

COMMITTENTE:



DIREZIONE LAVORI:



APPALTATORE:

CONSORZIO:



SOCI:



PROGETTAZIONE:

MANDATARIA:



MANDANTI:



PROGETTO ESECUTIVO

ITINERARIO NAPOLI - BARI RADDOPPIO TRATTA APICE - ORSARA I LOTTO FUNZIONALE APICE - HIRPINIA

GEOLOGIA

INDAGINI GEOGNOSTICHE INTEGRATIVE - AMBITO FLYSCH ROSSO G. GROTTAMINARDA E MELITO
ESITI INDAGINI

Indagini Geofisiche - Documentazione Tecnica

APPALTATORE	DIRETTORE DELLA PROGETTAZIONE	PROGETTISTA
Consorzio HIRPINIA AV Il Direttore Tecnico Ing. Vincenzo Moriello 21/02/2020	Il Responsabile integrazione fra le varie prestazioni specialistiche Ing. G. Cassani	 Dott. Geol. F. Pennino

COMMESSA	LOTTO	FASE	ENTE	TIPO DOC.	OPERA/DISCIPLINA	PROGR.	REV.	SCALA:
IF28	01	E	ZZ	IG	GE0305	001	A	-

Rev.	Descrizione	Redatto	Data	Verificato	Data	Approvato	Data	Autorizzato Data
A	Emissione per consegna	V. Minardi	21/02/2020	B. Spigarelli	21/02/2020	M. Gatti	21/02/2020	Ing. G. Cassani

21/02/2020

APPALTATORE: <u>Consorzio</u> <u>Soci</u> HIRPINIA AV SALINI IMPREGILO S.P.A. ASTALDI S.P.A.	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA																	
PROGETTAZIONE: <u>Mandataria</u> <u>Mandanti</u> ROCKSOIL S.P.A. NET ENGINEERING S.P.A. ALPINA S.P.A.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 16.6%;">COMMESSA</td> <td style="width: 16.6%;">LOTTO</td> <td style="width: 16.6%;">CODIFICA</td> <td style="width: 16.6%;">DOCUMENTO</td> <td style="width: 16.6%;">REV.</td> <td style="width: 16.6%;">FOGLIO</td> </tr> <tr> <td style="text-align: center;">IF28</td> <td style="text-align: center;">01</td> <td style="text-align: center;">E ZZ IG</td> <td style="text-align: center;">GE0305 001</td> <td style="text-align: center;">A</td> <td style="text-align: center;">2 di 3</td> </tr> </table>						COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ IG	GE0305 001	A	2 di 3
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IF28	01	E ZZ IG	GE0305 001	A	2 di 3													
PROGETTO ESECUTIVO Indagini Geofisiche – Documentazione Tecnica																		

Indice

1	DESCRIZIONE DEI CONTENUTI	3
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APPALTATORE: <u>Consorzio</u> <u>Soci</u> HIRPINIA AV SALINI IMPREGILO S.P.A. ASTALDI S.P.A	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA																	
PROGETTAZIONE: <u>Mandataria</u> <u>Mandanti</u> ROCKSOIL S.P.A NET ENGINEERING S.P.A. ALPINA S.P.A.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 16.6%;">COMMESSA</td> <td style="width: 16.6%;">LOTTO</td> <td style="width: 16.6%;">CODIFICA</td> <td style="width: 16.6%;">DOCUMENTO</td> <td style="width: 16.6%;">REV.</td> <td style="width: 16.6%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ IG</td> <td>GE0305 001</td> <td>A</td> <td>3 di 3</td> </tr> </table>						COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ IG	GE0305 001	A	3 di 3
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IF28	01	E ZZ IG	GE0305 001	A	3 di 3													
PROGETTO ESECUTIVO Indagini Geofisiche – Documentazione Tecnica																		

1 DESCRIZIONE DEI CONTENUTI

Nell'ambito della stesura del Progetto Esecutivo del raddoppio del 1° lotto funzionale Apice-Hirpinia della tratta Apice - Orsara (itinerario Napoli – Bari), il presente elaborato contiene le Indagini geofisiche in foro integrative con la tecnologia cross-hole, realizzate nell'ambito dei settori interessati dalla formazione geologica del Flysch Rosso in corrispondenza delle Gallerie Grottaminarda e Melito.

La documentazione è così distinta:

- Allegato 1 – Prove Cross-Hole in corrispondenza del sondaggio SN ME01
- Allegato 2 – Prove Cross-Hole in corrispondenza del sondaggio SN ME04
- Allegato 3 – Prove Cross-Hole in corrispondenza del sondaggio SN ME05
- Allegato 4 – Prove Cross-Hole in corrispondenza del sondaggio SN ME08

CROSS-HOLE Vp/Vs

COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Apice Hirpinia
DATA	11/02/20

PROVA	SN ME 01
SORGENTE	
RICEVITORE	
DISTANZA FORI	5.80 m

Depth	Tp	Ts	Vp	Vs	Vp/Vs	γ	v	Edin	Gdin
0.0	0.0078	0.0200	744	290	2.56	18.0	0.41	435	154
-1.0	0.0075	0.0191	770	303	2.54	18.0	0.41	475	169
-2.0	0.0073	0.0183	799	318	2.52	18.0	0.41	520	185
-3.0	0.0070	0.0174	830	333	2.49	18.0	0.40	573	204
-4.0	0.0067	0.0165	863	351	2.46	18.0	0.40	633	226
-5.0	0.0065	0.0157	899	370	2.43	18.0	0.40	703	252
-6.0	0.0062	0.0148	938	392	2.39	18.0	0.39	786	282
-7.0	0.0059	0.0139	981	416	2.35	18.0	0.39	885	318
-8.0	0.0056	0.0131	1027	444	2.31	18.0	0.39	1003	362
-9.0	0.0054	0.0122	1079	476	2.27	18.0	0.38	1145	415
-10.0	0.0051	0.0113	1136	512	2.22	18.0	0.37	1321	481
-11.0	0.0048	0.0108	1199	535	2.24	18.0	0.38	1444	525
-12.0	0.0046	0.0104	1270	559	2.27	18.0	0.38	1584	574
-13.0	0.0040	0.0099	1468	586	2.50	18.0	0.41	1773	631
-14.0	0.0038	0.0094	1522	616	2.47	18.0	0.40	1954	697
-15.0	0.0038	0.0089	1547	649	2.38	18.0	0.39	2154	773
-16.0	0.0036	0.0085	1616	686	2.36	18.0	0.39	2400	863
-17.0	0.0035	0.0080	1657	727	2.28	18.0	0.38	2678	970
-18.0	0.0034	0.0075	1706	773	2.21	18.0	0.37	3008	1097
-19.0	0.0034	0.0074	1731	784	2.21	18.0	0.37	3090	1127
-20.0	0.0033	0.0073	1758	794	2.21	18.0	0.37	3175	1157
-21.0	0.0032	0.0072	1813	805	2.25	18.0	0.38	3275	1189
-22.0	0.0031	0.0071	1871	816	2.29	18.0	0.38	3380	1222
-23.0	0.0031	0.0070	1902	828	2.30	18.0	0.38	3477	1257
-24.0	0.0030	0.0069	1933	839	2.30	18.0	0.38	3579	1293
-25.0	0.0030	0.0068	1912	852	2.25	18.0	0.38	3663	1331
-26.0	0.0031	0.0067	1891	864	2.19	18.0	0.37	3749	1370
-27.0	0.0031	0.0066	1871	877	2.13	18.0	0.36	3836	1411
-28.0	0.0031	0.0065	1871	890	2.10	18.0	0.35	3937	1454
-29.0	0.0031	0.0064	1871	904	2.07	18.0	0.35	4041	1499
-30.0	0.0031	0.0063	1871	918	2.04	18.0	0.34	4148	1546
-31.0	0.0031	0.0062	1902	932	2.04	18.0	0.34	4281	1595
-32.0	0.0030	0.0061	1933	947	2.04	18.0	0.34	4421	1647
-33.0	0.0030	0.0060	1966	963	2.04	18.0	0.34	4568	1702
-34.0	0.0029	0.0059	2000	991	2.02	18.0	0.34	4821	1803
-35.0	0.0029	0.0057	2035	1021	1.99	18.0	0.33	5096	1913
-36.0	0.0028	0.0055	2071	1053	1.97	18.0	0.33	5394	2034
-37.0	0.0028	0.0053	2109	1087	1.94	18.0	0.32	5718	2167
-38.0	0.0027	0.0052	2148	1123	1.91	18.0	0.31	6071	2313
-39.0	0.0026	0.0050	2255	1161	1.94	18.0	0.32	6531	2475
-40.0	0.0024	0.0048	2372	1203	1.97	18.0	0.33	7045	2654
-41.0	0.0024	0.0047	2433	1247	1.95	18.0	0.32	7544	2854
-42.0	0.0023	0.0045	2497	1295	1.93	18.0	0.32	8098	3077
-43.0	0.0023	0.0043	2565	1346	1.90	18.0	0.31	8714	3326
-44.0	0.0022	0.0041	2636	1402	1.88	18.0	0.30	9401	3608
-45.0	0.0021	0.0040	2762	1463	1.89	18.0	0.31	10250	3927
-46.0	0.0020	0.0038	2900	1529	1.90	18.0	0.31	11219	4290
-47.0	0.0019	0.0036	3053	1602	1.91	18.0	0.31	12331	4706

CROSS-HOLE Vp/Vs

COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Apice Hirpinia
DATA	11/02/20

PROVA	SN ME 01
SORGENTE	
RICEVITORE	
DISTANZA FORI	5.80 m

Depth	Tp	Ts	Vp	Vs	Vp/Vs	γ	v	Edin	Gdin
-48.0	0.0019	0.0036	3072	1610	1.91	18.0	0.31	12467	4756
-49.0	0.0019	0.0036	3092	1618	1.91	18.0	0.31	12604	4806
-50.0	0.0019	0.0036	3112	1627	1.91	18.0	0.31	12743	4857
-51.0	0.0019	0.0035	3132	1636	1.91	18.0	0.31	12885	4909
-52.0	0.0018	0.0035	3152	1644	1.92	18.0	0.31	13030	4962
-53.0	0.0018	0.0035	3173	1653	1.92	18.0	0.31	13176	5015
-54.0	0.0018	0.0035	3194	1662	1.92	18.0	0.31	13325	5070
-55.0	0.0018	0.0035	3215	1671	1.92	18.0	0.31	13477	5125
-56.0	0.0018	0.0035	3237	1680	1.93	18.0	0.32	13631	5181
-57.0	0.0018	0.0034	3258	1690	1.93	18.0	0.32	13788	5238
-58.0	0.0018	0.0034	3281	1699	1.93	18.0	0.32	13948	5296
-59.0	0.0018	0.0034	3303	1708	1.93	18.0	0.32	14110	5355
-60.0	0.0017	0.0034	3326	1718	1.94	18.0	0.32	14275	5415
-61.0	0.0017	0.0034	3349	1728	1.94	18.0	0.32	14443	5477
-62.0	0.0017	0.0033	3372	1737	1.94	18.0	0.32	14614	5539
-63.0	0.0017	0.0033	3396	1747	1.94	18.0	0.32	14788	5602
-64.0	0.0017	0.0033	3420	1757	1.95	18.0	0.32	14966	5666
-65.0	0.0017	0.0033	3444	1767	1.95	18.0	0.32	15146	5732
-66.0	0.0017	0.0033	3469	1778	1.95	18.0	0.32	15329	5798
-67.0	0.0017	0.0032	3494	1788	1.95	18.0	0.32	15516	5866
-68.0	0.0016	0.0032	3537	1827	1.94	18.0	0.32	16148	6127
-69.0	0.0016	0.0031	3580	1868	1.92	18.0	0.31	16818	6405
-70.0	0.0016	0.0030	3625	1911	1.90	18.0	0.31	17528	6703
-71.0	0.0016	0.0030	3671	1956	1.88	18.0	0.30	18281	7022
-72.0	0.0016	0.0029	3718	2003	1.86	18.0	0.30	19081	7365
-73.0	0.0015	0.0028	3766	2039	1.85	18.0	0.29	19721	7628
-74.0	0.0015	0.0028	3816	2076	1.84	18.0	0.29	20392	7905
-75.0	0.0015	0.0027	3867	2114	1.83	18.0	0.29	21098	8197
-76.0	0.0015	0.0027	3919	2153	1.82	18.0	0.28	21841	8506
-77.0	0.0015	0.0026	3973	2194	1.81	18.0	0.28	22622	8833
-78.0	0.0014	0.0026	4028	2222	1.81	18.0	0.28	23211	9058
-79.0	0.0014	0.0026	4085	2250	1.82	18.0	0.28	23824	9291
-80.0	0.0014	0.0025	4143	2279	1.82	18.0	0.28	24462	9534
-81.0	0.0014	0.0025	4203	2309	1.82	18.0	0.28	25125	9786
-82.0	0.0014	0.0025	4210	2340	1.80	18.0	0.28	25651	10048
-83.0	0.0014	0.0025	4217	2351	1.79	18.0	0.27	25844	10138
-84.0	0.0014	0.0025	4224	2361	1.79	18.0	0.27	26038	10229
-85.0	0.0014	0.0024	4231	2372	1.78	18.0	0.27	26235	10321
-86.0	0.0014	0.0024	4238	2382	1.78	18.0	0.27	26433	10415
-87.0	0.0014	0.0024	4245	2393	1.77	18.0	0.27	26633	10509
-88.0	0.0014	0.0024	4253	2404	1.77	18.0	0.27	26835	10605
-89.0	0.0014	0.0024	4260	2423	1.76	18.0	0.26	27165	10772
-90.0	0.0014	0.0024	4267	2442	1.75	18.0	0.26	27499	10943
-91.0	0.0014	0.0024	4274	2462	1.74	18.0	0.25	27837	11118
-92.0	0.0014	0.0023	4282	2481	1.73	18.0	0.25	28178	11297
-93.0	0.0014	0.0023	4289	2501	1.71	18.0	0.24	28523	11480
-94.0	0.0014	0.0023	4296	2522	1.70	18.0	0.24	28872	11668

