0	-15.6	0.8	2.3	0.0	13.8	OK	10.8	1.6	11.2	261.9	OK
7.1	0.5	-1.3	-1.0	9.2	0.7	-1.6	-1.3	0.0	13.8	OK	12.3	-1.0	12.4	261.9	OK
18.2	1.3	-0.3	-2.1	23.7	1.7	-0.3	-2.7	0.1	13.8	OK	3.1	-1.9	4.6	261.9	OK
162.3	11.9	-1.7	-12.9	211.0	15.5	-2.3	-16.7	0.8	13.8	OK	21.6	-11.9	29.9	261.9	OK
86.8	6.4	-3.4	-13.1	112.9	8.3	-4.5	-17.0	0.5	13.8	OK	35.5	-12.1	41.2	261.9	OK
119.9	8.8	0.8	-1.7	155.9	11.4	1.0	-2.2	0.6	13.8	OK	11.0	-1.6	11.3	261.9	OK

Tabella 3: verifiche del sostegno di prima fase (M>0 fibre tese in intradosso) – Camerone IN01

Sollecitazioni caratteristiche				Sollecitazioni SLU				Verifica calcestruzzo proiettato			Verifica centine				
N_{clsp}	N_{cen}	M_{cen}	T_{cen}	$N_{clsp,d}$	$N_{cen,d}$	$M_{cen,d}$	$T_{cen,d}$	$\sigma_{c\_clsp,d}$	f_{cd}	Verifica	$\sigma_{cen,d}$	$\tau_{cen,d}$	$\sigma_{id,cen,d}$	f_{yd}	Verifica
[kN]	[kN]	[kNm]	[kN]	[kN]	[kN]	[kNm]	[kN]	[MPa]	[MPa]	-	[MPa]	[MPa]	[MPa]	[MPa]	-
761.0	122.2	28.7	-13.0	989.3	158.8	37.4	-16.8	4.0	13.83	OK	111.1	-5.4	111.5	261.9	OK
0.0	-30.7	-9.1	3.2	0.0	-39.9	-11.9	4.2	0.0	13.83	OK	33.7	1.4	33.8	261.9	OK
761.0	122.2	28.7	-13.0	989.3	158.8	37.4	-16.8	4.0	13.83	OK	111.1	-5.4	111.5	261.9	OK
601.9	96.6	3.9	-37.9	782.4	125.6	5.1	-49.2	3.1	13.83	OK	30.7	-15.8	41.1	261.9	OK
517.0	83.0	17.7	-5.1	672.1	107.9	23.0	-6.6	2.7	13.83	OK	70.0	-2.1	70.1	261.9	OK
761.0	122.2	28.7	-13.0	989.3	158.8	37.4	-16.8	4.0	13.83	OK	111.1	-5.4	111.5	261.9	OK
601.9	96.6	3.9	-37.9	782.4	125.6	5.1	-49.2	3.1	13.83	OK	30.7	-15.8	41.1	261.9	OK
458.3	73.6	14.9	8.8	595.8	95.7	19.3	11.4	2.4	13.83	OK	59.4	3.6	59.8	261.9	OK
411.8	66.1	8.5	-28.4	535.3	86.0	11.1	-36.9	2.1	13.83	OK	38.8	-11.8	43.8	261.9	OK
497.9	79.9	23.4	21.4	647.3	103.9	30.4	27.8	2.6	13.83	OK	86.6	8.9	88.0	261.9	OK
0.0	-0.3	6.5	2.5	0.0	-0.4	8.5	3.2	0.0	13.83	OK	19.9	1.0	19.9	261.9	OK
205.7	33.0	-3.9	5.3	267.4	42.9	-5.0	6.9	1.1	13.83	OK	18.1	2.2	18.5	261.9	OK
30.9	5.0	7.0	3.1	40.1	6.4	9.1	4.0	0.2	13.83	OK	22.2	1.3	22.3	261.9	OK
92.0	14.8	0.5	7.4	119.6	19.2	0.6	9.6	0.5	13.83	OK	4.3	3.1	6.8	261.9	OK
126.1	20.3	5.3	4.2	164.0	26.3	6.9	5.5	0.7	13.83	OK	20.0	1.8	20.2	261.9	OK
31.7	5.1	4.3	5.1	41.3	6.6	5.6	6.6	0.2	13.83	OK	14.2	2.1	14.6	261.9	OK
628.4	100.9	-1.5	-10.3	816.9	131.2	-2.0	-13.4	3.3	13.83	OK	24.3	-4.3	25.4	261.9	OK
47.2	7.6	5.5	4.3	61.3	9.8	7.1	5.5	0.2	13.83	OK	18.1	1.8	18.3	261.9	OK
320.6	51.5	-8.6	-7.5	416.8	66.9	-11.2	-9.8	1.7	13.83	OK	36.1	-3.1	36.5	261.9	OK
0.0	-12.7	5.8	0.3	0.0	-16.6	7.6	0.4	0.0	13.83	OK	20.1	0.1	20.2	261.9	OK
429.2	68.9	2.1	-1.7	558.0	89.6	2.7	-2.2	2.2	13.83	OK	19.7	-0.7	19.7	261.9	OK
245.2	39.4	1.2	2.2	318.7	51.2	1.6	2.8	1.3	13.83	OK	11.4	0.9	11.5	261.9	OK
0.0	-5.6	4.5	-3.0	0.0	-7.3	5.8	-3.9	0.0	13.83	OK	14.6	-1.2	14.8	261.9	OK
55.8	9.0	-13.0	-5.0	72.6	11.7	-16.8	-6.5	0.3	13.83	OK	41.1	-2.1	41.3	261.9	OK
40.1	6.4	-10.2	-5.2	52.1	8.4	-13.3	-6.7	0.2	13.83	OK	32.2	-2.2	32.4	261.9	OK
26.1	4.2	5.4	-1.7	34.0	5.5	7.0	-2.2	0.1	13.83	OK	17.3	-0.7	17.3	261.9	OK
53.1	8.5	-5.7	-4.2	69.0	11.1	-7.5	-5.5	0.3	13.83	OK	19.1	-1.8	19.4	261.9	OK
30.0	4.8	1.6	-0.2	39.0	6.3	2.0	-0.2	0.2	13.83	OK	5.7	-0.1	5.7	261.9	OK
24.2	3.9	-4.7	-3.5	31.5	5.1	-6.1	-4.5	0.1	13.83	OK	15.0	-1.4	15.2	261.9	OK
16.8	2.7	-0.1	-2.7	21.8	3.5	-0.2	-3.5	0.1	13.83	OK	1.0	-1.1	2.2	261.9	OK
62.5	10.0	-18.0	3.2	81.2	13.0	-23.4	4.2	0.3	13.83	OK	56.7	1.3	56.7	261.9	OK
41.9	6.7	-13.4	2.5	54.5	8.8	-17.4	3.3	0.2	13.83	OK	41.9	1.0	41.9	261.9	OK
18.0	2.9	4.0	-2.5	23.4	3.8	5.2	-3.3	0.1	13.83	OK	12.8	-1.0	12.9	261.9	OK
45.6	7.3	-6.5	3.0	59.3	9.5	-8.5	3.9	0.2	13.83	OK	21.3	1.2	21.4	261.9	OK
35.8	5.8	-10.6	0.4	46.6	7.5	-13.8	0.6	0.2	13.83	OK	33.4	0.2	33.4	261.9	OK
60.2	9.7	-18.7	5.6	78.2	12.6	-24.3	7.3	0.3	13.83	OK	58.7	2.3	58.8	261.9	OK
58.8	9.4	-14.3	0.6	76.5	12.3	-18.5	0.8	0.3	13.83	OK	45.2	0.3	45.2	261.9	OK
8.3	1.3	-0.5	4.3	10.8	1.7	-0.7	5.6	0.0	13.83	OK	1.9	1.8	3.6	261.9	OK
40.0	6.4	0.2	4.4	52.0	8.3	0.3	5.7	0.2	13.83	OK	1.9	1.8	3.7	261.9	OK
0.0	-1.4	2.7	0.9	0.0	-1.8	3.5	1.2	0.0	13.83	OK	8.5	0.4	8.6	261.9	OK
29.1	4.7	-6.2	4.1	37.8	6.1	-8.0	5.4	0.2	13.83	OK	19.6	1.7	19.9	261.9	OK
45.5	7.3	-13.8	4.8	59.1	9.5	-17.9	6.3	0.2	13.83	OK	43.3	2.0	43.4	261.9	OK

0.0	-7.5	5.6	-2.7	0.0	-9.8	7.2	-3.5	0.0	13.83	OK	18.3	-1.1	18.4	261.9	OK
738.2	118.5	9.9	10.4	959.7	154.1	12.9	13.6	3.8	13.83	OK	53.2	4.3	53.8	261.9	OK
28.7	4.6	3.5	-4.7	37.3	6.0	4.5	-6.1	0.1	13.83	OK	11.5	-2.0	12.0	261.9	OK
0.0	-21.3	4.5	-0.5	0.0	-27.8	5.9	-0.7	0.0	13.83	OK	17.8	-0.2	17.8	261.9	OK
290.7	46.7	-2.2	2.6	377.9	60.7	-2.9	3.4	1.5	13.83	OK	15.8	1.1	15.9	261.9	OK
189.4	30.4	-1.1	-3.6	246.3	39.5	-1.5	-4.7	1.0	13.83	OK	9.3	-1.5	9.7	261.9	OK
285.1	45.8	-0.4	-2.0	370.6	59.5	-0.5	-2.6	1.5	13.83	OK	10.1	-0.8	10.2	261.9	OK
89.1	14.3	0.7	-6.2	115.9	18.6	0.9	-8.1	0.5	13.83	OK	4.9	-2.6	6.6	261.9	OK
451.0	72.4	5.2	10.2	586.3	94.1	6.8	13.2	2.3	13.83	OK	29.9	4.2	30.8	261.9	OK
151.3	24.3	4.1	-4.6	196.6	31.6	5.4	-5.9	0.8	13.83	OK	17.3	-1.9	17.6	261.9	OK
50.5	8.1	4.1	-4.7	65.6	10.5	5.4	-6.1	0.3	13.83	OK	14.1	-1.9	14.5	261.9	OK
29.9	4.8	5.4	-3.1	38.8	6.2	7.0	-4.0	0.2	13.83	OK	17.3	-1.3	17.4	261.9	OK
362.3	58.2	5.3	3.7	471.0	75.6	6.8	4.8	1.9	13.83	OK	27.3	1.6	27.4	261.9	OK
354.5	56.9	-0.6	8.0	460.9	74.0	-0.7	10.5	1.8	13.83	OK	12.8	3.4	14.0	261.9	OK
587.5	94.3	4.8	-0.3	763.7	122.6	6.2	-0.4	3.1	13.83	OK	32.8	-0.1	32.8	261.9	OK
336.8	54.1	2.0	-1.3	437.9	70.3	2.6	-1.7	1.8	13.83	OK	16.5	-0.5	16.6	261.9	OK
366.0	58.8	4.1	-1.6	475.8	76.4	5.3	-2.1	1.9	13.83	OK	23.8	-0.7	23.8	261.9	OK
624.9	100.3	4.8	-8.0	812.3	130.4	6.2	-10.4	3.2	13.83	OK	34.0	-3.3	34.5	261.9	OK
103.4	16.6	-6.3	10.2	134.5	21.6	-8.2	13.3	0.5	13.83	OK	22.3	4.3	23.5	261.9	OK
53.3	8.6	-6.5	5.5	69.3	11.1	-8.4	7.1	0.3	13.83	OK	21.3	2.3	21.7	261.9	OK
95.3	15.3	-4.0	3.7	123.8	19.9	-5.2	4.9	0.5	13.83	OK	15.2	1.6	15.4	261.9	OK
142.0	22.8	-1.0	7.3	184.6	29.6	-1.4	9.4	0.7	13.83	OK	7.6	3.0	9.2	261.9	OK
126.1	20.3	-1.4	6.0	164.0	26.3	-1.8	7.7	0.7	13.83	OK	8.1	2.5	9.2	261.9	OK
214.9	34.5	-1.2	4.2	279.4	44.9	-1.6	5.5	1.1	13.83	OK	10.4	1.8	10.8	261.9	OK
0.0	-15.4	-1.5	-5.8	0.0	-20.0	-1.9	-7.5	0.0	13.83	OK	7.5	-2.4	8.5	261.9	OK
32.7	5.2	4.2	-1.1	42.5	6.8	5.5	-1.4	0.2	13.83	OK	13.8	-0.5	13.8	261.9	OK
0.0	-28.0	-1.8	-6.9	0.0	-36.4	-2.4	-9.0	0.0	13.83	OK	11.0	-2.9	12.1	261.9	OK
7.2	1.2	3.1	0.0	9.3	1.5	4.1	-0.1	0.0	13.83	OK	9.7	0.0	9.7	261.9	OK
74.1	11.9	-9.9	1.8	96.4	15.5	-12.9	2.3	0.4	13.83	OK	32.4	0.8	32.4	261.9	OK
35.3	5.7	-9.2	-0.2	45.9	7.4	-12.0	-0.3	0.2	13.83	OK	29.2	-0.1	29.2	261.9	OK
0.0	-20.6	1.3	-2.9	0.0	-26.8	1.7	-3.8	0.0	13.83	OK	8.1	-1.2	8.4	261.9	OK
0.0	-8.5	2.3	-3.2	0.0	-11.1	3.0	-4.1	0.0	13.83	OK	8.6	-1.3	8.9	261.9	OK
4.2	0.7	-7.3	-6.8	5.4	0.9	-9.5	-8.9	0.0	13.83	OK	22.4	-2.8	22.9	261.9	OK
12.5	2.0	-6.6	-8.0	16.2	2.6	-8.6	-10.4	0.1	13.83	OK	20.4	-3.3	21.2	261.9	OK
0.5	0.1	2.9	-0.6	0.6	0.1	3.8	-0.7	0.0	13.83	OK	8.9	-0.2	8.9	261.9	OK
9.0	1.4	3.7	-2.0	11.7	1.9	4.8	-2.6	0.0	13.83	OK	11.6	-0.8	11.7	261.9	OK
46.7	7.5	4.0	-0.6	60.7	9.7	5.1	-0.8	0.2	13.83	OK	13.5	-0.3	13.5	261.9	OK
71.5	11.5	-0.8	2.0	93.0	14.9	-1.0	2.6	0.4	13.83	OK	4.6	0.8	4.8	261.9	OK
74.2	11.9	-4.4	1.0	96.4	15.5	-5.7	1.3	0.4	13.83	OK	15.6	0.4	15.7	261.9	OK
54.7	8.8	2.1	0.5	71.1	11.4	2.7	0.7	0.3	13.83	OK	8.1	0.2	8.1	261.9	OK
62.8	10.1	-2.7	1.5	81.6	13.1	-3.5	2.0	0.3	13.83	OK	10.1	0.6	10.1	261.9	OK
43.2	6.9	1.2	1.7	56.2	9.0	1.6	2.3	0.2	13.83	OK	5.0	0.7	5.1	261.9	OK
21.8	3.5	2.8	0.5	28.3	4.5	3.6	0.7	0.1	13.83	OK	9.1	0.2	9.1	261.9	OK
65.7	10.5	-3.9	0.2	85.4	13.7	-5.0	0.3	0.3	13.83	OK	13.8	0.1	13.8	261.9	OK
80.0	12.8	-6.2	0.8	103.9	16.7	-8.0	1.1	0.4	13.83	OK	21.2	0.3	21.2	261.9	OK
49.4	7.9	-0.7	1.4	64.2	10.3	-0.9	1.8	0.3	13.83	OK	3.7	0.6	3.9	261.9	OK
67.9	10.9	-0.4	-1.6	88.2	14.2	-0.5	-2.1	0.4	13.83	OK	3.4	-0.7	3.6	261.9	OK

67.0	10.8	-3.6	-0.7	87.1	14.0	-4.7	-0.9	0.3	13.83	OK	13.1	-0.3	13.1	261.9	OK
79.9	12.8	-3.6	-2.1	103.8	16.7	-4.7	-2.8	0.4	13.83	OK	13.5	-0.9	13.6	261.9	OK
79.2	12.7	-6.2	-0.1	103.0	16.5	-8.0	-0.2	0.4	13.83	OK	21.3	-0.1	21.3	261.9	OK
41.8	6.7	5.0	1.2	54.3	8.7	6.5	1.6	0.2	13.83	OK	16.4	0.5	16.4	261.9	OK
37.1	6.0	2.2	-1.5	48.2	7.7	2.9	-1.9	0.2	13.83	OK	7.9	-0.6	7.9	261.9	OK
29.5	4.7	3.5	-0.7	38.4	6.2	4.5	-0.9	0.2	13.83	OK	11.5	-0.3	11.5	261.9	OK
61.4	9.9	3.4	-1.5	79.8	12.8	4.4	-1.9	0.3	13.83	OK	12.2	-0.6	12.3	261.9	OK
56.5	9.1	-0.1	-2.2	73.4	11.8	-0.1	-2.8	0.3	13.83	OK	2.1	-0.9	2.6	261.9	OK
60.2	9.7	-2.3	-1.1	78.3	12.6	-3.0	-1.5	0.3	13.83	OK	9.0	-0.5	9.0	261.9	OK
32.8	5.3	5.1	1.5	42.6	6.8	6.7	1.9	0.2	13.83	OK	16.6	0.6	16.6	261.9	OK
0.0	-14.3	1.1	3.6	0.0	-18.6	1.4	4.7	0.0	13.83	OK	6.2	1.5	6.7	261.9	OK
71.1	11.4	-12.7	-2.9	92.5	14.9	-16.6	-3.8	0.4	13.83	OK	40.9	-1.2	41.0	261.9	OK
49.3	7.9	-10.5	-0.4	64.1	10.3	-13.6	-0.5	0.3	13.83	OK	33.3	-0.2	33.3	261.9	OK
8.1	1.3	3.9	0.3	10.5	1.7	5.1	0.4	0.0	13.83	OK	12.2	0.1	12.2	261.9	OK
0.0	-14.9	-3.1	7.3	0.0	-19.4	-4.1	9.5	0.0	13.83	OK	12.5	3.0	13.5	261.9	OK
10.7	1.7	4.1	2.6	13.9	2.2	5.4	3.3	0.1	13.83	OK	12.9	1.1	13.0	261.9	OK
0.0	-7.5	-2.6	6.0	0.0	-9.7	-3.4	7.8	0.0	13.83	OK	9.5	2.5	10.4	261.9	OK
8.7	1.4	-8.7	6.4	11.3	1.8	-11.3	8.4	0.0	13.83	OK	26.7	2.7	27.1	261.9	OK
11.8	1.9	-9.6	7.0	15.4	2.5	-12.5	9.2	0.1	13.83	OK	29.5	2.9	30.0	261.9	OK
2.2	0.4	3.4	1.2	2.9	0.5	4.4	1.5	0.0	13.83	OK	10.4	0.5	10.4	261.9	OK
0.0	-1.2	1.9	4.1	0.0	-1.5	2.5	5.3	0.0	13.83	OK	6.1	1.7	6.8	261.9	OK
134.0	21.5	-0.2	-4.2	174.3	28.0	-0.3	-5.5	0.7	13.83	OK	4.9	-1.8	5.8	261.9	OK
253.5	40.7	5.5	-6.7	329.6	52.9	7.1	-8.7	1.3	13.83	OK	24.6	-2.8	25.1	261.9	OK
261.2	41.9	4.8	4.4	339.6	54.5	6.3	5.7	1.4	13.83	OK	22.8	1.8	23.1	261.9	OK
163.6	26.3	-4.5	-14.7	212.7	34.2	-5.9	-19.1	0.9	13.83	OK	18.8	-6.1	21.6	261.9	OK
185.4	29.8	0.7	-0.4	241.1	38.7	1.0	-0.5	1.0	13.83	OK	8.1	-0.2	8.1	261.9	OK
100.3	16.1	-6.3	-7.2	130.3	20.9	-8.1	-9.4	0.5	13.83	OK	22.2	-3.0	22.8	261.9	OK
27.8	4.5	-1.2	2.2	36.1	5.8	-1.6	2.9	0.1	13.83	OK	4.5	0.9	4.8	261.9	OK
18.9	3.0	-4.8	4.1	24.6	4.0	-6.3	5.4	0.1	13.83	OK	15.3	1.7	15.6	261.9	OK
65.1	10.5	-4.6	7.5	84.7	13.6	-6.0	9.7	0.3	13.83	OK	16.1	3.1	17.0	261.9	OK
1.3	0.2	-7.8	3.1	1.7	0.3	-10.1	4.0	0.0	13.83	OK	23.6	1.3	23.7	261.9	OK
44.7	7.2	-8.9	6.4	58.1	9.3	-11.5	8.4	0.2	13.83	OK	28.4	2.7	28.7	261.9	OK
130.8	21.0	-2.9	8.8	170.0	27.3	-3.8	11.5	0.7	13.83	OK	12.9	3.7	14.4	261.9	OK
45.5	7.3	3.0	-1.7	59.2	9.5	3.9	-2.2	0.2	13.83	OK	10.5	-0.7	10.6	261.9	OK
11.2	1.8	2.1	-0.8	14.6	2.3	2.7	-1.0	0.1	13.83	OK	6.8	-0.3	6.8	261.9	OK
9.1	1.5	-9.7	0.2	11.9	1.9	-12.6	0.3	0.0	13.83	OK	29.8	0.1	29.8	261.9	OK
20.9	3.4	2.0	-1.7	27.2	4.4	2.6	-2.2	0.1	13.83	OK	6.7	-0.7	6.8	261.9	OK
0.0	-14.1	-0.7	-2.9	0.0	-18.3	-0.9	-3.7	0.0	13.83	OK	4.8	-1.2	5.2	261.9	OK
11.2	1.8	0.4	-2.9	14.5	2.3	0.5	-3.8	0.1	13.83	OK	1.4	-1.2	2.6	261.9	OK
0.0	-2.5	-3.6	-5.4	0.0	-3.3	-4.7	-7.1	0.0	13.83	OK	11.5	-2.3	12.2	261.9	OK
0.3	0.0	-8.6	-4.3	0.3	0.1	-11.2	-5.6	0.0	13.83	OK	26.2	-1.8	26.4	261.9	OK
0.0	-7.0	-4.0	-4.9	0.0	-9.1	-5.2	-6.3	0.0	13.83	OK	13.4	-2.0	13.9	261.9	OK
4.6	0.7	1.1	-1.1	6.0	1.0	1.4	-1.5	0.0	13.83	OK	3.5	-0.5	3.6	261.9	OK
15.2	2.4	-9.2	-5.2	19.7	3.2	-11.9	-6.8	0.1	13.83	OK	28.4	-2.2	28.6	261.9	OK
28.4	4.6	-11.8	1.1	37.0	5.9	-15.4	1.4	0.1	13.83	OK	36.8	0.5	36.8	261.9	OK
60.2	9.7	3.6	-1.8	78.2	12.6	4.6	-2.3	0.3	13.83	OK	12.7	-0.7	12.8	261.9	OK
54.0	8.7	1.2	0.3	70.2	11.3	1.6	0.4	0.3	13.83	OK	5.4	0.1	5.4	261.9	OK

67.6	10.9	2.7	-0.4	87.9	14.1	3.5	-0.5	0.4	13.83	OK	10.3	-0.2	10.3	261.9	OK
82.9	13.3	1.3	0.7	107.8	17.3	1.7	1.0	0.4	13.83	OK	6.6	0.3	6.6	261.9	OK
27.3	4.4	2.4	-0.7	35.5	5.7	3.1	-0.9	0.1	13.83	OK	8.2	-0.3	8.2	261.9	OK
68.3	11.0	-0.3	0.0	88.8	14.3	-0.5	0.0	0.4	13.83	OK	3.2	0.0	3.2	261.9	OK
90.8	14.6	-2.0	0.3	118.0	18.9	-2.6	0.5	0.5	13.83	OK	8.8	0.1	8.8	261.9	OK
85.6	13.7	-1.1	0.2	111.3	17.9	-1.4	0.3	0.4	13.83	OK	5.9	0.1	5.9	261.9	OK
65.1	10.4	0.2	0.6	84.6	13.6	0.3	0.8	0.3	13.83	OK	2.7	0.3	2.7	261.9	OK
47.1	7.6	2.0	0.4	61.3	9.8	2.6	0.5	0.2	13.83	OK	7.4	0.2	7.4	261.9	OK
59.3	9.5	1.9	-1.1	77.1	12.4	2.5	-1.5	0.3	13.83	OK	7.6	-0.5	7.7	261.9	OK
71.0	11.4	-0.2	-0.5	92.3	14.8	-0.3	-0.7	0.4	13.83	OK	3.0	-0.2	3.0	261.9	OK
32.3	5.2	3.6	0.4	42.1	6.8	4.7	0.5	0.2	13.83	OK	11.9	0.2	11.9	261.9	OK
89.3	14.3	-2.1	-0.3	116.1	18.6	-2.8	-0.4	0.5	13.83	OK	9.3	-0.1	9.3	261.9	OK
41.6	6.7	3.2	-0.4	54.1	8.7	4.2	-0.5	0.2	13.83	OK	11.1	-0.1	11.1	261.9	OK
89.1	14.3	-0.3	-1.4	115.8	18.6	-0.4	-1.9	0.5	13.83	OK	3.8	-0.6	3.9	261.9	OK
51.7	8.3	4.9	2.1	67.2	10.8	6.4	2.7	0.3	13.83	OK	16.5	0.9	16.5	261.9	OK
64.5	10.4	0.6	-0.5	83.8	13.5	0.7	-0.7	0.3	13.83	OK	3.7	-0.2	3.8	261.9	OK
71.8	11.5	4.5	-0.3	93.4	15.0	5.8	-0.4	0.4	13.83	OK	15.9	-0.1	15.9	261.9	OK
77.7	12.5	1.8	-0.9	101.0	16.2	2.3	-1.2	0.4	13.83	OK	7.8	-0.4	7.8	261.9	OK
42.0	6.8	4.5	2.4	54.7	8.8	5.9	3.1	0.2	13.83	OK	15.1	1.0	15.2	261.9	OK
31.0	5.0	-13.3	0.1	40.3	6.5	-17.2	0.1	0.2	13.83	OK	41.2	0.0	41.2	261.9	OK
52.8	8.5	-16.3	-1.6	68.7	11.0	-21.2	-2.0	0.3	13.83	OK	51.1	-0.7	51.1	261.9	OK
9.7	1.6	0.2	5.0	12.7	2.0	0.2	6.5	0.1	13.83	OK	0.9	2.1	3.7	261.9	OK
4.1	0.7	2.1	1.9	5.4	0.9	2.7	2.4	0.0	13.83	OK	6.4	0.8	6.5	261.9	OK
0.0	-2.4	-5.7	7.5	0.0	-3.1	-7.4	9.7	0.0	13.83	OK	17.8	3.1	18.6	261.9	OK
4.4	0.7	-11.1	5.7	5.8	0.9	-14.5	7.5	0.0	13.83	OK	34.0	2.4	34.2	261.9	OK
16.1	2.6	-12.7	6.5	21.0	3.4	-16.5	8.4	0.1	13.83	OK	39.1	2.7	39.4	261.9	OK
0.0	-5.2	-5.2	6.2	0.0	-6.8	-6.7	8.0	0.0	13.83	OK	16.8	2.6	17.3	261.9	OK
11.0	1.8	3.3	1.1	14.4	2.3	4.3	1.5	0.1	13.83	OK	10.4	0.5	10.4	261.9	OK
0.0	-13.0	-0.6	4.0	0.0	-16.9	-0.8	5.2	0.0	13.83	OK	4.3	1.7	5.2	261.9	OK
18.7	3.0	2.8	3.1	24.4	3.9	3.7	4.0	0.1	13.83	OK	9.2	1.3	9.5	261.9	OK
200.4	32.2	0.5	-8.7	260.5	41.8	0.7	-11.3	1.0	13.83	OK	7.9	-3.6	10.1	261.9	OK
193.3	31.0	-2.8	-10.6	251.3	40.4	-3.7	-13.7	1.0	13.83	OK	14.7	-4.4	16.5	261.9	OK
112.2	18.0	-5.1	-5.7	145.8	23.4	-6.7	-7.4	0.6	13.83	OK	19.1	-2.4	19.5	261.9	OK
71.0	11.4	-10.2	-5.4	92.3	14.8	-13.3	-7.0	0.4	13.83	OK	33.3	-2.2	33.5	261.9	OK
115.3	18.5	-10.5	-12.3	149.9	24.1	-13.7	-16.0	0.6	13.83	OK	35.6	-5.1	36.7	261.9	OK
191.6	30.8	-2.0	-4.0	249.1	40.0	-2.6	-5.2	1.0	13.83	OK	12.0	-1.7	12.3	261.9	OK
188.0	30.2	0.5	2.0	244.4	39.2	0.7	2.6	1.0	13.83	OK	7.5	0.8	7.7	261.9	OK
142.2	22.8	-3.6	10.2	184.8	29.7	-4.6	13.3	0.7	13.83	OK	15.3	4.3	17.0	261.9	OK
242.5	38.9	2.7	5.2	315.3	50.6	3.5	6.7	1.3	13.83	OK	15.8	2.2	16.2	261.9	OK
262.4	42.1	-3.4	17.1	341.1	54.8	-4.4	22.3	1.4	13.83	OK	18.6	7.1	22.3	261.9	OK
179.1	28.7	-1.0	4.7	232.8	37.4	-1.4	6.1	0.9	13.83	OK	8.8	1.9	9.4	261.9	OK
342.2	54.9	-0.3	-1.9	444.8	71.4	-0.4	-2.5	1.8	13.83	OK	11.7	-0.8	11.8	261.9	OK
17.1	2.7	5.2	-1.2	22.2	3.6	6.8	-1.5	0.1	13.83	OK	16.4	-0.5	16.4	261.9	OK
0.0	-29.0	2.7	-3.7	0.0	-37.7	3.5	-4.8	0.0	13.83	OK	13.9	-1.5	14.2	261.9	OK
0.0	-16.2	4.7	-1.0	0.0	-21.1	6.1	-1.3	0.0	13.83	OK	17.4	-0.4	17.5	261.9	OK
5.1	0.8	4.5	-3.6	6.6	1.1	5.9	-4.7	0.0	13.83	OK	13.8	-1.5	14.1	261.9	OK
72.9	11.7	-2.5	-8.1	94.8	15.2	-3.2	-10.5	0.4	13.83	OK	9.8	-3.4	11.4	261.9	OK

