


PONTE SULLO STRETTO DI MESSINA



PROGETTO DEFINITIVO

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F0	20/06/2011	EMISSIONE FINALE	F. Santoli	L. Picili	A. Crea

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ABSTRACT




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ABSTRACT

Safety Coordination during design phase for the project "Ponte sullo Stretto"

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1 INTRODUCTION

During the design phase of a work, it's necessary to define the safety conditions in which operators will work during the different phases, construction or maintenance. In particular Title IV of the Legislative Decree no. 81/08 and subsequent amendments shows the requirements on safety and health of workers that are duties of the reference prevention figures. This decree refers to works defined as "temporary or mobile construction site" (see Annex X of the Decree. 81/08).




Safety conditions are defined through the analysis of several aspect as: workplace, operating procedures, schedule, materials, technologies etc. This analysis must be conduct during the design phase of the project by designers and HSE specialist working together.

The abstract provides an explanation of the structure of the Safety and Coordination Plan and of the Technical Report relevant to the project "PONTE SULLO STRETTO DI MESSINA". Following attachment to the abstract are present for this purpose:




- **Works type specific** for the works covered by this safety and coordination plan
- **Technical and detailed card**, accompanied by plot plans and photos, necessary to clarify the methodological structure of the PSC, as an example of documentation relevant to the critical aspects of the project

The ISA Srl team working to the project is detailed below:

N.	Role	Surname	Name	Qualification
1	HSE Coordinator during design phase	CREA	Antonino	Engineer
2	Project manager	PICILI	Luciano	Engineer
3	HSE Coordinator Assistant	SANTOLI	Fabio	Engineer
4	HSE Coordinator Assistant	RICCARDI	Cinzia	Surveyor
5	HSE Coordinator Assistant	TRIMBOLI	Domenico	Geologist
6	HSE Coordinator Assistant	SURACE	Angelo	Architect
7	HSE Coordinator Assistant	MAGINI	Daniele	Architect
8	HSE Coordinator Assistant	SOAVE	Caterina	Engineer
9	HSE Coordinator Assistant	SGARGI	Emanuele	Surveyor
10	HSE Coordinator Assistant	IANNITTO	Gaetano	Master degree
11	HSE Coordinator Assistant	CASCETTO	Alessandro	Surveyor
12	HSE Coordinator Assistant	STROVEGLIA	Danilo	Engineer

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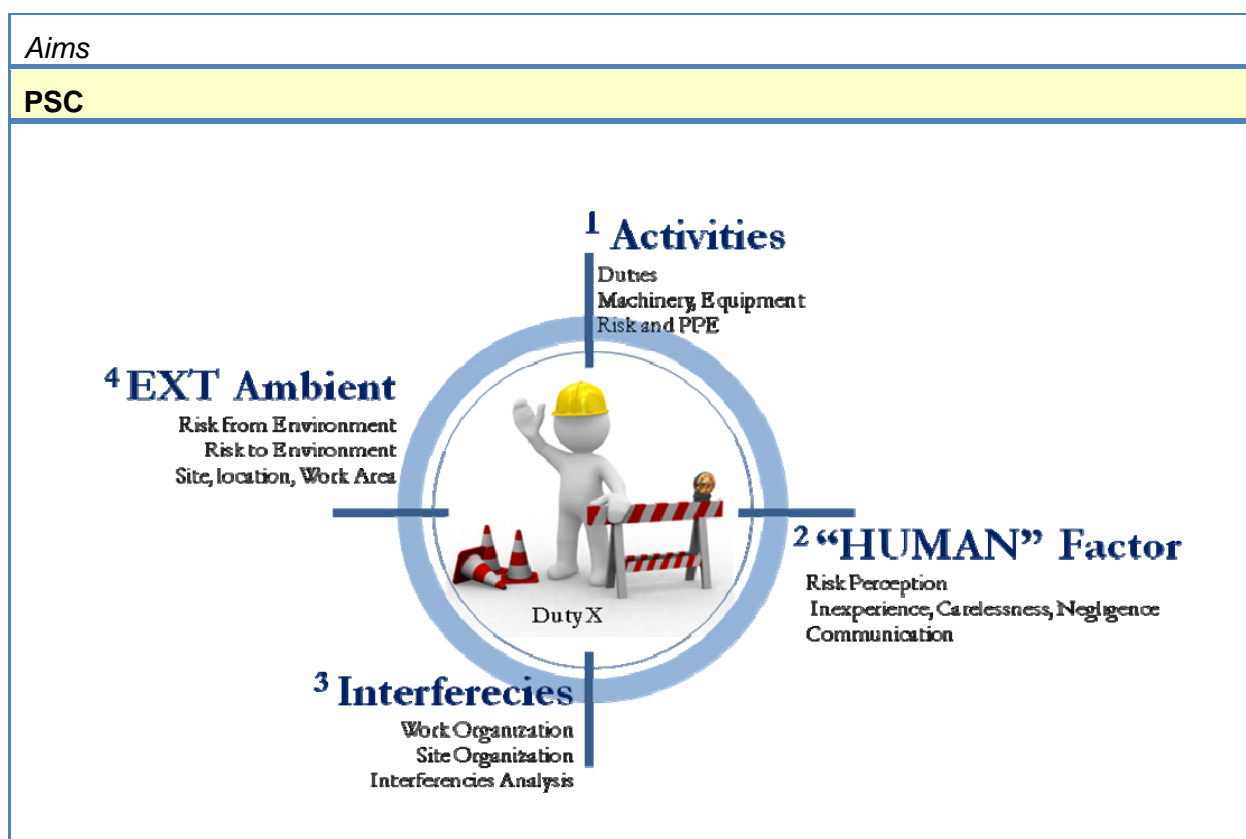
13	<i>HSE Coordinator Assistant</i>	AMBROSI	Federico	<i>Master degree</i>
14	<i>HSE Coordinator Assistant</i>	COLAVECCHI	Katia	<i>Master degree</i>
15	<i>HSE Coordinator Assistant</i>	TRIMBOLI	Felice	<i>Surveyor</i>
16	<i>HSE Coordinator Assistant</i>	SCORDO	Giovanni	<i>Designated Physician</i>




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2 SAFETY AND COORDINATION PLAN (PSC)

2.1 Safety and coordination plan Aims

The purpose of the PSC is to put the Man-Worker-User at the center of the design, construction, maintenance and management process, of the project "PONTE sullo STRETTO". In particular it try to assess which is the condition of minimum risk to be achieved within the possible design choices.