CROSS-HOLE Vp/Vs

COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Apice Hirpinia
DATA	11/02/20

PROVA	SN ME 01
SORGENTE	
RICEVITORE	
DISTANZA FORI	5.80 m

Depth	Tp	Ts	Vp	Vs	Vp/Vs	γ	ν	Edin	Gdin
<i>maximum</i>	0.0078	0.0200	4085	2250	2.56		0.41	23824	9291
<i>minimum</i>	0.0014	0.0026	744	290	1.81		0.28	435	154
<i>average</i>	0.0030	0.0064	2438	1230	2.07		0.34	8864	3373
<i>st. deviation</i>	0.0016	0.0043	982	574	0.21		0.04	6815	2642

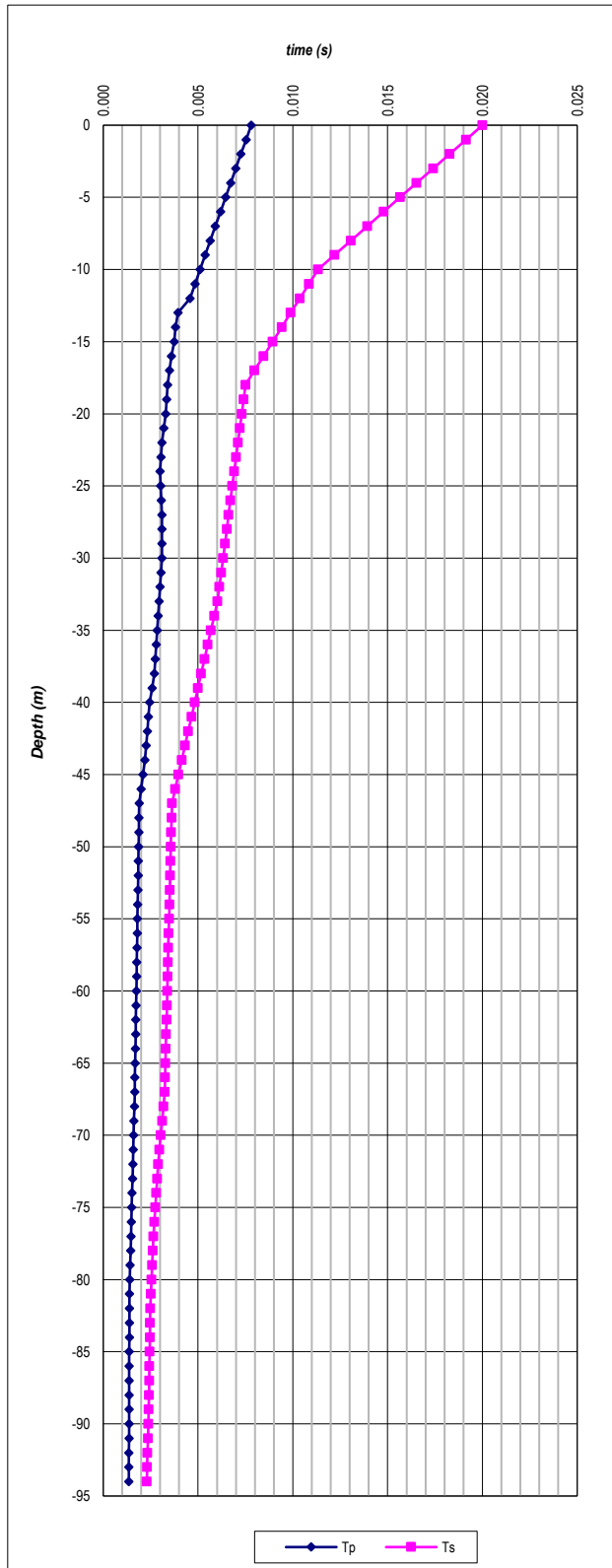
PARAMETER	DEFINITION	UNIT OF MEASUREMENT
Depth	depth from land surface	m
D	distance between source and receiver	m
Tp	P waves arrival time	s
Ts	S waves arrival time	s
Vp	P waves interval velocity	m/s
Vs	S waves interval velocity	m/s
Vp/Vs	P velocity and S velocity ratio	
γ	density	kN/m ³
ν	Poisson's ratio	
Edin	Dynamic elastic modulus	MPa
Gdin	Dynamic shear modulus	MPa

CROSS-HOLE Vp/Vs

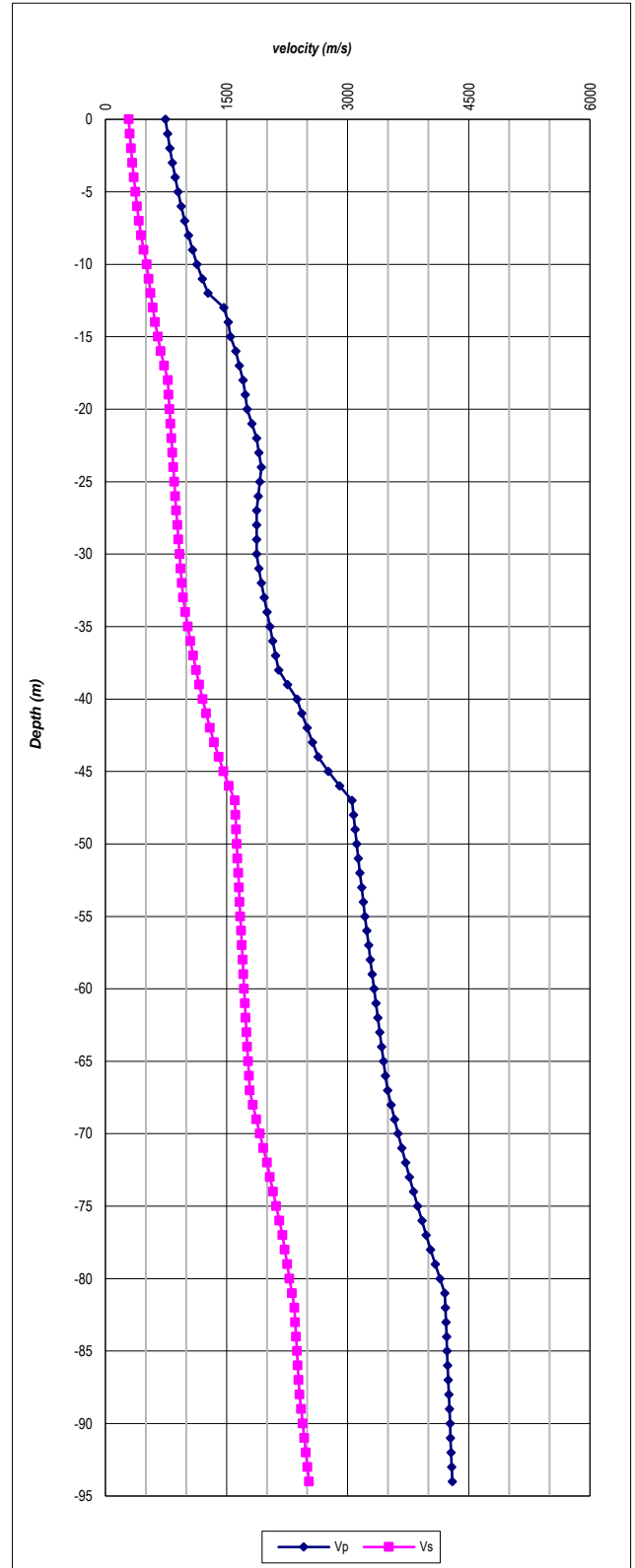
COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Hirpinia AV
DATA	11/02/20