98.0	15.7	-8.2	0.6	127.4	20.5	-10.7	0.7	0.5	13.83	OK	28.0	0.2	28.0	261.9	OK
26.5	4.3	-5.8	-8.9	34.4	5.5	-7.5	-11.5	0.1	13.83	OK	18.4	-3.7	19.5	261.9	OK
0.0	-17.3	0.4	-6.6	0.0	-22.5	0.5	-8.6	0.0	13.83	OK	4.5	-2.8	6.6	261.9	OK
242.1	38.9	-3.9	6.2	314.7	50.5	-5.0	8.1	1.3	13.83	OK	19.3	2.6	19.9	261.9	OK
8.7	1.4	-1.8	-7.7	11.4	1.8	-2.3	-10.0	0.0	13.83	OK	5.6	-3.2	7.9	261.9	OK
3.2	0.5	3.3	-4.6	4.2	0.7	4.3	-6.0	0.0	13.83	OK	10.1	-1.9	10.7	261.9	OK
0.0	-9.2	4.1	0.3	0.0	-12.0	5.3	0.4	0.0	13.83	OK	14.2	0.1	14.2	261.9	OK
30.2	4.8	4.1	1.5	39.2	6.3	5.4	2.0	0.2	13.83	OK	13.5	0.6	13.5	261.9	OK
58.3	9.4	-3.8	3.3	75.8	12.2	-4.9	4.3	0.3	13.83	OK	13.2	1.4	13.5	261.9	OK
30.0	4.8	0.4	2.4	39.0	6.3	0.6	3.1	0.2	13.83	OK	2.3	1.0	2.8	261.9	OK
36.8	5.9	-3.2	2.5	47.8	7.7	-4.1	3.2	0.2	13.83	OK	10.8	1.0	10.9	261.9	OK
7.0	1.1	2.9	1.8	9.1	1.5	3.8	2.4	0.0	13.83	OK	9.1	0.8	9.2	261.9	OK
37.1	6.0	1.6	0.3	48.2	7.7	2.1	0.3	0.2	13.83	OK	6.0	0.1	6.0	261.9	OK
55.4	8.9	-8.2	-0.2	72.1	11.6	-10.6	-0.3	0.3	13.83	OK	26.6	-0.1	26.6	261.9	OK
53.0	8.5	-6.1	2.5	68.9	11.1	-7.9	3.2	0.3	13.83	OK	20.1	1.0	20.2	261.9	OK
61.9	9.9	-8.2	3.0	80.4	12.9	-10.7	3.9	0.3	13.83	OK	27.0	1.3	27.1	261.9	OK
67.1	10.8	-11.3	-1.6	87.3	14.0	-14.7	-2.1	0.3	13.83	OK	36.4	-0.7	36.4	261.9	OK
44.8	7.2	-2.2	-3.0	58.3	9.4	-2.8	-3.9	0.2	13.83	OK	7.9	-1.2	8.2	261.9	OK
53.9	8.7	-2.3	-2.5	70.1	11.2	-3.0	-3.2	0.3	13.83	OK	8.7	-1.0	8.9	261.9	OK
47.9	7.7	-5.8	-1.5	62.3	10.0	-7.6	-2.0	0.2	13.83	OK	19.2	-0.6	19.2	261.9	OK
67.9	10.9	-8.1	-1.9	88.2	14.2	-10.5	-2.5	0.4	13.83	OK	26.8	-0.8	26.8	261.9	OK
23.5	3.8	5.6	1.4	30.5	4.9	7.2	1.8	0.1	13.83	OK	17.6	0.6	17.6	261.9	OK
69.0	11.1	-11.4	-3.5	89.7	14.4	-14.8	-4.6	0.4	13.83	OK	36.8	-1.5	36.9	261.9	OK
56.3	9.0	-7.8	-1.9	73.1	11.7	-10.1	-2.4	0.3	13.83	OK	25.5	-0.8	25.5	261.9	OK
24.2	3.9	1.3	-3.0	31.4	5.0	1.7	-3.9	0.1	13.83	OK	4.6	-1.2	5.1	261.9	OK
48.7	7.8	2.2	-4.0	63.3	10.2	2.8	-5.2	0.3	13.83	OK	8.1	-1.7	8.6	261.9	OK
15.6	2.5	4.0	-1.4	20.3	3.3	5.2	-1.8	0.1	13.83	OK	12.7	-0.6	12.8	261.9	OK
41.9	6.7	-7.7	8.4	54.4	8.7	-10.0	10.9	0.2	13.83	OK	24.7	3.5	25.4	261.9	OK
77.1	12.4	-6.9	9.6	100.3	16.1	-9.0	12.5	0.4	13.83	OK	23.4	4.0	24.5	261.9	OK
0.0	-2.2	-0.9	7.2	0.0	-2.8	-1.2	9.4	0.0	13.83	OK	3.2	3.0	6.2	261.9	OK
190.3	30.6	-11.2	-8.1	247.4	39.7	-14.5	-10.6	1.0	13.83	OK	39.8	-3.4	40.3	261.9	OK
20.0	3.2	6.2	1.2	26.0	4.2	8.1	1.6	0.1	13.83	OK	19.5	0.5	19.6	261.9	OK
8.3	1.3	5.2	3.7	10.8	1.7	6.7	4.8	0.0	13.83	OK	16.0	1.5	16.2	261.9	OK
0.0	-11.1	5.3	1.5	0.0	-14.4	6.8	2.0	0.0	13.83	OK	18.1	0.6	18.2	261.9	OK
122.3	19.6	-10.1	-2.5	158.9	25.5	-13.2	-3.2	0.6	13.83	OK	34.6	-1.0	34.6	261.9	OK
10.0	1.6	3.5	5.3	13.0	2.1	4.6	6.8	0.1	13.83	OK	11.1	2.2	11.7	261.9	OK
26.3	4.2	-2.3	8.4	34.2	5.5	-3.0	10.9	0.1	13.83	OK	7.8	3.5	9.9	261.9	OK
0.0	-18.9	2.6	4.5	0.0	-24.5	3.4	5.9	0.0	13.83	OK	11.7	1.9	12.2	261.9	OK
0.0	-6.2	5.0	-0.1	0.0	-8.1	6.5	-0.2	0.0	13.83	OK	16.4	-0.1	16.4	261.9	OK
415.8	66.8	10.4	15.6	540.6	86.8	13.5	20.3	2.2	13.83	OK	44.5	6.5	45.9	261.9	OK
271.0	43.5	7.7	-6.2	352.3	56.6	10.0	-8.1	1.4	13.83	OK	31.8	-2.6	32.1	261.9	OK
300.4	48.2	5.8	5.8	390.5	62.7	7.6	7.6	1.6	13.83	OK	27.1	2.4	27.5	261.9	OK
457.3	73.4	13.5	-16.1	594.4	95.4	17.6	-21.0	2.4	13.83	OK	55.3	-6.7	56.5	261.9	OK
223.6	35.9	-2.2	-14.0	290.7	46.7	-2.9	-18.2	1.2	13.83	OK	13.7	-5.8	17.0	261.9	OK
367.6	59.0	3.8	-22.6	477.9	76.7	5.0	-29.4	1.9	13.83	OK	23.2	-9.4	28.3	261.9	OK
0.0	-30.7	-9.1	3.2	0.0	-39.9	-11.9	4.2	0.0	13.83	OK	33.7	1.4	33.8	261.9	OK
10.4	1.7	-11.3	5.3	13.6	2.2	-14.7	7.0	0.1	13.83	OK	34.6	2.2	34.8	261.9	OK

8.2	1.3	-7.0	7.3	10.7	1.7	-9.1	9.5	0.0	13.83	OK	21.4	3.1	22.1	261.9	OK
0.0	-23.1	-5.3	4.0	0.0	-30.0	-6.9	5.2	0.0	13.83	OK	20.6	1.7	20.8	261.9	OK
0.0	-12.9	-1.8	1.2	0.0	-16.7	-2.4	1.5	0.0	13.83	OK	8.1	0.5	8.1	261.9	OK
37.7	6.1	-3.1	10.4	49.1	7.9	-4.1	13.5	0.2	13.83	OK	10.7	4.3	13.1	261.9	OK
22.6	3.6	0.5	-2.6	29.3	4.7	0.6	-3.4	0.1	13.83	OK	2.1	-1.1	2.8	261.9	OK
0.0	-16.4	-6.3	-5.3	0.0	-21.3	-8.2	-6.9	0.0	13.83	OK	22.3	-2.2	22.6	261.9	OK
15.8	2.5	-1.6	-3.7	20.6	3.3	-2.1	-4.8	0.1	13.83	OK	5.4	-1.5	6.0	261.9	OK
0.0	-5.4	0.0	-2.7	0.0	-7.0	-0.1	-3.5	0.0	13.83	OK	1.2	-1.1	2.3	261.9	OK
1.2	0.2	1.5	-1.8	1.6	0.3	1.9	-2.3	0.0	13.83	OK	4.6	-0.7	4.7	261.9	OK
0.0	-11.0	-10.7	-3.4	0.0	-14.3	-14.0	-4.4	0.0	13.83	OK	34.8	-1.4	34.9	261.9	OK
0.0	-4.4	-11.4	1.0	0.0	-5.7	-14.8	1.3	0.0	13.83	OK	35.4	0.4	35.4	261.9	OK
11.1	1.8	-11.7	-3.8	14.5	2.3	-15.2	-5.0	0.1	13.83	OK	35.9	-1.6	36.0	261.9	OK
46.9	7.5	2.3	-2.5	61.0	9.8	3.0	-3.3	0.2	13.83	OK	8.5	-1.0	8.7	261.9	OK
8.0	1.3	-13.8	1.0	10.4	1.7	-18.0	1.4	0.0	13.83	OK	42.2	0.4	42.2	261.9	OK
0.0	-23.8	-2.7	-3.7	0.0	-31.0	-3.5	-4.9	0.0	13.83	OK	12.7	-1.6	13.0	261.9	OK
2.9	0.5	-6.3	-5.5	3.8	0.6	-8.2	-7.2	0.0	13.83	OK	19.2	-2.3	19.6	261.9	OK
89.9	14.4	1.7	0.3	116.8	18.8	2.2	0.3	0.5	13.83	OK	8.0	0.1	8.0	261.9	OK
30.1	4.8	2.9	-0.7	39.2	6.3	3.8	-0.9	0.2	13.83	OK	9.7	-0.3	9.7	261.9	OK
82.3	13.2	3.3	-0.1	107.0	17.2	4.3	-0.1	0.4	13.83	OK	12.7	0.0	12.7	261.9	OK
69.5	11.2	3.4	-1.5	90.4	14.5	4.5	-2.0	0.4	13.83	OK	12.6	-0.6	12.7	261.9	OK
85.4	13.7	1.9	-0.5	111.0	17.8	2.5	-0.7	0.4	13.83	OK	8.4	-0.2	8.4	261.9	OK
35.4	5.7	2.9	-0.7	46.0	7.4	3.7	-0.9	0.2	13.83	OK	9.9	-0.3	9.9	261.9	OK
61.8	9.9	3.4	-2.4	80.4	12.9	4.5	-3.2	0.3	13.83	OK	12.4	-1.0	12.5	261.9	OK
15.0	2.4	2.1	-2.0	19.4	3.1	2.7	-2.6	0.1	13.83	OK	6.8	-0.8	6.9	261.9	OK
27.3	4.4	3.0	-1.5	35.4	5.7	3.9	-2.0	0.1	13.83	OK	10.0	-0.6	10.0	261.9	OK
35.0	5.6	2.9	0.0	45.5	7.3	3.7	0.0	0.2	13.83	OK	9.8	0.0	9.8	261.9	OK
54.8	8.8	4.8	2.8	71.2	11.4	6.3	3.7	0.3	13.83	OK	16.4	1.2	16.5	261.9	OK
18.2	2.9	3.8	1.9	23.7	3.8	5.0	2.5	0.1	13.83	OK	12.1	0.8	12.2	261.9	OK
36.3	5.8	3.0	-0.2	47.2	7.6	3.9	-0.3	0.2	13.83	OK	10.2	-0.1	10.2	261.9	OK
41.5	6.7	2.5	-0.1	54.0	8.7	3.2	-0.2	0.2	13.83	OK	8.9	-0.1	8.9	261.9	OK
33.0	5.3	3.7	0.4	43.0	6.9	4.8	0.6	0.2	13.83	OK	12.2	0.2	12.2	261.9	OK
71.8	11.5	5.4	0.4	93.4	15.0	7.0	0.5	0.4	13.83	OK	18.7	0.2	18.7	261.9	OK
23.5	3.8	3.9	0.7	30.5	4.9	5.0	0.9	0.1	13.83	OK	12.5	0.3	12.5	261.9	OK
77.6	12.5	3.6	0.1	100.9	16.2	4.7	0.1	0.4	13.83	OK	13.4	0.0	13.4	261.9	OK
86.3	13.9	2.5	-0.9	112.2	18.0	3.2	-1.2	0.4	13.83	OK	10.3	-0.4	10.3	261.9	OK
87.0	14.0	1.2	0.2	113.1	18.2	1.6	0.2	0.5	13.83	OK	6.4	0.1	6.4	261.9	OK
0.0	-4.8	-13.3	5.8	0.0	-6.3	-17.3	7.6	0.0	13.83	OK	41.4	2.4	41.6	261.9	OK
4.1	0.7	2.5	2.1	5.3	0.9	3.3	2.8	0.0	13.83	OK	7.8	0.9	8.0	261.9	OK
46.2	7.4	-19.3	-1.1	60.1	9.6	-25.0	-1.5	0.2	13.83	OK	59.9	-0.5	59.9	261.9	OK
15.0	2.4	-15.6	-0.2	19.5	3.1	-20.3	-0.3	0.1	13.83	OK	48.0	-0.1	48.0	261.9	OK
16.2	2.6	-1.6	5.2	21.0	3.4	-2.1	6.8	0.1	13.83	OK	5.4	2.2	6.6	261.9	OK
0.0	-20.0	-2.3	4.9	0.0	-26.0	-3.0	6.4	0.0	13.83	OK	11.0	2.1	11.5	261.9	OK
0.0	-3.1	1.2	3.2	0.0	-4.1	1.6	4.2	0.0	13.83	OK	4.3	1.4	4.9	261.9	OK
22.9	3.7	1.6	3.5	29.8	4.8	2.1	4.6	0.1	13.83	OK	5.5	1.5	6.1	261.9	OK
0.0	-14.2	-6.9	6.8	0.0	-18.4	-9.0	8.9	0.0	13.83	OK	23.8	2.8	24.3	261.9	OK
21.7	3.5	-15.4	6.0	28.2	4.5	-20.0	7.7	0.1	13.83	OK	47.5	2.5	47.7	261.9	OK
6.0	1.0	-8.1	7.4	7.8	1.3	-10.5	9.6	0.0	13.83	OK	24.7	3.1	25.3	261.9	OK

44.5	7.1	3.9	2.8	57.8	9.3	5.1	3.7	0.2	13.83	OK	13.3	1.2	13.4	261.9	OK
278.8	44.8	-3.8	-20.1	362.5	58.2	-4.9	-26.2	1.4	13.83	OK	20.1	-8.4	24.8	261.9	OK
82.8	13.3	-14.8	-10.9	107.6	17.3	-19.3	-14.2	0.4	13.83	OK	47.6	-4.6	48.3	261.9	OK
14.3	2.3	-11.7	-5.8	18.6	3.0	-15.1	-7.5	0.1	13.83	OK	35.8	-2.4	36.1	261.9	OK
161.0	25.8	-8.2	-11.5	209.2	33.6	-10.6	-15.0	0.8	13.83	OK	29.9	-4.8	31.0	261.9	OK
51.8	8.3	-1.2	-2.0	67.3	10.8	-1.6	-2.7	0.3	13.83	OK	5.4	-0.9	5.6	261.9	OK
21.3	3.4	-6.5	-4.9	27.7	4.5	-8.5	-6.4	0.1	13.83	OK	20.4	-2.1	20.7	261.9	OK

Tabella 4: verifiche del sostegno di prima fase (M>0 fibre tese in intradosso) – Camerone IN02

Sollecitazioni caratteristiche				Sollecitazioni SLU				Verifica calcestruzzo proiettato			Verifica centine				
N_{clsp} [kN]	N_{cen} [kN]	M_{cen} [kNm]	T_{cen} [kN]	$N_{clsp,d}$ [kN]	$N_{cen,d}$ [kN]	$M_{cen,d}$ [kNm]	$T_{cen,d}$ [kN]	$\sigma_{c\_clsp,d}$ [MPa]	f_{cd} [MPa]	Verifica -	$\sigma_{cen,d}$ [MPa]	$\tau_{cen,d}$ [MPa]	$\sigma_{id,cen,d}$ [MPa]	f_{yd} [MPa]	Verifica -
1335.1	253.5	0.1	-46.8	1735.6	329.6	0.2	-60.8	6.9	13.8	OK	42.0	-16.4	50.7	261.9	OK
0.0	-909.8	45.2	-58.0	0.0	-1182.7	58.8	-75.4	0.0	13.8	OK	255.4	-20.3	257.8	261.9	OK
0.0	-632.6	45.3	-54.3	0.0	-822.4	58.9	-70.5	0.0	13.8	OK	210.0	-19.0	212.6	261.9	OK
13.1	2.5	0.8	-399.6	17.0	3.2	1.0	-519.5	0.1	13.8	OK	2.2	-140.0	242.5	261.9	OK
0.0	-4.7	0.5	24.4	0.0	-6.2	0.7	31.8	0.0	13.8	OK	2.0	8.6	15.0	261.9	OK
0.0	-73.6	-5.6	2.2	0.0	-95.7	-7.2	2.9	0.0	13.8	OK	25.1	0.8	25.2	261.9	OK
0.0	-69.1	-6.4	-3.0	0.0	-89.8	-8.3	-3.9	0.0	13.8	OK	26.2	-1.1	26.3	261.9	OK
16.9	3.2	9.4	56.4	21.9	4.2	12.2	73.4	0.1	13.8	OK	22.5	19.8	41.0	261.9	OK
0.0	-27.7	4.1	26.6	0.0	-36.0	5.3	34.6	0.0	13.8	OK	14.1	9.3	21.5	261.9	OK
0.0	-67.7	-4.1	6.7	0.0	-88.0	-5.3	8.7	0.0	13.8	OK	20.7	2.4	21.1	261.9	OK
0.0	-8.1	0.0	21.4	0.0	-10.5	0.0	27.8	0.0	13.8	OK	1.4	7.5	13.1	261.9	OK
0.0	-31.9	15.9	41.8	0.0	-41.5	20.7	54.3	0.0	13.8	OK	42.4	14.6	49.4	261.9	OK
0.0	-54.7	11.2	45.7	0.0	-71.1	14.5	59.5	0.0	13.8	OK	35.1	16.0	44.7	261.9	OK
174.3	33.1	11.2	44.9	226.6	43.0	14.6	58.4	0.9	13.8	OK	31.7	15.7	41.8	261.9	OK
462.6	87.8	2.3	78.0	601.4	114.2	3.0	101.4	2.4	13.8	OK	19.8	27.3	51.3	261.9	OK
0.0	-97.0	-6.4	-0.4	0.0	-126.1	-8.3	-0.5	0.0	13.8	OK	30.9	-0.1	30.9	261.9	OK
873.8	165.9	3.4	-3.8	1136.0	215.7	4.4	-5.0	4.5	13.8	OK	35.2	-1.3	35.2	261.9	OK
924.5	175.6	35.4	-16.9	1201.9	228.2	46.0	-21.9	4.8	13.8	OK	111.6	-5.9	112.1	261.9	OK
666.2	126.5	9.0	-64.9	866.0	164.4	11.7	-84.4	3.5	13.8	OK	41.8	-22.7	57.4	261.9	OK
0.0	-909.8	45.2	-58.0	0.0	-1182.7	58.8	-75.4	0.0	13.8	OK	255.4	-20.3	257.8	261.9	OK
0.0	-297.0	27.8	85.1	0.0	-386.1	36.2	110.6	0.0	13.8	OK	113.9	29.8	125.1	261.9	OK
0.0	-708.3	28.9	-45.3	0.0	-920.8	37.6	-58.9	0.0	13.8	OK	184.1	-15.9	186.2	261.9	OK
0.0	-632.6	45.3	-54.3	0.0	-822.4	58.9	-70.5	0.0	13.8	OK	210.0	-19.0	212.6	261.9	OK
0.0	-266.5	7.4	-83.2	0.0	-346.5	9.6	-108.2	0.0	13.8	OK	61.2	-29.2	79.4	261.9	OK
32.6	6.2	9.4	53.0	42.4	8.1	12.3	68.9	0.2	13.8	OK	23.1	18.6	39.6	261.9	OK
194.8	37.0	31.0	125.4	253.2	48.1	40.3	163.1	1.0	13.8	OK	78.6	44.0	109.4	261.9	OK
70.4	13.4	-6.3	49.4	91.5	17.4	-8.2	64.2	0.4	13.8	OK	17.0	17.3	34.4	261.9	OK
88.9	16.9	21.4	-335.5	115.5	21.9	27.8	-436.1	0.5	13.8	OK	52.8	-117.5	210.3	261.9	OK
230.3	43.7	19.0	-95.9	299.4	56.8	24.7	-124.6	1.2	13.8	OK	51.5	-33.6	77.7	261.9	OK
339.1	64.4	7.1	-313.4	440.9	83.7	9.2	-407.5	1.8	13.8	OK	27.2	-109.8	192.1	261.9	OK
0.0	-48.1	-7.8	-2.7	0.0	-62.5	-10.1	-3.6	0.0	13.8	OK	26.1	-1.0	26.2	261.9	OK
18.8	3.6	-11.5	-4.4	24.5	4.6	-15.0	-5.7	0.1	13.8	OK	27.5	-1.5	27.7	261.9	OK
124.6	23.7	-8.8	-9.9	162.0	30.8	-11.4	-12.8	0.6	13.8	OK	24.4	-3.5	25.1	261.9	OK
0.0	-14.9	-8.8	-6.7	0.0	-19.4	-11.4	-8.6	0.0	13.8	OK	23.0	-2.3	23.4	261.9	OK
0.0	-15.1	-9.4	-3.8	0.0	-19.7	-12.2	-5.0	0.0	13.8	OK	24.5	-1.3	24.6	261.9	OK
70.1	13.3	-10.4	-9.5	91.2	17.3	-13.5	-12.3	0.4	13.8	OK	26.5	-3.3	27.1	261.9	OK
97.3	18.5	-11.1	-10.6	126.5	24.0	-14.4	-13.7	0.5	13.8	OK	28.9	-3.7	29.6	261.9	OK
0.0	-51.1	-7.0	-3.0	0.0	-66.4	-9.1	-3.9	0.0	13.8	OK	24.8	-1.1	24.9	261.9	OK
36.9	7.0	-7.9	-3.2	48.0	9.1	-10.3	-4.1	0.2	13.8	OK	19.7	-1.1	19.8	261.9	OK
121.1	23.0	-13.5	-9.4	157.5	29.9	-17.5	-12.3	0.6	13.8	OK	35.3	-3.3	35.8	261.9	OK
0.0	-21.3	-9.2	-2.0	0.0	-27.7	-11.9	-2.6	0.0	13.8	OK	25.0	-0.7	25.0	261.9	OK
0.0	-65.8	-9.5	-5.8	0.0	-85.6	-12.3	-7.5	0.0	13.8	OK	33.0	-2.0	33.2	261.9	OK