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2.2 Safety and coordination plan Structure

The Safety and Co-ordination Plan is divided into following parts:




- **"PART A - GENERAL PROVISIONS"**: the "General Section" contains the description of the overall project, the identification of hazards and general safety measures for types of works. Also defines, in a uniform manner for the project "PONTE sullo STRETTO", the duties of the prevention figures, the HSE organization, in terms of facilities, sanitation/health care, organization of emergency and first aid, health surveillance, information and training for workers. In this part are also included: the methodology of risk assessment, analysis of interference to and from the yard, the indication for the site signs and use of DPI.
- **"PART B - ANALYSIS OF THE DOCUMENTS ISSUED FOR COSTRUCTION FOR THE SPECIFIC RISK ASSESSMENT AND RISK OF INTERFERENCE"**: on this section are analyzed the reference WBS and the main types of works that will be realized; for each of them is present a brief report relevant to the design, organizational and constructive choices, and are indicating the code card of "Reference Work Type." With regard to the WBS are identified and analyzed the risks coming from external factor with respect the yard, those transmitted by the yard to the surrounding environment and the risks due to works type and their interference. As consequence are established the procedures and the additional preventive and protective measures with respect what required based on the "Safety Data Sheets of work activities". Are then provided the so-called "Area classification" that identify all the works of the project, describing the environment in which insists the operation and the risks resulting from them, define the site construction and all activities and hygiene care, emergency, first aid and fire, also using graphic tables. Are also identified and analyzed spatial and temporal interference identified in the General Program of Work. The document includes the "safety costs" based on the "Price list for cost estimates" prepared by the Client Stretto di Messina and the local price list for items missing.

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- **"PART C - RISK ASSESSMENT AND PREVENTION AND PROTECTION MEASURES THROUGH THE SAFETY CARDS"**: it collects all the cards necessary to risk assess, and therefore: work type, work activities, specific risks associated with work, measures of good practice, equipment and tools of work, preventive measures, DPI, risk analysis per specific duty.
- **"PART D - DRAWINGS"** describing the construction site, roads, emergency.

<i>Structure</i>	
PSC	
	SAFETY AND COORDINATION PLAN <i>"PONTE SULLO STRETTO DI MESSINA"</i>
	Part A - General provisions
	Part B - Analysis of the documents issued for construction for the specific risk assessment and risk of interference
	Part C - Risk assessment and prevention and protection measures through the safety cards
	Part D - Drawings

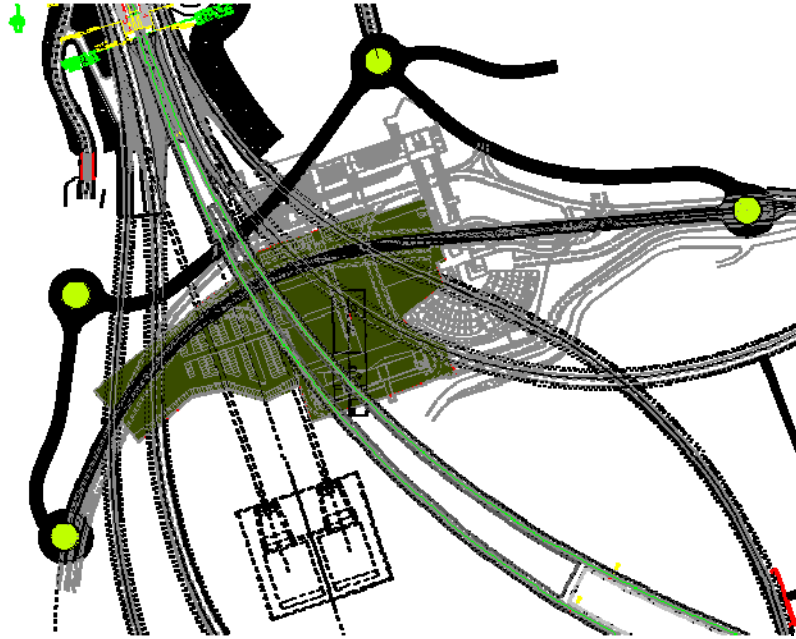
The content and modalities of this PSC are in accordance with the provisions of Art. 100 of Legislative Decree no. 81/08, as detailed in Annex XV of this Decree.

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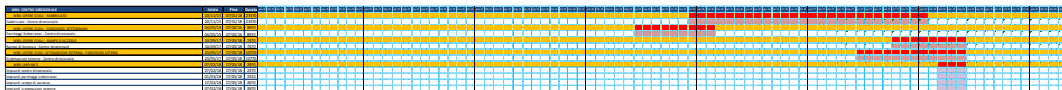
2.2.1 WBS Centro Direzionale




	Site	CALABRIA
	WBS	Centro Direzionale
	Card	Centro Direzionale
	Area classification	E2

1 Card Work



2 Schedule






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3 Work Description

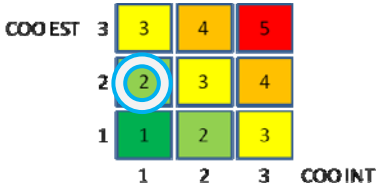
In the business center are provided offices, including managers Department, Secretariat, Coordination and Planning, Data Processing Centre, Management Services, Technical Services.
It's foreseen as well a building for trade and catering