PROVA	SN ME01
SORGENTE	
RICEVITORE	
DISTANZA FORI	5.80 m

Time profile



Velocity profile

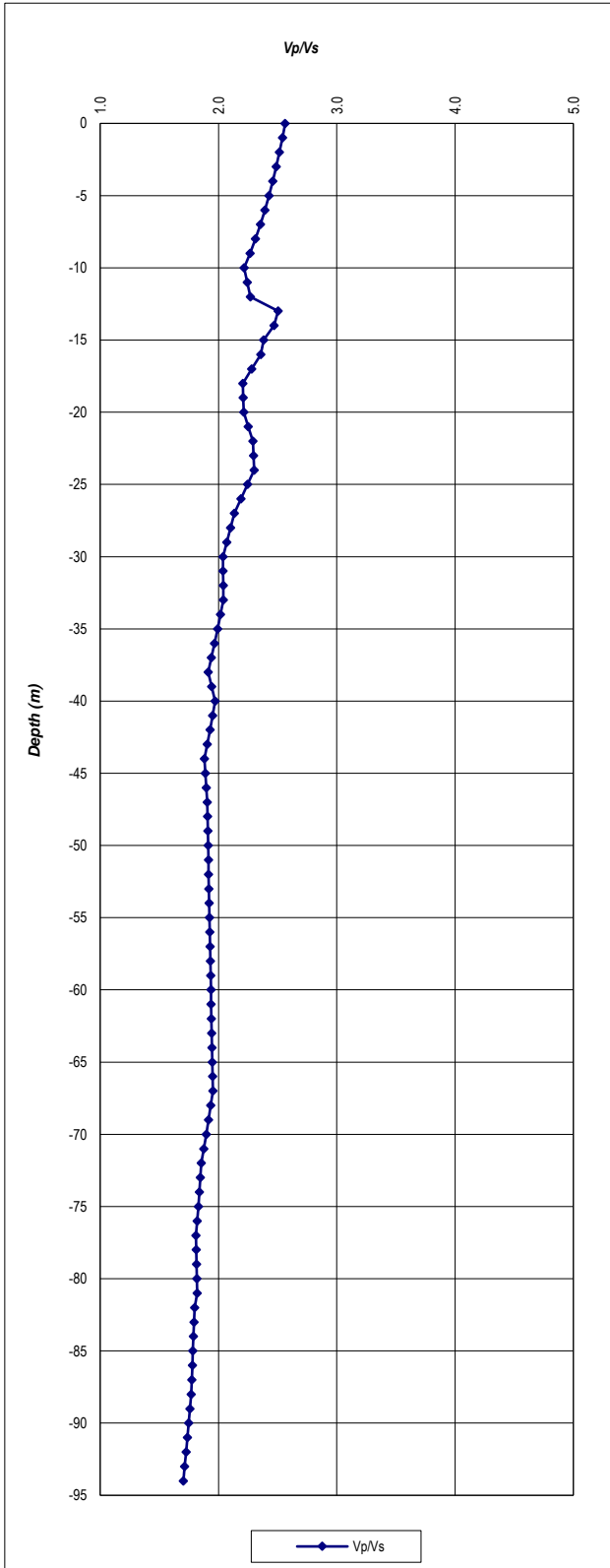


CROSS-HOLE Vp/Vs

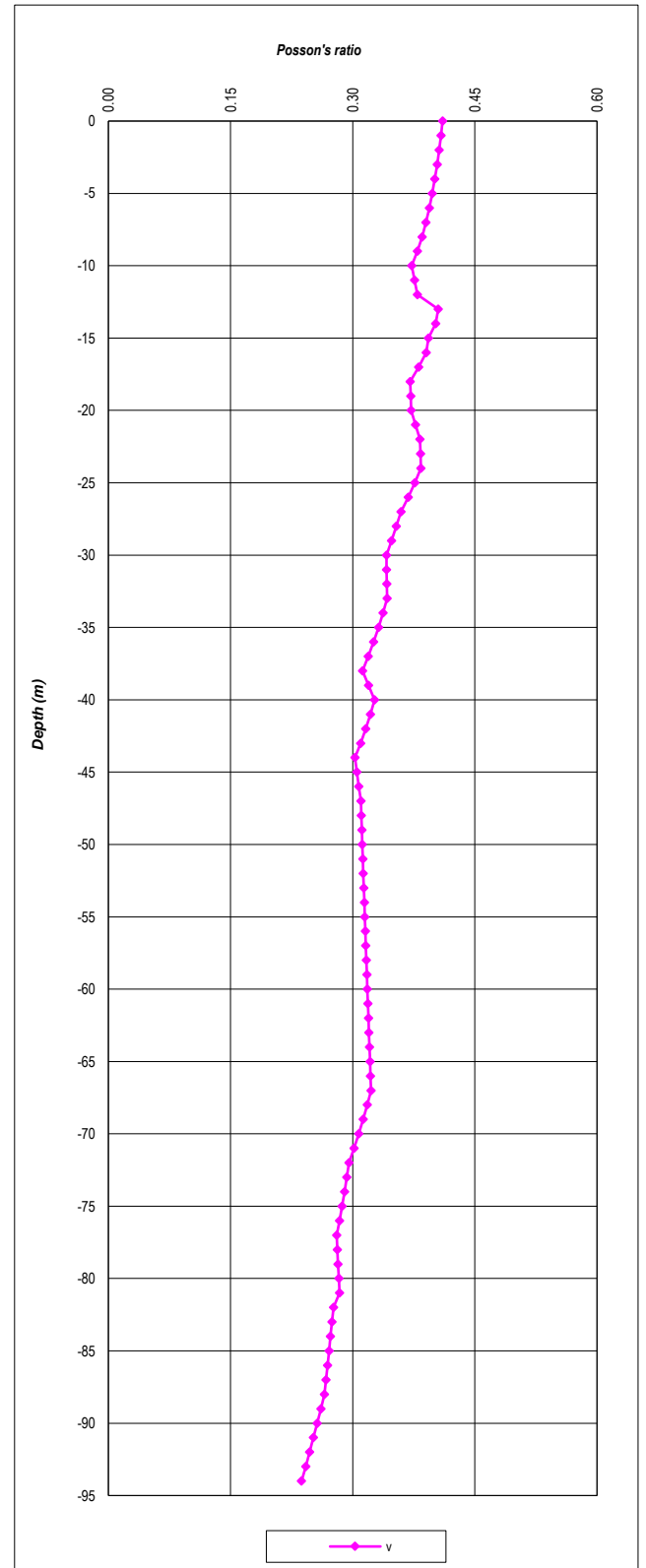
COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Hirpinia AV
DATA	11/02/20

PROVA	SN ME01
SORGENTE	
RICEVITORE	
DISTANZA FORI	5.80 m

Vp/Vs ratio



Poisson's ratio

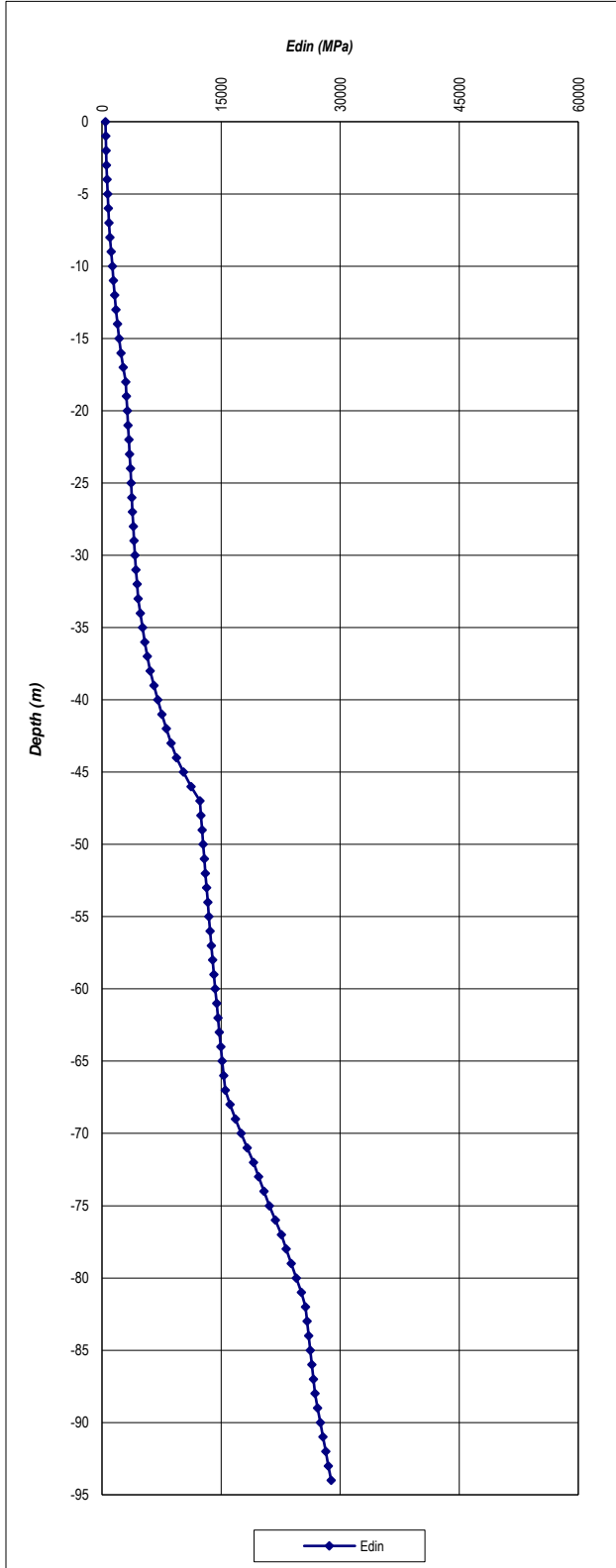


CROSS-HOLE Vp/Vs

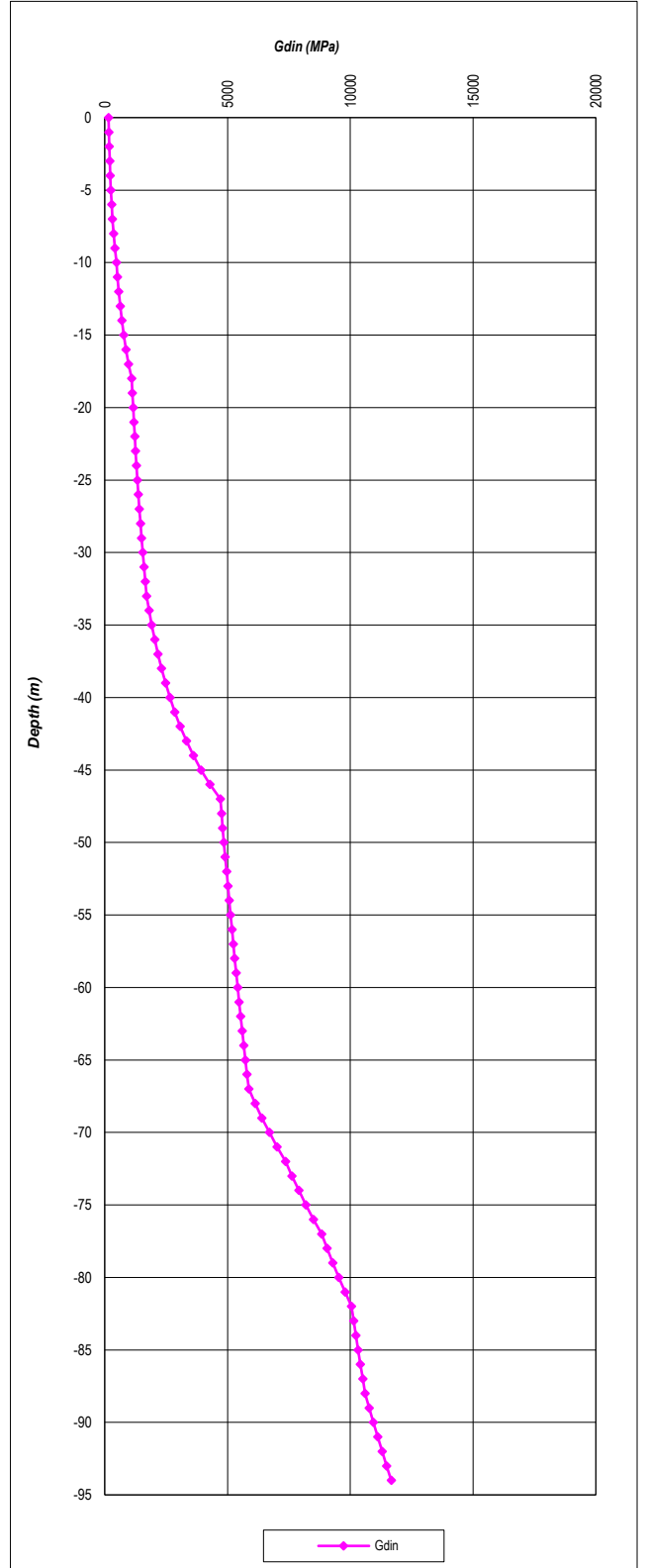
COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Hirpinia AV
DATA	11/02/20