45.8	8.7	-10.0	-10.0	59.6	11.3	-13.0	-13.0	0.2	13.8	OK	24.9	-3.5	25.6	261.9	OK
102.4	19.4	-6.9	-6.0	133.1	25.3	-9.0	-7.7	0.5	13.8	OK	19.4	-2.1	19.8	261.9	OK
138.1	26.2	-11.0	-10.5	179.6	34.1	-14.3	-13.6	0.7	13.8	OK	30.1	-3.7	30.8	261.9	OK
123.5	23.4	-8.4	-11.1	160.5	30.5	-10.9	-14.4	0.6	13.8	OK	23.5	-3.9	24.5	261.9	OK
81.0	15.4	-13.5	-6.3	105.3	20.0	-17.6	-8.3	0.4	13.8	OK	34.1	-2.2	34.3	261.9	OK
15.9	3.0	-11.5	-7.6	20.7	3.9	-15.0	-9.8	0.1	13.8	OK	27.5	-2.6	27.9	261.9	OK
0.0	-85.8	-9.4	-3.2	0.0	-111.6	-12.3	-4.1	0.0	13.8	OK	36.2	-1.1	36.2	261.9	OK
0.0	-33.1	-10.7	-3.8	0.0	-43.1	-13.9	-5.0	0.0	13.8	OK	30.5	-1.3	30.6	261.9	OK
0.0	-70.0	-2.8	23.2	0.0	-91.0	-3.7	30.1	0.0	13.8	OK	18.1	8.1	23.0	261.9	OK
0.0	-84.5	-8.3	-4.5	0.0	-109.8	-10.8	-5.9	0.0	13.8	OK	33.3	-1.6	33.4	261.9	OK
0.0	-96.7	1.3	30.6	0.0	-125.7	1.7	39.8	0.0	13.8	OK	19.0	10.7	26.6	261.9	OK
329.1	62.5	20.2	4.0	427.8	81.2	26.3	5.2	1.7	13.8	OK	57.6	1.4	57.7	261.9	OK
0.0	-90.0	-2.5	26.2	0.0	-117.1	-3.3	34.1	0.0	13.8	OK	20.7	9.2	26.1	261.9	OK
0.0	-120.7	-6.8	7.8	0.0	-156.9	-8.9	10.1	0.0	13.8	OK	35.8	2.7	36.1	261.9	OK
0.0	-136.5	-8.8	-1.7	0.0	-177.5	-11.4	-2.2	0.0	13.8	OK	43.0	-0.6	43.0	261.9	OK
0.0	-112.0	-8.2	2.2	0.0	-145.6	-10.6	2.9	0.0	13.8	OK	37.5	0.8	37.6	261.9	OK
404.2	76.8	9.0	46.8	525.5	99.8	11.7	60.8	2.1	13.8	OK	33.7	16.4	44.0	261.9	OK
0.0	-153.4	5.4	41.4	0.0	-199.4	7.1	53.9	0.0	13.8	OK	37.9	14.5	45.5	261.9	OK
110.6	21.0	9.5	49.3	143.7	27.3	12.4	64.1	0.6	13.8	OK	25.7	17.3	39.5	261.9	OK
0.0	-197.4	12.3	209.3	0.0	-256.6	16.0	272.1	0.0	13.8	OK	61.2	73.3	141.0	261.9	OK
0.0	-253.5	22.2	159.4	0.0	-329.5	28.9	207.2	0.0	13.8	OK	93.6	55.8	134.6	261.9	OK
0.0	-15.0	12.0	46.9	0.0	-19.4	15.7	61.0	0.0	13.8	OK	30.6	16.4	41.8	261.9	OK
45.1	8.6	12.3	10.6	58.6	11.1	16.0	13.8	0.2	13.8	OK	30.1	3.7	30.8	261.9	OK
61.4	11.7	8.5	33.4	79.8	15.2	11.1	43.5	0.3	13.8	OK	21.9	11.7	29.8	261.9	OK
0.0	-203.0	6.8	-84.8	0.0	-263.9	8.8	-110.3	0.0	13.8	OK	49.2	-29.7	71.2	261.9	OK
55.6	10.6	7.1	-22.3	72.2	13.7	9.3	-29.0	0.3	13.8	OK	18.4	-7.8	22.9	261.9	OK
132.7	25.2	7.1	7.3	172.5	32.8	9.3	9.4	0.7	13.8	OK	20.9	2.5	21.3	261.9	OK
63.5	12.0	-20.1	91.6	82.5	15.7	-26.1	119.1	0.3	13.8	OK	48.9	32.1	74.0	261.9	OK
136.5	25.9	-4.6	-35.1	177.4	33.7	-6.0	-45.6	0.7	13.8	OK	15.1	-12.3	26.1	261.9	OK
7.6	1.4	15.0	8.4	9.9	1.9	19.4	11.0	0.0	13.8	OK	35.2	3.0	35.6	261.9	OK
0.0	-132.0	-6.6	-97.6	0.0	-171.5	-8.6	-126.8	0.0	13.8	OK	37.2	-34.2	69.9	261.9	OK
70.4	13.4	2.1	31.2	91.5	17.4	2.7	40.5	0.4	13.8	OK	7.1	10.9	20.2	261.9	OK
457.9	86.9	14.0	-69.4	595.2	113.0	18.1	-90.2	2.4	13.8	OK	46.9	-24.3	63.0	261.9	OK
5.4	1.0	0.9	12.9	7.0	1.3	1.1	16.7	0.0	13.8	OK	2.2	4.5	8.1	261.9	OK
0.0	-57.5	-3.7	20.4	0.0	-74.8	-4.8	26.5	0.0	13.8	OK	18.0	7.1	21.9	261.9	OK
5.1	1.0	-6.3	3.6	6.6	1.3	-8.2	4.7	0.0	13.8	OK	15.0	1.3	15.2	261.9	OK
0.0	-27.2	2.8	18.1	0.0	-35.3	3.6	23.5	0.0	13.8	OK	11.0	6.3	15.5	261.9	OK
16.1	3.1	3.5	33.7	20.9	4.0	4.5	43.8	0.1	13.8	OK	8.6	11.8	22.2	261.9	OK
0.0	-46.7	-5.5	16.2	0.0	-60.6	-7.2	21.1	0.0	13.8	OK	20.6	5.7	22.8	261.9	OK
118.9	22.6	-15.8	-17.3	154.5	29.3	-20.5	-22.5	0.6	13.8	OK	40.6	-6.1	41.9	261.9	OK
38.5	7.3	-15.3	-11.0	50.1	9.5	-19.9	-14.3	0.2	13.8	OK	36.9	-3.8	37.5	261.9	OK
141.8	26.9	-18.2	-16.4	184.3	35.0	-23.6	-21.3	0.7	13.8	OK	46.9	-5.7	48.0	261.9	OK
90.3	17.1	-13.3	-8.5	117.4	22.3	-17.3	-11.0	0.5	13.8	OK	33.9	-3.0	34.3	261.9	OK
0.0	-22.0	-15.0	-4.3	0.0	-28.6	-19.6	-5.6	0.0	13.8	OK	38.8	-1.5	38.9	261.9	OK
2.2	0.4	-18.0	-6.3	2.9	0.6	-23.5	-8.2	0.0	13.8	OK	42.3	-2.2	42.4	261.9	OK
5.0	1.0	-14.1	-2.7	6.5	1.2	-18.3	-3.5	0.0	13.8	OK	33.1	-0.9	33.2	261.9	OK
0.0	-23.5	-12.5	0.4	0.0	-30.6	-16.2	0.6	0.0	13.8	OK	33.0	0.2	33.0	261.9	OK

74.9	14.2	-21.2	-9.9	97.4	18.5	-27.5	-12.8	0.4	13.8	OK	51.9	-3.5	52.2	261.9	OK
0.0	-35.6	-8.4	4.4	0.0	-46.3	-10.9	5.7	0.0	13.8	OK	25.5	1.5	25.6	261.9	OK
0.0	-40.5	-16.6	1.2	0.0	-52.7	-21.5	1.5	0.0	13.8	OK	45.4	0.4	45.4	261.9	OK
0.0	-35.4	-8.0	2.7	0.0	-46.0	-10.4	3.5	0.0	13.8	OK	24.5	0.9	24.6	261.9	OK
0.0	-54.7	-14.9	-1.9	0.0	-71.1	-19.4	-2.4	0.0	13.8	OK	43.8	-0.7	43.9	261.9	OK
135.6	25.7	-20.9	-15.7	176.3	33.5	-27.1	-20.4	0.7	13.8	OK	53.0	-5.5	53.8	261.9	OK
114.4	21.7	-16.9	-14.9	148.8	28.2	-22.0	-19.4	0.6	13.8	OK	43.1	-5.2	44.1	261.9	OK
0.0	-12.7	-14.5	-4.3	0.0	-16.6	-18.8	-5.6	0.0	13.8	OK	35.9	-1.5	36.0	261.9	OK
76.9	14.6	-18.1	-13.6	100.0	19.0	-23.5	-17.6	0.4	13.8	OK	44.7	-4.8	45.4	261.9	OK
39.2	7.4	-14.5	-4.5	51.0	9.7	-18.8	-5.8	0.2	13.8	OK	35.0	-1.6	35.1	261.9	OK
9.7	1.8	-18.9	-2.6	12.6	2.4	-24.6	-3.4	0.1	13.8	OK	44.5	-0.9	44.5	261.9	OK
127.6	24.2	-15.3	-12.2	165.8	31.5	-19.9	-15.9	0.7	13.8	OK	39.7	-4.3	40.4	261.9	OK
0.0	-53.3	2.6	26.4	0.0	-69.3	3.3	34.3	0.0	13.8	OK	14.8	9.2	21.8	261.9	OK
0.0	-69.5	-4.7	21.8	0.0	-90.3	-6.1	28.3	0.0	13.8	OK	22.4	7.6	26.1	261.9	OK
0.0	-97.5	-6.4	21.2	0.0	-126.7	-8.3	27.6	0.0	13.8	OK	30.9	7.4	33.5	261.9	OK
0.0	-11.4	-7.7	10.7	0.0	-14.8	-10.0	14.0	0.0	13.8	OK	19.8	3.8	20.9	261.9	OK
0.0	-20.5	2.7	44.1	0.0	-26.6	3.6	57.3	0.0	13.8	OK	9.8	15.5	28.5	261.9	OK
0.0	-177.3	-0.4	15.8	0.0	-230.5	-0.6	20.6	0.0	13.8	OK	30.2	5.5	31.7	261.9	OK
2.6	0.5	-5.0	-24.3	3.3	0.6	-6.5	-31.6	0.0	13.8	OK	11.7	-8.5	18.8	261.9	OK
121.7	23.1	-23.4	-71.7	158.3	30.1	-30.4	-93.3	0.6	13.8	OK	58.5	-25.1	72.9	261.9	OK
184.2	35.0	-6.3	-85.2	239.4	45.5	-8.2	-110.8	1.0	13.8	OK	20.6	-29.9	55.7	261.9	OK
0.0	-44.8	3.1	-7.2	0.0	-58.3	4.0	-9.3	0.0	13.8	OK	14.6	-2.5	15.2	261.9	OK
155.4	29.5	0.8	-119.4	202.0	38.4	1.0	-155.2	0.8	13.8	OK	6.7	-41.8	72.7	261.9	OK
0.0	-182.2	3.9	152.5	0.0	-236.9	5.1	198.2	0.0	13.8	OK	39.1	53.4	100.5	261.9	OK
15.3	2.9	-3.8	16.8	19.8	3.8	-5.0	21.8	0.1	13.8	OK	9.4	5.9	13.9	261.9	OK
0.0	-19.2	-21.3	1.6	0.0	-24.9	-27.7	2.1	0.0	13.8	OK	52.9	0.6	52.9	261.9	OK
56.3	10.7	-12.4	12.4	73.1	13.9	-16.2	16.1	0.3	13.8	OK	30.8	4.3	31.7	261.9	OK
128.4	24.4	-19.7	-15.6	166.9	31.7	-25.6	-20.3	0.7	13.8	OK	50.0	-5.5	50.9	261.9	OK
15.3	2.9	-22.4	7.9	19.8	3.8	-29.1	10.3	0.1	13.8	OK	52.7	2.8	53.0	261.9	OK
86.5	16.4	-29.4	-7.4	112.5	21.4	-38.3	-9.6	0.4	13.8	OK	71.5	-2.6	71.7	261.9	OK
137.1	26.0	-30.2	-15.8	178.3	33.9	-39.3	-20.5	0.7	13.8	OK	75.0	-5.5	75.6	261.9	OK
26.4	5.0	-22.9	-2.2	34.3	6.5	-29.8	-2.9	0.1	13.8	OK	54.5	-0.8	54.5	261.9	OK
0.0	-24.8	-14.6	29.4	0.0	-32.2	-19.0	38.3	0.0	13.8	OK	38.2	10.3	42.2	261.9	OK
83.5	15.9	-21.4	-12.2	108.6	20.6	-27.9	-15.8	0.4	13.8	OK	52.7	-4.3	53.3	261.9	OK
97.7	18.6	-19.5	-10.2	127.0	24.1	-25.4	-13.2	0.5	13.8	OK	48.7	-3.6	49.1	261.9	OK
101.4	19.2	-28.5	-5.2	131.8	25.0	-37.0	-6.8	0.5	13.8	OK	69.8	-1.8	69.9	261.9	OK
0.0	-17.2	-19.0	6.3	0.0	-22.4	-24.7	8.2	0.0	13.8	OK	47.2	2.2	47.4	261.9	OK
136.8	26.0	-19.8	-19.8	177.9	33.8	-25.8	-25.7	0.7	13.8	OK	50.6	-6.9	52.0	261.9	OK
23.3	4.4	-20.0	9.2	30.3	5.8	-26.0	11.9	0.1	13.8	OK	47.5	3.2	47.8	261.9	OK
0.0	-52.5	-12.4	36.3	0.0	-68.3	-16.1	47.2	0.0	13.8	OK	37.5	12.7	43.5	261.9	OK
38.2	7.3	-20.5	-0.1	49.6	9.4	-26.6	-0.1	0.2	13.8	OK	49.1	0.0	49.1	261.9	OK
24.9	4.7	-2.7	22.3	32.4	6.2	-3.6	29.0	0.1	13.8	OK	7.2	7.8	15.3	261.9	OK
145.0	27.5	-28.4	-15.4	188.6	35.8	-36.9	-20.1	0.8	13.8	OK	70.9	-5.4	71.5	261.9	OK
9.6	1.8	-10.3	20.2	12.5	2.4	-13.4	26.2	0.0	13.8	OK	24.3	7.1	27.2	261.9	OK
56.0	10.6	-3.5	10.7	72.9	13.8	-4.5	13.9	0.3	13.8	OK	9.8	3.8	11.8	261.9	OK
37.2	7.1	-3.9	5.4	48.4	9.2	-5.1	7.0	0.2	13.8	OK	10.3	1.9	10.8	261.9	OK
0.0	-564.7	12.3	37.8	0.0	-734.1	16.0	49.1	0.0	13.8	OK	121.7	13.2	123.8	261.9	OK

0.0	-3.8	-24.0	10.5	0.0	-5.0	-31.2	13.6	0.0	13.8	OK	56.8	3.7	57.2	261.9	OK
139.1	26.4	-25.4	-0.7	180.8	34.3	-33.0	-0.9	0.7	13.8	OK	63.6	-0.2	63.7	261.9	OK
153.5	29.1	-27.2	-8.8	199.5	37.9	-35.3	-11.5	0.8	13.8	OK	68.3	-3.1	68.5	261.9	OK
5.7	1.1	-11.5	38.8	7.4	1.4	-14.9	50.4	0.0	13.8	OK	27.0	13.6	35.8	261.9	OK
101.3	19.2	-24.8	39.9	131.6	25.0	-32.3	51.9	0.5	13.8	OK	61.2	14.0	65.9	261.9	OK
128.9	24.5	-28.0	-12.1	167.6	31.8	-36.4	-15.7	0.7	13.8	OK	69.4	-4.2	69.8	261.9	OK
144.4	27.4	-18.4	19.8	187.7	35.6	-23.9	25.8	0.8	13.8	OK	47.5	6.9	49.0	261.9	OK
23.4	4.4	-11.0	51.5	30.4	5.8	-14.4	67.0	0.1	13.8	OK	26.5	18.0	41.0	261.9	OK
15.8	3.0	-6.5	39.4	20.6	3.9	-8.5	51.2	0.1	13.8	OK	15.8	13.8	28.6	261.9	OK
152.1	28.9	-12.2	24.7	197.8	37.6	-15.8	32.1	0.8	13.8	OK	33.2	8.7	36.4	261.9	OK
107.7	20.4	-17.4	43.5	140.0	26.6	-22.7	56.6	0.6	13.8	OK	44.2	15.3	51.5	261.9	OK
34.7	6.6	-4.6	55.1	45.2	8.6	-5.9	71.7	0.2	13.8	OK	11.8	19.3	35.5	261.9	OK
134.5	25.5	-29.4	-8.1	174.9	33.2	-38.2	-10.6	0.7	13.8	OK	72.9	-2.8	73.0	261.9	OK
148.1	28.1	-22.6	-1.0	192.6	36.6	-29.4	-1.3	0.8	13.8	OK	57.5	-0.3	57.5	261.9	OK
138.9	26.4	-22.2	-6.3	180.6	34.3	-28.8	-8.2	0.7	13.8	OK	56.2	-2.2	56.3	261.9	OK
14.0	2.7	-17.4	11.8	18.2	3.5	-22.6	15.4	0.1	13.8	OK	41.0	4.1	41.7	261.9	OK
255.1	48.4	-19.4	20.1	331.6	63.0	-25.3	26.1	1.3	13.8	OK	53.4	7.0	54.8	261.9	OK
76.9	14.6	-13.9	8.4	100.0	19.0	-18.0	10.9	0.4	13.8	OK	34.8	2.9	35.2	261.9	OK
80.3	15.2	-4.5	46.4	104.4	19.8	-5.9	60.4	0.4	13.8	OK	13.1	16.3	31.1	261.9	OK
0.0	-14.2	-0.4	17.2	0.0	-18.5	-0.6	22.4	0.0	13.8	OK	3.4	6.0	11.0	261.9	OK
187.6	35.6	-13.4	35.5	243.8	46.3	-17.4	46.1	1.0	13.8	OK	37.2	12.4	43.0	261.9	OK
147.8	28.1	-1.7	29.9	192.1	36.5	-2.2	38.8	0.8	13.8	OK	8.6	10.5	20.1	261.9	OK
80.3	15.3	2.3	35.7	104.4	19.8	3.0	46.4	0.4	13.8	OK	7.9	12.5	23.1	261.9	OK
0.0	-3.1	9.7	6.9	0.0	-4.0	12.6	9.0	0.0	13.8	OK	23.2	2.4	23.6	261.9	OK
66.9	12.7	-15.2	-0.8	87.0	16.5	-19.8	-1.1	0.3	13.8	OK	37.7	-0.3	37.7	261.9	OK
226.9	43.1	-14.0	16.0	294.9	56.0	-18.2	20.8	1.2	13.8	OK	39.9	5.6	41.0	261.9	OK
0.0	-34.9	2.0	-2.9	0.0	-45.4	2.6	-3.8	0.0	13.8	OK	10.3	-1.0	10.5	261.9	OK
253.5	48.1	-21.9	-20.4	329.5	62.6	-28.5	-26.5	1.3	13.8	OK	59.2	-7.2	60.5	261.9	OK
287.7	54.6	-23.8	-17.0	374.0	71.0	-31.0	-22.1	1.5	13.8	OK	64.7	-5.9	65.5	261.9	OK
8.0	1.5	-0.5	-7.3	10.4	2.0	-0.6	-9.5	0.0	13.8	OK	1.4	-2.6	4.6	261.9	OK
144.8	27.5	0.0	5.4	188.2	35.7	0.0	7.0	0.8	13.8	OK	4.6	1.9	5.6	261.9	OK
80.4	15.3	-4.7	11.3	104.5	19.8	-6.1	14.6	0.4	13.8	OK	13.5	3.9	15.1	261.9	OK
90.1	17.1	-1.8	-3.4	117.2	22.2	-2.3	-4.5	0.5	13.8	OK	6.9	-1.2	7.3	261.9	OK
259.3	49.2	-15.6	16.5	337.1	64.0	-20.2	21.5	1.3	13.8	OK	44.5	5.8	45.6	261.9	OK
43.2	8.2	-6.6	12.1	56.2	10.7	-8.5	15.7	0.2	13.8	OK	16.7	4.2	18.3	261.9	OK
310.4	58.9	-2.8	-15.8	403.5	76.6	-3.7	-20.5	1.6	13.8	OK	16.3	-5.5	18.9	261.9	OK
103.6	19.7	-3.7	-9.4	134.7	25.6	-4.9	-12.2	0.5	13.8	OK	12.0	-3.3	13.3	261.9	OK
100.9	19.2	-2.2	-13.8	131.2	24.9	-2.8	-17.9	0.5	13.8	OK	8.3	-4.8	11.7	261.9	OK
183.8	34.9	-1.1	-1.0	239.0	45.4	-1.4	-1.3	1.0	13.8	OK	8.3	-0.4	8.4	261.9	OK
115.5	21.9	5.1	-9.1	150.1	28.5	6.6	-11.8	0.6	13.8	OK	15.6	-3.2	16.5	261.9	OK
321.4	61.0	2.5	-26.0	417.9	79.3	3.3	-33.8	1.7	13.8	OK	16.0	-9.1	22.5	261.9	OK
17.1	3.3	0.6	-15.8	22.3	4.2	0.8	-20.5	0.1	13.8	OK	2.0	-5.5	9.8	261.9	OK
134.1	25.5	-3.5	-2.3	174.3	33.1	-4.6	-3.0	0.7	13.8	OK	12.5	-0.8	12.5	261.9	OK
0.0	-80.4	-0.7	-4.6	0.0	-104.6	-0.9	-6.0	0.0	13.8	OK	14.8	-1.6	15.1	261.9	OK
70.2	13.3	3.6	-7.9	91.2	17.3	4.7	-10.3	0.4	13.8	OK	10.7	-2.8	11.7	261.9	OK
0.0	-34.8	-3.9	-3.5	0.0	-45.2	-5.0	-4.6	0.0	13.8	OK	14.8	-1.2	14.9	261.9	OK
3.0	0.6	-8.6	1.1	4.0	0.8	-11.1	1.4	0.0	13.8	OK	20.1	0.4	20.1	261.9	OK

130.9	24.8	-7.0	2.7	170.1	32.3	-9.2	3.5	0.7	13.8	OK	20.6	0.9	20.6	261.9	OK
127.9	24.3	3.1	-12.8	166.3	31.6	4.1	-16.7	0.7	13.8	OK	11.3	-4.5	13.8	261.9	OK
195.3	37.1	-5.0	-4.9	253.9	48.2	-6.5	-6.4	1.0	13.8	OK	17.7	-1.7	18.0	261.9	OK
110.3	20.9	-5.6	-3.5	143.4	27.2	-7.2	-4.6	0.6	13.8	OK	16.4	-1.2	16.6	261.9	OK
86.6	16.4	-6.1	-4.5	112.6	21.4	-7.9	-5.8	0.5	13.8	OK	17.0	-1.6	17.2	261.9	OK
83.6	15.9	-6.5	-0.6	108.7	20.6	-8.4	-0.7	0.4	13.8	OK	17.8	-0.2	17.8	261.9	OK
0.0	-8.8	-2.2	-9.7	0.0	-11.5	-2.9	-12.6	0.0	13.8	OK	6.6	-3.4	8.8	261.9	OK
0.0	-9.4	-6.5	-1.5	0.0	-12.3	-8.4	-1.9	0.0	13.8	OK	16.7	-0.5	16.7	261.9	OK
135.4	25.7	-1.1	-11.6	176.0	33.4	-1.5	-15.1	0.7	13.8	OK	6.9	-4.1	9.9	261.9	OK
263.5	50.0	1.3	-20.8	342.6	65.1	1.8	-27.1	1.4	13.8	OK	11.4	-7.3	17.0	261.9	OK
38.9	7.4	-6.0	-6.4	50.6	9.6	-7.8	-8.3	0.2	13.8	OK	15.2	-2.2	15.7	261.9	OK
247.8	47.1	-1.7	-12.5	322.2	61.2	-2.2	-16.2	1.3	13.8	OK	11.7	-4.4	13.9	261.9	OK
0.0	-22.3	-7.7	-1.8	0.0	-29.0	-10.1	-2.4	0.0	13.8	OK	21.8	-0.6	21.8	261.9	OK
5.2	1.0	1.8	-6.6	6.8	1.3	2.3	-8.6	0.0	13.8	OK	4.4	-2.3	5.9	261.9	OK
157.6	29.9	1.3	5.4	204.9	38.9	1.7	7.0	0.8	13.8	OK	8.1	1.9	8.7	261.9	OK
99.3	18.9	-2.2	-9.2	129.1	24.5	-2.9	-11.9	0.5	13.8	OK	8.3	-3.2	10.0	261.9	OK
237.1	45.0	1.2	-12.5	308.3	58.5	1.6	-16.2	1.2	13.8	OK	10.2	-4.4	12.7	261.9	OK
10.8	2.0	-1.0	-5.8	14.0	2.7	-1.3	-7.5	0.1	13.8	OK	2.7	-2.0	4.4	261.9	OK
167.6	31.8	-4.8	-2.6	217.9	41.4	-6.3	-3.4	0.9	13.8	OK	16.5	-0.9	16.6	261.9	OK
115.5	21.9	2.3	-15.2	150.1	28.5	3.0	-19.7	0.6	13.8	OK	8.9	-5.3	12.8	261.9	OK
0.0	-5.6	-7.4	3.0	0.0	-7.3	-9.6	3.9	0.0	13.8	OK	18.3	1.1	18.3	261.9	OK
16.6	3.2	-9.5	1.3	21.6	4.1	-12.4	1.7	0.1	13.8	OK	22.8	0.5	22.8	261.9	OK
52.2	9.9	-8.0	1.8	67.8	12.9	-10.3	2.3	0.3	13.8	OK	20.2	0.6	20.3	261.9	OK
89.1	16.9	1.8	-6.2	115.9	22.0	2.4	-8.0	0.5	13.8	OK	7.1	-2.2	8.0	261.9	OK
13.6	2.6	-5.8	2.4	17.7	3.4	-7.5	3.1	0.1	13.8	OK	14.0	0.8	14.1	261.9	OK
9.1	1.7	-2.6	-0.9	11.8	2.2	-3.4	-1.2	0.0	13.8	OK	6.4	-0.3	6.5	261.9	OK
3.0	0.6	-8.6	2.5	3.9	0.7	-11.2	3.2	0.0	13.8	OK	20.2	0.9	20.3	261.9	OK
57.5	10.9	-6.6	-4.3	74.7	14.2	-8.6	-5.6	0.3	13.8	OK	17.2	-1.5	17.4	261.9	OK
185.3	35.2	2.0	8.3	240.9	45.7	2.7	10.8	1.0	13.8	OK	10.6	2.9	11.7	261.9	OK
32.1	6.1	3.3	-5.3	41.7	7.9	4.3	-6.9	0.2	13.8	OK	8.8	-1.8	9.3	261.9	OK
86.0	16.3	-8.6	1.5	111.8	21.2	-11.2	1.9	0.4	13.8	OK	22.8	0.5	22.8	261.9	OK
168.5	32.0	-0.8	-9.9	219.1	41.6	-1.1	-12.8	0.9	13.8	OK	7.2	-3.5	9.4	261.9	OK
161.5	30.7	1.2	-15.9	210.0	39.9	1.5	-20.6	0.8	13.8	OK	7.8	-5.6	12.4	261.9	OK
51.9	9.8	-5.9	2.5	67.4	12.8	-7.7	3.3	0.3	13.8	OK	15.5	0.9	15.6	261.9	OK
94.6	18.0	-4.7	2.9	122.9	23.3	-6.1	3.8	0.5	13.8	OK	13.8	1.0	14.0	261.9	OK
97.6	18.5	-8.0	-1.4	126.9	24.1	-10.5	-1.8	0.5	13.8	OK	21.8	-0.5	21.9	261.9	OK
95.8	18.2	-0.8	-2.7	124.5	23.6	-1.0	-3.5	0.5	13.8	OK	4.8	-0.9	5.1	261.9	OK
48.3	9.2	-6.8	2.6	62.7	11.9	-8.8	3.4	0.3	13.8	OK	17.4	0.9	17.5	261.9	OK
20.7	3.9	-9.4	-0.8	26.8	5.1	-12.2	-1.0	0.1	13.8	OK	22.6	-0.3	22.6	261.9	OK
135.9	25.8	-3.0	33.4	176.7	33.6	-3.9	43.4	0.7	13.8	OK	11.2	11.7	23.2	261.9	OK
0.0	-724.5	9.6	34.7	0.0	-941.9	12.4	45.1	0.0	13.8	OK	141.6	12.2	143.2	261.9	OK
24.0	4.6	1.1	-4.0	31.2	5.9	1.4	-5.1	0.1	13.8	OK	3.3	-1.4	4.1	261.9	OK
54.5	10.3	-5.9	7.6	70.8	13.4	-7.7	9.8	0.3	13.8	OK	15.6	2.6	16.2	261.9	OK
31.0	5.9	0.4	-5.9	40.3	7.7	0.5	-7.6	0.2	13.8	OK	1.8	-2.1	4.0	261.9	OK
83.6	15.9	1.4	-6.4	108.7	20.6	1.8	-8.4	0.4	13.8	OK	5.9	-2.3	7.1	261.9	OK
41.2	7.8	-5.1	12.0	53.6	10.2	-6.6	15.6	0.2	13.8	OK	13.2	4.2	15.0	261.9	OK
79.2	15.0	-5.7	6.8	102.9	19.5	-7.5	8.8	0.4	13.8	OK	15.9	2.4	16.4	261.9	OK