4 Reference work type

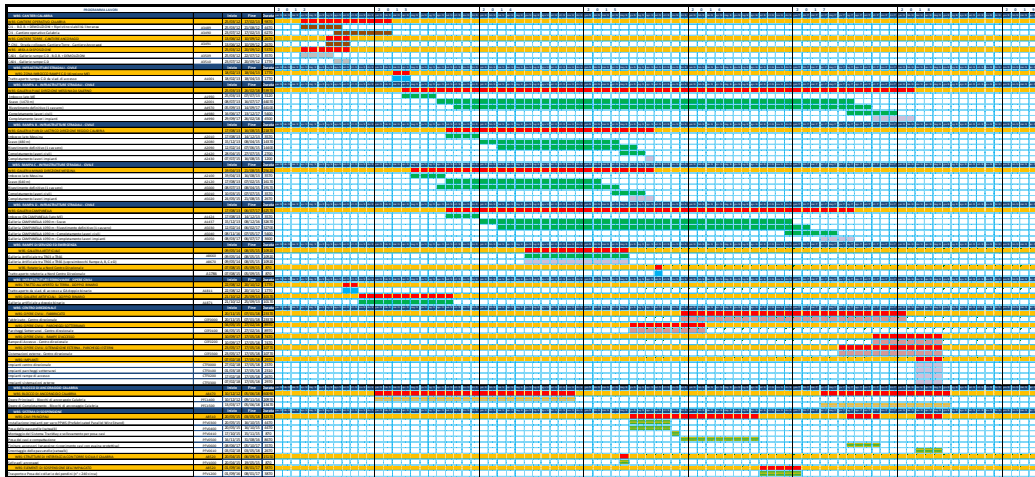
Color Code	Reference work type	Sub-work type
	Civil work	TIP FAB 001
	MV / LV transformers and electrical panels	TIP IMP 001
	Power primary distribution	TIP IMP 001
	Lighting	TIP IMP 001
	Special Plant	TIP IMP 001
	Mechanical Plant	TIP IMP 001
	Roads-parking	TIP VIP 001
	Roads-parking	TIP VIP 003

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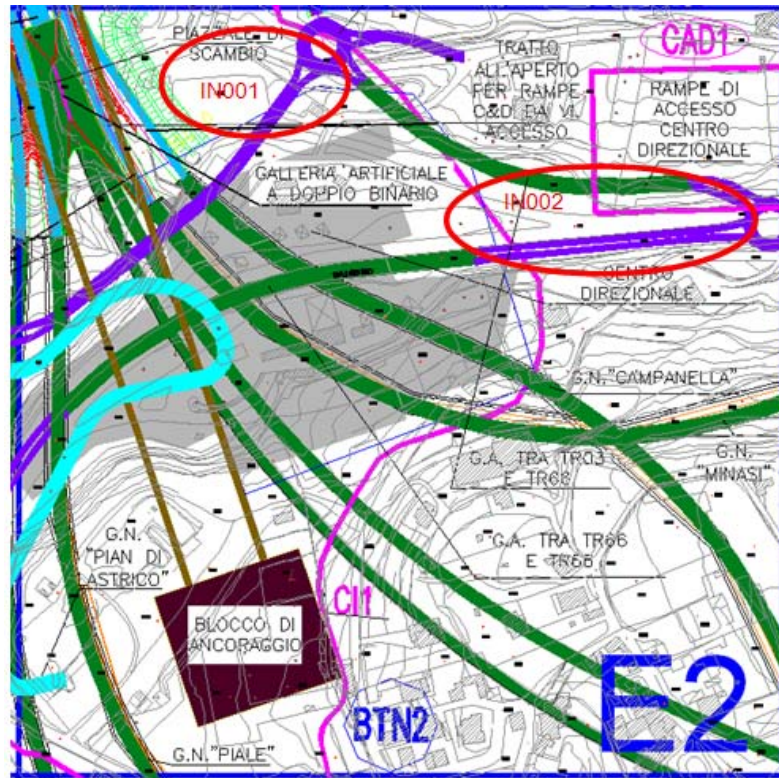
2.2.2 Classification Area E2 – Site Calabria

Site	CALABRIA
Classification Area	E2
Number of involved WBS:	11
Number of involved Works:	22
Coordination Index	<div style="text-align: center;">  </div> <p><i>COORDINATION INDEX</i> <i>Provides an indication of the difficulty / effort of coordination during execution phase according to the coordinating internal and external measures to be applied to this Area classification</i></p>

1 Schedule



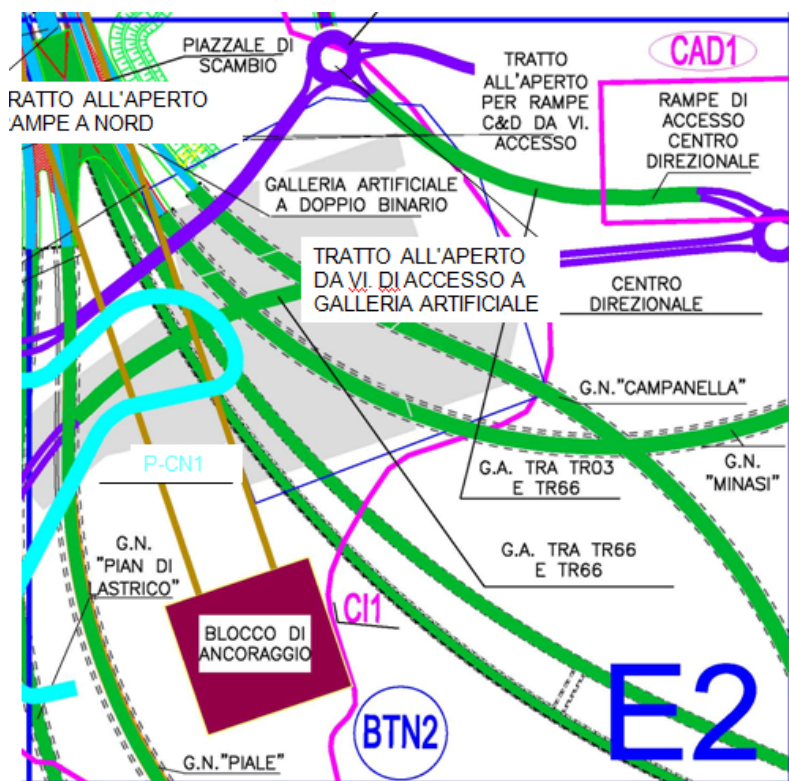
2 Area Classification – 1st Interference Level (From/To the site)



3 Coordination Measurements




<i>Type of intervention</i>	<i>Coordination Measurements Code</i>	<i>Reference Area</i>
Roads	MSC EST 001	IN 001
Roads	MSC EST 001	IN 002
Aqueducts	MSC EST 002A	Highlighted on the attached table 4c
Underground power line	MSC EST 002D	Highlighted on the attached table 5c
Overhead power line	MSC EST 002E	Highlighted on the attached table 5c

4 Area Classification – 2nd Interference Level (Between different works)



5 Coordination Measurements

Type of intervention	Coordination Measurements Code	Reference Area
(*)	(*)	(*)
(*) no interferences between works are highlighted due to distance between them.		