PROVA	SN ME01
SORGENTE	
RICEVITORE	
DISTANZA FORI	5.80 m

Dynamic elastic modulus



Dynamic shear modulus



CROSS-HOLE Vp/Vs

COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Hirpinia AV
DATA	13/02/20

PROVA	SN ME04
SORGENTE	SN ME04 bis
RICEVITORE	SN ME04 ter
DISTANZA FORI	6.00 m

Depth	Tp	Ts	Vp	Vs	Vp/Vs	γ	v	Edin	Gdin
0.0	0.0076	0.0195	795	308	2.58	18.0	0.41	491	174
-1.0	0.0074	0.0186	815	323	2.52	18.0	0.41	538	191
-2.0	0.0072	0.0177	835	339	2.46	18.0	0.40	592	211
-3.0	0.0071	0.0168	845	358	2.36	18.0	0.39	654	235
-4.0	0.0060	0.0159	997	378	2.64	18.0	0.42	744	263
-5.0	0.0058	0.0149	1029	402	2.56	18.0	0.41	834	296
-6.0	0.0055	0.0140	1081	428	2.53	18.0	0.41	945	336
-7.0	0.0052	0.0131	1162	457	2.54	18.0	0.41	1081	384
-8.0	0.0049	0.0122	1229	492	2.50	18.0	0.40	1246	443
-9.0	0.0043	0.0113	1396	531	2.63	18.0	0.42	1466	518
-10.0	0.0041	0.0104	1459	578	2.52	18.0	0.41	1724	613
-11.0	0.0040	0.0095	1489	633	2.35	18.0	0.39	2046	736
-12.0	0.0039	0.0086	1520	701	2.17	18.0	0.37	2461	901
-13.0	0.0038	0.0084	1595	718	2.22	18.0	0.37	2597	946
-14.0	0.0039	0.0082	1547	736	2.10	18.0	0.35	2691	994
-15.0	0.0038	0.0079	1581	755	2.09	18.0	0.35	2828	1046
-16.0	0.0036	0.0077	1661	775	2.14	18.0	0.36	2998	1101
-17.0	0.0035	0.0075	1733	796	2.18	18.0	0.37	3175	1162
-18.0	0.0034	0.0075	1759	804	2.19	18.0	0.37	3242	1185
-19.0	0.0034	0.0074	1785	812	2.20	18.0	0.37	3310	1208
-20.0	0.0033	0.0073	1813	820	2.21	18.0	0.37	3381	1233
-21.0	0.0033	0.0072	1802	828	2.18	18.0	0.37	3436	1258
-22.0	0.0034	0.0072	1791	836	2.14	18.0	0.36	3493	1284
-23.0	0.0033	0.0071	1829	845	2.16	18.0	0.36	3575	1310
-24.0	0.0032	0.0070	1869	854	2.19	18.0	0.37	3660	1338
-25.0	0.0032	0.0070	1885	863	2.19	18.0	0.37	3736	1366
-26.0	0.0032	0.0069	1902	873	2.18	18.0	0.37	3824	1399
-27.0	0.0031	0.0068	1918	884	2.17	18.0	0.37	3916	1434
-28.0	0.0031	0.0067	1935	895	2.16	18.0	0.36	4010	1470
-29.0	0.0031	0.0066	1961	906	2.16	18.0	0.36	4113	1508
-30.0	0.0030	0.0065	1987	918	2.16	18.0	0.36	4219	1546
-31.0	0.0030	0.0065	2027	930	2.18	18.0	0.37	4337	1587
-32.0	0.0029	0.0064	2069	932	2.22	18.0	0.37	4377	1594
-33.0	0.0030	0.0064	2034	934	2.18	18.0	0.37	4377	1602
-34.0	0.0030	0.0064	2000	937	2.14	18.0	0.36	4377	1610
-35.0	0.0030	0.0064	2034	939	2.17	18.0	0.36	4414	1617
-36.0	0.0029	0.0064	2069	941	2.20	18.0	0.37	4451	1625
-37.0	0.0030	0.0064	2034	943	2.16	18.0	0.36	4451	1633
-38.0	0.0030	0.0063	2000	946	2.11	18.0	0.36	4450	1641
-39.0	0.0030	0.0063	2000	948	2.11	18.0	0.36	4469	1649
-40.0	0.0030	0.0063	2000	950	2.10	18.0	0.35	4487	1657
-41.0	0.0031	0.0063	1967	953	2.07	18.0	0.35	4485	1665
-42.0	0.0031	0.0063	1935	955	2.03	18.0	0.34	4481	1673
-43.0	0.0031	0.0063	1928	957	2.01	18.0	0.34	4493	1681
-44.0	0.0031	0.0063	1920	960	2.00	18.0	0.33	4506	1689
-45.0	0.0031	0.0062	1953	968	2.02	18.0	0.34	4601	1721
-46.0	0.0031	0.0061	1923	977	1.97	18.0	0.33	4648	1753
-47.0	0.0031	0.0061	1954	987	1.98	18.0	0.33	4747	1786

CROSS-HOLE Vp/Vs

COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Hirpinia AV
DATA	13/02/20

PROVA	SN ME04
SORGENTE	SN ME04 bis
RICEVITORE	SN ME04 ter
DISTANZA FORI	6.00 m

Depth	Tp	Ts	Vp	Vs	Vp/Vs	γ	ν	Edin	Gdin
-48.0	0.0031	0.0060	1923	996	1.93	18.0	0.32	4792	1820
-49.0	0.0031	0.0060	1931	997	1.94	18.0	0.32	4805	1822
-50.0	0.0031	0.0060	1939	997	1.94	18.0	0.32	4817	1825
-51.0	0.0031	0.0060	1946	998	1.95	18.0	0.32	4830	1827
-52.0	0.0031	0.0060	1954	999	1.96	18.0	0.32	4842	1829
-53.0	0.0031	0.0060	1962	999	1.96	18.0	0.33	4854	1832
-54.0	0.0030	0.0060	1970	1000	1.97	18.0	0.33	4867	1834
-55.0	0.0030	0.0060	1979	1001	1.98	18.0	0.33	4879	1837
-56.0	0.0030	0.0060	1987	1001	1.98	18.0	0.33	4891	1839
-57.0	0.0031	0.0060	1954	1002	1.95	18.0	0.32	4868	1842
-58.0	0.0031	0.0060	1923	1003	1.92	18.0	0.31	4844	1844
-59.0	0.0031	0.0060	1958	1006	1.95	18.0	0.32	4904	1857
-60.0	0.0030	0.0059	1993	1009	1.97	18.0	0.33	4964	1870
-61.0	0.0030	0.0059	2030	1013	2.00	18.0	0.33	5024	1883
-62.0	0.0029	0.0059	2069	1016	2.04	18.0	0.34	5084	1896
-63.0	0.0030	0.0059	1993	1020	1.95	18.0	0.32	5050	1909
-64.0	0.0031	0.0059	1923	1024	1.88	18.0	0.30	5007	1922
-65.0	0.0031	0.0058	1926	1027	1.88	18.0	0.30	5039	1936
-66.0	0.0031	0.0058	1929	1031	1.87	18.0	0.30	5070	1950
-67.0	0.0031	0.0058	1932	1034	1.87	18.0	0.30	5102	1964
-68.0	0.0031	0.0057	1935	1044	1.85	18.0	0.29	5183	2002
-69.0	0.0031	0.0057	1967	1055	1.87	18.0	0.30	5299	2041
-70.0	0.0030	0.0056	2000	1065	1.88	18.0	0.30	5420	2081
-71.0	0.0030	0.0056	1997	1076	1.86	18.0	0.30	5501	2123
-72.0	0.0030	0.0055	2012	1086	1.85	18.0	0.29	5605	2165

maximum	0.0076	0.0195	2069	1086	2.64		0.42	5605	2165
minimum	0.0029	0.0055	795	308	1.85		0.29	491	174
average	0.0036	0.0078	1781	856	2.13		0.35	3818	1425
st. deviation	0.0011	0.0033	342	210	0.21		0.03	1439	554

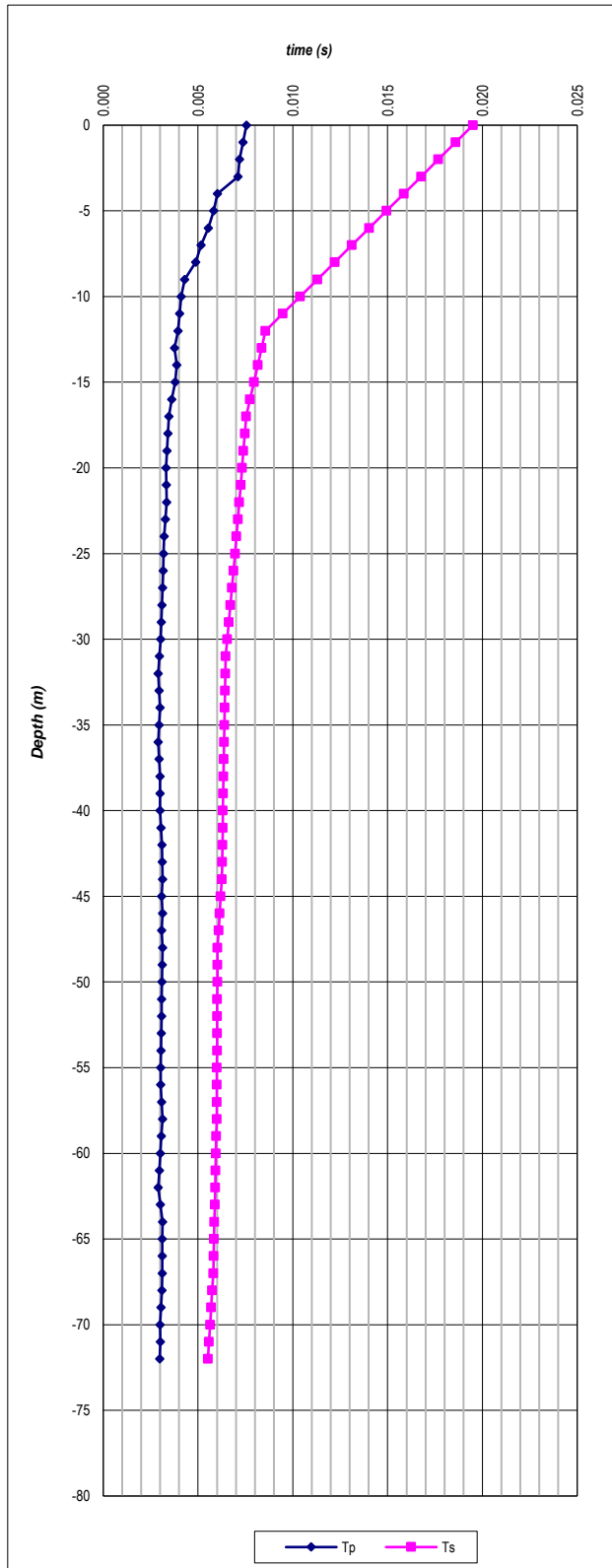
PARAMETER	DEFINITION	UNIT OF MEASUREMENT
Depth	depth from land surface	<i>m</i>
D	distance between source and receiver	<i>m</i>
Tp	P waves arrival time	<i>s</i>
Ts	S waves arrival time	<i>s</i>
Vp	P waves interval velocity	<i>m/s</i>
Vs	S waves interval velocity	<i>m/s</i>
Vp/Vs	P velocity and S velocity ratio	
γ	density	<i>kN/m³</i>
ν	Poisson's ratio	
Edin	Dynamic elastic modulus	<i>MPa</i>
Gdin	Dynamic shear modulus	<i>MPa</i>