102.8	19.5	3.7	-16.0	133.7	25.4	4.8	-20.7	0.5	13.8	OK	11.8	-5.6	15.2	261.9	OK
150.9	28.6	-3.0	-9.2	196.1	37.2	-3.9	-12.0	0.8	13.8	OK	11.8	-3.2	13.0	261.9	OK
6.6	1.2	-4.2	2.8	8.5	1.6	-5.4	3.7	0.0	13.8	OK	9.9	1.0	10.1	261.9	OK
0.6	0.1	-3.2	1.8	0.7	0.1	-4.2	2.3	0.0	13.8	OK	7.5	0.6	7.6	261.9	OK
28.2	5.4	-3.7	2.2	36.6	7.0	-4.8	2.8	0.1	13.8	OK	9.4	0.8	9.5	261.9	OK
0.0	-4.7	-2.3	0.4	0.0	-6.1	-3.0	0.5	0.0	13.8	OK	6.2	0.1	6.2	261.9	OK
56.0	10.6	-1.8	-2.0	72.7	13.8	-2.3	-2.5	0.3	13.8	OK	5.9	-0.7	6.1	261.9	OK
87.2	16.6	-7.7	-0.8	113.4	21.5	-10.0	-1.0	0.5	13.8	OK	20.8	-0.3	20.8	261.9	OK
31.6	6.0	-2.9	-6.6	41.0	7.8	-3.8	-8.5	0.2	13.8	OK	7.8	-2.3	8.7	261.9	OK
0.0	-10.1	-1.3	-2.1	0.0	-13.2	-1.7	-2.7	0.0	13.8	OK	4.8	-0.7	4.9	261.9	OK
47.0	8.9	-2.5	8.4	61.0	11.6	-3.3	10.9	0.2	13.8	OK	7.4	2.9	9.0	261.9	OK
29.2	5.5	-3.9	9.2	38.0	7.2	-5.0	11.9	0.2	13.8	OK	9.9	3.2	11.4	261.9	OK
31.3	5.9	-3.1	7.2	40.7	7.7	-4.1	9.4	0.2	13.8	OK	8.3	2.5	9.4	261.9	OK
156.3	29.7	-0.8	-4.7	203.2	38.6	-1.0	-6.1	0.8	13.8	OK	6.7	-1.6	7.3	261.9	OK
17.4	3.3	-2.8	1.8	22.6	4.3	-3.6	2.3	0.1	13.8	OK	7.1	0.6	7.2	261.9	OK
66.6	12.6	-3.0	-6.9	86.5	16.4	-3.9	-8.9	0.3	13.8	OK	9.1	-2.4	10.0	261.9	OK
28.6	5.4	-7.6	4.7	37.2	7.1	-9.8	6.1	0.1	13.8	OK	18.5	1.6	18.8	261.9	OK
342.7	65.1	5.2	-11.5	445.5	84.6	6.8	-15.0	1.8	13.8	OK	22.9	-4.0	23.9	261.9	OK
17.0	3.2	-2.8	1.7	22.1	4.2	-3.7	2.2	0.1	13.8	OK	7.1	0.6	7.2	261.9	OK
62.3	11.8	-8.1	5.7	81.0	15.4	-10.5	7.4	0.3	13.8	OK	20.9	2.0	21.2	261.9	OK
44.2	8.4	-8.1	0.6	57.4	10.9	-10.5	0.7	0.2	13.8	OK	20.3	0.2	20.3	261.9	OK
82.7	15.7	-8.7	3.8	107.5	20.4	-11.3	5.0	0.4	13.8	OK	22.8	1.3	23.0	261.9	OK
0.0	-13.8	-2.0	-0.3	0.0	-17.9	-2.7	-0.3	0.0	13.8	OK	7.1	-0.1	7.1	261.9	OK
186.6	35.4	-4.4	-5.6	242.6	46.1	-5.7	-7.3	1.0	13.8	OK	16.1	-2.0	16.5	261.9	OK
53.4	10.1	-9.6	4.1	69.4	13.2	-12.5	5.4	0.3	13.8	OK	24.2	1.4	24.3	261.9	OK
129.9	24.7	6.4	-15.4	168.9	32.1	8.3	-20.1	0.7	13.8	OK	18.9	-5.4	21.1	261.9	OK
139.6	26.5	5.2	-17.9	181.5	34.5	6.7	-23.3	0.7	13.8	OK	16.4	-6.3	19.7	261.9	OK
22.6	4.3	-5.8	3.6	29.4	5.6	-7.5	4.7	0.1	13.8	OK	14.2	1.3	14.4	261.9	OK
31.0	5.9	-2.2	0.9	40.3	7.7	-2.8	1.1	0.2	13.8	OK	6.1	0.3	6.1	261.9	OK
21.3	4.0	-4.6	2.3	27.7	5.3	-6.0	3.0	0.1	13.8	OK	11.4	0.8	11.5	261.9	OK
11.2	2.1	-2.3	0.3	14.6	2.8	-3.0	0.3	0.1	13.8	OK	5.7	0.1	5.7	261.9	OK
41.7	7.9	-3.1	1.0	54.2	10.3	-4.0	1.3	0.2	13.8	OK	8.5	0.3	8.5	261.9	OK
399.5	75.9	4.0	-17.1	519.4	98.6	5.1	-22.2	2.1	13.8	OK	21.7	-6.0	24.1	261.9	OK
32.3	6.1	-5.7	0.5	42.0	8.0	-7.4	0.7	0.2	13.8	OK	14.3	0.2	14.3	261.9	OK
34.8	6.6	-9.1	5.5	45.2	8.6	-11.8	7.1	0.2	13.8	OK	22.3	1.9	22.6	261.9	OK
100.7	19.1	-6.5	-0.4	130.9	24.9	-8.5	-0.5	0.5	13.8	OK	18.5	-0.1	18.5	261.9	OK
223.6	42.5	5.9	-14.7	290.7	55.2	7.7	-19.1	1.2	13.8	OK	20.8	-5.1	22.6	261.9	OK
65.3	12.4	-2.7	1.3	84.9	16.1	-3.5	1.7	0.3	13.8	OK	8.4	0.5	8.4	261.9	OK
48.8	9.3	-7.0	5.1	63.5	12.1	-9.1	6.7	0.3	13.8	OK	18.0	1.8	18.2	261.9	OK
31.8	6.0	-5.6	3.5	41.3	7.8	-7.3	4.6	0.2	13.8	OK	14.2	1.2	14.3	261.9	OK
18.1	3.4	-2.4	0.9	23.6	4.5	-3.1	1.2	0.1	13.8	OK	6.1	0.3	6.1	261.9	OK
105.9	20.1	6.3	-14.0	137.7	26.1	8.2	-18.2	0.6	13.8	OK	18.0	-4.9	19.9	261.9	OK
234.7	44.6	2.8	-16.0	305.0	57.9	3.7	-20.7	1.2	13.8	OK	13.9	-5.6	17.0	261.9	OK
38.4	7.3	-2.5	4.5	49.9	9.5	-3.3	5.8	0.2	13.8	OK	7.1	1.6	7.6	261.9	OK
49.9	9.5	-2.8	10.8	64.8	12.3	-3.6	14.0	0.3	13.8	OK	8.1	3.8	10.4	261.9	OK
69.1	13.1	-3.8	12.2	89.8	17.1	-5.0	15.8	0.4	13.8	OK	11.1	4.3	13.3	261.9	OK
45.2	8.6	-2.2	5.1	58.7	11.1	-2.9	6.6	0.2	13.8	OK	6.6	1.8	7.3	261.9	OK

0.0	-112.5	-14.4	-119.2	0.0	-146.2	-18.7	-154.9	0.0	13.8	OK	52.2	-41.7	89.2	261.9	OK
153.2	29.1	9.9	-0.6	199.1	37.8	12.8	-0.7	0.8	13.8	OK	27.9	-0.2	27.9	261.9	OK
0.0	-28.9	-7.1	21.2	0.0	-37.6	-9.3	27.5	0.0	13.8	OK	21.5	7.4	25.0	261.9	OK
0.0	-19.8	0.4	-66.7	0.0	-25.7	0.5	-86.7	0.0	13.8	OK	4.2	-23.4	40.7	261.9	OK
0.0	-12.9	-4.0	-122.8	0.0	-16.7	-5.2	-159.6	0.0	13.8	OK	11.5	-43.0	75.4	261.9	OK
0.0	-71.9	-12.0	65.1	0.0	-93.5	-15.6	84.7	0.0	13.8	OK	39.8	22.8	56.1	261.9	OK
91.9	17.5	-22.6	-72.7	119.5	22.7	-29.3	-94.5	0.5	13.8	OK	55.6	-25.5	71.0	261.9	OK
58.8	11.2	7.1	202.2	76.4	14.5	9.3	262.8	0.3	13.8	OK	18.5	70.8	124.1	261.9	OK
0.0	-13.8	20.4	177.0	0.0	-18.0	26.5	230.2	0.0	13.8	OK	49.9	62.0	118.5	261.9	OK
42.2	8.0	-10.9	253.9	54.8	10.4	-14.2	330.1	0.2	13.8	OK	26.8	89.0	156.4	261.9	OK
0.0	-1.2	3.1	-163.6	0.0	-1.5	4.0	-212.7	0.0	13.8	OK	7.4	-57.3	99.6	261.9	OK
13.1	2.5	0.8	-399.6	17.0	3.2	1.0	-519.5	0.1	13.8	OK	2.2	-140.0	242.5	261.9	OK
0.0	-89.6	-3.7	215.6	0.0	-116.4	-4.8	280.3	0.0	13.8	OK	23.4	75.5	132.9	261.9	OK
138.6	26.3	1.3	-240.1	180.2	34.2	1.7	-312.2	0.7	13.8	OK	7.4	-84.1	145.9	261.9	OK
9.0	1.7	-2.7	-1.8	11.7	2.2	-3.5	-2.3	0.0	13.8	OK	6.5	-0.6	6.6	261.9	OK
21.8	4.1	-4.3	-2.4	28.3	5.4	-5.5	-3.1	0.1	13.8	OK	10.6	-0.8	10.7	261.9	OK
132.3	25.1	-1.3	-14.6	172.0	32.7	-1.7	-19.0	0.7	13.8	OK	7.2	-5.1	11.4	261.9	OK
43.7	8.3	-5.8	-2.5	56.8	10.8	-7.6	-3.3	0.2	13.8	OK	15.0	-0.9	15.1	261.9	OK
525.1	99.7	2.5	0.8	682.6	129.6	3.2	1.0	2.7	13.8	OK	22.1	0.3	22.1	261.9	OK
116.8	22.2	-3.2	3.3	151.8	28.8	-4.2	4.3	0.6	13.8	OK	11.2	1.2	11.4	261.9	OK
13.1	2.5	-4.1	-1.4	17.1	3.2	-5.4	-1.8	0.1	13.8	OK	10.1	-0.5	10.1	261.9	OK
43.9	8.3	1.3	16.4	57.1	10.8	1.7	21.3	0.2	13.8	OK	4.5	5.7	10.9	261.9	OK
79.0	15.0	-4.4	-8.3	102.6	19.5	-5.7	-10.9	0.4	13.8	OK	12.7	-2.9	13.7	261.9	OK
17.0	3.2	-2.6	-2.6	22.1	4.2	-3.4	-3.4	0.1	13.8	OK	6.6	-0.9	6.8	261.9	OK
167.0	31.7	4.1	-16.4	217.0	41.2	5.3	-21.3	0.9	13.8	OK	14.8	-5.7	17.8	261.9	OK
9.8	1.9	-4.7	-2.0	12.8	2.4	-6.1	-2.6	0.1	13.8	OK	11.3	-0.7	11.3	261.9	OK
33.2	6.3	-5.4	1.6	43.2	8.2	-7.0	2.1	0.2	13.8	OK	13.6	0.6	13.7	261.9	OK
49.5	9.4	-4.8	1.2	64.3	12.2	-6.2	1.6	0.3	13.8	OK	12.7	0.4	12.8	261.9	OK
76.3	14.5	1.9	18.6	99.2	18.8	2.5	24.1	0.4	13.8	OK	6.9	6.5	13.2	261.9	OK
4.7	0.9	-3.9	-1.6	6.1	1.1	-5.1	-2.0	0.0	13.8	OK	9.3	-0.5	9.4	261.9	OK
43.2	8.2	-5.4	4.5	56.2	10.7	-7.0	5.8	0.2	13.8	OK	13.9	1.6	14.1	261.9	OK
377.6	71.7	14.1	10.4	490.9	93.2	18.3	13.5	2.0	13.8	OK	44.7	3.6	45.2	261.9	OK
281.8	53.5	-4.6	-16.8	366.4	69.6	-6.0	-21.9	1.5	13.8	OK	19.6	-5.9	22.1	261.9	OK
271.4	51.5	1.2	-16.8	352.8	67.0	1.6	-21.8	1.4	13.8	OK	11.4	-5.9	15.3	261.9	OK
116.2	22.1	-6.9	0.0	151.0	28.7	-8.9	0.0	0.6	13.8	OK	19.7	0.0	19.7	261.9	OK
11.1	2.1	-1.8	0.3	14.5	2.7	-2.3	0.4	0.1	13.8	OK	4.5	0.1	4.5	261.9	OK
75.1	14.3	-5.5	0.7	97.7	18.5	-7.2	1.0	0.4	13.8	OK	15.3	0.3	15.3	261.9	OK
26.3	5.0	-3.7	-2.5	34.2	6.5	-4.8	-3.3	0.1	13.8	OK	9.4	-0.9	9.6	261.9	OK
60.2	11.4	-2.0	-1.8	78.2	14.9	-2.6	-2.3	0.3	13.8	OK	6.5	-0.6	6.6	261.9	OK
113.2	21.5	-6.5	4.1	147.2	27.9	-8.5	5.3	0.6	13.8	OK	18.7	1.4	18.9	261.9	OK
428.2	81.3	-1.6	-12.5	556.7	105.7	-2.1	-16.3	2.2	13.8	OK	17.1	-4.4	18.7	261.9	OK
19.3	3.7	-3.3	-2.7	25.1	4.8	-4.3	-3.5	0.1	13.8	OK	8.4	-1.0	8.6	261.9	OK
55.7	10.6	-7.8	-2.5	72.5	13.8	-10.2	-3.3	0.3	13.8	OK	20.0	-0.9	20.1	261.9	OK
151.2	28.7	-8.7	-9.1	196.5	37.3	-11.3	-11.8	0.8	13.8	OK	25.0	-3.2	25.6	261.9	OK
98.0	18.6	-9.1	-0.9	127.3	24.2	-11.9	-1.2	0.5	13.8	OK	24.4	-0.3	24.4	261.9	OK
80.2	15.2	-3.0	-7.0	104.2	19.8	-3.9	-9.1	0.4	13.8	OK	9.5	-2.4	10.4	261.9	OK
95.5	18.1	-5.6	0.8	124.1	23.6	-7.3	1.1	0.5	13.8	OK	16.1	0.3	16.1	261.9	OK

134.5	25.5	-1.7	-6.7	174.9	33.2	-2.2	-8.8	0.7	13.8	OK	8.2	-2.4	9.1	261.9	OK
335.8	63.8	-3.0	2.0	436.6	82.9	-3.9	2.6	1.7	13.8	OK	17.5	0.7	17.6	261.9	OK
11.0	2.1	-5.7	-1.0	14.3	2.7	-7.4	-1.2	0.1	13.8	OK	13.6	-0.3	13.6	261.9	OK
0.0	-1.3	-2.5	-1.1	0.0	-1.7	-3.2	-1.5	0.0	13.8	OK	6.0	-0.4	6.0	261.9	OK
5.1	1.0	-5.1	-1.1	6.6	1.3	-6.6	-1.4	0.0	13.8	OK	12.1	-0.4	12.1	261.9	OK
11.2	2.1	-5.4	1.6	14.6	2.8	-7.1	2.1	0.1	13.8	OK	13.1	0.6	13.1	261.9	OK
86.6	16.4	2.6	8.6	112.6	21.4	3.4	11.2	0.5	13.8	OK	8.7	3.0	10.2	261.9	OK
38.0	7.2	0.2	10.7	49.4	9.4	0.2	13.8	0.2	13.8	OK	1.6	3.7	6.7	261.9	OK
128.5	24.4	2.9	1.6	167.0	31.7	3.8	2.0	0.7	13.8	OK	10.8	0.5	10.9	261.9	OK
45.3	8.6	0.3	2.6	58.9	11.2	0.4	3.4	0.2	13.8	OK	2.2	0.9	2.7	261.9	OK
55.9	10.6	2.3	11.1	72.7	13.8	3.0	14.5	0.3	13.8	OK	7.2	3.9	9.8	261.9	OK
1.4	0.3	-2.1	-1.2	1.9	0.4	-2.7	-1.6	0.0	13.8	OK	4.9	-0.4	4.9	261.9	OK
36.0	6.8	1.5	9.2	46.7	8.9	1.9	11.9	0.2	13.8	OK	4.6	3.2	7.2	261.9	OK
66.2	12.6	-0.6	5.4	86.1	16.4	-0.8	7.1	0.3	13.8	OK	3.5	1.9	4.8	261.9	OK
18.0	3.4	-5.5	-0.7	23.4	4.4	-7.2	-1.0	0.1	13.8	OK	13.5	-0.3	13.5	261.9	OK
373.3	70.9	8.0	-56.8	485.2	92.1	10.4	-73.9	1.9	13.8	OK	30.3	-19.9	45.9	261.9	OK
317.4	60.3	4.1	-11.4	412.6	78.4	5.3	-14.9	1.7	13.8	OK	19.5	-4.0	20.7	261.9	OK
112.0	21.3	5.0	5.1	145.6	27.6	6.5	6.6	0.6	13.8	OK	15.2	1.8	15.5	261.9	OK
92.2	17.5	-6.9	4.6	119.8	22.8	-9.0	6.0	0.5	13.8	OK	19.1	1.6	19.3	261.9	OK
206.3	39.2	-7.7	11.8	268.1	50.9	-10.0	15.4	1.1	13.8	OK	24.5	4.1	25.5	261.9	OK
193.4	36.7	-3.8	-5.8	251.4	47.7	-4.9	-7.6	1.0	13.8	OK	14.9	-2.0	15.3	261.9	OK
26.5	5.0	1.9	10.9	34.5	6.5	2.5	14.2	0.1	13.8	OK	5.3	3.8	8.5	261.9	OK
40.9	7.8	1.9	18.9	53.2	10.1	2.5	24.6	0.2	13.8	OK	5.7	6.6	12.8	261.9	OK
93.3	17.7	3.1	17.6	121.3	23.0	4.1	22.9	0.5	13.8	OK	10.2	6.2	14.8	261.9	OK
10.3	2.0	-5.1	-2.3	13.4	2.5	-6.6	-3.0	0.1	13.8	OK	12.3	-0.8	12.4	261.9	OK
52.2	9.9	1.7	25.3	67.9	12.9	2.3	32.8	0.3	13.8	OK	5.7	8.8	16.3	261.9	OK
194.4	36.9	2.2	-26.1	252.7	48.0	2.9	-33.9	1.0	13.8	OK	11.2	-9.1	19.4	261.9	OK
3.7	0.7	-2.4	-0.9	4.7	0.9	-3.1	-1.1	0.0	13.8	OK	5.6	-0.3	5.7	261.9	OK
50.6	9.6	-2.9	-2.5	65.8	12.5	-3.8	-3.3	0.3	13.8	OK	8.4	-0.9	8.6	261.9	OK
1.7	0.3	-3.7	-1.9	2.2	0.4	-4.8	-2.5	0.0	13.8	OK	8.6	-0.7	8.7	261.9	OK
35.9	6.8	-6.4	2.2	46.7	8.9	-8.3	2.8	0.2	13.8	OK	16.1	0.8	16.2	261.9	OK
11.9	2.3	-5.0	1.9	15.5	2.9	-6.5	2.5	0.1	13.8	OK	12.0	0.7	12.1	261.9	OK
156.0	29.6	-1.8	2.6	202.8	38.5	-2.4	3.4	0.8	13.8	OK	9.1	0.9	9.3	261.9	OK
74.4	14.1	-0.3	7.5	96.7	18.4	-0.4	9.7	0.4	13.8	OK	3.1	2.6	5.5	261.9	OK
9.4	1.8	-5.4	1.5	12.3	2.3	-7.0	1.9	0.0	13.8	OK	13.0	0.5	13.0	261.9	OK
33.1	6.3	-0.9	-0.6	43.0	8.2	-1.1	-0.8	0.2	13.8	OK	3.1	-0.2	3.1	261.9	OK
356.5	67.7	2.8	-16.7	463.5	88.0	3.7	-21.7	1.9	13.8	OK	17.8	-5.9	20.4	261.9	OK
224.0	42.5	3.6	-12.5	291.2	55.3	4.7	-16.2	1.2	13.8	OK	15.4	-4.4	17.1	261.9	OK
64.8	12.3	-1.1	-7.3	84.3	16.0	-1.5	-9.5	0.3	13.8	OK	4.6	-2.6	6.4	261.9	OK
130.8	24.8	-1.0	0.1	170.1	32.3	-1.3	0.2	0.7	13.8	OK	6.5	0.0	6.5	261.9	OK
3.0	0.6	-3.6	-2.1	3.8	0.7	-4.7	-2.8	0.0	13.8	OK	8.5	-0.8	8.6	261.9	OK
74.2	14.1	-0.7	3.0	96.4	18.3	-1.0	4.0	0.4	13.8	OK	4.0	1.1	4.4	261.9	OK
56.8	10.8	-3.2	0.0	73.8	14.0	-4.1	0.0	0.3	13.8	OK	9.2	0.0	9.2	261.9	OK
108.7	20.6	-2.6	2.0	141.4	26.8	-3.4	2.6	0.6	13.8	OK	9.4	0.7	9.5	261.9	OK
69.9	13.3	-2.6	0.1	90.9	17.3	-3.4	0.2	0.4	13.8	OK	8.3	0.0	8.3	261.9	OK
63.3	12.0	-5.4	-1.2	82.3	15.6	-7.1	-1.6	0.3	13.8	OK	14.7	-0.4	14.7	261.9	OK
163.9	31.1	-5.3	-9.7	213.1	40.5	-6.9	-12.6	0.9	13.8	OK	17.5	-3.4	18.5	261.9	OK

129.8	24.6	-9.4	4.7	168.7	32.0	-12.3	6.1	0.7	13.8	OK	26.1	1.7	26.3	261.9	OK
47.5	9.0	-4.4	-2.4	61.8	11.7	-5.7	-3.1	0.2	13.8	OK	11.7	-0.8	11.8	261.9	OK
62.7	11.9	1.7	-0.4	81.6	15.5	2.2	-0.5	0.3	13.8	OK	5.8	-0.1	5.8	261.9	OK
158.7	30.1	7.4	1.5	206.3	39.2	9.6	1.9	0.8	13.8	OK	22.2	0.5	22.3	261.9	OK
15.8	3.0	-3.7	3.2	20.5	3.9	-4.8	4.1	0.1	13.8	OK	9.0	1.1	9.2	261.9	OK
0.0	-18.5	1.3	2.1	0.0	-24.1	1.7	2.7	0.0	13.8	OK	6.1	0.7	6.2	261.9	OK
0.0	-9.6	2.5	0.3	0.0	-12.5	3.3	0.4	0.0	13.8	OK	7.5	0.1	7.5	261.9	OK
56.5	10.7	0.5	-0.7	73.4	13.9	0.7	-0.9	0.3	13.8	OK	3.0	-0.2	3.0	261.9	OK
147.6	28.0	-0.4	11.9	191.9	36.4	-0.6	15.5	0.8	13.8	OK	5.7	4.2	9.2	261.9	OK
42.2	8.0	3.9	-2.6	54.9	10.4	5.1	-3.4	0.2	13.8	OK	10.5	-0.9	10.7	261.9	OK
71.7	13.6	-0.7	2.8	93.2	17.7	-0.9	3.7	0.4	13.8	OK	3.8	1.0	4.2	261.9	OK
145.3	27.6	-1.2	8.0	188.9	35.9	-1.5	10.4	0.8	13.8	OK	7.2	2.8	8.7	261.9	OK
1.1	0.2	1.2	2.5	1.4	0.3	1.5	3.3	0.0	13.8	OK	2.8	0.9	3.2	261.9	OK
238.8	45.3	3.7	-10.0	310.4	58.9	4.9	-13.0	1.2	13.8	OK	16.2	-3.5	17.3	261.9	OK
238.3	45.2	-5.6	-1.2	309.8	58.8	-7.2	-1.6	1.2	13.8	OK	20.5	-0.4	20.5	261.9	OK
331.3	62.9	-1.5	-3.6	430.7	81.8	-1.9	-4.7	1.7	13.8	OK	13.8	-1.3	14.0	261.9	OK
0.0	-77.6	2.9	0.1	0.0	-100.8	3.8	0.1	0.0	13.8	OK	19.6	0.0	19.6	261.9	OK
114.0	21.6	2.1	3.3	148.2	28.1	2.7	4.3	0.6	13.8	OK	8.4	1.2	8.6	261.9	OK
170.2	32.3	-8.0	10.1	221.3	42.0	-10.4	13.1	0.9	13.8	OK	24.0	3.5	24.8	261.9	OK
272.0	51.6	3.6	0.4	353.5	67.1	4.7	0.6	1.4	13.8	OK	16.9	0.2	16.9	261.9	OK
32.0	6.1	-3.8	4.0	41.6	7.9	-5.0	5.2	0.2	13.8	OK	10.0	1.4	10.3	261.9	OK
8.9	1.7	-3.6	2.8	11.6	2.2	-4.7	3.7	0.0	13.8	OK	8.7	1.0	8.8	261.9	OK
26.5	5.0	-4.0	3.5	34.4	6.5	-5.2	4.6	0.1	13.8	OK	10.2	1.2	10.4	261.9	OK
37.8	7.2	-3.5	3.7	49.1	9.3	-4.5	4.8	0.2	13.8	OK	9.3	1.3	9.6	261.9	OK
117.7	22.4	-3.5	5.0	153.0	29.1	-4.5	6.5	0.6	13.8	OK	11.8	1.8	12.2	261.9	OK
156.0	29.6	3.3	1.7	202.8	38.5	4.2	2.2	0.8	13.8	OK	12.5	0.6	12.5	261.9	OK
187.7	35.7	-2.6	8.0	244.1	46.3	-3.4	10.4	1.0	13.8	OK	12.0	2.8	13.0	261.9	OK
0.0	-48.3	2.4	2.1	0.0	-62.8	3.2	2.7	0.0	13.8	OK	13.6	0.7	13.7	261.9	OK
510.4	96.9	3.0	-0.6	663.6	126.0	3.9	-0.8	2.7	13.8	OK	22.9	-0.2	22.9	261.9	OK
72.6	13.8	1.1	1.5	94.4	17.9	1.4	2.0	0.4	13.8	OK	4.7	0.5	4.8	261.9	OK
79.2	15.0	-1.2	3.7	103.0	19.6	-1.6	4.8	0.4	13.8	OK	5.4	1.3	5.8	261.9	OK
163.2	31.0	-3.3	5.9	212.1	40.3	-4.2	7.7	0.8	13.8	OK	12.7	2.1	13.2	261.9	OK
99.9	19.0	1.3	1.6	129.9	24.7	1.7	2.1	0.5	13.8	OK	6.2	0.6	6.2	261.9	OK
205.4	39.0	3.0	3.8	267.1	50.7	4.0	5.0	1.1	13.8	OK	13.5	1.3	13.7	261.9	OK
241.6	45.9	8.9	-0.6	314.0	59.6	11.5	-0.7	1.3	13.8	OK	28.3	-0.2	28.3	261.9	OK
215.7	41.0	-7.2	5.9	280.4	53.2	-9.3	7.7	1.1	13.8	OK	23.5	2.1	23.8	261.9	OK
73.1	13.9	1.2	-1.2	95.0	18.0	1.6	-1.6	0.4	13.8	OK	5.1	-0.4	5.1	261.9	OK
240.2	45.6	-9.3	9.6	312.3	59.3	-12.1	12.5	1.2	13.8	OK	29.2	3.4	29.8	261.9	OK
14.7	2.8	-0.9	2.9	19.1	3.6	-1.1	3.8	0.1	13.8	OK	2.5	1.0	3.0	261.9	OK
145.8	27.7	3.4	-4.1	189.5	36.0	4.5	-5.4	0.8	13.8	OK	12.6	-1.4	12.8	261.9	OK
183.7	34.9	1.0	11.1	238.9	45.4	1.2	14.4	1.0	13.8	OK	8.0	3.9	10.4	261.9	OK
805.9	153.0	14.5	-1.3	1047.6	198.9	18.8	-1.7	4.2	13.8	OK	59.0	-0.5	59.0	261.9	OK
98.0	18.6	-4.5	7.1	127.4	24.2	-5.9	9.2	0.5	13.8	OK	13.6	2.5	14.3	261.9	OK
5.5	1.0	-0.9	2.9	7.2	1.4	-1.2	3.7	0.0	13.8	OK	2.4	1.0	3.0	261.9	OK
152.8	29.0	-8.6	7.2	198.6	37.7	-11.2	9.4	0.8	13.8	OK	24.9	2.5	25.3	261.9	OK
156.9	29.8	1.9	-3.9	204.0	38.7	2.5	-5.1	0.8	13.8	OK	9.4	-1.4	9.7	261.9	OK
18.3	3.5	-1.2	2.7	23.8	4.5	-1.5	3.6	0.1	13.8	OK	3.3	1.0	3.7	261.9	OK