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2.2.3 TIP FAB 001 Buildings

Work Type Code	TIP FAB 001
Work Type	Buildings
Sub-work type	<i>Office Department, toll gate, utilities room</i>

1 *Overview*

A building is any structure covered, delimited by streets and void spaces, separated from other buildings through walls.

Can be designed to meet different needs, such as houses, shops, warehouse, garage, utilities or general service room.

The construction of buildings will include the following micro-phases:

Step 1: Dig;

Step 2: Foundations;

Step 3: horizontal and vertical structures;

Step 4: Internal and external Finishing Works.

2 *Description of WORK MICRO-PHASES*

In this section is described the above listed Work Step (definition, purpose, different operation type, requirements and sequence)

References Pictures



Picture 1: Dig



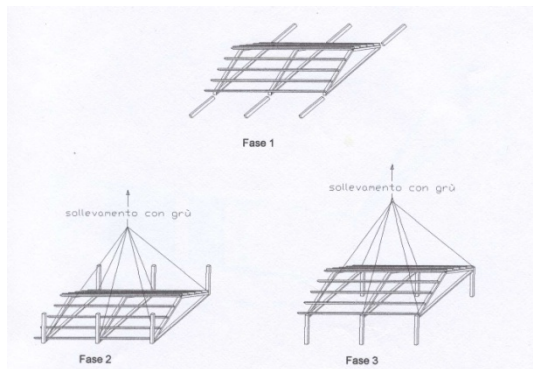
Picture 2: Foundations



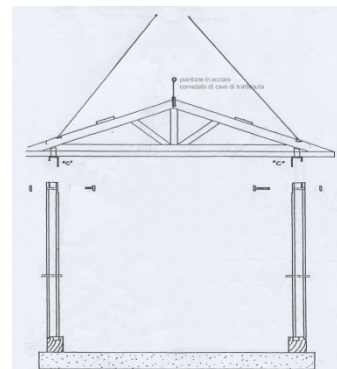
Picture 3: Vertical prefabricate structure Installation



Picture 4: Horizontal prefabricate structure Installation



Picture 5: Cover structure installation sequence



Picture 6: Truss installation

3 Risks and General Prevention Measurement

Risks from external ambient

The main risks sources during work execution are:

- Adverse weather conditions




Risks versus external ambient

The works required for the buildings construction are sources of certain risks that can also be transmitted outside, those risks identified were:

- Waste products from site;
- Traffic relevant to site vehicles.

Safety procedures




In this section are listed all the safety measurement relevant to workers, equipment, vehicles involved in the operations

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4 **MEL "Buildings"**

WORK PHASE	CARDS		
Fence installation	OAC	DEC	001
Prefabricated accommodation installation	OAC	PAB	002
Site signs	OAC	VIA	005
Dig			
Soil preparation and lowering of the ground level	SBA	SCA	001
Excavation	SBA	SCA	002
Hand excavation	SBA	SCA	003
Excavation reinforcement	SBA	SCA	005
Foundations			
Foundation formwork	OPF	FON	001
Wrought iron installation	OPF	FON	002
Prefabricated plinths installation	PRE	INS	001
Concrete casting	OPF	FON	003
Cleaning and forms dismantling	OPF	FON	004
Cut, bending and assembly	OPC	LVF	001
Electric welding	OPC	LVF	002
Aluminothermic welding	OPC	LVF	003
Lean concrete casting	OPC	GET	001
Concrete casting	OPC	GET	002
Vertical and horizontal structures			
Formwork for vertical structures	OPC	CAR	001
Formwork for horizontal structures	OPC	CAR	002
Forms dismantling and removal	OPC	CAR	003
Walls and pillars forming	OPC	CAR	004
Predalles installation	OPC	CAR	005
Assembly, dismantling and movement of modular formwork	OPC	CAR	007
Cut, bending and assembly	OPC	LVF	001
Electric welding	OPC	LVF	001
Aluminothermic welding	OPC	LVF	003
Installation of wrought iron for vertical structures	OPC	LVF	004
Installation of wrought iron for horizontal structures	OPC	LVF	005
Laying molds for lighter structures	OPC	LVF	006
Lean concrete casting	OPC	GET	001
Concrete casting	OPC	GET	002


Prefabricated vertical structures installation	PRE	INS	002
Shoring vertical elements	PRE	INS	003
Horizontal structures Installation	PRE	INS	004
Slab flooring and similar	PRE	INS	005
Trusses and prefabricated elements assembly	PRE	INS	006
Vertical iron structures assembly	PRE	INS	007
Horizontal iron structures assembly	PRE	INS	008
Erection of pylons to support skylights	PRE	INS	009
Prestressed concrete L beams installation	PRE	INS	010
Internal and external Finishing Works			
Reinforced earth	SBA	TEA	001
Materials laying	SBA	STE	001
Earth backfilling	SBA	REI	001
Compaction	SBA	REI	002
Industrial flooring laying	OPC	PAV	001
Flooring laying	OPC	PAV	002
Internal door and window frames installation	OPC	INF	001
Rails and balconies installation	OPC	INF	002
Final fence	OPC	SIE	001
Stone or block flooring	OPC	SIE	002
Cutting stone installation	OPC	SIE	003
Sheaths installation	OPC	IMP	001
Paving and fixing precast mantle	OPC	IMP	002
Screed slope construction	OPC	IMP	003
Primer treatment	OPC	IMP	004
Prefabricated sheath installation	OPC	IMP	005
Waterproofing joints installation	OPC	IMP	006
Polyurethane resins Laying	OPC	IMP	007
Waterproofing fabric laying	OPC	IMP	008
Waterproofing of horizontal structures	OPC	IMP	009
Prefabricated painting	OPC	ACS	002
False ceiling construction	OPC	ACS	003
Steel carpentry assembly	OPC	ACC	001
Metal component painting	OPC	ACC	002
Bolting	OPC	ACC	003
Masonry construction with hollow blocks and concrete	OPC	MUR	001
Masonry construction with hollow bricks	OPC	MUR	002
Finishing with plaster	OPC	MUR	003