CROSS-HOLE Vp/Vs

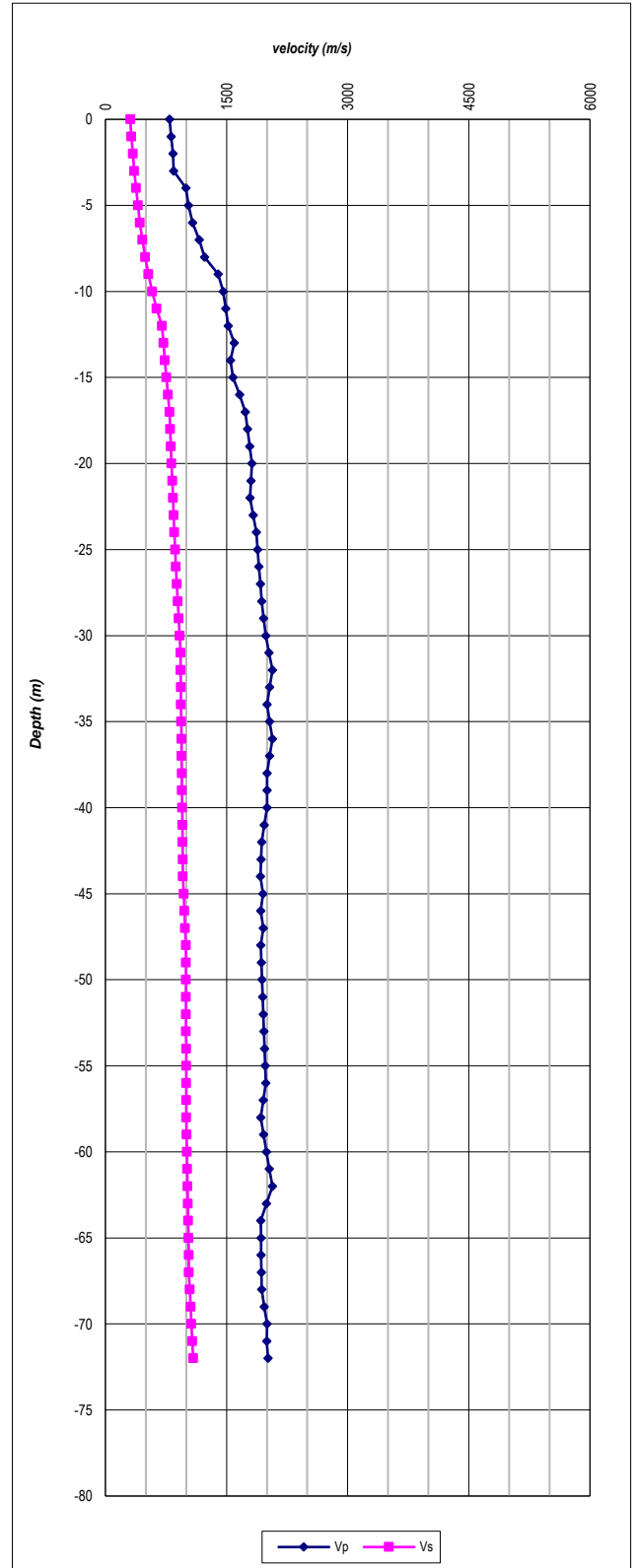
COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Hirpinia AV
DATA	13/02/20

PROVA	SN ME04
SORGENTE	SN ME04 bis
RICEVITORE	SN ME04 ter
DISTANZA FORI	6.00 m

Time profile



Velocity profile

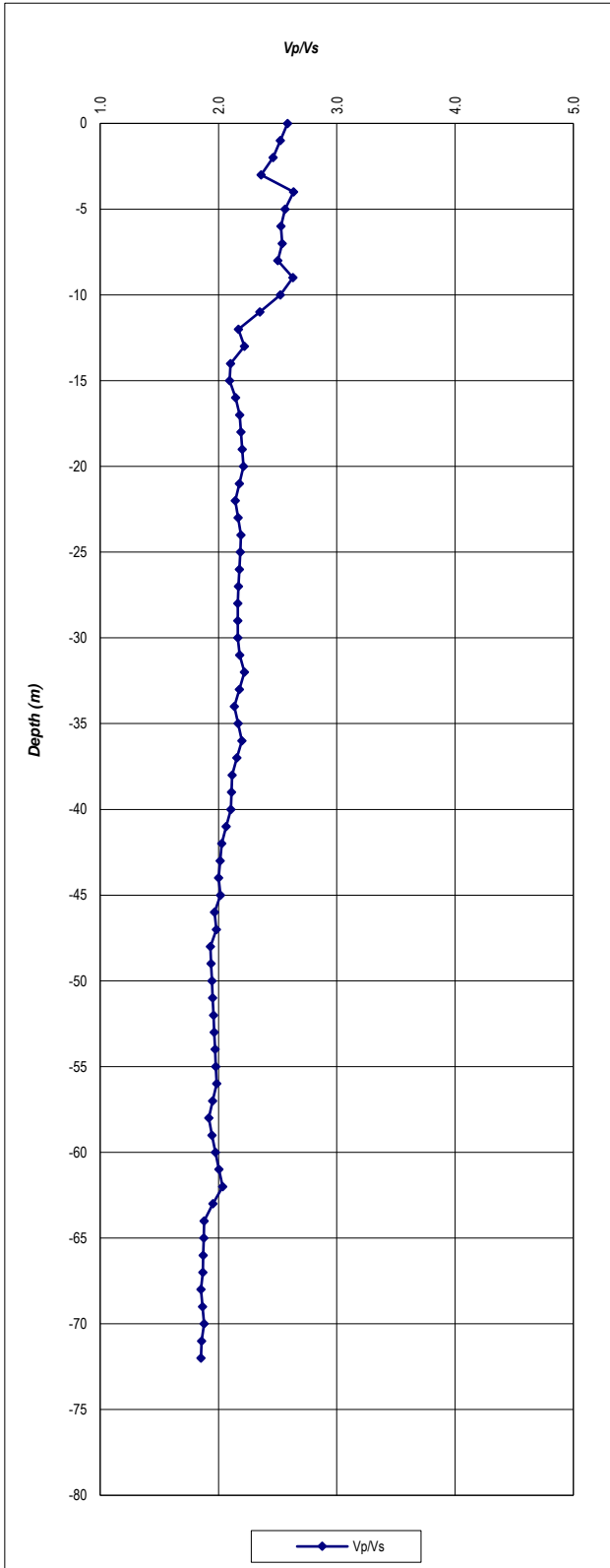


CROSS-HOLE Vp/Vs

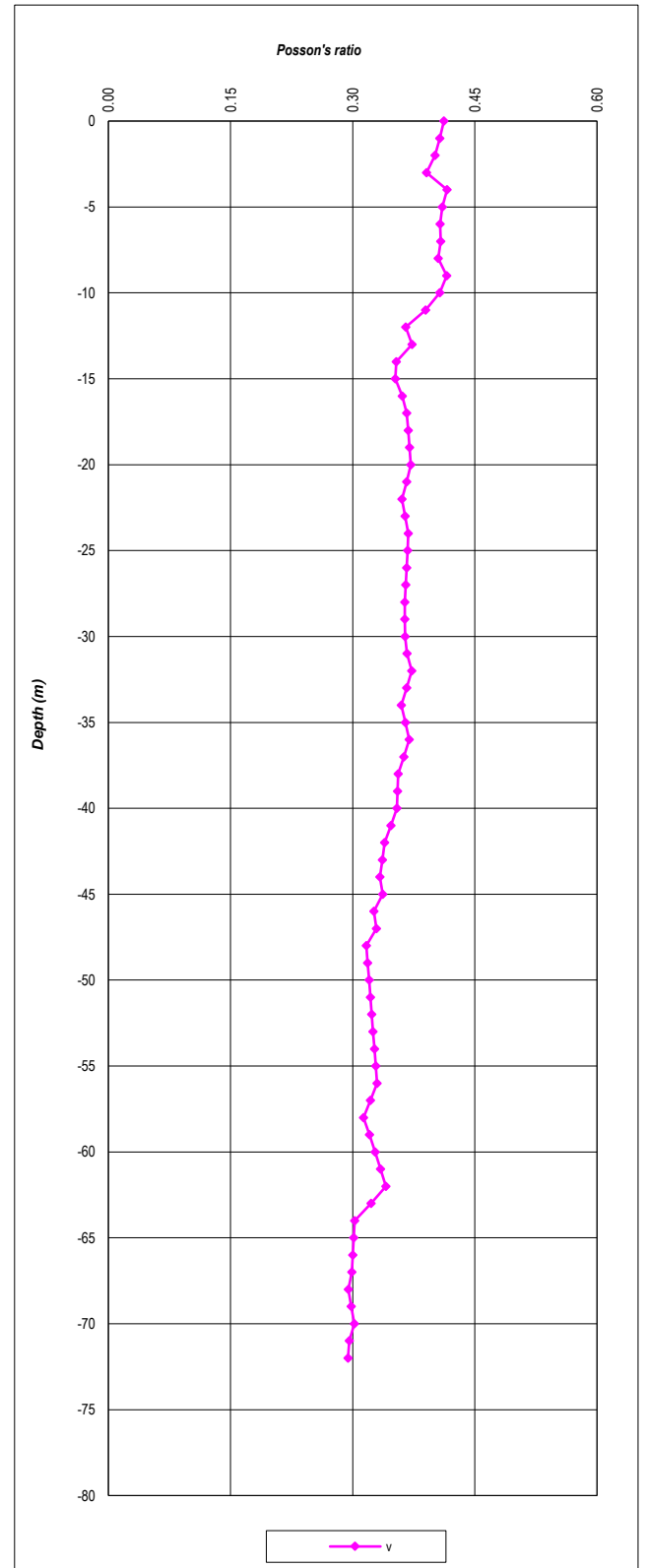
COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Hirpinia AV
DATA	13/02/20