20.7	3.9	-1.1	2.7	26.9	5.1	-1.4	3.6	0.1	13.8	OK	3.3	1.0	3.6	261.9	OK
230.1	43.7	-10.8	-11.2	299.1	56.8	-14.0	-14.5	1.2	13.8	OK	32.4	-3.9	33.1	261.9	OK
73.7	14.0	-1.4	3.9	95.8	18.2	-1.8	5.1	0.4	13.8	OK	5.6	1.4	6.1	261.9	OK
7.7	1.5	1.9	2.1	10.1	1.9	2.4	2.7	0.0	13.8	OK	4.6	0.7	4.8	261.9	OK
322.6	61.3	4.2	-14.0	419.4	79.6	5.4	-18.2	1.7	13.8	OK	19.9	-4.9	21.6	261.9	OK
181.2	34.4	5.7	2.4	235.5	44.7	7.4	3.1	0.9	13.8	OK	18.9	0.8	18.9	261.9	OK
84.8	16.1	-5.4	5.3	110.2	20.9	-7.0	6.9	0.4	13.8	OK	15.2	1.9	15.5	261.9	OK
0.0	-4.8	0.8	1.6	0.0	-6.2	1.1	2.1	0.0	13.8	OK	2.7	0.6	2.9	261.9	OK
74.1	14.1	-4.0	4.4	96.4	18.3	-5.2	5.7	0.4	13.8	OK	11.6	1.5	11.9	261.9	OK
174.5	33.1	-3.7	3.1	226.8	43.1	-4.8	4.1	0.9	13.8	OK	14.1	1.1	14.2	261.9	OK
56.2	10.7	0.6	0.9	73.1	13.9	0.8	1.2	0.3	13.8	OK	3.1	0.3	3.2	261.9	OK
140.7	26.7	1.7	3.2	182.9	34.7	2.2	4.1	0.7	13.8	OK	8.3	1.1	8.5	261.9	OK
51.7	9.8	1.0	3.9	67.2	12.8	1.2	5.0	0.3	13.8	OK	3.8	1.4	4.5	261.9	OK
142.0	27.0	-0.7	3.8	184.6	35.1	-0.9	4.9	0.7	13.8	OK	6.0	1.3	6.4	261.9	OK
222.9	42.3	-1.4	0.4	289.8	55.0	-1.8	0.6	1.2	13.8	OK	10.3	0.2	10.3	261.9	OK
270.1	51.3	1.3	19.2	351.1	66.7	1.7	25.0	1.4	13.8	OK	11.6	6.7	16.4	261.9	OK
219.5	41.7	-4.7	-12.2	285.3	54.2	-6.1	-15.9	1.1	13.8	OK	17.8	-4.3	19.3	261.9	OK
33.1	6.3	1.3	-6.7	43.1	8.2	1.6	-8.7	0.2	13.8	OK	4.0	-2.3	5.7	261.9	OK
304.2	57.8	-0.1	-3.1	395.5	75.1	-0.1	-4.0	1.6	13.8	OK	9.7	-1.1	9.9	261.9	OK
398.5	75.7	9.3	16.6	518.0	98.4	12.1	21.6	2.1	13.8	OK	34.2	5.8	35.6	261.9	OK
159.2	30.2	-0.8	-27.0	207.0	39.3	-1.1	-35.0	0.8	13.8	OK	6.9	-9.4	17.8	261.9	OK
729.3	138.5	0.4	-19.5	948.0	180.0	0.5	-25.4	3.8	13.8	OK	23.8	-6.8	26.5	261.9	OK
151.1	28.7	-2.9	10.0	196.5	37.3	-3.8	13.0	0.8	13.8	OK	11.5	3.5	13.0	261.9	OK
118.5	22.5	10.6	-0.6	154.1	29.3	13.8	-0.8	0.6	13.8	OK	28.5	-0.2	28.5	261.9	OK
211.9	40.2	15.4	0.6	275.5	52.3	20.1	0.8	1.1	13.8	OK	42.7	0.2	42.7	261.9	OK
404.6	76.8	-10.1	-21.1	526.0	99.9	-13.2	-27.4	2.1	13.8	OK	36.3	-7.4	38.5	261.9	OK
1335.1	253.5	0.1	-46.8	1735.6	329.6	0.2	-60.8	6.9	13.8	OK	42.0	-16.4	50.7	261.9	OK
223.3	42.4	0.6	-4.0	290.3	55.1	0.8	-5.2	1.2	13.8	OK	8.4	-1.4	8.7	261.9	OK
154.7	29.4	3.2	3.5	201.1	38.2	4.1	4.5	0.8	13.8	OK	12.2	1.2	12.4	261.9	OK
0.0	-61.4	-3.7	-12.2	0.0	-79.8	-4.8	-15.9	0.0	13.8	OK	18.7	-4.3	20.1	261.9	OK
304.9	57.9	11.4	12.1	396.4	75.3	14.8	15.7	1.6	13.8	OK	36.2	4.2	36.9	261.9	OK
112.5	21.4	0.1	-26.2	146.3	27.8	0.1	-34.1	0.6	13.8	OK	3.7	-9.2	16.3	261.9	OK
90.8	17.2	3.7	4.4	118.0	22.4	4.9	5.8	0.5	13.8	OK	11.6	1.6	11.9	261.9	OK
149.8	28.4	-1.9	8.8	194.7	37.0	-2.5	11.4	0.8	13.8	OK	9.2	3.1	10.6	261.9	OK
336.4	63.9	22.6	5.6	437.4	83.0	29.3	7.2	1.7	13.8	OK	63.3	1.9	63.4	261.9	OK
137.9	26.2	6.8	7.0	179.2	34.0	8.9	9.1	0.7	13.8	OK	20.2	2.5	20.7	261.9	OK
178.0	33.8	-2.3	14.2	231.5	44.0	-3.0	18.5	0.9	13.8	OK	11.0	5.0	13.9	261.9	OK
138.8	26.3	-1.3	14.6	180.4	34.3	-1.7	19.0	0.7	13.8	OK	7.4	5.1	11.5	261.9	OK
370.2	70.3	3.8	4.3	481.2	91.4	4.9	5.6	1.9	13.8	OK	20.4	1.5	20.6	261.9	OK
252.3	47.9	1.5	2.1	328.0	62.3	2.0	2.7	1.3	13.8	OK	11.4	0.7	11.5	261.9	OK
0.0	-106.9	-7.1	-3.8	0.0	-139.0	-9.2	-4.9	0.0	13.8	OK	34.1	-1.3	34.2	261.9	OK
0.0	-96.0	-2.4	-28.9	0.0	-124.8	-3.1	-37.6	0.0	13.8	OK	21.4	-10.1	27.7	261.9	OK
199.7	37.9	6.7	10.9	259.7	49.3	8.8	14.2	1.0	13.8	OK	22.0	3.8	23.0	261.9	OK
516.5	98.1	7.5	-29.6	671.4	127.5	9.8	-38.4	2.7	13.8	OK	33.7	-10.4	38.2	261.9	OK
58.3	11.1	6.2	-4.6	75.8	14.4	8.0	-6.0	0.3	13.8	OK	16.2	-1.6	16.5	261.9	OK
206.8	39.3	-1.3	2.5	268.9	51.1	-1.7	3.2	1.1	13.8	OK	9.5	0.9	9.6	261.9	OK
402.8	76.5	-0.4	-17.9	523.7	99.4	-0.6	-23.3	2.1	13.8	OK	13.6	-6.3	17.4	261.9	OK

35.2	6.7	4.3	-2.9	45.8	8.7	5.5	-3.7	0.2	13.8	OK	11.1	-1.0	11.2	261.9	OK
18.5	3.5	-13.7	-32.5	24.0	4.6	-17.9	-42.3	0.1	13.8	OK	32.7	-11.4	38.2	261.9	OK
483.9	91.9	2.8	-8.8	629.0	119.4	3.7	-11.5	2.5	13.8	OK	21.8	-3.1	22.4	261.9	OK
0.0	-100.5	-9.2	-13.3	0.0	-130.7	-12.0	-17.3	0.0	13.8	OK	38.1	-4.7	38.9	261.9	OK
317.3	60.3	2.8	319.2	412.5	78.3	3.6	415.0	1.7	13.8	OK	16.4	111.8	194.4	261.9	OK
848.4	161.1	-7.1	-171.5	1103.0	209.4	-9.3	-222.9	4.4	13.8	OK	43.2	-60.1	112.7	261.9	OK
515.6	97.9	-29.5	-262.1	670.3	127.3	-38.4	-340.7	2.7	13.8	OK	85.2	-91.8	180.4	261.9	OK
73.0	13.9	22.0	286.7	94.9	18.0	28.6	372.7	0.4	13.8	OK	53.7	100.4	182.1	261.9	OK
19.2	3.6	19.2	146.1	24.9	4.7	24.9	189.9	0.1	13.8	OK	45.4	51.2	99.6	261.9	OK
398.0	75.6	9.5	39.3	517.5	98.3	12.4	51.1	2.1	13.8	OK	34.7	13.8	42.1	261.9	OK
0.0	-21.3	19.5	182.3	0.0	-27.6	25.4	237.0	0.0	13.8	OK	49.2	63.9	121.1	261.9	OK
355.1	67.4	-34.6	-161.8	461.7	87.7	-44.9	-210.3	1.8	13.8	OK	91.9	-56.7	134.5	261.9	OK

Tabella 5: verifiche del sostegno di prima fase (M>0 fibre tese in intradosso) – Galleria di linea IN03

Sollecitazioni caratteristiche				Sollecitazioni SLU				Verifica calcestruzzo proiettato			Verifica centine				
N_{clsp} [kN]	N_{cen} [kN]	M_{cen} [kNm]	T_{cen} [kN]	$N_{clsp,d}$ [kN]	$N_{cen,d}$ [kN]	$M_{cen,d}$ [kNm]	$T_{cen,d}$ [kN]	$\sigma_{c\_clsp,d}$ [MPa]	f_{cd} [MPa]	Verifica -	$\sigma_{cen,d}$ [MPa]	$\tau_{cen,d}$ [MPa]	$\sigma_{id,cen,d}$ [MPa]	f_{yd} [MPa]	Verifica -
618.5	83.0	0.5	-16.8	804.1	107.8	0.6	-21.8	3.2	13.83	OK	21.3	-8.4	25.8	261.9	OK
120.2	16.1	-4.9	-1.2	156.3	21.0	-6.4	-1.5	0.6	13.83	OK	23.5	-0.6	23.5	261.9	OK
120.2	16.1	-4.9	-1.2	156.3	21.0	-6.4	-1.5	0.6	13.83	OK	23.5	-0.6	23.5	261.9	OK
35.6	4.8	0.1	1.2	46.3	6.2	0.1	1.5	0.2	13.83	OK	1.6	0.6	1.9	261.9	OK
72.2	9.7	-2.9	1.7	93.8	12.6	-3.7	2.2	0.4	13.83	OK	13.8	0.9	13.9	261.9	OK
30.3	4.1	2.5	2.4	39.4	5.3	3.3	3.1	0.2	13.83	OK	11.2	1.2	11.4	261.9	OK
28.5	3.8	3.2	-1.4	37.1	5.0	4.1	-1.8	0.1	13.83	OK	13.7	-0.7	13.8	261.9	OK
32.6	4.4	1.3	1.9	42.3	5.7	1.6	2.5	0.2	13.83	OK	6.1	1.0	6.3	261.9	OK
19.3	2.6	2.4	2.3	25.1	3.4	3.2	3.0	0.1	13.83	OK	10.5	1.2	10.7	261.9	OK
65.9	8.8	-3.4	-5.7	85.6	11.5	-4.4	-7.4	0.3	13.83	OK	15.9	-2.8	16.6	261.9	OK
114.4	15.3	-4.5	0.0	148.7	19.9	-5.9	0.0	0.6	13.83	OK	21.8	0.0	21.8	261.9	OK
36.5	4.9	0.3	3.2	47.4	6.4	0.4	4.2	0.2	13.83	OK	2.4	1.6	3.7	261.9	OK
39.8	5.3	0.3	1.9	51.7	6.9	0.4	2.5	0.2	13.83	OK	2.6	1.0	3.0	261.9	OK
33.9	4.6	0.7	1.0	44.1	5.9	0.9	1.2	0.2	13.83	OK	4.0	0.5	4.1	261.9	OK
81.6	10.9	1.8	8.7	106.1	14.2	2.3	11.3	0.4	13.83	OK	9.7	4.4	12.3	261.9	OK
56.5	7.6	-0.8	1.3	73.5	9.9	-1.1	1.8	0.3	13.83	OK	5.2	0.7	5.3	261.9	OK
39.6	5.3	1.3	2.3	51.5	6.9	1.7	3.0	0.2	13.83	OK	6.5	1.2	6.8	261.9	OK
48.2	6.5	2.2	13.1	62.6	8.4	2.9	17.1	0.3	13.83	OK	10.5	6.6	15.5	261.9	OK
34.9	4.7	0.4	4.3	45.4	6.1	0.6	5.6	0.2	13.83	OK	2.9	2.1	4.7	261.9	OK
18.3	2.5	3.4	6.2	23.7	3.2	4.5	8.1	0.1	13.83	OK	14.4	3.1	15.4	261.9	OK
51.7	6.9	2.1	0.6	67.2	9.0	2.7	0.7	0.3	13.83	OK	10.1	0.3	10.1	261.9	OK
62.2	8.3	2.3	2.1	80.9	10.9	3.0	2.7	0.3	13.83	OK	11.2	1.0	11.3	261.9	OK
9.4	1.3	3.2	5.9	12.2	1.6	4.2	7.6	0.0	13.83	OK	13.2	2.9	14.2	261.9	OK
30.3	4.1	2.9	0.6	39.4	5.3	3.8	0.7	0.2	13.83	OK	12.7	0.3	12.7	261.9	OK
24.5	3.3	1.2	3.4	31.8	4.3	1.6	4.4	0.1	13.83	OK	5.8	1.7	6.5	261.9	OK
33.9	4.5	0.5	0.4	44.0	5.9	0.6	0.6	0.2	13.83	OK	3.1	0.2	3.1	261.9	OK
34.9	4.7	0.9	-0.1	45.4	6.1	1.2	-0.1	0.2	13.83	OK	4.7	0.0	4.7	261.9	OK
44.7	6.0	1.3	1.7	58.1	7.8	1.7	2.2	0.2	13.83	OK	6.8	0.8	7.0	261.9	OK
41.7	5.6	0.2	-0.2	54.2	7.3	0.3	-0.2	0.2	13.83	OK	2.1	-0.1	2.1	261.9	OK
41.5	5.6	0.2	0.2	53.9	7.2	0.3	0.2	0.2	13.83	OK	2.1	0.1	2.1	261.9	OK
69.7	9.4	-1.8	3.1	90.7	12.2	-2.4	4.1	0.4	13.83	OK	9.6	1.6	10.0	261.9	OK
152.1	20.4	1.8	10.5	197.7	26.5	2.4	13.7	0.8	13.83	OK	12.2	5.3	15.2	261.9	OK
24.5	3.3	1.6	-1.6	31.9	4.3	2.1	-2.1	0.1	13.83	OK	7.2	-0.8	7.4	261.9	OK
54.4	7.3	-2.1	-1.7	70.8	9.5	-2.7	-2.3	0.3	13.83	OK	10.1	-0.9	10.2	261.9	OK
58.8	7.9	-1.9	2.5	76.4	10.3	-2.5	3.2	0.3	13.83	OK	9.5	1.2	9.7	261.9	OK
50.2	6.7	-2.4	-2.2	65.3	8.8	-3.1	-2.8	0.3	13.83	OK	11.2	-1.1	11.4	261.9	OK
51.2	6.9	-2.0	0.0	66.6	8.9	-2.6	0.0	0.3	13.83	OK	9.7	0.0	9.7	261.9	OK
39.3	5.3	0.5	6.2	51.1	6.9	0.7	8.0	0.2	13.83	OK	3.4	3.1	6.3	261.9	OK
36.6	4.9	-0.3	-2.1	47.5	6.4	-0.4	-2.7	0.2	13.83	OK	2.4	-1.0	3.0	261.9	OK
40.2	5.4	-0.5	-1.6	52.2	7.0	-0.6	-2.1	0.2	13.83	OK	3.1	-0.8	3.4	261.9	OK
97.2	13.0	3.0	11.0	126.4	17.0	3.9	14.3	0.5	13.83	OK	15.3	5.5	18.0	261.9	OK
26.7	3.6	0.8	4.5	34.7	4.6	1.0	5.8	0.1	13.83	OK	3.9	2.2	5.5	261.9	OK

20.7	2.8	2.5	-0.5	26.9	3.6	3.3	-0.7	0.1	13.83	OK	10.9	-0.3	10.9	261.9	OK
28.5	3.8	1.1	-1.2	37.1	5.0	1.4	-1.6	0.1	13.83	OK	5.4	-0.6	5.5	261.9	OK
31.9	4.3	1.3	-3.9	41.4	5.6	1.7	-5.0	0.2	13.83	OK	6.1	-1.9	7.0	261.9	OK
30.9	4.1	1.6	-1.8	40.2	5.4	2.1	-2.3	0.2	13.83	OK	7.5	-0.9	7.7	261.9	OK
114.0	15.3	2.5	10.5	148.2	19.9	3.2	13.7	0.6	13.83	OK	13.5	5.3	16.3	261.9	OK
38.8	5.2	-0.4	-2.7	50.4	6.8	-0.5	-3.5	0.2	13.83	OK	2.9	-1.3	3.7	261.9	OK
34.9	4.7	1.0	1.2	45.3	6.1	1.3	1.5	0.2	13.83	OK	5.1	0.6	5.2	261.9	OK
41.2	5.5	-0.9	-4.5	53.6	7.2	-1.2	-5.9	0.2	13.83	OK	5.0	-2.3	6.4	261.9	OK
22.9	3.1	1.9	0.0	29.8	4.0	2.5	0.0	0.1	13.83	OK	8.4	0.0	8.4	261.9	OK
29.1	3.9	0.9	0.1	37.8	5.1	1.1	0.1	0.2	13.83	OK	4.4	0.1	4.4	261.9	OK
188.2	25.2	1.2	11.9	244.6	32.8	1.6	15.5	1.0	13.83	OK	10.8	6.0	14.9	261.9	OK
31.2	4.2	0.1	2.0	40.6	5.4	0.2	2.6	0.2	13.83	OK	1.4	1.0	2.3	261.9	OK
90.6	12.2	-2.6	2.1	117.8	15.8	-3.4	2.7	0.5	13.83	OK	13.5	1.1	13.6	261.9	OK
25.4	3.4	1.5	0.0	33.0	4.4	2.0	0.0	0.1	13.83	OK	6.9	0.0	6.9	261.9	OK
304.8	40.9	5.8	26.1	396.2	53.1	7.5	33.9	1.6	13.83	OK	32.9	13.0	39.9	261.9	OK
257.6	34.5	2.8	17.1	334.8	44.9	3.6	22.3	1.3	13.83	OK	19.3	8.6	24.3	261.9	OK
31.2	4.2	0.8	-1.6	40.5	5.4	1.0	-2.1	0.2	13.83	OK	4.0	-0.8	4.3	261.9	OK
47.9	6.4	2.0	10.3	62.3	8.4	2.5	13.4	0.2	13.83	OK	9.4	5.2	13.0	261.9	OK
386.1	51.8	18.8	70.8	502.0	67.3	24.5	92.0	2.0	13.83	OK	88.1	35.4	107.3	261.9	OK
44.5	6.0	1.1	5.6	57.8	7.8	1.4	7.3	0.2	13.83	OK	5.7	2.8	7.5	261.9	OK
31.5	4.2	3.2	3.6	40.9	5.5	4.2	4.7	0.2	13.83	OK	13.9	1.8	14.3	261.9	OK
42.0	5.6	3.1	1.7	54.7	7.3	4.0	2.2	0.2	13.83	OK	13.8	0.9	13.9	261.9	OK
27.2	3.6	2.7	-0.6	35.3	4.7	3.5	-0.8	0.1	13.83	OK	11.7	-0.3	11.7	261.9	OK
56.1	7.5	-1.3	0.4	72.9	9.8	-1.7	0.5	0.3	13.83	OK	7.0	0.2	7.0	261.9	OK
3.7	0.5	3.1	3.8	4.8	0.6	4.0	4.9	0.0	13.83	OK	12.7	1.9	13.1	261.9	OK
40.6	5.4	-0.8	0.3	52.8	7.1	-1.1	0.3	0.2	13.83	OK	4.6	0.1	4.6	261.9	OK
205.7	27.6	0.6	-8.1	267.4	35.9	0.8	-10.5	1.1	13.83	OK	8.9	-4.0	11.4	261.9	OK
116.0	15.6	-4.0	-0.1	150.8	20.2	-5.2	-0.2	0.6	13.83	OK	19.7	-0.1	19.7	261.9	OK
55.9	7.5	-2.0	-0.7	72.7	9.8	-2.6	-1.0	0.3	13.83	OK	9.9	-0.4	9.9	261.9	OK
49.5	6.6	-1.6	-0.5	64.3	8.6	-2.1	-0.7	0.3	13.83	OK	8.0	-0.3	8.0	261.9	OK
129.4	17.4	3.1	-18.0	168.2	22.6	4.0	-23.3	0.7	13.83	OK	16.6	-9.0	22.8	261.9	OK
64.9	8.7	1.8	-9.0	84.4	11.3	2.4	-11.7	0.3	13.83	OK	9.4	-4.5	12.2	261.9	OK
618.5	83.0	0.5	-16.8	804.1	107.8	0.6	-21.8	3.2	13.83	OK	21.3	-8.4	25.8	261.9	OK
34.2	4.6	-0.6	1.3	44.5	6.0	-0.8	1.7	0.2	13.83	OK	3.6	0.7	3.8	261.9	OK
26.0	3.5	3.5	0.4	33.8	4.5	4.5	0.6	0.1	13.83	OK	14.9	0.2	14.9	261.9	OK
32.0	4.3	-1.3	-3.0	41.6	5.6	-1.7	-3.9	0.2	13.83	OK	6.3	-1.5	6.8	261.9	OK
44.1	5.9	-1.2	-0.5	57.3	7.7	-1.6	-0.6	0.2	13.83	OK	6.3	-0.2	6.3	261.9	OK
41.2	5.5	-1.4	-0.7	53.5	7.2	-1.8	-1.0	0.2	13.83	OK	6.9	-0.4	6.9	261.9	OK
49.5	6.6	-2.5	7.2	64.4	8.6	-3.3	9.3	0.3	13.83	OK	11.7	3.6	13.2	261.9	OK
86.1	11.5	-4.3	-0.2	111.9	15.0	-5.6	-0.3	0.4	13.83	OK	19.9	-0.1	19.9	261.9	OK
40.2	5.4	-0.3	-1.2	52.3	7.0	-0.3	-1.6	0.2	13.83	OK	2.3	-0.6	2.6	261.9	OK
92.9	12.5	-3.0	-1.4	120.8	16.2	-3.9	-1.8	0.5	13.83	OK	14.9	-0.7	14.9	261.9	OK
391.6	52.5	3.1	-34.4	509.1	68.3	4.1	-44.7	2.0	13.83	OK	24.9	-17.2	38.8	261.9	OK
83.7	11.2	2.3	-15.6	108.8	14.6	3.0	-20.3	0.4	13.83	OK	11.8	-7.8	17.9	261.9	OK
41.1	5.5	-0.8	0.8	53.5	7.2	-1.0	1.1	0.2	13.83	OK	4.5	0.4	4.6	261.9	OK
60.0	8.0	-1.6	-0.1	78.0	10.5	-2.1	-0.2	0.3	13.83	OK	8.5	-0.1	8.5	261.9	OK
361.6	48.5	4.9	-33.0	470.1	63.1	6.3	-42.8	1.9	13.83	OK	31.0	-16.5	42.1	261.9	OK

44.6	6.0	-2.8	3.3	57.9	7.8	-3.6	4.3	0.2	13.83	OK	12.5	1.7	12.8	261.9	OK
36.2	4.9	-0.9	-1.4	47.1	6.3	-1.1	-1.9	0.2	13.83	OK	4.6	-0.7	4.8	261.9	OK
63.5	8.5	-2.8	-1.3	82.6	11.1	-3.7	-1.7	0.3	13.83	OK	13.5	-0.6	13.5	261.9	OK
115.8	15.5	4.3	-23.4	150.5	20.2	5.6	-30.4	0.6	13.83	OK	21.1	-11.7	29.3	261.9	OK
30.9	4.1	0.6	0.9	40.2	5.4	0.8	1.1	0.2	13.83	OK	3.6	0.4	3.6	261.9	OK
41.6	5.6	-1.3	-0.6	54.1	7.2	-1.7	-0.8	0.2	13.83	OK	6.6	-0.3	6.6	261.9	OK
40.9	5.5	-1.0	0.5	53.2	7.1	-1.3	0.7	0.2	13.83	OK	5.4	0.3	5.5	261.9	OK
31.9	4.3	-2.4	8.7	41.4	5.6	-3.2	11.3	0.2	13.83	OK	10.9	4.3	13.2	261.9	OK
24.0	3.2	1.9	0.7	31.2	4.2	2.4	0.9	0.1	13.83	OK	8.3	0.3	8.3	261.9	OK
19.0	2.5	2.5	0.6	24.7	3.3	3.2	0.8	0.1	13.83	OK	10.5	0.3	10.5	261.9	OK
43.2	5.8	-2.5	7.3	56.1	7.5	-3.3	9.5	0.2	13.83	OK	11.5	3.7	13.1	261.9	OK
32.9	4.4	0.5	2.1	42.7	5.7	0.6	2.7	0.2	13.83	OK	2.9	1.0	3.4	261.9	OK
24.3	3.3	1.2	0.9	31.5	4.2	1.5	1.2	0.1	13.83	OK	5.4	0.5	5.5	261.9	OK
57.2	7.7	-2.7	1.1	74.3	10.0	-3.5	1.4	0.3	13.83	OK	12.5	0.5	12.6	261.9	OK
25.5	3.4	0.9	1.8	33.2	4.4	1.1	2.3	0.1	13.83	OK	4.3	0.9	4.6	261.9	OK
43.3	5.8	-0.9	1.3	56.3	7.5	-1.2	1.7	0.2	13.83	OK	5.2	0.7	5.3	261.9	OK
58.4	7.8	-2.3	2.1	75.9	10.2	-3.0	2.8	0.3	13.83	OK	11.1	1.1	11.2	261.9	OK
53.4	7.2	-2.6	3.1	69.4	9.3	-3.4	4.1	0.3	13.83	OK	12.1	1.6	12.4	261.9	OK
27.1	3.6	2.8	0.5	35.2	4.7	3.7	0.6	0.1	13.83	OK	12.3	0.2	12.3	261.9	OK
37.6	5.0	-0.3	3.1	48.8	6.5	-0.4	4.0	0.2	13.83	OK	2.5	1.6	3.7	261.9	OK
24.1	3.2	1.8	1.5	31.3	4.2	2.3	2.0	0.1	13.83	OK	7.9	0.8	8.0	261.9	OK
72.1	9.7	-3.1	-3.0	93.8	12.6	-4.1	-3.9	0.4	13.83	OK	14.9	-1.5	15.1	261.9	OK
28.8	3.9	1.8	2.3	37.4	5.0	2.3	3.0	0.1	13.83	OK	8.1	1.2	8.3	261.9	OK
37.5	5.0	-1.2	-0.6	48.8	6.5	-1.6	-0.8	0.2	13.83	OK	6.1	-0.3	6.1	261.9	OK
40.4	5.4	-1.2	2.6	52.6	7.1	-1.5	3.4	0.2	13.83	OK	6.0	1.3	6.4	261.9	OK
31.3	4.2	0.1	4.5	40.7	5.5	0.1	5.9	0.2	13.83	OK	1.2	2.3	4.1	261.9	OK
170.0	22.8	4.6	-29.7	221.0	29.6	6.0	-38.6	0.9	13.83	OK	24.0	-14.9	35.2	261.9	OK
209.6	28.1	2.9	-21.1	272.5	36.6	3.8	-27.4	1.1	13.83	OK	18.4	-10.6	25.9	261.9	OK
33.6	4.5	-0.4	2.5	43.7	5.9	-0.5	3.3	0.2	13.83	OK	2.7	1.3	3.5	261.9	OK
40.5	5.4	-1.4	1.0	52.6	7.1	-1.8	1.3	0.2	13.83	OK	6.9	0.5	7.0	261.9	OK
25.6	3.4	2.1	3.9	33.3	4.5	2.7	5.0	0.1	13.83	OK	9.3	1.9	9.9	261.9	OK
37.7	5.1	-0.8	1.3	49.0	6.6	-1.0	1.7	0.2	13.83	OK	4.3	0.6	4.4	261.9	OK
74.3	10.0	1.2	-5.4	96.5	12.9	1.6	-7.1	0.4	13.83	OK	7.3	-2.7	8.7	261.9	OK
103.0	13.8	-3.2	2.4	133.9	18.0	-4.2	3.2	0.5	13.83	OK	16.1	1.2	16.3	261.9	OK
33.4	4.5	0.8	-6.0	43.4	5.8	1.1	-7.8	0.2	13.83	OK	4.4	-3.0	6.8	261.9	OK
30.4	4.1	-1.7	1.3	39.5	5.3	-2.2	1.6	0.2	13.83	OK	7.7	0.6	7.8	261.9	OK
71.0	9.5	-2.5	-1.1	92.3	12.4	-3.3	-1.4	0.4	13.83	OK	12.5	-0.5	12.5	261.9	OK
84.9	11.4	3.4	-16.4	110.4	14.8	4.5	-21.3	0.4	13.83	OK	16.6	-8.2	21.8	261.9	OK
32.2	4.3	0.1	-1.8	41.9	5.6	0.1	-2.3	0.2	13.83	OK	1.4	-0.9	2.1	261.9	OK
33.6	4.5	-0.3	1.0	43.7	5.9	-0.3	1.2	0.2	13.83	OK	2.1	0.5	2.2	261.9	OK
44.3	5.9	1.0	-5.1	57.6	7.7	1.3	-6.7	0.2	13.83	OK	5.4	-2.6	7.0	261.9	OK
22.2	3.0	-1.8	-3.3	28.8	3.9	-2.3	-4.3	0.1	13.83	OK	7.8	-1.7	8.3	261.9	OK
43.8	5.9	2.5	-1.1	56.9	7.6	3.2	-1.4	0.2	13.83	OK	11.4	-0.5	11.4	261.9	OK
130.7	17.5	4.5	-25.2	169.9	22.8	5.8	-32.8	0.7	13.83	OK	22.2	-12.6	31.2	261.9	OK
340.8	45.7	5.4	-34.5	443.0	59.4	7.0	-44.9	1.8	13.83	OK	32.4	-17.3	44.0	261.9	OK
387.0	51.9	2.9	-35.2	503.1	67.5	3.8	-45.8	2.0	13.83	OK	24.0	-17.6	38.8	261.9	OK
107.0	14.4	-3.4	1.7	139.1	18.7	-4.5	2.2	0.6	13.83	OK	17.2	0.8	17.3	261.9	OK