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Gutters and downspouts Installation	OPC	COP	001
Tiling	OPC	COP	002
Vegetation removal	VER	SOV	001
Soil fertilization arrangement	VER	SOV	002
Planting of trees and shrubs	VER	SOV	003
Soil arrangement	VER	SOV	004
Hydro seeding	VER	SOV	005
Laying geotextile (anticapillary layers)	STR	PAV	001
Gravel laying	STR	PAV	002
Inert laying and embankment formation	STR	PAV	003
Spraying	STR	PAV	004
Bitumen carpet laying	STR	PAV	005
Bitumen cold wearing carpet laying	STR	PAV	006
Guard-rail and protective barriers installation	STR	GRA	001

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2.2.4 SBA SCA 002 Excavation

Card Code	SBA SCA 002	
Phase	Earth Moving	
Sub-phase	Dig	
Work type	Excavation	
<i>Picture</i>		

1 Overview
<p>Excavations dig: Removal of a mass of soil or rock, mostly for the purpose of engineering works with significant horizontal extent than the height. This work is made by mechanical tools (shovel and / or excavator) and / or by hand.</p>
2 Operation Requirements
<p>Mark and notify the excavation area with railings or equivalents.</p> <p>Before the excavation start it is necessary to be informed about the presence of above or underground utilities. In case of doubt about the exact location of underground utilities it should be performed an excavation by hand.</p> <p>Allow access only to relevant personnel.</p> <p>Supervise mechanical vehicles entry and exit from site.</p> <p>The speed of the incoming, outgoing and transit vehicles must be reduced as far as possible in the working site and as maximum established limits must be observed.</p> <p>The operators must have full visibility of the work area.</p> <p>Ensure the ground consistency before allowing workers and equipment access.</p> <p>The site vehicles must use the route set up.</p> <p>Water Spray must be used in the work area to reduce dust levels.</p> <p>During transport, if necessary, the powdery material must be protected with fabric or plastic.</p> <p>Operators must immediately report to the site manager and assistants any abnormality of the equipment used.</p> <p>Provide suitable mechanical equipment to reduce manual handling of materials.</p> <p>When truck is approaching the area of excavation equipment, the driver must immediately draw attention to its presence by means of acoustic signals.</p> <p>All vehicles must be equipped with flashing light and reverse acoustic signals.</p> <p>Do not leave dangerous situations during the period of inactivity on the site.</p> <p>Instruct appropriate personnel about the specific danger of vehicles and excavation equipment to avoid crash during operation within the site.</p> <p>When strengthening is present on the ground to be moved, adequate procedure must be followed to reduce the weakening of the structures.</p> <p>Provide warnings and protect the excavations with railings or equivalent.</p> <p>The excavations where necessary to be reinforced and shored up.</p> <p>To access the excavations stairs or suitable ramps should be used.</p> <p>The Ladders must be securely anchored and tied up before use and must comply with the projection over the plane landing specified by law.</p>

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Operators must be trained and informed on the correct operating procedures and in particular on:

1. importance of preventing the formation of dust;
2. techniques to be applied to minimize the formation and spread of dust;
3. importance of DPI and their proper use.

Provide suitable areas for materials stocking
Materials must be stored neatly ensuring stability against falling and rolling over.
Do not store materials on the excavation edge.

3 **Materials**

- Soil, sand
- Inert

4 **References MACHINERY AND EQUIPMENT**




ATT100	Manual excavation equipment
ATT118	Water pump
ATT168	Ladder
MEZ113	Shovel
MEZ106	Excavator
MEZ109	Truck
MEZ111	Dumper

5 **References DUTIES**

MAN014	Team Leader
MAN010	Driver
MAN016	Excavator Operator
MAN033	Shovel Operator
MAN030	Operator




6 **References SPECIFIC RISCKS**

RIS037	Tipping
RIS015	Collisions, knocks, impacts, compressions
RIS017	Falling over, sliding
RIS018	Shearing, crushing
RIS014	Burial, subsidence
RIS008	Load Manual moving
RIS013	Fall from high
RIS010	Noise
RIS011	Vibrations
RIS022	Dust, fibers
RIS021	Crash


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7 **References PERSONAL PROTECTION EQUIPMENT**

DPI001	Safety Footwear
DPI002	Safety helmet
DPI005	Gloves
DPI011	Protective Clothing
DPI006	Dust mask, filtering or blocking equipment
DPI004	Headphones and earplugs

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2.2.5 MEZ 102 Machine - Crane

Card Code	MEZ 102	
Type	<i>Machinery</i>	
Model	Crane	
<i>Picture</i>		

1 *Overview*

The crane is a heavy vehicle providing the handling of materials in places where there is not a fixed installation. Several versions of crane, the most specific match to a wheeled vehicle with a single guide having a large and solid extending arm acting as crane. This structure is able to lift the biggest weights and to reach the greater heights.




2 *Operation Requirements*

BEFORE USE




- Check that the site paths are adequate and work/maneuvering areas are free and suitable for the transit of the vehicle and its stability.
- Check the existence of any impediments / obstacles (height and width), size limits, etc..
- Make sure that in the working area there are no overhead power lines that may interfere with the maneuvers of the vehicle. Work near overhead power lines can be executed at minimum distance provided by law; minimum distance must be respected by both the structural elements of the arm and by suspended loads handled.
- Check the efficiency of controls and in particular the braking devices.
- Check the efficiency of the flashing light and reverse acoustic signals.
- In urban areas check for the presence of manholes, grates, curbs, underground caves, subways or underground tanks that may cause instability of the machine if the stabilizers insist in their proximity.