PROVA	SN ME04
SORGENTE	SN ME04 bis
RICEVITORE	SN ME04 ter
DISTANZA FORI	6.00 m

Vp/Vs ratio



Poisson's ratio

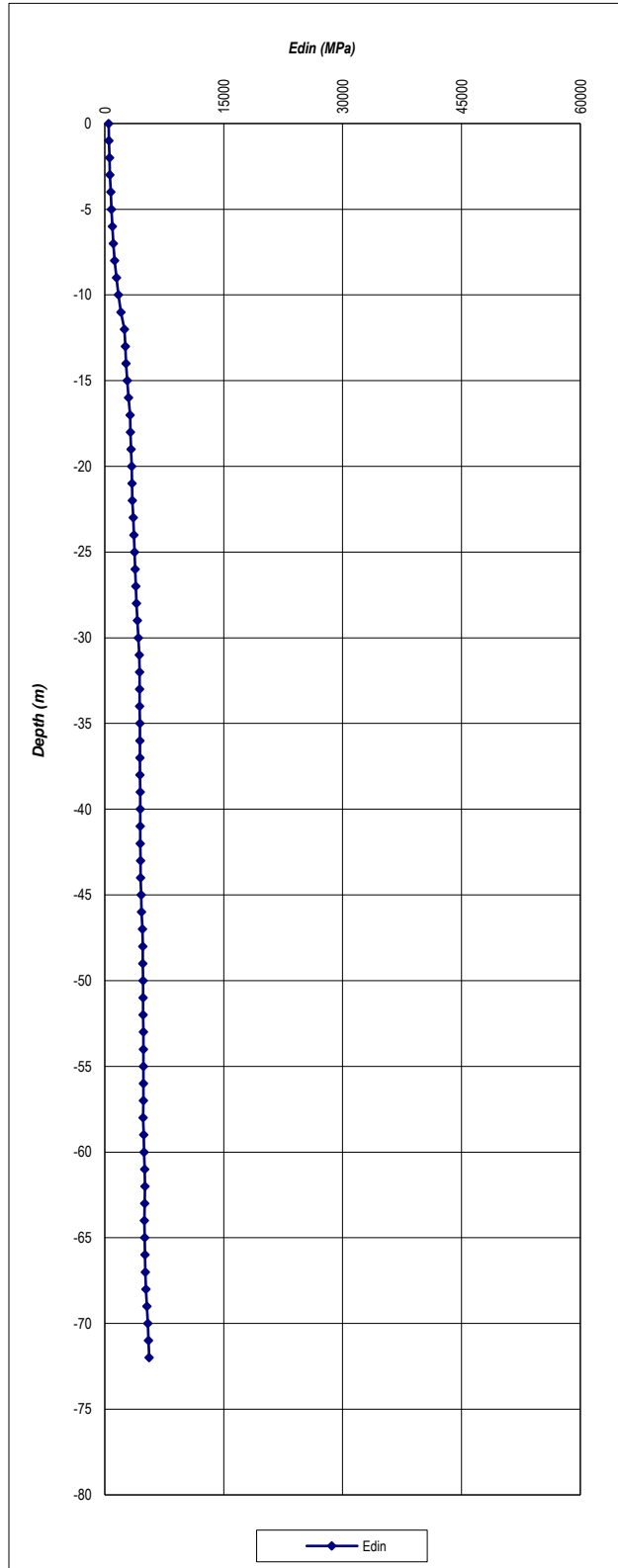


CROSS-HOLE Vp/Vs

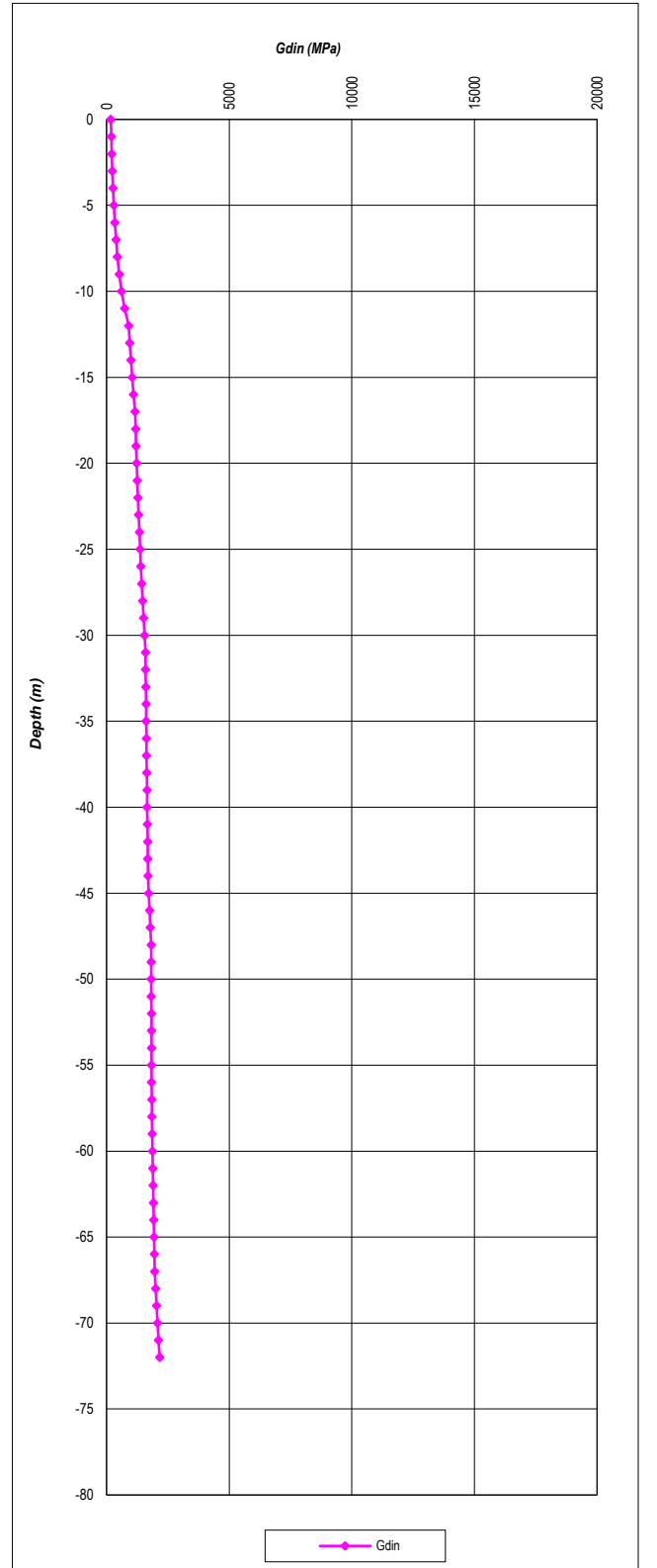
COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Hirpinia AV
DATA	13/02/20

PROVA	SN ME04
SORGENTE	SN ME04 bis
RICEVITORE	SN ME04 ter
DISTANZA FORI	6.00 m

Dynamic elastic modulus



Dynamic shear modulus



CROSS-HOLE Vp/Vs

COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Apice Hirpinia
DATA	11/02/20

PROVA	SN ME 05
SORGENTE	
RICEVITORE	
DISTANZA FORI	5.00 m

Depth	Tp	Ts	Vp	Vs	Vp/Vs	γ	v	Edin	Gdin
0.0	0.0067	0.0145	872	401	2.17	18.0	0.37	806	295
-1.0	0.0066	0.0138	877	419	2.09	18.0	0.35	873	323
-2.0	0.0066	0.0132	882	440	2.01	18.0	0.33	947	355
-3.0	0.0064	0.0129	902	449	2.01	18.0	0.33	989	371
-4.0	0.0063	0.0126	922	460	2.01	18.0	0.33	1034	387
-5.0	0.0061	0.0123	946	470	2.01	18.0	0.34	1084	406
-6.0	0.0060	0.0120	971	481	2.02	18.0	0.34	1137	425
-7.0	0.0058	0.0118	997	493	2.02	18.0	0.34	1194	446
-8.0	0.0057	0.0115	1025	505	2.03	18.0	0.34	1255	469
-9.0	0.0055	0.0112	1054	518	2.03	18.0	0.34	1321	493
-10.0	0.0053	0.0108	1086	536	2.03	18.0	0.34	1411	527
-11.0	0.0052	0.0105	1119	555	2.02	18.0	0.34	1510	565
-12.0	0.0049	0.0101	1174	575	2.04	18.0	0.34	1628	607
-13.0	0.0047	0.0097	1236	597	2.07	18.0	0.35	1762	653
-14.0	0.0044	0.0094	1304	620	2.10	18.0	0.35	1911	706
-15.0	0.0042	0.0090	1381	646	2.14	18.0	0.36	2081	765
-16.0	0.0040	0.0086	1466	673	2.18	18.0	0.37	2273	832
-17.0	0.0038	0.0082	1533	703	2.18	18.0	0.37	2481	908
-18.0	0.0036	0.0079	1606	736	2.18	18.0	0.37	2719	995
-19.0	0.0034	0.0075	1687	772	2.18	18.0	0.37	2993	1094
-20.0	0.0033	0.0071	1776	812	2.19	18.0	0.37	3311	1210
-21.0	0.0031	0.0068	1869	856	2.18	18.0	0.37	3679	1345
-22.0	0.0030	0.0064	1954	906	2.16	18.0	0.36	4102	1505
-23.0	0.0029	0.0060	2003	961	2.09	18.0	0.35	4576	1694
-24.0	0.0028	0.0058	2079	992	2.10	18.0	0.35	4888	1807
-25.0	0.0027	0.0057	2182	1026	2.13	18.0	0.36	5246	1931
-26.0	0.0025	0.0055	2360	1062	2.22	18.0	0.37	5682	2069
-27.0	0.0024	0.0053	2452	1101	2.23	18.0	0.37	6106	2222
-28.0	0.0024	0.0051	2452	1142	2.15	18.0	0.36	6517	2393
-29.0	0.0022	0.0049	2594	1187	2.19	18.0	0.37	7070	2585
-30.0	0.0022	0.0047	2683	1235	2.17	18.0	0.37	7646	2800
-31.0	0.0020	0.0045	2843	1288	2.21	18.0	0.37	8344	3043
-32.0	0.0020	0.0044	2860	1323	2.16	18.0	0.36	8756	3210
-33.0	0.0020	0.0043	2877	1359	2.12	18.0	0.36	9196	3390
-34.0	0.0020	0.0041	2894	1398	2.07	18.0	0.35	9668	3586
-35.0	0.0020	0.0040	2887	1439	2.01	18.0	0.33	10144	3800
-36.0	0.0020	0.0039	2860	1483	1.93	18.0	0.32	10618	4034
-37.0	0.0020	0.0039	2877	1498	1.92	18.0	0.31	10816	4115
-38.0	0.0020	0.0038	2894	1513	1.91	18.0	0.31	11020	4200
-39.0	0.0020	0.0038	2887	1528	1.89	18.0	0.31	11190	4286
-40.0	0.0020	0.0038	2939	1544	1.90	18.0	0.31	11459	4376
-41.0	0.0019	0.0037	2993	1561	1.92	18.0	0.31	11737	4468
-42.0	0.0019	0.0037	3049	1577	1.93	18.0	0.32	12024	4564
-43.0	0.0019	0.0036	3108	1594	1.95	18.0	0.32	12321	4662
-44.0	0.0018	0.0036	3168	1611	1.97	18.0	0.33	12629	4764
-45.0	0.0018	0.0036	3231	1629	1.98	18.0	0.33	12947	4869
-46.0	0.0018	0.0035	3297	1647	2.00	18.0	0.33	13276	4977
-47.0	0.0017	0.0035	3365	1665	2.02	18.0	0.34	13616	5089

CROSS-HOLE Vp/Vs

COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Apice Hirpinia
DATA	11/02/20

PROVA	SN ME 05
SORGENTE	
RICEVITORE	
DISTANZA FORI	5.00 m

Depth	Tp	Ts	Vp	Vs	Vp/Vs	γ	v	Edin	Gdin
-48.0	0.0017	0.0034	3436	1684	2.04	18.0	0.34	13969	5205
-49.0	0.0017	0.0034	3461	1704	2.03	18.0	0.34	14272	5325
-50.0	0.0017	0.0034	3486	1723	2.02	18.0	0.34	14585	5449
-51.0	0.0017	0.0033	3511	1744	2.01	18.0	0.34	14908	5578
-52.0	0.0016	0.0033	3537	1764	2.00	18.0	0.33	15241	5711
-53.0	0.0016	0.0032	3563	1785	2.00	18.0	0.33	15586	5849
-54.0	0.0016	0.0032	3589	1807	1.99	18.0	0.33	15942	5992
-55.0	0.0016	0.0032	3616	1829	1.98	18.0	0.33	16309	6141
-56.0	0.0016	0.0032	3604	1837	1.96	18.0	0.32	16408	6194
-57.0	0.0016	0.0031	3593	1845	1.95	18.0	0.32	16507	6249
-58.0	0.0016	0.0031	3582	1854	1.93	18.0	0.32	16605	6304
-59.0	0.0016	0.0031	3570	1862	1.92	18.0	0.31	16704	6360
-60.0	0.0016	0.0031	3559	1870	1.90	18.0	0.31	16802	6416
-61.0	0.0016	0.0031	3548	1878	1.89	18.0	0.31	16899	6474
-62.0	0.0016	0.0031	3537	1887	1.87	18.0	0.30	16996	6532
-63.0	0.0016	0.0030	3576	1920	1.86	18.0	0.30	17550	6763
-64.0	0.0016	0.0030	3616	1954	1.85	18.0	0.29	18130	7007
-65.0	0.0016	0.0029	3657	1990	1.84	18.0	0.29	18738	7264
-66.0	0.0016	0.0029	3699	2027	1.83	18.0	0.29	19376	7536
-67.0	0.0016	0.0028	3742	2065	1.81	18.0	0.28	20046	7824
-68.0	0.0015	0.0028	3786	2105	1.80	18.0	0.28	20748	8128
-69.0	0.0015	0.0027	3831	2114	1.81	18.0	0.28	21008	8199
-70.0	0.0015	0.0027	3877	2123	1.83	18.0	0.29	21271	8272
-71.0	0.0015	0.0027	3924	2133	1.84	18.0	0.29	21537	8345
-72.0	0.0015	0.0027	3973	2142	1.85	18.0	0.30	21806	8419
-73.0	0.0014	0.0027	4028	2152	1.87	18.0	0.30	22091	8494
-74.0	0.0014	0.0027	4031	2161	1.86	18.0	0.30	22254	8571
-75.0	0.0014	0.0027	4034	2171	1.86	18.0	0.30	22417	8648
-76.0	0.0014	0.0027	4037	2181	1.85	18.0	0.29	22582	8726
-77.0	0.0014	0.0026	4061	2191	1.85	18.0	0.29	22804	8806
-78.0	0.0014	0.0026	4086	2201	1.86	18.0	0.30	23029	8886
-79.0	0.0014	0.0026	4111	2211	1.86	18.0	0.30	23256	8968
-80.0	0.0014	0.0026	4137	2221	1.86	18.0	0.30	23488	9051
-81.0	0.0014	0.0026	4163	2231	1.87	18.0	0.30	23722	9135
-82.0	0.0014	0.0026	4189	2242	1.87	18.0	0.30	23960	9220
-83.0	0.0014	0.0026	4216	2252	1.87	18.0	0.30	24202	9306
-84.0	0.0014	0.0026	4242	2263	1.88	18.0	0.30	24447	9394
-85.0	0.0014	0.0026	4270	2273	1.88	18.0	0.30	24695	9482
-86.0	0.0013	0.0025	4297	2284	1.88	18.0	0.30	24948	9572
-87.0	0.0013	0.0025	4325	2295	1.88	18.0	0.30	25204	9664
-88.0	0.0013	0.0025	4353	2306	1.89	18.0	0.31	25464	9756
-89.0	0.0013	0.0025	4382	2317	1.89	18.0	0.31	25728	9850
-90.0	0.0013	0.0025	4411	2328	1.89	18.0	0.31	25996	9945
-91.0	0.0013	0.0025	4441	2339	1.90	18.0	0.31	26268	10042
-92.0	0.0013	0.0025	4470	2341	1.91	18.0	0.31	26369	10056
-93.0	0.0013	0.0024	4501	2373	1.90	18.0	0.31	27013	10330
-94.0	0.0013	0.0024	4531	2405	1.88	18.0	0.30	27679	10614