53.5	7.2	-2.8	7.0	69.6	9.3	-3.6	9.1	0.3	13.83	OK	12.9	3.5	14.2	261.9	OK
178.2	23.9	4.7	-30.3	231.6	31.1	6.1	-39.4	0.9	13.83	OK	24.6	-15.2	36.0	261.9	OK
38.5	5.2	-0.1	0.8	50.0	6.7	-0.1	1.1	0.2	13.83	OK	1.4	0.4	1.6	261.9	OK
46.0	6.2	0.7	-0.4	59.8	8.0	0.8	-0.5	0.2	13.83	OK	4.1	-0.2	4.1	261.9	OK
144.0	19.3	3.4	-19.3	187.2	25.1	4.4	-25.1	0.7	13.83	OK	18.1	-9.7	24.7	261.9	OK
24.8	3.3	3.3	0.7	32.3	4.3	4.4	0.9	0.1	13.83	OK	14.3	0.3	14.3	261.9	OK
51.8	7.0	0.3	-1.7	67.4	9.0	0.4	-2.3	0.3	13.83	OK	3.0	-0.9	3.3	261.9	OK
587.7	78.8	-0.2	-19.1	764.0	102.5	-0.2	-24.9	3.1	13.83	OK	19.0	-9.6	25.2	261.9	OK
56.3	7.5	2.0	-2.6	73.2	9.8	2.6	-3.4	0.3	13.83	OK	9.7	-1.3	10.0	261.9	OK
40.3	5.4	2.5	-5.2	52.4	7.0	3.3	-6.8	0.2	13.83	OK	11.5	-2.6	12.3	261.9	OK
45.9	6.2	0.4	-1.3	59.7	8.0	0.5	-1.7	0.2	13.83	OK	3.0	-0.7	3.3	261.9	OK
25.5	3.4	4.0	0.9	33.2	4.4	5.2	1.1	0.1	13.83	OK	16.8	0.4	16.8	261.9	OK
33.8	4.5	0.0	4.6	44.0	5.9	0.0	5.9	0.2	13.83	OK	1.1	2.3	4.1	261.9	OK
27.7	3.7	2.4	-3.5	36.0	4.8	3.1	-4.5	0.1	13.83	OK	10.6	-1.7	11.0	261.9	OK
70.1	9.4	-1.2	-0.2	91.1	12.2	-1.6	-0.3	0.4	13.83	OK	7.0	-0.1	7.0	261.9	OK
45.3	6.1	-0.1	-0.1	58.9	7.9	-0.2	-0.2	0.2	13.83	OK	1.9	-0.1	1.9	261.9	OK
29.9	4.0	2.3	-2.4	38.9	5.2	2.9	-3.1	0.2	13.83	OK	10.0	-1.2	10.2	261.9	OK
27.6	3.7	2.3	0.7	35.9	4.8	2.9	0.9	0.1	13.83	OK	10.0	0.4	10.0	261.9	OK
52.1	7.0	1.9	-2.3	67.8	9.1	2.5	-3.0	0.3	13.83	OK	9.4	-1.1	9.6	261.9	OK
87.7	11.8	2.1	-6.4	114.0	15.3	2.7	-8.3	0.5	13.83	OK	11.0	-3.2	12.3	261.9	OK
102.6	13.8	-3.2	-1.6	133.3	17.9	-4.2	-2.0	0.5	13.83	OK	16.3	-0.8	16.4	261.9	OK
55.4	7.4	-0.4	-0.6	72.1	9.7	-0.5	-0.8	0.3	13.83	OK	3.2	-0.3	3.2	261.9	OK
61.9	8.3	-2.9	1.6	80.5	10.8	-3.7	2.0	0.3	13.83	OK	13.4	0.8	13.5	261.9	OK
23.5	3.2	2.2	2.0	30.6	4.1	2.8	2.6	0.1	13.83	OK	9.5	1.0	9.6	261.9	OK
105.9	14.2	2.6	-18.2	137.7	18.5	3.4	-23.7	0.6	13.83	OK	13.7	-9.1	20.9	261.9	OK
29.3	3.9	1.2	0.8	38.1	5.1	1.6	1.1	0.2	13.83	OK	6.0	0.4	6.0	261.9	OK
208.8	28.0	3.1	-21.1	271.4	36.4	4.1	-27.4	1.1	13.83	OK	19.2	-10.5	26.5	261.9	OK
42.4	5.7	0.1	-1.9	55.1	7.4	0.2	-2.5	0.2	13.83	OK	1.8	-1.0	2.5	261.9	OK
30.7	4.1	0.0	1.6	39.9	5.4	0.0	2.0	0.2	13.83	OK	1.0	0.8	1.7	261.9	OK
22.6	3.0	1.3	2.3	29.4	3.9	1.7	2.9	0.1	13.83	OK	5.9	1.1	6.2	261.9	OK
21.0	2.8	2.4	0.7	27.3	3.7	3.1	1.0	0.1	13.83	OK	10.4	0.4	10.4	261.9	OK
33.2	4.5	0.9	2.5	43.2	5.8	1.1	3.3	0.2	13.83	OK	4.5	1.3	5.0	261.9	OK
16.2	2.2	2.9	0.8	21.0	2.8	3.8	1.0	0.1	13.83	OK	12.3	0.4	12.4	261.9	OK
26.3	3.5	2.3	4.1	34.1	4.6	3.0	5.3	0.1	13.83	OK	10.1	2.0	10.7	261.9	OK
61.2	8.2	-2.5	2.5	79.5	10.7	-3.3	3.2	0.3	13.83	OK	12.1	1.2	12.3	261.9	OK
42.5	5.7	0.0	-0.5	55.3	7.4	0.0	-0.7	0.2	13.83	OK	1.4	-0.3	1.5	261.9	OK
53.3	7.2	2.2	-7.5	69.3	9.3	2.9	-9.7	0.3	13.83	OK	10.7	-3.7	12.5	261.9	OK
42.4	5.7	-0.3	-0.8	55.2	7.4	-0.4	-1.0	0.2	13.83	OK	2.6	-0.4	2.7	261.9	OK
61.7	8.3	-2.1	-0.5	80.2	10.8	-2.7	-0.7	0.3	13.83	OK	10.4	-0.3	10.4	261.9	OK
37.7	5.1	-0.3	3.7	49.0	6.6	-0.4	4.8	0.2	13.83	OK	2.4	1.8	4.0	261.9	OK
55.1	7.4	-2.9	3.3	71.7	9.6	-3.7	4.3	0.3	13.83	OK	13.2	1.7	13.6	261.9	OK
83.9	11.3	-2.7	-0.9	109.1	14.6	-3.5	-1.2	0.4	13.83	OK	13.4	-0.5	13.4	261.9	OK
40.5	5.4	-1.0	3.1	52.6	7.1	-1.3	4.0	0.2	13.83	OK	5.2	1.5	5.8	261.9	OK
53.8	7.2	2.0	-9.1	69.9	9.4	2.6	-11.9	0.3	13.83	OK	9.7	-4.6	12.5	261.9	OK
20.8	2.8	1.7	0.8	27.0	3.6	2.2	1.1	0.1	13.83	OK	7.5	0.4	7.6	261.9	OK
35.0	4.7	-0.4	3.0	45.4	6.1	-0.5	3.8	0.2	13.83	OK	2.7	1.5	3.7	261.9	OK
44.2	5.9	-0.2	1.0	57.5	7.7	-0.3	1.3	0.2	13.83	OK	2.3	0.5	2.5	261.9	OK

30.4	4.1	0.4	0.6	39.5	5.3	0.5	0.8	0.2	13.83	OK	2.6	0.3	2.7	261.9	OK
83.6	11.2	2.4	-10.1	108.7	14.6	3.2	-13.1	0.4	13.83	OK	12.4	-5.0	15.2	261.9	OK
77.7	10.4	-3.4	-3.2	101.0	13.5	-4.5	-4.1	0.4	13.83	OK	16.3	-1.6	16.5	261.9	OK
101.3	13.6	3.8	-18.9	131.7	17.7	4.9	-24.6	0.5	13.83	OK	18.4	-9.5	24.7	261.9	OK
26.4	3.5	2.2	2.7	34.3	4.6	2.8	3.5	0.1	13.83	OK	9.6	1.4	9.9	261.9	OK
47.9	6.4	2.5	-5.7	62.3	8.4	3.2	-7.4	0.2	13.83	OK	11.5	-2.8	12.5	261.9	OK
45.9	6.2	-0.7	1.7	59.7	8.0	-1.0	2.3	0.2	13.83	OK	4.4	0.9	4.7	261.9	OK
51.9	7.0	-1.2	-0.5	67.5	9.1	-1.6	-0.7	0.3	13.83	OK	6.7	-0.3	6.7	261.9	OK
89.7	12.0	-4.5	-0.5	116.6	15.6	-5.9	-0.7	0.5	13.83	OK	21.1	-0.3	21.1	261.9	OK
202.9	27.2	0.8	-9.3	263.8	35.4	1.0	-12.1	1.1	13.83	OK	9.6	-4.6	12.5	261.9	OK
121.3	16.3	-4.2	-0.3	157.7	21.2	-5.5	-0.4	0.6	13.83	OK	20.8	-0.2	20.8	261.9	OK
40.2	5.4	1.6	-1.7	52.3	7.0	2.1	-2.2	0.2	13.83	OK	7.9	-0.8	8.0	261.9	OK
69.5	9.3	2.5	9.1	90.3	12.1	3.2	11.8	0.4	13.83	OK	12.1	4.5	14.4	261.9	OK
33.6	4.5	2.7	8.0	43.7	5.9	3.5	10.3	0.2	13.83	OK	11.9	4.0	13.7	261.9	OK
42.6	5.7	0.5	1.4	55.4	7.4	0.7	1.8	0.2	13.83	OK	3.5	0.7	3.7	261.9	OK
31.3	4.2	1.8	-3.6	40.7	5.5	2.3	-4.7	0.2	13.83	OK	8.1	-1.8	8.7	261.9	OK
38.2	5.1	1.9	3.9	49.6	6.7	2.5	5.1	0.2	13.83	OK	9.0	2.0	9.7	261.9	OK
28.6	3.8	1.7	-2.5	37.2	5.0	2.2	-3.2	0.1	13.83	OK	7.7	-1.2	8.0	261.9	OK
49.0	6.6	0.2	1.6	63.6	8.5	0.2	2.0	0.3	13.83	OK	2.2	0.8	2.6	261.9	OK
120.2	16.1	-4.9	-1.2	156.3	21.0	-6.4	-1.5	0.6	13.83	OK	23.5	-0.6	23.5	261.9	OK
37.8	5.1	1.9	2.9	49.2	6.6	2.4	3.8	0.2	13.83	OK	8.7	1.4	9.0	261.9	OK
246.5	33.1	3.2	18.0	320.5	43.0	4.2	23.3	1.3	13.83	OK	20.8	9.0	26.0	261.9	OK
99.5	13.3	2.9	14.3	129.3	17.3	3.7	18.6	0.5	13.83	OK	14.6	7.2	19.2	261.9	OK
298.1	40.0	5.9	24.0	387.5	52.0	7.7	31.1	1.6	13.83	OK	33.1	12.0	39.1	261.9	OK
58.3	7.8	-1.2	1.8	75.8	10.2	-1.6	2.3	0.3	13.83	OK	6.8	0.9	7.0	261.9	OK
62.9	8.4	-1.4	1.6	81.8	11.0	-1.9	2.0	0.3	13.83	OK	7.7	0.8	7.9	261.9	OK
35.9	4.8	0.1	-0.2	46.7	6.3	0.1	-0.3	0.2	13.83	OK	1.5	-0.1	1.5	261.9	OK
94.8	12.7	1.6	9.2	123.3	16.5	2.1	12.0	0.5	13.83	OK	9.4	4.6	12.4	261.9	OK
40.4	5.4	0.1	0.6	52.6	7.0	0.1	0.8	0.2	13.83	OK	1.5	0.3	1.6	261.9	OK
26.8	3.6	1.4	-1.3	34.9	4.7	1.8	-1.7	0.1	13.83	OK	6.4	-0.7	6.5	261.9	OK
48.4	6.5	0.4	1.2	62.9	8.4	0.5	1.6	0.3	13.83	OK	3.0	0.6	3.2	261.9	OK
24.4	3.3	3.1	-1.0	31.7	4.3	4.1	-1.3	0.1	13.83	OK	13.4	-0.5	13.4	261.9	OK
333.9	44.8	2.7	8.6	434.1	58.2	3.6	11.2	1.7	13.83	OK	21.5	4.3	22.7	261.9	OK
69.9	9.4	-3.4	-4.4	90.9	12.2	-4.4	-5.7	0.4	13.83	OK	15.8	-2.2	16.2	261.9	OK
47.8	6.4	2.1	3.0	62.2	8.3	2.8	4.0	0.2	13.83	OK	10.1	1.5	10.4	261.9	OK
34.7	4.7	0.5	-0.8	45.1	6.1	0.6	-1.1	0.2	13.83	OK	3.1	-0.4	3.2	261.9	OK
44.2	5.9	2.0	9.7	57.5	7.7	2.6	12.6	0.2	13.83	OK	9.3	4.8	12.5	261.9	OK
51.2	6.9	-1.0	-0.2	66.6	8.9	-1.3	-0.2	0.3	13.83	OK	5.7	-0.1	5.7	261.9	OK
81.8	11.0	-2.1	3.1	106.3	14.3	-2.7	4.1	0.4	13.83	OK	11.0	1.6	11.3	261.9	OK
73.5	9.9	2.4	12.1	95.5	12.8	3.1	15.8	0.4	13.83	OK	11.9	6.1	15.9	261.9	OK
41.1	5.5	0.7	0.7	53.5	7.2	0.9	0.9	0.2	13.83	OK	4.0	0.4	4.1	261.9	OK
40.0	5.4	2.8	6.6	52.0	7.0	3.6	8.6	0.2	13.83	OK	12.6	3.3	13.8	261.9	OK
54.0	7.2	2.2	-0.8	70.2	9.4	2.9	-1.1	0.3	13.83	OK	10.6	-0.4	10.7	261.9	OK
23.1	3.1	1.7	-0.7	30.1	4.0	2.3	-0.9	0.1	13.83	OK	7.7	-0.3	7.8	261.9	OK
37.4	5.0	-0.6	-3.4	48.7	6.5	-0.8	-4.4	0.2	13.83	OK	3.6	-1.7	4.6	261.9	OK
27.4	3.7	1.1	-0.6	35.7	4.8	1.4	-0.8	0.1	13.83	OK	5.1	-0.3	5.2	261.9	OK
39.8	5.3	-0.5	-2.5	51.8	6.9	-0.7	-3.3	0.2	13.83	OK	3.4	-1.3	4.0	261.9	OK

55.5	7.4	-2.4	-0.2	72.1	9.7	-3.1	-0.2	0.3	13.83	OK	11.2	-0.1	11.2	261.9	OK
28.4	3.8	1.0	-1.7	37.0	5.0	1.2	-2.3	0.1	13.83	OK	4.8	-0.9	5.0	261.9	OK
69.4	9.3	-2.2	3.2	90.2	12.1	-2.9	4.1	0.4	13.83	OK	11.2	1.6	11.5	261.9	OK
41.9	5.6	-1.1	-1.4	54.4	7.3	-1.4	-1.9	0.2	13.83	OK	5.7	-0.7	5.9	261.9	OK
24.5	3.3	1.6	-2.0	31.8	4.3	2.1	-2.6	0.1	13.83	OK	7.4	-1.0	7.6	261.9	OK
60.2	8.1	-2.5	-2.0	78.2	10.5	-3.3	-2.6	0.3	13.83	OK	12.1	-1.0	12.2	261.9	OK
20.1	2.7	2.2	-0.4	26.1	3.5	2.9	-0.6	0.1	13.83	OK	9.5	-0.2	9.5	261.9	OK
43.2	5.8	-1.1	-5.9	56.1	7.5	-1.4	-7.7	0.2	13.83	OK	5.8	-3.0	7.7	261.9	OK
53.4	7.2	-2.8	-2.4	69.4	9.3	-3.6	-3.1	0.3	13.83	OK	13.0	-1.2	13.1	261.9	OK
198.0	26.6	1.4	13.6	257.3	34.5	1.9	17.6	1.0	13.83	OK	12.0	6.8	16.8	261.9	OK
32.0	4.3	0.8	0.0	41.6	5.6	1.0	0.0	0.2	13.83	OK	4.1	0.0	4.1	261.9	OK
34.1	4.6	0.4	-2.7	44.3	5.9	0.5	-3.6	0.2	13.83	OK	2.7	-1.4	3.6	261.9	OK
151.8	20.4	2.3	12.3	197.3	26.5	3.0	16.0	0.8	13.83	OK	14.1	6.1	17.7	261.9	OK
19.2	2.6	2.9	-0.9	24.9	3.3	3.7	-1.2	0.1	13.83	OK	12.2	-0.5	12.3	261.9	OK
97.8	13.1	-3.1	2.3	127.1	17.0	-4.0	3.0	0.5	13.83	OK	15.6	1.2	15.7	261.9	OK
28.2	3.8	3.6	-2.4	36.7	4.9	4.6	-3.1	0.1	13.83	OK	15.3	-1.2	15.4	261.9	OK
39.2	5.3	-0.1	-0.2	50.9	6.8	-0.1	-0.3	0.2	13.83	OK	1.4	-0.1	1.5	261.9	OK
39.7	5.3	2.1	1.4	51.6	6.9	2.7	1.8	0.2	13.83	OK	9.7	0.7	9.8	261.9	OK
54.1	7.3	2.6	9.0	70.3	9.4	3.4	11.6	0.3	13.83	OK	12.2	4.5	14.5	261.9	OK
122.9	16.5	2.8	12.5	159.8	21.4	3.7	16.3	0.6	13.83	OK	15.3	6.3	18.7	261.9	OK
43.0	5.8	0.3	0.8	55.9	7.5	0.3	1.0	0.2	13.83	OK	2.4	0.4	2.5	261.9	OK
48.6	6.5	0.8	2.7	63.1	8.5	1.1	3.5	0.3	13.83	OK	4.9	1.4	5.5	261.9	OK
79.1	10.6	-3.2	2.6	102.8	13.8	-4.2	3.3	0.4	13.83	OK	15.5	1.3	15.7	261.9	OK
41.5	5.6	0.2	1.7	54.0	7.2	0.2	2.2	0.2	13.83	OK	2.0	0.8	2.5	261.9	OK
38.1	5.1	1.1	0.6	49.5	6.6	1.5	0.7	0.2	13.83	OK	5.7	0.3	5.7	261.9	OK
47.6	6.4	-0.5	-0.4	61.9	8.3	-0.6	-0.5	0.2	13.83	OK	3.4	-0.2	3.4	261.9	OK
26.7	3.6	1.6	-1.9	34.7	4.7	2.1	-2.5	0.1	13.83	OK	7.3	-1.0	7.5	261.9	OK
30.6	4.1	1.6	0.1	39.8	5.3	2.1	0.1	0.2	13.83	OK	7.4	0.0	7.4	261.9	OK
64.3	8.6	2.3	2.5	83.6	11.2	3.1	3.3	0.3	13.83	OK	11.5	1.3	11.7	261.9	OK

ALLEGATO 2

SOLLECITAZIONI NEL RIVESTIMENTO DEFINITIVO

Tabella 1: sollecitazioni nel rivestimento definitivo (N>0: compressione, M>0: tende le fibre in intradosso) – Galleria di linea

Calotta						Arco rovescio					
Sollecitazioni caratteristiche			Sollecitazioni di calcolo (SLU)			Sollecitazioni caratteristiche			Sollecitazioni di calcolo (SLU)		
N_k [kN]	M_k [kNm]	T_k [kN]	N_d [kN]	M_d [kNm]	T_d [kN]	N_k [kN]	M_k [kNm]	T_k [kN]	N_d [kN]	M_d [kNm]	T_d [kN]
2935	80	-43	3816	104	-56	38	1	0	50	2	0
2528	31	144	3286	40	187	43	1	1	56	1	1
2547	82	34	3311	107	45	43	-6	5	56	-8	7
2290	-45	152	2977	-58	197	17	-9	5	22	-11	7
1696	-36	28	2205	-47	36	58	-3	9	75	-5	12
4205	52	-11	5467	68	-15	38	2	-1	49	2	-1
2253	76	-5	2929	99	-6	70	-3	7	91	-3	9
2458	78	-5	3195	101	-7	34	-1	0	45	-1	-1
2461	-46	154	3199	-60	201	60	-1	2	78	-2	3
3443	-18	124	4476	-24	161	59	-3	-1	77	-4	-1
2459	67	6	3197	87	7	70	0	0	91	1	-1
2942	60	46	3824	78	59	67	0	2	88	1	3
2955	74	-80	3842	96	-104	41	1	1	53	1	2
2559	67	36	3327	87	47	40	-1	4	51	-2	5
2981	48	-20	3875	63	-27	70	-1	4	91	-1	5
2415	47	101	3140	61	131	63	0	0	82	0	1
2485	-18	200	3231	-24	261	39	-2	5	50	-3	6
2828	54	-24	3676	70	-31	54	-8	8	70	-11	11
3577	-70	75	4650	-91	98	28	-2	-2	36	-2	-2
3307	38	-49	4299	49	-63	67	-8	5	87	-11	6
4572	18	96	5943	23	124	41	1	0	53	1	0
2288	35	161	2975	46	209	66	0	1	86	0	1
4003	-30	62	5203	-39	81	42	0	0	55	1	0
2042	42	2	2655	55	3	31	0	-1	41	1	-1
2035	53	33	2645	70	43	36	1	1	47	1	1
3200	71	-43	4160	92	-56	66	0	0	86	0	-1
1440	19	22	1872	25	29	62	-2	8	81	-3	10
1152	-27	15	1497	-35	19	37	-4	6	48	-5	8
862	-22	27	1121	-29	35	36	-2	2	47	-2	2
839	-6	-1	1090	-8	-1	37	-1	2	48	-2	3
3478	22	-152	4521	28	-198	15	-6	-7	19	-8	-9
521	-7	-21	677	-9	-27	47	0	-3	61	0	-4
880	-19	1	1144	-25	1	9	-20	-5	11	-26	-6
1570	29	-8	2041	37	-10	10	-11	-11	14	-14	-14
1155	-15	-36	1501	-19	-47	58	-3	1	75	-3	1
721	-7	3	938	-9	3	2	-3	4	3	-3	5
683	-3	4	888	-4	5	21	0	-1	28	0	-2
1287	0	-53	1674	1	-69	16	-10	-1	21	-13	-2
853	-19	20	1109	-25	26	14	-1	-1	18	-2	-2
1252	-19	-31	1628	-25	-40	37	-2	-4	48	-3	-5

1693	25	-29	2201	32	-37	30	0	1	39	1	2
1439	1	-40	1871	1	-52	49	0	1	64	0	2
1045	-26	11	1358	-34	14	31	-3	-7	40	-4	-8
2671	36	-86	3473	46	-111	14	-3	-4	18	-4	-6
2594	60	-43	3372	77	-56	8	-4	-4	10	-5	-5
677	-9	2	880	-11	3	60	0	-3	77	0	-3
528	-6	5	686	-7	6	16	-9	-6	21	-12	-8
472	-1	24	613	-2	31	32	-3	-4	42	-4	-6
1313	-4	-43	1707	-5	-56	39	-1	-1	51	-2	-2
1636	24	-13	2127	31	-17	24	-8	-10	31	-10	-12
2209	24	98	2872	31	127	22	-13	-4	28	-17	-5
2650	18	-89	3445	24	-115	25	0	-1	32	0	-2
193	2	-4	252	3	-5	-1	-6	-4	-1	-8	-5
436	1	35	567	1	45	31	-11	-8	40	-14	-11
1245	2	-15	1618	3	-20	19	-4	-3	25	-5	-4
2311	48	-53	3004	63	-68	10	-13	0	13	-17	0
2929	5	-42	3807	7	-54	2	-15	-15	2	-19	-19
3004	4	-53	3906	6	-69	17	-1	-1	23	-1	-1
1526	-4	-41	1984	-5	-53	8	-2	-1	10	-2	-2
1321	-2	-13	1717	-3	-16	28	1	-1	36	1	-1
785	-14	32	1021	-19	41	22	-1	-2	29	-1	-2
391	-5	13	509	-6	17	-19	-12	9	-25	-16	12
558	-8	-19	725	-11	-25	-1	-8	-5	-1	-11	-6
2460	33	87	3198	43	113	26	-10	18	34	-13	24
2063	48	-7	2682	62	-9	8	-4	-6	11	-5	-8
1939	53	-60	2521	69	-78	13	-10	14	17	-13	18
2234	53	-65	2904	69	-85	-34	-7	-6	-45	-9	-8
728	-13	33	946	-17	43	-26	0	-6	-34	0	-8
2112	41	-29	2745	53	-38	7	1	4	10	2	6
1445	25	-1	1879	33	-1	-5	2	-3	-6	3	-4
1142	-28	-12	1484	-36	-15	6	-2	-9	8	-2	-12
1693	20	-16	2201	26	-21	-9	-8	-19	-12	-11	-24
574	-11	-7	746	-15	-9	70	2	1	90	3	1
2577	28	42	3350	37	55	80	0	0	104	1	0
2130	41	88	2769	53	115	56	0	-1	72	1	-1
739	-15	6	960	-20	8	52	1	-2	68	2	-2
993	-19	26	1291	-25	34	64	0	1	84	0	2
689	3	0	896	4	-1	46	7	-10	59	10	-13
3237	56	61	4208	72	79	64	0	1	83	0	1
1129	6	25	1468	8	33	44	0	3	57	0	4
3048	67	40	3963	87	53	62	3	-4	81	4	-5
614	1	14	799	2	18	67	0	0	87	0	0
1881	26	3	2446	33	4	79	0	-4	102	0	-5
252	8	22	327	10	29	76	1	0	98	1	0
1318	9	22	1714	11	29	53	1	-1	69	1	-1
981	5	-7	1275	6	-9	44	3	-4	57	3	-6
1776	9	7	2309	12	9	59	0	-3	77	0	-4