DURING USE




- On site, do not place the crane and its stabilizers on not properly compacted soil or near open excavations.
- Expand when necessary, with appropriate planks the surface where the stabilizers are allocated.
- Make sure the machine is positioned so as to leave sufficient space for pedestrian or delimit the areas of intervention.
- Ensure the proper installation of the ballast.
- Check the wind speed: Do not start work if it is greater than wind limit shown on the machine operating manual supplied by vendor.
- Check that there are not engine oil leakage, rupture, etc.
- Check the fuel level, the water in the radiator and the engine oil.
- Ensure that there is no tampering with the guard and systems safeguarding.
- Object or material not relevant or necessary to the service must be removed from the cockpit.
- Control the seat and mirrors position in order to have the maximum comfort and usability of the

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- driving commands.
- During the installation phase, delimit the working area.
 - In the range of machine action, provide guards and warning signs.
 - Indicate the running status of the vehicle with flashing beacon.
 - Request the assistance of ground crew to perform work in confined spaces or when visibility is not adequate.
 - If there is a need to contact the driver during the work, the cabin can be approached only from a position easily seen by the driver and only after his nod.
 - Keep the doors closed in the engine compartment and cockpit, if the windows are left open, the operator must wear headphones or ear protection plugs.
 - It's absolutely forbidden to carry passengers on the vehicle or on other parts of the machine if they are not equipped for the service.
 - Never drive the car with wet shoes or greased with oil or grease.
 - Do not go up or down if the machine is moving, always wait until it is stopped.
 - Do not stick legs or arms out of the vehicle.
 - Notify the beginning of operations with a special acoustic signal.
 - Follow the recommendations before proceeding with the maneuvers.
 - Avoid the handling of cargo on work and / or transit areas.
 - Carry out the lifting and unloading with the upright ropes.
 - It's forbidden the crane use for towing or not vertical lifting.
 - Loads must never exceed the maximum value set by the capacity diagram. The capacity charts must be visible by the warning signs fixed on the arm.
 - Stop the operations in case of fog, heavy rain, poor lighting and high winds.
 - During the operations the lower part of the load must always be at least two meters above the ground to prevent accidental contact with people.
 - Before lifting ensure that it is perfectly balanced.
 - Prior to release the load make sure it is perfectly stable under the supports.
 - Notify immediately any malfunction or dangerous situations.
 - Keep the commands clean from grease, oil, etc.
 - The driver's seat must be provided with complete visibility of the working and maneuvering area, even with the help of mirrors, video devices, beacons and lights for night work.
 - It should not be possible the remote control of the crane (i.e. this must be done only from the driving position)
 - The driver seats must be ergonomic, adjustable and able to reduce the transmission of vibrations.
- AFTER USE
- It 'absolutely forbidden to operate maintenance or cleaning up the moving parts.
 - Before leaving the cockpit lock the command, actuate the parking brake, stop engine and remove the vehicle key.
 - Park machine in predetermined places, ensuring the stability of the vehicle.
 - Do not park the crane in the banks or beds of rivers neither at end shift or working day.
 - Always clean from grease or oil the handles or the stairway to the cabin.
 - At the end of activities remove from the hook any type of cargo and do not let any suspended load.
 - Park the crane picking up the boom.
 - Replace the slings and lifting devices in the slots to protect them from damage.
 - Perform maintenance required for the use of the crane when engine is off. For the maintenance follow the indications described on the operating manual of the machine.
 - For the cleaning of mechanical components should never be used flammable liquids as diesel, naphtha, gasoline, etc.. Special non-flammable and non-toxic cleaning fluids must be used

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<ul style="list-style-type: none"> ▪ Do not release oil or other pollutants liquid into the environment. 	
3	References SPECIFIC RISKS
	RIS015 Collisions, knocks, impacts, compressions
	RIS032 Mineral oils and by-product
	RIS018 Shearing, crushing
	RIS004 Electrocutation
	RIS037 Tipping
	RIS010 Noise
	RIS006 Explosion, fire
4	References PERSONAL PROTECTION EQUIPMENT
	DPI005 Gloves
	DPI002 Safety helmet
	DPI011 Protective Clothing
	DPI001 Safety Footwear
	DPI004 Headphones and earplugs

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2.2.6 ATT 108 Equipment – Electric welder

Card Cod.	ATT 108	
Type	<i>Equipment</i>	
Model	Electric welder	
<i>Picture</i>		

1 *Overview*

The welding machine consists of an AC or DC power pack supplying a voltage of approx. 40 to 60 V applied to the electrodes. One of the electrode is the object to be welded and the other is a bar fixed in a grip pliers. The weld is achieved by putting in contact the bar with the object to be welded in order to prime an arc that melts the metal of the bar. When welding is realized in DC, the welder is composed of a simple low-voltage dynamo. This type of welder is particularly suitable for use with rapid changes of current intensity. When welding is realized in AC, the welder is composed of static equipment, similar to a transformer.

2 *Operation Requirements*

BEFORE USE

- Ensure the integrity of the cable and plug;
- Never use adhesive insulating tapes to perform repairs;
- Ensure the integrity of the electrode grip pliers;
- Do not perform welding operations in the presence of explosive gases or vapors (eg on vessels or tubes that have contained hazardous materials);
- Delimit the work area, preventing anyone transit or parking.

DURING USE




- Do not obstruct the passages with the power cord;
- Remove personnel not employed in the welding operations;
- During the work breaks, ensure to cut the power supply;
- In the case of work in confined spaces, provide for an adequate vapor effluent extraction system and / or ventilation.

AFTER USE




- Remove the electrical connection of the machine;
- Report any malfunctions.

3 *References Specific Risks*


RIS004	Electrocution
RIS006	Explosion, fire

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	RIS009	Not ionizing radiations
	RIS015	Collisions, knocks, impacts, compressions
	RIS022	Dusts, fibers
	RIS023	Fume
	RIS035	Burns
	RIS036	Material fragment
4	<i>References PERSONAL PROTECTION EQUIPMENT</i>	
	DPI001	Safety Footwear
	DPI005	Gloves
	DPI006	Dust mask, filtering or blocking equipment
	DPI010	Special clothing
	DPI011	Protective Clothing

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2.2.7 MAN 008 Homogeneous Group - Soil reinforcement installation operator

Card Code	MAN 008	
Type	Homogeneous Group	
Model	Soil Reinforcement installation Operator	
<i>Picture</i>		

1 **Overview**




Task that does not match with a standard occupation, but it is a cross activity developed by different figures (carpenter, cloak, laborer, etc...)
 It's the person who carries the ground assistance during the installation of precast elements, handled by crane.