CROSS-HOLE Vp/Vs

COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Apice Hirpinia
DATA	11/02/20

PROVA	SN ME 05
SORGENTE	
RICEVITORE	
DISTANZA FORI	5.00 m

Depth	Tp	Ts	Vp	Vs	Vp/Vs	γ	ν	Edin	Gdin
<i>maximum</i>	0.0067	0.0145	4111	2211	2.23		0.37	23256	8968
<i>minimum</i>	0.0014	0.0026	872	401	1.80		0.28	806	295
<i>average</i>	0.0027	0.0055	2722	1386	2.00		0.33	10955	4166
<i>st. deviation</i>	0.0016	0.0034	1067	594	0.12		0.03	7418	2873

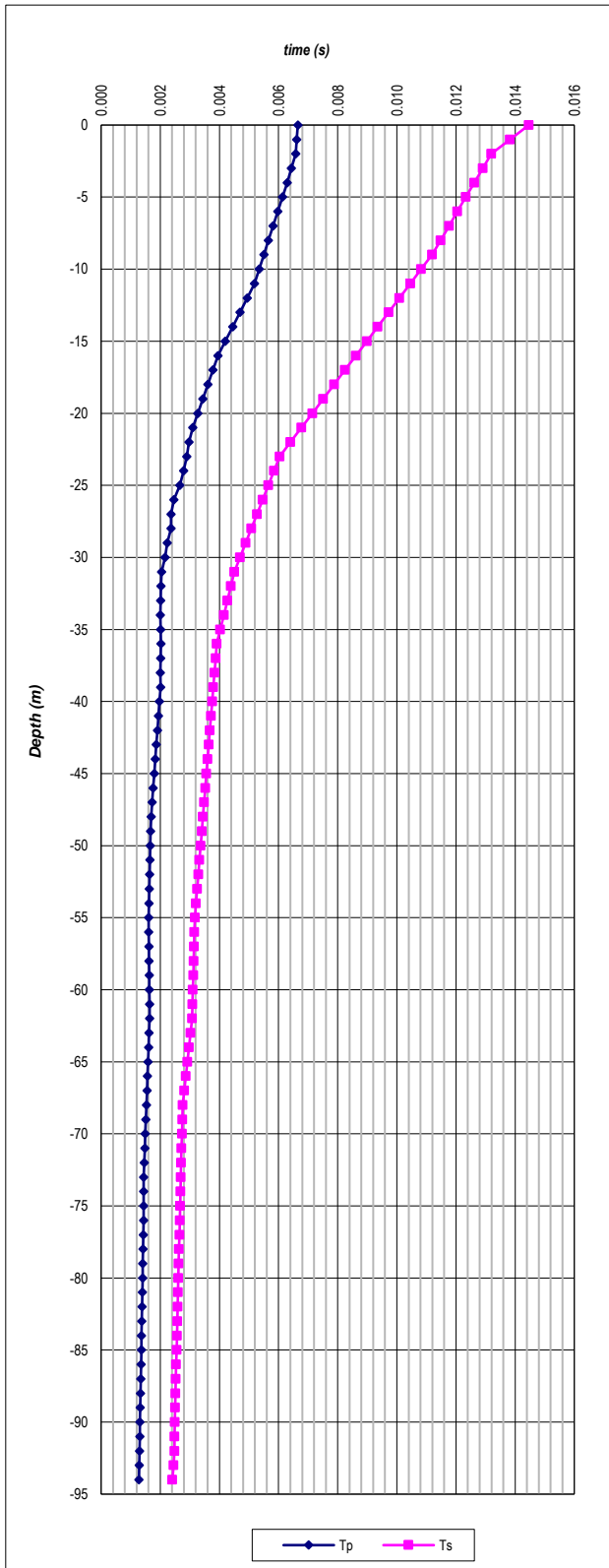
PARAMETER	DEFINITION	UNIT OF MEASUREMENT
Depth	depth from land surface	<i>m</i>
D	distance between source and receiver	<i>m</i>
Tp	P waves arrival time	<i>s</i>
Ts	S waves arrival time	<i>s</i>
Vp	P waves interval velocity	<i>m/s</i>
Vs	S waves interval velocity	<i>m/s</i>
Vp/Vs	P velocity and S velocity ratio	
γ	density	<i>kN/m³</i>
ν	Poisson's ratio	
Edin	Dynamic elastic modulus	<i>MPa</i>
Gdin	Dynamic shear modulus	<i>MPa</i>

CROSS-HOLE Vp/Vs

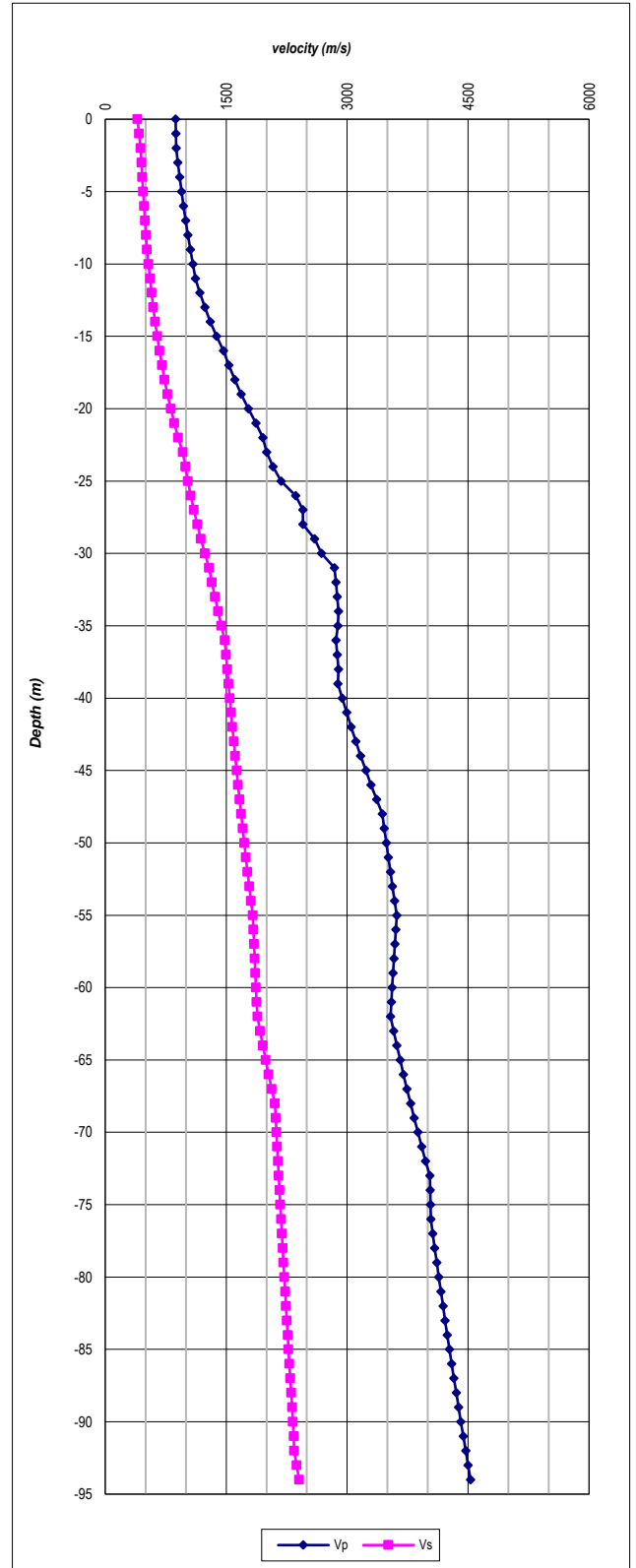
COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Hirpinia AV
DATA	11/02/20