2296	28	15	2985	36	20	62	-1	0	80	-1	0
1542	13	19	2004	17	25	38	1	-3	49	1	-4
354	6	-5	461	8	-7	11	4	3	14	5	4
2883	47	19	3748	61	25	24	5	-2	32	7	-2
304	5	-19	395	6	-25	27	3	1	35	4	2
585	2	1	760	2	1	55	0	-3	72	0	-4
736	7	-8	956	8	-11	65	-1	3	84	-1	4
354	5	14	460	7	18	75	1	0	98	2	0
564	4	-6	733	5	-7	59	-1	3	76	-1	4
1250	3	19	1625	4	24	75	-1	-7	98	-1	-9
328	3	-20	427	4	-26	83	-1	2	108	-1	2
511	1	6	664	1	7	55	2	-1	71	2	-1
2130	38	30	2768	49	40	35	2	-2	45	3	-3
742	-4	3	964	-5	4	42	5	-1	55	7	-2
901	-1	-19	1172	-1	-24	42	0	0	55	0	-1
968	-4	-20	1258	-5	-26	25	1	2	33	1	3
928	3	3	1206	3	4	64	-1	1	83	-1	2
2052	38	20	2668	49	26	20	-3	3	26	-4	4
1073	-3	8	1395	-4	11	15	-1	-1	20	-2	-2
2294	27	14	2982	35	18	56	0	-1	73	0	-1
2087	25	-3	2713	32	-4	-14	11	3	-18	14	4
2024	20	21	2632	26	27	60	-1	7	77	-1	9
590	5	-32	767	7	-42	11	9	13	14	11	17
1842	15	10	2394	20	13	37	0	-4	48	1	-5
1551	2	24	2017	3	31	42	0	-3	55	-1	-4
627	4	4	816	5	6	48	-1	0	63	-2	0
483	5	2	628	7	3	76	-1	-2	98	-2	-2
2547	24	73	3312	31	95	35	-1	-2	45	-2	-3
590	-4	6	767	-5	8	21	0	1	27	0	1
3420	51	28	4446	66	37	20	-1	-1	27	-1	-1
2345	37	20	3048	48	26	60	-1	0	78	-1	0
1301	3	7	1691	4	9	1	9	11	2	12	14
475	8	-30	617	10	-39	42	0	0	55	0	0
1666	18	14	2166	23	19	46	-1	-1	59	-1	-1
771	5	-5	1002	7	-6	31	-2	-1	41	-2	-2
154	4	0	200	6	1	29	0	3	38	0	3
1263	15	-21	1643	19	-27	37	-1	1	48	-1	2
1197	9	13	1556	12	17	11	1	5	15	1	6
2555	35	8	3322	45	10	23	-2	0	30	-2	0
1804	15	-25	2346	19	-33	-1	3	5	-1	4	7
1612	19	14	2096	24	18	26	0	6	34	1	8
881	1	-17	1146	1	-22	33	-4	-5	44	-5	-6
1124	3	-24	1461	4	-31	31	0	0	40	0	0
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778	-41	27	1011	-54	35
850	11	-147	1106	14	-192
634	-24	14	824	-31	19
786	-30	9	1022	-39	12
849	-48	13	1104	-62	17
773	-46	15	1004	-60	19
708	12	-166	920	15	-216
793	-35	-49	1031	-45	-64
690	25	-149	897	33	-193
336	-18	7	437	-23	9
888	-11	-120	1154	-14	-156
905	-43	25	1177	-56	33
774	-52	-8	1006	-68	-11
722	-33	-31	939	-42	-41
1498	26	-3	1947	33	-4
998	-27	-33	1298	-35	-42

732	-50	-45	952	-65	-59
929	19	88	1207	25	114
386	-23	46	502	-30	60
623	-27	19	810	-36	25
338	9	29	440	11	38
528	-40	31	686	-53	40
315	-6	37	409	-8	48
602	-17	26	782	-23	34
995	0	-24	1293	-1	-31
490	-39	25	637	-51	33
2618	45	46	3403	58	60
1476	47	22	1919	61	29
2086	47	53	2712	61	68
604	-5	-11	785	-7	-14
758	-7	-20	986	-9	-27
667	-42	15	867	-55	19
869	17	97	1130	22	126
651	-53	37	846	-69	48
624	-52	19	811	-68	25
709	-52	46	922	-67	60
316	-15	0	410	-19	-1
2978	47	49	3872	61	64
653	4	-22	848	5	-29
412	-27	6	536	-35	8
661	-26	9	860	-34	11
709	3	41	921	4	54
545	-20	12	708	-25	15
807	-6	-41	1049	-8	-53
688	16	108	894	21	141
627	-59	19	815	-77	25
348	-21	21	452	-27	27
328	-12	-8	427	-16	-10
680	-25	-14	885	-32	-18
340	11	-24	443	14	-31
659	-28	-6	857	-36	-8
548	8	-23	713	11	-30
588	3	-5	765	4	-6
561	-15	21	730	-19	28
574	-8	-37	746	-11	-48
578	-4	17	751	-5	22
614	-5	42	798	-7	54
616	2	-20	801	3	-26
639	-19	-18	831	-25	-23
425	13	-15	552	17	-19
299	0	-16	389	-1	-21
1201	23	50	1562	30	65
698	-32	11	907	-42	14

598	-21	-3	777	-27	-4
1733	43	30	2252	55	39
557	-17	1	724	-22	1
1011	4	14	1315	5	18
129	-8	6	168	-10	8
620	-30	2	806	-39	3
235	-33	10	306	-43	13
471	1	51	613	1	66
986	34	52	1281	44	67
708	-41	26	921	-53	34
495	-22	18	644	-28	24
646	-1	14	840	-1	18
551	-34	24	716	-44	31
606	-59	24	788	-77	31
662	-10	28	860	-14	36
819	-53	-16	1064	-69	-20
583	-55	28	758	-71	36
302	-16	4	393	-21	5
Calotta 70+30					
1056	142	-74	1373	185	-96
549	120	45	713	156	58
568	96	-1	739	125	-2
512	117	20	665	152	26
1089	118	97	1416	153	126
252	48	67	328	63	87
368	93	53	479	121	69
407	77	34	529	100	44
25	-31	-1	32	-41	-1
90	-25	7	116	-33	9
198	39	52	258	51	68
71	-24	5	92	-32	6
240	-8	45	312	-11	59
137	-35	-18	178	-45	-23
150	0	-19	195	-1	-24
43	-31	-20	56	-40	-26
18	-20	-22	23	-27	-29
254	23	-78	330	30	-101
44	-3	-9	57	-4	-12
129	47	-77	168	62	-100
273	97	-42	355	126	-55
68	-14	-15	89	-18	-20
365	103	-72	474	133	-93
435	115	3	565	149	3
190	127	-2	247	165	-2
781	119	47	1016	155	61
845	112	-5	1099	146	-7
562	117	12	731	153	16

5434	55	76	7064	71	98
5493	28	-82	7141	37	-106
6149	48	112	7993	62	146
4800	-17	23	6240	-22	31
5214	27	-174	6778	35	-227
4885	-7	13	6351	-9	17
5812	-72	-57	7556	-94	-75
5326	45	92	6924	59	119
4997	23	228	6496	30	297
4465	18	-174	5804	24	-226
5333	29	59	6933	38	77
5534	39	-75	7194	51	-97
4308	3	-34	5601	3	-44
5259	37	44	6837	48	57
4206	19	-88	5468	25	-114
5336	23	60	6937	29	78
5756	39	7	7482	50	9
1132	154	-75	1472	200	-98
588	105	-15	764	137	-20
2153	73	-51	2799	95	-66
4961	150	-30	6449	195	-39
1861	115	-12	2419	149	-16
1788	125	33	2325	162	43
858	90	68	1116	116	88
1042	133	69	1355	173	89
4824	13	201	6271	16	261
4806	74	-118	6248	97	-153
4013	85	-76	5217	111	-99
5302	-55	233	6892	-71	303
5706	-2	99	7418	-2	129
369	33	32	480	43	41
361	78	39	470	101	51
254	-10	48	330	-13	62
85	-32	0	111	-42	0
-37	-40	28	-48	-53	37
3	-37	15	4	-49	19
62	-26	3	80	-34	4
107	5	67	139	6	87
616	67	66	801	88	86
196	49	60	254	64	78
451	75	-40	586	97	-52
69	-6	-6	90	-7	-7
85	-43	-1	111	-56	-1
347	21	-86	451	28	-111
679	32	-84	883	42	-110
305	-19	-47	397	-24	-61
27	-24	-27	35	-32	-35

322	103	-66	419	134	-85
161	-11	14	209	-15	19
162	-39	-15	210	-50	-19
2435	100	41	3166	130	53
926	128	10	1204	166	14
660	123	19	858	160	25
5233	-72	-227	6803	-93	-295
2213	55	43	2877	72	56
1451	126	-26	1887	164	-34
1083	132	58	1408	172	75
5492	-9	-119	7139	-11	-154
4747	59	98	6171	77	128
4054	66	59	5270	86	77
4633	10	-229	6023	13	-298
816	112	-64	1061	145	-83
4617	125	40	6002	163	52
5293	38	-225	6881	49	-293
5612	47	70	7295	61	91
5130	40	-239	6670	51	-311
4693	-42	114	6101	-55	149
6048	-110	316	7863	-142	411
342	98	-51	445	128	-66
129	43	-76	168	56	-99
185	80	-89	241	104	-115
183	-30	-14	238	-39	-19
-5	17	-37	-7	22	-48
359	-12	-17	466	-15	-22
136	-25	-15	176	-33	-20
194	-1	-15	252	-2	-19
87	94	-36	113	122	-47
240	-13	-12	312	-17	-16
138	-27	6	179	-35	8
89	-20	4	116	-26	5
157	37	52	204	48	68
162	-31	-3	211	-40	-4
153	17	48	199	22	62
260	81	56	338	106	73
-18	-2	44	-23	-3	58
448	94	65	582	123	85
145	-27	10	189	-35	13
273	74	86	355	96	112
282	116	33	367	150	43
682	-38	6	887	-49	7
651	-29	35	846	-38	46
562	-27	-49	730	-35	-64
808	-45	-29	1050	-59	-38
456	-25	19	593	-32	25

653	-2	90	849	-3	117
552	12	104	718	16	135
440	-31	-4	573	-40	-6
392	-19	37	509	-25	48
355	-22	-49	461	-28	-64
248	-34	26	322	-45	33
657	-3	-29	854	-3	-38
445	3	-84	579	5	-109
378	-28	-29	491	-36	-38
348	-19	-17	452	-25	-22
242	-22	-32	314	-28	-42
-15	-35	-14	-19	-45	-18
126	85	-111	163	110	-144
200	14	-47	260	19	-61
36	-26	20	46	-34	26
413	9	-86	537	12	-111
110	63	-122	143	82	-159
379	77	106	492	101	137
456	17	102	593	22	132
328	17	59	426	22	76
393	66	92	511	86	120
252	-23	-2	328	-29	-2
302	-19	11	392	-25	14
243	-31	17	316	-41	22
282	-23	9	366	-30	12
5465	265	275	7104	344	358
6680	245	-418	8684	319	-543
5594	292	-151	7272	380	-197
4477	55	-238	5821	71	-309
7536	348	199	9797	453	259
5408	265	-132	7031	345	-172
5078	210	-73	6602	273	-95
7525	313	-454	9782	407	-590
7398	437	-66	9617	568	-86
4976	19	-359	6468	25	-466
5517	319	-5	7173	415	-6
4741	45	-227	6164	59	-295
6903	419	-41	8974	545	-53
7684	289	365	9989	376	475
4991	151	-128	6489	196	-166
6173	395	-49	8025	513	-63
6186	297	251	8042	385	326
6411	294	200	8334	383	260
5515	254	171	7170	331	223
5092	-136	-299	6620	-176	-388
4155	-117	43	5402	-153	55
5814	308	31	7558	401	41

5154	208	41	6700	270	53
5928	252	-83	7706	328	-107
6289	293	-282	8175	381	-366
5959	-115	-348	7747	-149	-452
4977	-75	-216	6470	-98	-281
2968	-27	-102	3858	-35	-133
3682	-19	-48	4786	-24	-62
4018	9	-56	5223	12	-73
4677	95	62	6080	124	80
3700	-56	-28	4810	-73	-36
3917	3	-120	5092	3	-156
3229	0	-122	4197	0	-158
3207	81	-69	4169	105	-89
4836	-129	123	6287	-167	160
6334	32	215	8234	42	280
6039	-28	272	7851	-37	353
4066	-79	-94	5286	-103	-123
4077	73	195	5300	94	253
3422	69	-57	4448	89	-74
3990	0	-26	5186	0	-34
4135	102	100	5376	133	130
4157	81	121	5405	106	157
3128	-99	-160	4066	-129	-208
3704	14	-25	4815	19	-33
5506	-156	-94	7158	-202	-123
6398	-206	79	8318	-268	102
7540	73	109	9802	94	141
3889	19	-56	5055	25	-73
4580	-167	-2	5954	-217	-3
5621	-73	-177	7307	-94	-230
4308	-21	-61	5601	-27	-79
4593	-79	-67	5971	-103	-88
3483	30	-19	4528	38	-25
7565	43	195	9835	56	253
3176	57	-47	4129	74	-61
4867	99	106	6326	129	138
4384	-34	59	5699	-44	77
3064	-31	-157	3984	-41	-205
4209	-65	126	5471	-85	163
5527	80	250	7185	104	325
3410	-58	-207	4433	-75	-270
3962	-22	54	5150	-28	70
3959	101	4	5147	132	5
3121	76	-28	4058	99	-36
6013	4	231	7817	5	301
4850	60	198	6305	79	258
4795	-90	114	6233	-117	149

3379	40	-133	4393	52	-173
3064	-66	-111	3983	-86	-145
3186	21	-65	4141	27	-85
4309	-120	-145	5602	-156	-188
4510	83	140	5863	108	183
5386	53	290	7001	69	376
4051	82	165	5266	107	215
4518	65	209	5874	84	272
4179	-70	-244	5433	-91	-318
3012	36	-100	3916	47	-129
3428	51	-70	4456	67	-91
3297	44	-77	4286	57	-100
3419	40	-67	4444	53	-87
3903	-117	-65	5074	-152	-84
4442	1	-254	5774	1	-331
6145	-158	31	7989	-205	40
3839	-40	-149	4990	-52	-194
3401	-5	-11	4421	-6	-15
5815	70	186	7559	90	242
3432	3	-17	4462	4	-23
3664	-31	-129	4764	-41	-167
3248	-236	185	4222	-307	240
6276	322	376	8159	418	488
6306	412	-355	8198	536	-462
5197	-25	-522	6756	-33	-679
3664	-9	-276	4763	-11	-358
4102	104	-316	5332	135	-411
6660	-114	-485	8657	-149	-630
4751	325	68	6176	423	88
4835	310	-327	6285	403	-426
3493	-62	-39	4541	-81	-51
5666	6	-474	7366	8	-617
4503	227	204	5854	294	265
5005	248	254	6506	322	330
5303	284	255	6894	370	332
5496	275	181	7144	358	235
6427	339	465	8355	440	605
4211	201	-162	5475	261	-211
4282	257	-1	5567	334	-1
4340	-4	-484	5642	-6	-629
5031	229	-430	6540	297	-559
4808	364	10	6251	473	13
4803	309	49	6244	402	63
4752	223	-286	6178	290	-371
4041	77	-316	5253	100	-410
4125	70	-303	5363	90	-394
4366	246	72	5676	320	94

3564	-18	-224	4633	-23	-292
4328	241	109	5627	313	141
6968	543	62	9058	706	81
4078	-61	-187	5301	-80	-244
4188	247	-20	5444	322	-25
4605	238	270	5987	310	351
5933	506	34	7713	658	44
4629	289	-217	6018	376	-282
3535	-8	-306	4595	-10	-398
5046	403	96	6560	524	125
5713	437	48	7427	568	62
4479	218	112	5823	283	146
5252	365	32	6828	474	42
7346	406	-330	9549	527	-428
3324	18	-163	4322	23	-212
4958	242	261	6446	315	339
5575	329	-251	7248	428	-326
4434	231	-344	5764	301	-447
4179	214	-219	5433	278	-285
4301	-71	-229	5591	-93	-298
2015	45	-60	2620	58	-78
1519	4	14	1974	5	18
2256	45	-21	2932	59	-27
1935	41	-10	2515	54	-12
1838	-21	31	2390	-27	40
1721	87	-141	2238	113	-184
1699	20	21	2209	26	27
1600	44	78	2080	57	101
1600	38	-97	2080	49	-127
1479	4	99	1923	5	129
2760	27	-141	3588	35	-184
2069	31	13	2690	41	16
1262	-16	-56	1640	-21	-73
2317	50	-50	3012	65	-65
2171	27	-58	2822	36	-75
2222	63	42	2889	82	54
1918	6	-132	2493	8	-172
1932	37	-54	2511	47	-70
2122	97	-35	2758	126	-46
1796	52	-185	2335	67	-241
1015	0	-65	1320	0	-84
738	-53	38	959	-69	49
2302	17	-119	2992	22	-154
2071	27	-27	2692	35	-34
2329	88	-45	3028	115	-59
2111	72	-198	2744	94	-257
933	26	54	1213	34	71

2000	7	-57	2599	9	-75
1492	12	72	1939	15	94
1834	47	-64	2385	60	-83
1362	13	-54	1770	17	-70
1867	57	-110	2428	74	-143
2342	41	-66	3045	53	-86
1863	7	-8	2422	9	-11
1764	82	10	2294	107	13
1865	37	-4	2424	48	-5
2385	-7	-31	3101	-9	-41
1878	66	-69	2441	86	-89
1443	81	-116	1876	105	-151
896	3	-89	1165	4	-115
704	39	-19	915	50	-25
723	36	-38	940	46	-49
845	5	-17	1098	6	-22
765	45	-156	995	58	-202
335	11	-53	436	14	-69
432	-4	34	562	-6	44
822	64	-43	1068	83	-56
627	34	-95	816	45	-123
1112	51	-37	1445	67	-48
252	-28	43	328	-36	55
16	-22	-30	20	-28	-39
822	66	-3	1069	85	-3
795	53	-74	1034	69	-97
375	-6	51	487	-8	66
615	33	-33	799	43	-43
902	70	-8	1172	91	-10
640	4	-98	831	5	-128
884	14	-40	1149	18	-53
404	-5	-4	526	-6	-6
1053	37	-19	1369	48	-25
601	4	-2	781	5	-2
338	-29	69	440	-37	89
578	-2	73	752	-2	95
628	-23	116	817	-30	151
445	13	38	578	16	50
570	-31	56	741	-41	73
627	-23	93	816	-30	120
234	-39	91	304	-51	118
342	17	83	445	22	108
365	5	46	474	6	60
12	-69	84	16	-90	110
134	22	-11	174	29	-14
232	-57	76	302	-74	99
177	36	-14	230	46	-18

41	-43	13	53	-56	17
62	-68	52	81	-88	68
541	-91	99	703	-119	128
422	-86	77	549	-111	101
184	-102	88	239	-133	115
193	-72	22	251	-94	29
180	-105	64	233	-136	83
269	-167	7	350	-218	9
4101	54	-13	5331	70	-16
4189	52	4	5446	68	5
4465	68	56	5805	88	73
4115	121	23	5350	157	30
4214	180	-210	5478	234	-273
5019	-144	243	6525	-188	316
5857	-172	-257	7614	-223	-335
5208	231	62	6771	300	81
5299	43	40	6888	56	52
5514	58	84	7168	76	110
5034	106	68	6544	138	88
5023	48	25	6530	62	32

Tabella 2: sollecitazioni nel rivestimento definitivo (N>0: compressione, M>0: tende le fibre in intradosso) – Camerone

Calotta						Arco rovescio					
Sollecitazioni caratteristiche			Sollecitazioni di calcolo (SLU)			Sollecitazioni caratteristiche			Sollecitazioni di calcolo (SLU)		
N_k [kN]	M_k [kNm]	T_k [kN]	N_d [kN]	M_d [kNm]	T_d [kN]	N_k [kN]	M_k [kNm]	T_k [kN]	N_d [kN]	M_d [kNm]	T_d [kN]
4829	68	90	6277	88	117	13	-7	-9	17	-10	-12
4970	-2	32	6461	-3	41	-46	4	3	-59	5	4
3965	6	20	5155	8	26	12	8	0	16	11	1
4328	-7	105	5626	-9	136	6	18	15	7	23	19
4605	74	-59	5987	96	-77	3	13	-35	4	17	-45
3833	17	-91	4983	22	-118	-22	4	-1	-29	6	-1
1312	114	-46	1705	149	-60	-17	-2	-7	-22	-2	-9
3627	109	-24	4715	142	-31	-9	-2	-12	-12	-2	-16
572	102	-67	744	132	-87	12	0	1	15	0	1
3084	108	0	4010	140	0	15	2	-5	20	2	-6
1700	127	50	2210	165	65	11	-1	0	14	-1	0
2132	122	11	2771	159	14	16	8	-5	21	11	-6
4153	3	50	5399	4	65	12	-1	0	16	-1	0
954	143	-49	1240	186	-63	23	1	-3	30	1	-4
4038	72	60	5249	94	78	11	-1	1	14	-1	1
1338	98	-16	1739	127	-21	19	0	-3	25	0	-4
3532	68	-107	4591	88	-140	-12	-2	-2	-16	-2	-3
2873	102	16	3735	133	21	-21	-1	2	-27	-2	3
702	69	-64	913	90	-84	-12	-1	-1	-16	-1	-2
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-6	0	-1	-7	0	-1
2	0	-4	2	0	-6
-3	0	0	-4	0	1
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-6	-1	-2	-8	-1	-3
-2	0	-3	-2	0	-4
0	0	-5	0	1	-7
11	-2	-1	14	-2	-1
18	-1	0	24	-2	0
15	-2	0	19	-2	1
13	-2	0	16	-2	0
15	-1	1	20	-2	1
13	-2	0	17	-3	1
17	-2	0	22	-2	0
6	-2	-1	8	-3	-1
-3	-2	1	-3	-2	2
10	-2	0	13	-3	0
9	-2	0	11	-3	0
2	-2	0	3	-3	0
16	-2	0	21	-2	0
-11	0	3	-14	0	3
19	-1	0	25	-2	0
-9	0	1	-12	0	2
19	-1	0	24	-2	0
1	-2	0	1	-3	0
18	-1	0	23	-2	0
2	-2	1	3	-3	1
11	-2	0	15	-3	1
4	-2	0	5	-3	0
6	-2	-1	8	-3	-1
-1	-2	-1	-1	-2	-1
16	-2	0	21	-2	0
17	-2	0	23	-2	-1
-1	-2	-1	-1	-2	-1
-4	-1	1	-5	-2	1
16	-2	1	20	-2	1
18	-2	0	24	-2	1
20	-1	0	26	-2	0
15	-2	0	19	-2	0
4	-2	0	6	-3	0
19	-2	0	24	-2	0
7	-2	-1	9	-2	-1
13	-2	0	16	-2	1

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8	-2	0	10	-2	0
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13	-1	0	17	-2	0
14	-1	0	18	-2	0
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13	-2	-1	17	-2	-1
12	-2	0	15	-2	0
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11	-2	0	14	-2	0
3	-2	0	4	-3	0
2	-2	0	2	-3	0
14	-1	0	19	-2	0
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-5	-1	-1	-6	-1	-1
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-4	-1	0	-5	-1	0
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15	-1	0	20	-2	0
13	-2	0	17	-2	0
12	-2	0	15	-2	-1
14	-1	0	18	-2	0
9	-2	0	12	-2	0
13	-2	0	17	-2	1

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13	-2	1	16	-2	1
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15	-1	0	20	-2	0
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14	-1	0	19	-2	0
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8	-2	0	11	-3	0
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-5	-2	-1	-6	-3	-1
14	-1	-1	18	-2	-1
15	-2	0	19	-2	0
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-7	-1	1	-9	-1	1
-6	2	7	-8	2	9
7	-2	0	9	-2	0
12	-1	0	15	-2	0
11	-2	0	15	-2	0
6	-2	0	8	-2	0
10	-1	0	14	-2	0
4	-2	0	6	-2	0
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2	-2	0	3	-2	0
2	-2	1	3	-3	1
6	-2	-1	8	-2	-1
1	-2	0	1	-3	0
10	-2	0	13	-2	0
-2	-1	1	-3	-2	1
12	-1	0	16	-2	0
-5	-2	0	-6	-2	0

11	-1	0	14	-2	0
-5	-3	1	-6	-4	1
13	-1	0	16	-2	0
-6	-3	1	-7	-4	1
3	-2	0	4	-3	0
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1	-2	1	2	-3	1
-12	-3	-2	-15	-3	-2
11	-2	0	14	-2	0
11	-2	0	14	-2	0
-10	-3	-2	-13	-3	-2
-4	-2	-1	-5	-3	-1
7	-2	0	9	-2	0
11	-1	0	14	-2	0
12	-1	0	16	-2	0
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137	-21	28	179	-27	37
24	21	-18	31	28	-24
1	4	-8	2	5	-11
-21	7	17	-27	9	22
25	-1	-1	32	-2	-1
21	-1	0	27	-1	0
0	2	-3	-1	2	-4
34	-2	0	44	-2	0
23	-1	-1	30	-1	-1
14	0	0	19	0	0
9	0	-1	12	0	-1
5	1	-1	7	1	-1
-11	9	-7	-14	11	-9
-24	8	5	-32	11	7
30	-1	0	39	-2	0
32	-2	0	41	-2	0
3	1	2	4	1	3
28	-2	1	37	-2	2
19	-1	0	25	-1	0
23	-1	1	30	-1	2
25	-1	0	33	-1	0
20	0	1	26	-1	1
0	3	5	0	3	7
14	0	0	18	0	0
15	0	2	19	0	2
-6	4	-3	-8	6	-4
14	-1	-1	19	-1	-1
4	1	0	5	1	0

10	0	0	13	0	0
-5	2	-1	-6	2	-2
-31	7	0	-40	9	0
2	2	-1	3	3	-1
27	-1	1	36	-2	1
28	-1	1	36	-2	1
29	-1	1	37	-2	1
26	-1	0	34	-2	1
-9	3	-1	-12	4	-1
29	-2	-1	38	-2	-1
4	1	11	5	1	14
-4	5	-8	-5	7	-10
16	7	8	21	9	10
-17	7	-14	-23	10	-19
75	-29	6	97	-37	8
36	-6	13	47	-8	16
21	1	5	28	2	7
18	1	7	24	1	9
15	1	7	19	1	9
34	-8	15	45	-10	19
-15	7	15	-19	9	20
25	1	1	33	2	2
51	-3	6	66	-4	8
35	3	-3	46	4	-3
50	-4	4	65	-5	5
24	1	3	32	2	4
31	-6	12	40	-8	16
-21	3	10	-27	4	13
8	1	6	11	2	8
85	3	-2	110	4	-3
19	2	14	24	3	18
37	-1	2	48	-2	3
35	-1	3	46	-1	4
27	1	2	35	2	3
23	1	5	30	1	6
26	0	5	34	0	7
38	-5	11	49	-6	14
27	1	3	36	1	4
24	-3	16	32	-4	21
54	3	12	70	4	16
40	-5	11	52	-7	14
51	-3	5	66	-4	7
34	-3	8	45	-4	10
24	-1	13	31	-1	17
42	-4	12	55	-5	15
40	-4	9	52	-5	12
34	-4	8	44	-5	10