2 **Definition of working time**

ATV01	Use of machinery/equipment	20%
ATV 02	Use of equipment	15%
ATV 03	Use of hand tools	20%
ATV 05	Lifting assistance	40%
ATV 06	Break	5%

3 **RISCKS EXSPASURE**




Code	Risck	E	F	D	R
RIS016	Cuts, abrasions, lacerations	2	2	1	2
RIS008	Load Manual moving	3	1	2	3
RIS019	Material falling from height	3	3	3	5
RIS015	Collisions, knocks, impacts, compressions	3	3	2	4
RIS034	Crush	3	3	3	5
RIS018	Shearing, crushing	3	3	2	4
RIS017	Falling over, sliding	1	2	1	1
RIS013	Fall from height	3	3	3	5
RIS022	Dust, Fibers	1	1	2	2
RIS033	Work Stress	1	1	1	1
RIS010	Noise				3

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2.2.8 RIS 013 Risk Prevention – Fall from height

Card Code	RIS 013
Type	Risk Prevention
Risk	Fall from height

1	Overview		
	<p>With Risk of falling from a height is intended the risk involving the workers operating in high altitude work areas facing a void space having a drop in height from one floor to another greater than 2 meters.</p>		
2	Operation Requirements		
	<ul style="list-style-type: none"> ▪ The loss of stability of people that can lead to falls from a work plan to another located at a lower level (usually with a drop greater than 2 meters), must be prevented with preventive measures, usually consisting of retaining parapets applied to all open sides of beams, scaffolding, platforms, shelves, balconies, walkways and raised places of work or transit. ▪ If it is impossible to implement such protections, these must be replaced by personal or collective measures in order to halt falls with the lower damage possible. ▪ Depending on the case can be used: stop surfaces consist of wood boards or semi-rigid materials, safety net, or stop surfaces very deformable, restraint and stop personal protective equipment. ▪ The area corresponding to the path of a possible fall must be made in advance free of obstructions interfering with people falling, causing damage or altering the trajectory. ▪ If it is impossible to implement such protections, to occasional work or short duration, can be used appropriate personal protective equipment restraining and stop. ▪ The equipment used to carry out activities in elevated floor must meet the safety and stability requirement in order to prevent people falling. ▪ Establish with the Site Director the work execution plan in order to implement gradual progress with particular reference to the stability of soil and reinforcement that may be present. 		
3	Notes		
	<p>In case of accident caused by staff falling from height, the Emergency Plan must be applied.</p>		
4	Reference PERSONEL PROTECTION EQUIPMENT		
	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%;">DPI003</td> <td>Safety Belt</td> </tr> </table>	DPI003	Safety Belt
DPI003	Safety Belt		

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2.2.9 DPI 003 Personal Protection Equipment – Safety belt

Card Code	DPI 003	
Type	Personal protection equipment	
Model	Safety belt	
<i>Picture</i>		

1 Overview




The safety belt is a basic element for the safety of workers subject to fall from high. security in the execution of processes that expose the worker to the risk of falling from above. It is a device consisting of wide linked fabric belts that encircling the hips, thighs and shoulders, retains the worker in case of fall. The belt is connected to a fixed point by a rope or a karabiner.

2 Operation Requirements


- DPI can be used whenever is not possible the use of collective protection equipment.
- For short steel structures work, industrial building works, prefabricated installation, scaffolding assembly and dismantling, crane assembly and so on. The safety belts must be used together with a suitable retaining rope in order to limit the fall from high to no more than 1.5 m. The retaining rope must be fixed by a safety hook (Karabiner type). The use of the rope should be done in conjunction with energy-absorbing devices (sinks), because even falls from modest heights can cause high arrest forces.
- Verify that the DPI has the CE mark on all structural components, issued with a CE declaration of conformity.
- When purchasing a safety belt it is necessary to require the issue of the test certificate to the manufacturer, containing also the structural characteristics and the conditions of use.
- The safety belt who suffered a tear stress will be put out.
- Follow the rules and information provided by Company about the use of DPI.
- Periodically check the integrity of components and promptly report to the site manager any faults found during operation.

3 References Specific Risks

<i>Code</i>	<i>Risk</i>
RIS019	Fall from high

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2.2.10 MSC INT 001 Internal Coordination procedure – General procedure

Card Code	INT CP 001	
Type	Internal coordination procedure	
Name	General procedure	
<i>Picture</i>		

1 Overview

Define a detailed schedule in order to prevent, as far as possible, the simultaneous presence of personnel implementing different works in the same area.

The site manager or one of the operator officer of the different companies must be selected to organize and direct the working phase. He has to assign the different tasks to workers and to operator officer but also manages and controls the machinery used in site.

Identify, with particular attention, the areas of the site subject to different processes and their execution timing.

Define accurately the viability of the site, indicating, with proper signage, limitations on width, height or weight for vehicles transiting.

With appropriate signs indicate the dangers related to the presence of the various equipment installed, in order to inform also the staff not involved in the operation requiring the use of these equipment.

Areas for temporary storage of construction and / or waste material should be properly marked and delimited.




Inform and train on the specific roles each workers engaged in the various processes in the same space-time.

Warn the workers about the presence of other teams, the limits of their intervention and pathways required for access.

The location of the areas involved into different operations should be investigated and indicated also in the pathways for workers and for vehicles.

In order to minimize the risks caused by vehicles transiting in the working areas (such as shock, investment, crushing) here below are listed the main procedures and coordination measures:

1. Identification of the vehicle at the entrance and of the person to contact for the first information (if it is a supplier);
2. Identification of the parking area of the vehicle waiting the check of the site manager or operator officer;
3. Procedure for the entry of the vehicle inside the work areas and identification of ground personnel to assist maneuvers in case of poor visibility (eg reverse).

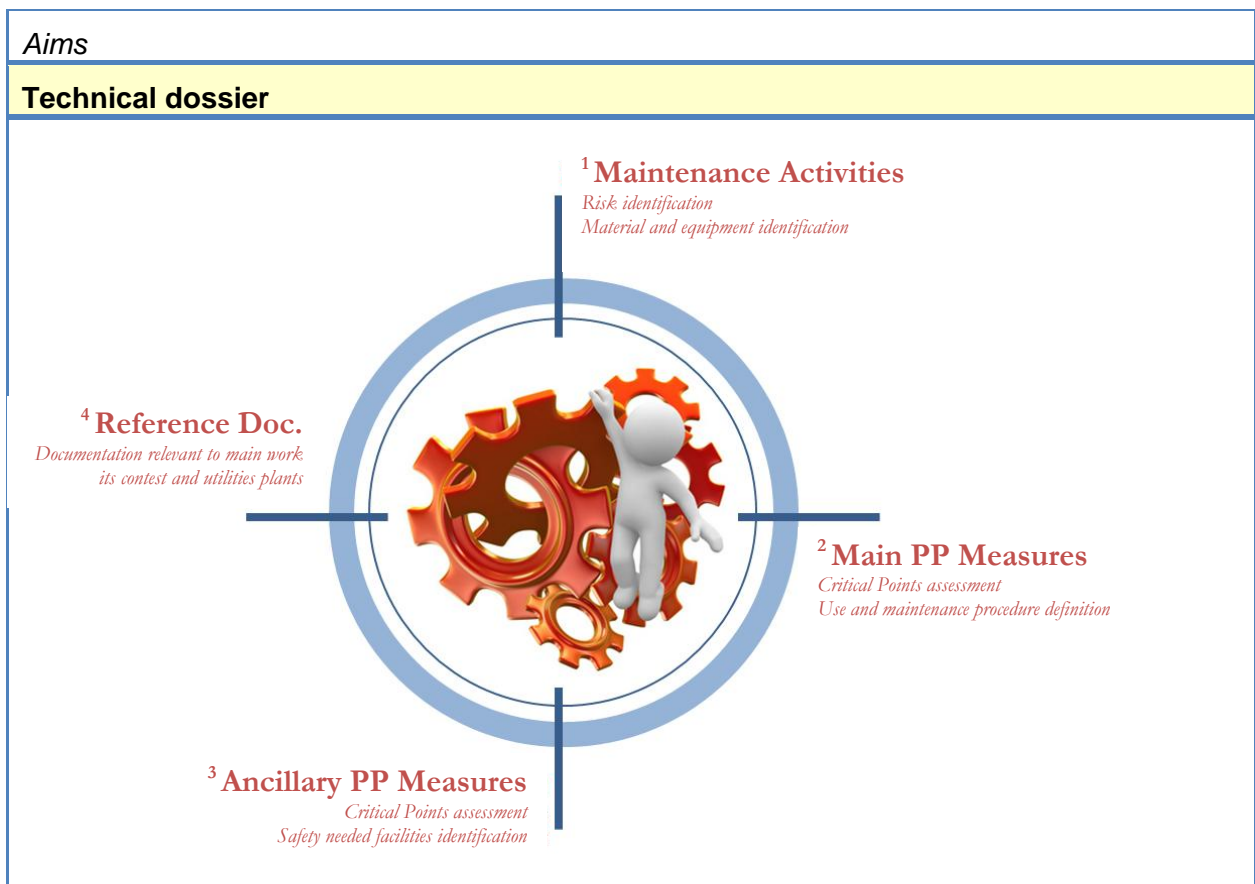
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3 TECHNICAL DOSSIER (FT)

3.1 Technical dossier aims

The technical dossier contains the identification of risks and main preventive and protective measures relevant to the project and those ancillary relevant to the future work expected later, as well as the actions planned or scheduled.

The purpose of this dossier is to consider the Man-Operator-user as centre of maintenance and management of the project PONTE SULLO STRETTO. In particular it try to assess the condition of minimum risk to take during the foreseeable activities and subsequent to the work, i.e. the preventive and protective measures and ancillary, with reference to project documentation.



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3.2 Technical dossier structure




The Technical dossier is structured as follows:

- **"PART A - DESCRIPTION OF THE OPERA"** is the general section: contains the description of the whole work, with an indication of the responsible person for maintenance works, also contains all the requirements to be implemented for all work foreseen.
- **"PART B - RISKS IDENTIFICATION"**, examines the Project and all its phases, and for each type of work expected, planned or scheduled, describes the risks identified and indicate the main preventative and protective measures included in the project and auxiliary ones, based on the analysis of each critical point:
 - Access to workplaces;
 - safety of workplaces;
 - Utilities systems;
 - Supply and material handling;
 - Supply and equipment handling–
 - hygiene at work;
 - Interference and subcontractor protection

Part B contains also reference tables (plot plans, pictures), explaining the main preventive and protective measures of the work and indicating the design choices made for the purpose, (ie: location of underground facilities).

- **"PART C – SAFETY CARDS"** collects all the cards necessary for identifying risks and for planning the main maintenance preventive and protective measures provided. These cards are: the work types and sub-type card, the maintenance activities cards, maintenance planning cards of main preventive and protective measures (MPP), risks and PPE cards. In particular, for each MPP included in the project, are indicated the information needed to safely scheduling their implementation, and to enable their use in complete safety and allow the customer control of their efficiency.



PART D - REFERENCES TO SUPPORTING DOCUMENTATION" contains useful

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information to find all technical documents of the work relevant to safety and of each subsequent intervention in the work, whether design documents, specifications or simple information, these documents include:

- a) *the context in which the work it is located;*
- b) *the static and architectural structure;*
- c) *existing plant.*

The contents of this technical dossier is in accordance with the requirements of Art. 91 of Legislative Decree no. 81/08, respond to the information contained in Annex XVI of this Decree, the rules of good practice and Annex II to the EU document May 26, 1993.

<i>Structure</i>	
Technical dossier (FT)	
	TECHNICAL DOSSIER <i>"PONTE SULLO STRETTO DI MESSINA"</i>
	: Part A – Project description
	: Part B – Risks identification
	: Part C – Reference cards
	: Part D – Reference documentation