23	2	-1	29	3	-1
8	3	12	11	4	16
45	-4	12	58	-5	15
11	1	10	14	1	13
23	1	3	30	1	4
67	-1	-4	87	-1	-5
11	-3	27	14	-3	35
19	1	4	24	1	5
17	3	-8	22	4	-10
22	-9	18	29	-12	23
40	-5	11	52	-7	14
40	-5	11	52	-6	14
28	1	0	36	2	1
23	1	3	30	1	4
27	2	1	35	2	1
42	-5	11	54	-6	14
42	3	-9	55	4	-12
31	-1	8	40	-1	10
35	-6	13	46	-8	17
29	2	2	37	2	3
14	2	3	18	2	5
13	1	4	18	2	5
18	1	10	23	1	12
23	1	1	30	1	2
22	-9	19	29	-11	25
35	-8	14	46	-10	18
55	1	-2	71	1	-3
26	-9	22	34	-12	29
33	-6	12	43	-8	16
-1	1	3	-2	1	4
13	3	4	17	3	6
5	2	3	6	2	4
16	5	0	21	7	0
38	-2	9	49	-2	12
19	3	3	24	5	4
26	-5	10	33	-6	14
16	1	9	20	1	12
21	1	3	27	1	4
47	-4	6	61	-5	8
22	-9	17	28	-12	22
36	-4	10	47	-6	13
30	-1	7	39	-1	9
15	1	11	19	1	14
38	0	1	50	0	2
48	-1	-3	62	-1	-5
18	-5	5	23	-6	7
32	-2	-2	42	-3	-2

40	-4	-5	53	-5	-6
27	0	-2	35	0	-3
-54	-11	47	-70	-15	61
40	0	-4	52	-1	-5
6	-2	9	7	-3	12
16	0	0	20	0	0
49	-6	-8	64	-8	-11
37	1	-2	48	1	-2
59	-4	-8	76	-6	-10
22	0	-1	28	0	-1
43	-4	-6	56	-5	-8
19	-1	0	24	-1	0
41	-4	-6	53	-5	-7
39	-4	-6	51	-5	-8
31	-3	-5	41	-4	-7
15	0	-1	20	0	-1
18	0	0	23	0	0
31	-1	-3	40	-1	-3
42	-3	-4	55	-3	-5
25	0	3	33	0	4
31	0	-2	40	-1	-3
-57	-7	29	-74	-9	38
31	0	2	40	0	2
21	-1	2	28	-2	3
31	-1	0	40	-1	0
24	-1	0	31	-1	0
13	-1	0	16	-1	0
15	-1	0	20	-1	0
9	-1	0	12	-1	0
22	-1	0	29	-1	0
36	-2	-4	47	-3	-5
27	0	-2	36	0	-3
-13	-3	8	-17	-3	11
19	-3	-2	25	-3	-3
41	-6	-8	53	-8	-11
30	-3	-4	39	-3	-5
9	-1	5	12	-1	7
18	1	-17	24	1	-22
-110	0	0	-142	0	0
53	12	-37	68	15	-48
-95	0	4	-123	0	5
19	-2	-7	25	-3	-9
32	1	-22	41	1	-28
-89	0	-4	-115	0	-5

Tabella 3: sollecitazioni nel rivestimento definitivo (N>0: compressione, M>0: tende le fibre in intradosso) – Camera d'esodo

Calotta, soletta piatta e setti verticali					
Sollecitazioni caratteristiche			Sollecitazioni di calcolo (SLU)		
N_k [kN]	M_k [kNm]	T_k [kN]	N_d [kN]	M_d [kNm]	T_d [kN]
731	22	0	950	29	0
623	30	39	810	38	51
426	-4	-29	554	-6	-38
412	-17	14	536	-23	18
716	23	3	931	30	3
877	53	-13	1140	69	-16
797	9	0	1036	12	0
1040	27	0	1352	35	0
857	40	-1	1114	51	-1
584	19	4	760	25	5
842	25	-15	1095	32	-19
597	19	13	776	24	18
1031	28	-19	1340	36	-25
1042	22	16	1355	29	21
714	-39	-11	928	-51	-14
1057	-17	-30	1374	-23	-39
932	13	-1	1212	16	-1
1017	-9	-1	1322	-12	-1
1074	7	12	1396	10	16
1193	8	-1	1550	10	-1
1294	18	1	1682	23	2
958	-13	-26	1246	-17	-34
1316	-1	-17	1711	-1	-22
1097	-9	21	1426	-12	27
632	-6	-1	821	-7	-1
1141	15	45	1483	19	58
965	11	-35	1254	15	-45
1519	-6	7	1974	-8	10
1431	10	2	1860	13	3
1125	13	-10	1462	17	-13
390	16	15	507	20	20
709	23	4	921	30	5
895	23	-7	1163	30	-9
849	19	-2	1104	25	-2
766	-27	-7	995	-36	-9
653	-25	10	849	-32	13
890	31	44	1157	40	57
627	35	11	815	46	15
810	5	-5	1053	6	-7
827	31	-22	1075	41	-29

434	10	3	564	14	3
713	29	3	927	38	3
775	0	13	1007	0	17
979	25	-1	1272	33	-1
925	23	0	1202	30	-1
931	32	-16	1211	42	-21
1084	26	-11	1409	34	-15
954	37	15	1240	48	19
830	6	-13	1079	8	-17
734	-28	5	954	-37	7
499	20	13	648	26	18
816	27	2	1060	35	2
863	32	26	1122	42	34
704	3	3	915	4	4
1008	26	-2	1311	34	-2
856	24	-12	1113	31	-15
894	19	-6	1162	24	-7
986	24	1	1282	32	1
1280	-1	-8	1664	-2	-11
1623	-1	11	2110	-1	14
1659	-1	-2	2157	-2	-3
1121	13	12	1457	17	15
1442	20	-1	1875	27	-2
1073	17	-1	1395	22	-1
851	15	2	1106	20	3
1370	-8	1	1781	-11	1
1027	11	12	1336	14	16
1186	8	0	1542	11	0
1209	20	-2	1572	26	-3
1306	19	-9	1697	24	-12
1680	-2	2	2184	-3	2
1122	-13	2	1458	-17	2
1265	-3	-9	1645	-4	-12
1025	-9	-5	1332	-12	-7
861	7	8	1120	9	11
1255	24	9	1631	31	11
1214	23	-1	1578	30	-2
667	29	3	867	37	3
692	22	2	900	29	3
773	29	1	1005	37	1
478	-20	-2	621	-25	-2
1050	26	-5	1365	33	-6
882	38	0	1146	50	0
1066	22	5	1385	28	7
552	-22	1	718	-29	1
736	2	1	956	3	1
720	30	-4	936	39	-5

779	32	4	1013	42	5
476	-12	-1	618	-15	-1
493	19	-1	641	25	-1
468	14	-1	609	18	-2
630	44	-1	819	57	-2
785	19	4	1021	25	5
486	25	-1	632	33	-1
460	18	1	599	24	1
472	15	1	614	19	2
587	24	-20	763	31	-27
539	18	-1	701	23	-2
368	0	1	479	0	1
412	16	2	536	21	2
495	1	-1	643	1	-2
569	20	2	740	26	3
723	-10	-2	940	-14	-2
1043	-10	1	1356	-13	1
912	12	6	1185	16	8
1019	-4	21	1325	-5	27
1052	14	-2	1368	18	-3
1088	14	-6	1414	18	-8
1237	15	-25	1608	20	-33
664	-22	7	863	-29	9
1005	17	-17	1306	22	-22
1092	16	-3	1419	21	-4
1017	1	1	1322	1	1
555	-7	2	722	-9	3
877	-4	-7	1140	-5	-9
1049	-10	-21	1363	-13	-27
1274	16	3	1656	21	4
1048	19	-2	1363	24	-3
239	10	-2	310	13	-3
626	14	7	813	18	9
464	20	-6	603	27	-8
623	14	6	810	18	7
833	-22	-86	1083	-28	-111
549	-35	-66	714	-45	-86
582	26	-8	756	33	-11
556	36	51	722	46	67
564	9	16	733	12	21
545	28	-2	709	36	-2
160	-4	15	208	-5	20
457	25	-30	594	32	-39
703	-9	-20	914	-11	-26
657	21	16	854	27	20
649	14	0	844	18	0
567	29	14	737	38	18

850	24	3	1105	31	4
658	23	-5	856	30	-7
556	13	18	722	17	24
852	-20	-3	1107	-27	-4
299	11	-41	389	14	-54
670	29	0	871	38	0
581	28	21	756	37	28
655	-18	-22	852	-23	-28
700	22	-8	910	28	-10
413	11	16	536	14	21
750	7	3	976	9	4
577	36	-1	751	47	-2
1054	14	-26	1370	18	-33
1036	-13	-17	1347	-16	-22
1054	-9	14	1370	-12	18
1052	17	2	1368	22	3
1198	17	63	1558	22	81
931	-6	-54	1210	-8	-70
693	-6	-12	900	-7	-16
1400	10	74	1820	13	97
650	-40	-32	845	-53	-41
688	-25	-94	895	-33	-122
1024	15	25	1331	19	33
1255	15	-52	1631	19	-68
1032	-9	20	1341	-11	26
1051	-13	-13	1367	-17	-17
1128	8	-15	1466	11	-19
1093	13	149	1421	18	194
519	17	-29	675	22	-37
507	15	-1	659	19	-1
747	24	-19	971	32	-25
656	22	-14	853	28	-18
599	17	-57	778	22	-74
501	-4	6	652	-5	7
485	3	-39	630	4	-50
612	25	9	796	32	12
649	44	42	844	58	55
554	19	39	721	24	50
1005	29	65	1307	37	85
593	18	-55	771	23	-71
827	13	8	1075	17	11
820	54	-38	1066	70	-49
830	-8	-29	1079	-10	-38
559	-14	-1	727	-19	-1
333	18	2	433	23	2
393	-3	65	511	-4	84
420	15	-25	546	20	-33

439	21	3	571	28	4
476	17	-66	618	22	-85
372	4	-61	483	5	-80
402	16	-20	522	20	-26
407	16	-3	530	21	-4
209	2	-45	272	3	-58
442	-2	106	575	-3	138
478	10	26	622	13	34
460	18	-13	598	23	-17
684	-3	0	889	-4	0
983	-4	106	1278	-5	137
860	18	-2	1118	23	-3
719	1	-53	934	1	-69
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67	-10	-17	87	-13	-22
41	-12	87	53	-15	114
51	-12	-1	67	-16	-2
53	-10	0	69	-13	0
39	-7	-1	51	-10	-2
46	-4	-3	60	-5	-4
42	-4	-18	55	-5	-23
73	-14	-1	96	-18	-1
32	-4	10	42	-6	13
39	-3	1	50	-4	1
72	-8	5	93	-11	6
27	-4	42	34	-5	54
29	-3	23	37	-4	30
36	-7	-5	47	-10	-6
45	-8	1	59	-10	2
15	-3	-8	19	-3	-10
23	-2	75	30	-2	97
28	-4	0	36	-5	0
-12	-2	6	-15	-3	8

-8	-1	22	-10	-1	29
22	-4	9	29	-6	12
4	-3	1	5	-4	1
10	-2	0	14	-2	0
-2	-1	4	-3	-1	5
-21	-5	26	-27	-6	34
-1	-1	-4	-1	-2	-6
13	-3	-16	17	-5	-21
27	-3	-2	35	-4	-3
34	-4	-15	44	-6	-20
34	2	-1	44	2	-1
30	-4	2	39	-6	3
8	-2	-4	10	-2	-5
25	-4	-9	33	-5	-11
14	-3	3	19	-3	4
26	-3	-2	34	-3	-3
11	-3	-1	15	-3	-1
22	-4	-9	29	-5	-12
20	-4	-6	26	-5	-8
27	-7	2	36	-9	2
1	0	1	1	-1	2
-8	1	-2	-11	2	-2
-9	2	1	-12	3	1
-2	0	0	-3	0	0
13	-1	1	17	-1	1
15	1	-2	19	1	-2
-4	1	-2	-5	1	-2
17	-1	0	23	-1	0
-2	2	1	-3	2	1
34	5	0	44	7	0
8	-2	-1	10	-2	-2
7	-1	1	10	-1	1
-26	-1	32	-34	-1	42
28	2	-1	36	3	-1
12	1	-1	15	1	-2
13	3	-1	16	4	-1
15	1	1	20	1	1
9	1	-5	12	1	-7
13	3	0	17	4	0
26	2	0	34	3	0
-20	0	-1	-27	0	-2
-35	0	0	-45	0	-1
2	1	0	3	2	0
-11	1	0	-15	1	0
110	-20	-1	143	-26	-1
61	-14	-7	80	-18	-9
88	-12	-4	115	-16	-6

10	-19	-3	13	-25	-4
92	-26	7	119	-34	9
59	-7	0	76	-9	0
64	-8	-19	83	-11	-24
69	-18	0	90	-24	0
7	-8	0	9	-11	0
68	-6	0	88	-8	-1
28	0	1	37	-1	1
11	-17	-1	14	-22	-2
5	-13	13	6	-17	17
-30	-12	0	-39	-16	1
229	2	6	298	3	8
171	1	-8	222	2	-10
101	-7	69	131	-9	90
-213	-7	-1	-276	-10	-2
127	-15	73	165	-19	96
56	4	24	73	5	32
22	-17	-1	29	-23	-2
15	-20	1	19	-26	1
206	9	12	268	12	15
-24	-17	0	-31	-22	0
-95	-13	-16	-124	-16	-20
11	-6	-3	15	-8	-3
-1	-5	-1	-2	-6	-2
93	-20	33	121	-27	43
3	-19	70	3	-25	91
58	-5	-3	75	-7	-4
159	-26	-19	207	-34	-24
68	-7	0	89	-9	0
41	-14	-3	53	-18	-4
85	-17	4	110	-22	5
154	-31	-9	200	-40	-12
47	-10	0	61	-14	0
54	-7	0	70	-9	0
74	-8	-10	96	-10	-13
69	-17	10	90	-22	13
47	-20	-1	62	-26	-2
34	-15	2	44	-20	2

Tabella 4: sollecitazioni nel rivestimento definitivo (N>0: compressione, M>0: tende le fibre in intradosso) – Sottoattraversamento

Setti verticali e soletta piatta					
Sollecitazioni caratteristiche			Sollecitazioni di calcolo (SLU)		
N_k [kN]	M_k [kNm]	T_k [kN]	N_d [kN]	M_d [kNm]	T_d [kN]
52	2	-2	68	2	-2
28	-1	4	36	-1	5
1	-2	-3	1	-3	-4
-4	-3	-1	-6	-4	-2
-6	-2	0	-8	-3	0
0	-1	-1	0	-1	-1
-9	-3	-1	-11	-4	-1
-6	-1	3	-8	-2	5
56	1	2	72	1	3
32	-1	-2	42	-2	-2
19	-2	6	24	-3	7
25	-3	5	32	-3	7
2	0	-1	3	0	-1
5	-2	-4	7	-3	-5
-3	1	0	-4	1	0
6	-2	-4	7	-3	-5
-3	0	0	-4	0	0
2	0	-1	3	0	-1
15	-1	1	20	-1	2
12	-1	2	15	-1	3
21	-2	6	27	-3	7
20	-2	6	26	-2	8
5	-2	-4	7	-3	-5
3	0	0	4	0	-1
1	0	1	1	0	2
-2	0	0	-2	0	1
4	0	0	6	0	0
7	-2	-4	9	-3	-5
12	-1	1	16	-1	1
18	-1	0	23	-1	0
37	-4	7	49	-5	10
25	-3	5	32	-3	7
-7	1	-1	-9	1	-2
6	-2	-6	7	-3	-7
1	0	-1	1	0	-1
-3	1	0	-4	1	0
4	-3	-4	5	-4	-6
1	0	-1	1	0	-1
17	-1	3	22	-1	4
24	-1	3	31	-1	4
26	-1	5	34	-1	7

25	-1	6	32	-2	8
3	-2	-4	4	-2	-5
5	1	0	6	1	0
3	-1	3	4	-1	4
2	0	-1	2	0	-1
5	-2	-4	7	-2	-5
2	0	4	2	-1	5
24	-1	-2	31	-1	-3
24	-1	-2	31	-1	-2
24	-1	7	32	-2	9
21	-1	6	27	-2	8
6	-2	-4	8	-2	-6
4	-1	2	5	-1	3
6	1	0	8	1	0
4	-1	3	5	-1	4
6	0	0	8	1	0
6	-2	-4	7	-2	-5
17	-1	-2	23	-1	-2
21	-1	-2	27	-1	-2
23	-2	6	30	-2	8
21	-1	7	27	-2	9
7	-2	-4	9	-3	-5
7	-2	-4	9	-2	-5
3	-1	2	4	-1	3
2	0	2	3	-1	2
5	0	0	6	0	0
7	0	0	9	1	0
17	-1	-1	22	-1	-1
16	-1	-1	21	-1	-1
-1	-1	-4	-2	-1	-5
14	1	2	18	1	2
32	-2	3	41	-2	4
29	-2	4	38	-3	5
16	1	2	21	1	3
-5	1	-2	-6	1	-2
-8	0	0	-10	0	0
-9	1	-2	-11	1	-2
16	-1	1	21	-1	2
10	0	1	13	0	1
3	0	0	5	0	0
15	-1	1	19	-1	2
-8	0	-2	-11	0	-2
2	0	-2	3	0	-2
3	0	2	4	0	2
1	1	-2	2	1	-2
10	-1	1	13	-1	2
-6	1	3	-8	1	4

-4	-1	0	-5	-1	0
-10	1	2	-13	1	2
-10	2	1	-13	2	2
16	-1	0	21	-1	0
-5	-1	-2	-7	-1	-3
20	-1	0	26	-1	0
21	-1	1	27	-1	1
9	0	1	12	0	1
16	-1	0	21	-1	0
-2	-1	-2	-3	-1	-2
10	0	1	13	0	1
19	0	5	25	0	6
-3	0	-2	-3	0	-2
29	-2	5	38	-3	6
17	1	3	23	1	3
38	-4	7	50	-5	9
-4	1	-1	-5	1	-2
-5	-1	-2	-6	-1	-2
15	-1	1	20	-1	1
17	-1	0	22	-1	0
8	0	1	10	0	1
1	0	-1	1	-1	-1
25	-1	1	33	-2	1
-2	0	-1	-3	0	-1
-6	0	-3	-8	0	-4
18	-1	1	23	-1	2
24	-1	1	32	-1	1
10	0	1	14	1	2
12	0	1	16	0	1
20	-1	2	26	-2	3
-7	-1	-3	-9	-2	-4
20	-1	1	26	-1	1
11	0	1	14	0	1
18	-1	1	23	-1	2
7	0	1	10	0	1
-2	0	-3	-2	0	-3
-9	-1	-1	-12	-2	-2
-7	0	-2	-9	-1	-3
-5	-1	-3	-6	-1	-4
19	0	1	25	-1	1
10	0	1	13	0	1
23	-1	1	30	-1	1
-3	0	-1	-4	0	-1
1	0	0	2	0	-1
-2	0	0	-2	0	0
2	0	0	3	0	0
17	0	1	22	-1	1

18	0	1	23	-1	1
22	-1	2	28	-2	3
-5	0	-4	-7	0	-5
-5	0	-4	-6	0	-5
-11	-2	-8	-14	-3	-11
13	1	1	17	1	1
-10	-2	-4	-13	-2	-5
-2	0	-2	-3	1	-3
12	0	1	16	1	2
26	-2	2	34	-2	3
28	-2	3	36	-2	4
30	-2	3	39	-2	3
16	1	2	21	1	2
13	1	1	17	1	2
-5	1	-2	-6	1	-3
-4	0	-4	-5	-1	-5
-2	0	-1	-3	-1	-1
2	0	0	2	0	0
13	0	1	17	-1	1
18	0	1	24	-1	1
18	0	2	24	0	3
19	0	1	24	0	2
13	-1	1	17	-1	1
-9	-2	5	-12	-3	6
13	-2	0	17	-2	1
-12	-1	2	-16	-1	2
-7	-4	8	-9	-5	10
1	2	4	2	3	5
0	0	1	0	0	2
-2	-3	9	-2	-4	11
-9	-7	13	-11	-9	16
-14	-7	7	-18	-9	9
-9	0	1	-11	0	2
-14	3	3	-18	3	4
-14	-4	12	-18	-6	15
-4	-4	5	-5	-5	7
7	2	3	9	3	4
8	1	3	11	1	4
7	1	2	10	1	3
-3	-2	3	-4	-3	4
5	0	1	6	0	1
3	0	1	4	0	1
4	2	4	5	3	5
12	1	2	16	1	3
7	0	1	9	0	1
8	0	2	10	1	2
-1	-1	2	-1	-2	3

-2	-2	3	-3	-3	4
0	-1	2	0	-2	2
9	1	1	12	1	2
0	-1	2	1	-1	2
15	0	1	19	1	1
14	0	0	19	0	1
14	1	1	18	1	1
-2	-1	2	-3	-1	2
1	-1	2	1	-1	2
-3	-2	3	-3	-2	4
-1	-1	2	-1	-1	2
8	0	0	11	0	1
18	0	1	23	0	1
14	0	1	18	1	1
20	0	1	26	1	1
17	0	1	22	0	1
-5	-3	5	-6	-3	6
14	0	0	18	0	1
10	0	0	13	0	1
9	0	0	12	0	0
-2	-2	3	-3	-2	4
18	0	1	23	0	1
-34	-12	22	-45	-15	28
-42	4	3	-55	6	4
-17	3	4	-22	4	6
-67	2	-1	-86	3	-1
-24	1	1	-32	1	1
-26	-3	10	-34	-3	12
18	0	1	24	0	1
-11	-3	5	-14	-4	7
-15	-4	4	-20	-6	6
-2	-2	4	-3	-2	6
-6	-3	6	-7	-3	8
8	-1	1	11	-1	1
10	0	0	13	0	0
18	0	0	24	0	0
-12	-5	11	-15	-6	14
17	0	1	22	0	1
21	0	1	28	0	1
-9	-3	6	-12	-4	8
-13	-1	1	-17	-1	1
9	-1	1	12	-1	1
12	0	1	16	0	1
-162	8	9	-211	10	12
-120	4	1	-156	5	1
-173	15	-11	-225	19	-14
-77	-9	33	-100	-12	43

-279	15	27	-363	20	35
-50	4	3	-64	6	4
-86	3	0	-111	4	0
-64	3	1	-83	4	1
-121	4	1	-158	6	1
25	-1	3	33	-1	4
15	-3	-6	19	-4	-7
-2	0	2	-2	0	3
15	-2	0	20	-2	0
18	0	2	24	0	3
-7	-3	5	-9	-3	7
-8	0	-10	-11	0	-13
-6	0	-1	-8	0	-2
-6	-1	0	-8	-2	0
-7	-1	-1	-9	-2	-1
-7	0	-2	-10	0	-2
-5	-1	0	-6	-2	0
-3	-1	0	-4	-2	0
0	-2	-3	0	-3	-4
-7	0	-2	-9	0	-2
-6	0	-1	-8	0	-1
-7	0	-1	-9	0	-2
-4	1	-1	-5	1	-2
-7	1	-2	-9	1	-2
-5	-2	1	-6	-2	2
-7	-1	1	-9	-2	2
-5	-2	2	-7	-2	2
-6	-1	0	-8	-1	0
-3	-2	1	-4	-3	2
4	-3	-6	5	-3	-8
2	-2	-4	3	-3	-5
-2	0	-10	-3	0	-13
3	-4	2	4	-5	3
-2	-3	1	-3	-4	1
2	-2	-4	3	-3	-6
-6	-1	1	-8	-1	1
-3	-1	1	-4	-2	2
0	-2	3	-1	-3	4
-4	-1	0	-5	-1	0
-8	0	-2	-10	0	-3
-4	-1	0	-6	-1	0
-3	-1	-2	-4	-2	-2
-4	-1	0	-5	-1	0
-5	-1	0	-6	-1	0
-10	0	-5	-13	1	-6
-4	-1	0	-5	-1	0
-4	-3	0	-6	-4	0

-7	0	-1	-9	0	-2
-12	1	-7	-16	2	-9
-9	1	-3	-12	1	-4
-7	-3	1	-9	-4	1
-3	-1	-1	-4	-2	-2
-2	-2	-2	-3	-2	-2
-7	-1	-1	-9	-2	-1
-3	0	-1	-4	1	-1
-6	0	-1	-7	0	-1
-6	-2	0	-8	-2	-1
-4	-1	0	-5	-1	0
-4	-1	0	-5	-1	0
-4	-1	1	-5	-1	1
-7	0	-1	-9	0	-1
-4	-1	0	-5	-1	0
-9	-2	-1	-11	-3	-1
-3	-1	0	-4	-1	0
-5	-3	0	-6	-4	0
-5	0	1	-6	-1	1
-5	-1	0	-7	-1	0
-1	-2	1	-1	-3	1
-5	-1	0	-6	-1	0
0	0	-2	0	0	-2
-1	-1	0	-1	-1	0
-11	0	-4	-14	1	-6
-5	0	-11	-6	0	-15
-6	-2	-1	-7	-2	-1
-1	0	-2	-1	0	-3
-10	1	-3	-14	1	-4
-8	-2	0	-10	-3	-1
-2	-1	-2	-3	-2	-2
1	-1	0	1	-1	0
-7	0	-1	-9	0	-1
-5	-2	1	-6	-3	1
1	-2	-3	1	-3	-4
-7	2	-7	-9	2	-10
0	0	-1	0	0	-1
-7	-1	0	-9	-2	1
-6	0	-1	-8	0	-1
-8	-1	1	-10	-2	1
-7	0	-2	-9	0	-2
-7	-1	1	-10	-2	1
Soletta superiore in direzione trasversale al sottoattraversamento					
2312	-250	52	3006	-325	67
1561	-335	-16	2030	-435	-21
1651	-352	62	2146	-458	80
2292	-250	-8	2980	-325	-10

2366	-241	-14	3076	-313	-18
1694	-307	-4	2202	-399	-5
2827	-203	-1	3676	-264	-1
2404	-250	-6	3125	-325	-7
2446	-238	5	3180	-310	7
2576	-221	-3	3348	-287	-4
2318	-241	4	3013	-313	6
2750	-211	18	3575	-274	24
1184	-391	33	1539	-508	43
1190	-385	-5	1546	-501	-7
1109	-377	-14	1442	-489	-18
1302	-375	5	1693	-488	6
1193	-368	7	1551	-479	9
1351	-439	60	1756	-570	77
1280	-401	-22	1664	-521	-29
1707	-417	79	2219	-542	103
1489	-350	-38	1935	-455	-49
1364	-387	26	1773	-503	33
1682	-348	18	2187	-452	24
1333	-439	40	1733	-571	51
1639	-370	-33	2131	-482	-43
2535	-304	29	3296	-396	38
1827	-366	26	2375	-476	33
1701	-418	36	2211	-544	47
2649	-363	60	3444	-472	79
2324	-296	-90	3021	-385	-117
1235	-355	-17	1605	-462	-22
1310	-387	48	1703	-503	63
1308	-346	20	1700	-449	26
1176	-365	7	1529	-475	9
1203	-397	19	1565	-516	25
1084	-370	-5	1409	-481	-7
1572	-342	-69	2044	-444	-90
1303	-345	14	1693	-449	19
1314	-391	62	1708	-508	80
1631	-352	70	2120	-458	92
1207	-351	-18	1570	-457	-23
1686	-307	13	2191	-399	17
2888	-279	-83	3754	-363	-108
2517	-300	-67	3273	-390	-87
3135	-343	49	4076	-446	64
2664	-321	23	3463	-417	30
2876	-299	26	3739	-389	34
2835	-351	67	3685	-457	87
Soletta superiore forata in direzione trasversale al sottoattraversamento					
1894	-614	72	2462	-798	93
1927	-577	42	2505	-751	55

1853	-541	2	2409	-704	2
1744	-566	-22	2268	-735	-29