PROVA	SN ME05
SORGENTE	
RICEVITORE	
DISTANZA FORI	5.00 m

Time profile



Velocity profile

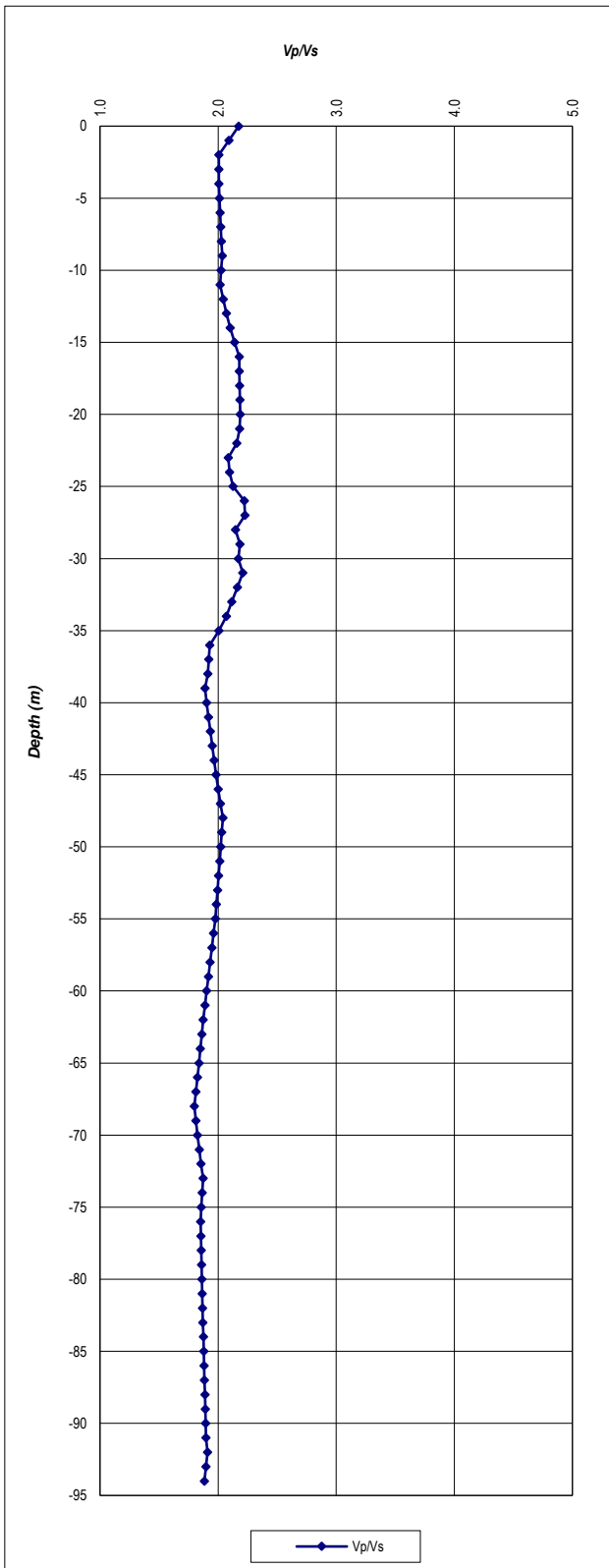


CROSS-HOLE Vp/Vs

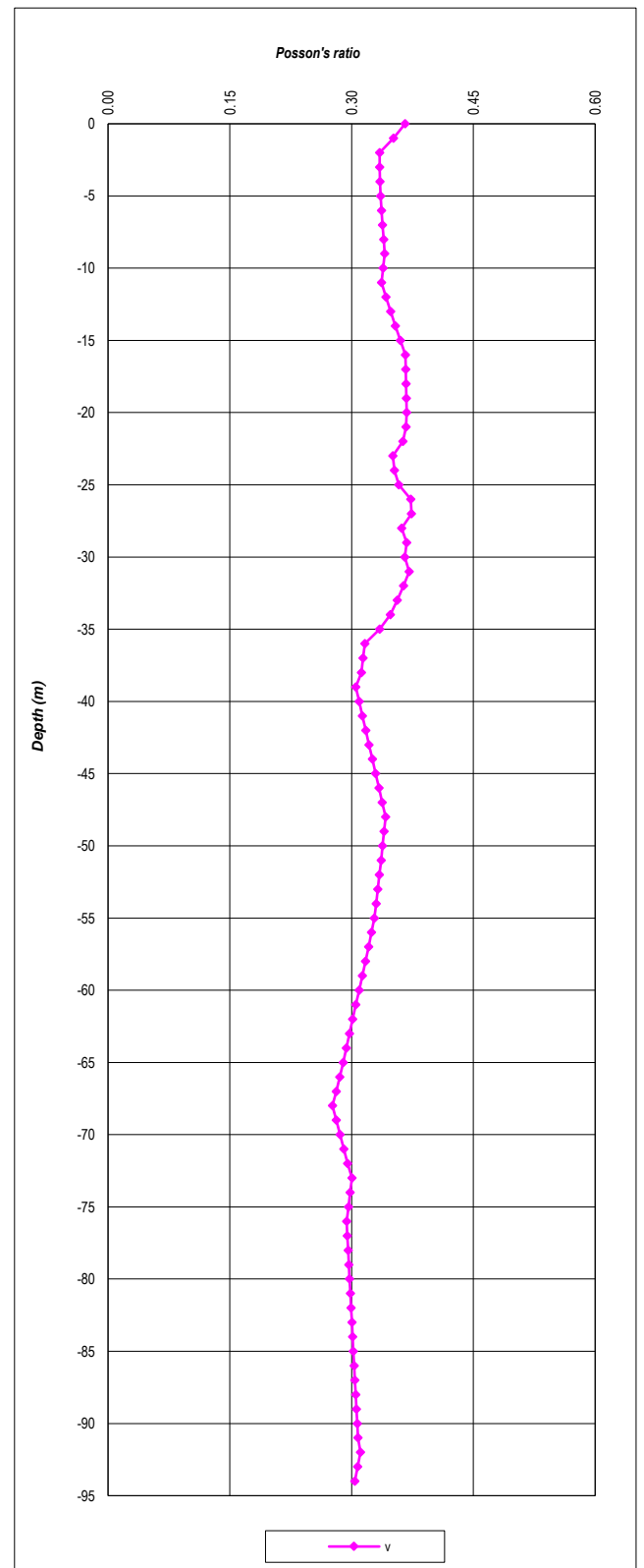
COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Hirpinia AV
DATA	11/02/20

PROVA	SN ME05
SORGENTE	
RICEVITORE	
DISTANZA FORI	5.00 m

Vp/Vs ratio



Poisson's ratio

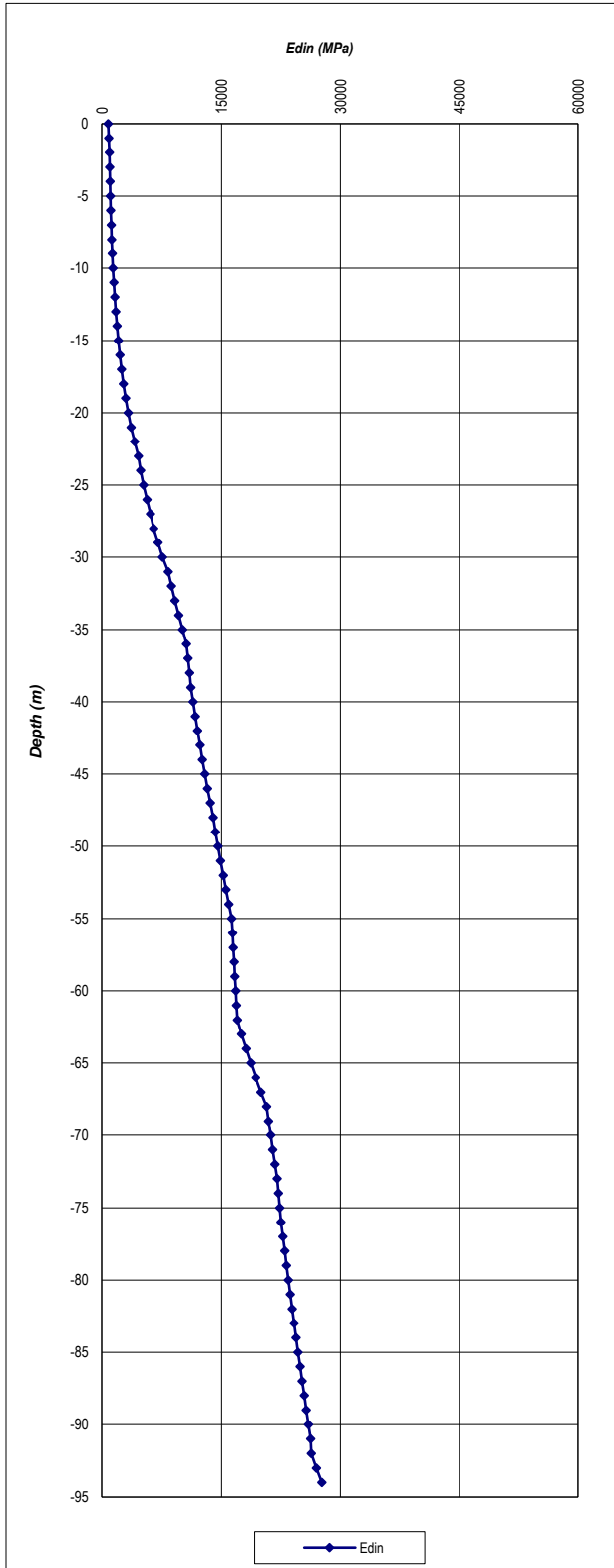


CROSS-HOLE Vp/Vs

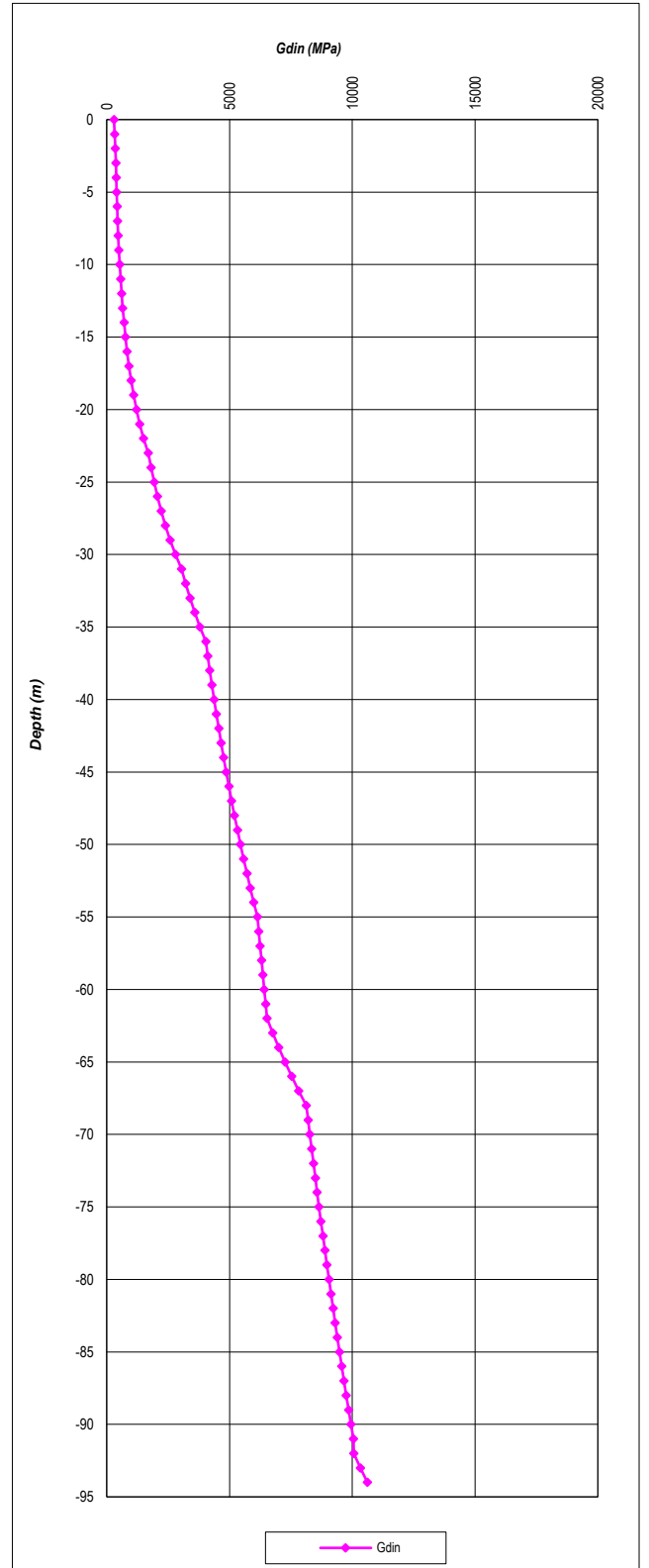
COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Hirpinia AV
DATA	11/02/20

PROVA	SN ME05
SORGENTE	
RICEVITORE	
DISTANZA FORI	5.80 m

Dynamic elastic modulus



Dynamic shear modulus



CROSS-HOLE Vp/Vs

COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Apice Hirpinia
DATA	11/02/20

PROVA	SN ME08
SORGENTE	SN ME08bis
RICEVITORE	SN ME08
DISTANZA FORI	3.00 m

Depth	Tp	Ts	Vp	Vs	Vp/Vs	γ	v	Edin	Gdin
0.0	0.0029	0.0075	1034	400	2.59	18.0	0.41	829	294
-1.0	0.0029	0.0072	1040	415	2.51	18.0	0.41	887	316
-2.0	0.0029	0.0072	1045	415	2.52	18.0	0.41	888	316
-3.0	0.0027	0.0071	1097	421	2.61	18.0	0.41	917	324
-4.0	0.0026	0.0069	1154	434	2.66	18.0	0.42	978	345
-5.0	0.0026	0.0065	1176	462	2.55	18.0	0.41	1101	391
-6.0	0.0025	0.0064	1200	466	2.57	18.0	0.41	1127	399
-7.0	0.0025	0.0061	1224	492	2.49	18.0	0.40	1246	444
-8.0	0.0024	0.0060	1250	500	2.50	18.0	0.40	1289	459
-9.0	0.0023	0.0059	1304	506	2.58	18.0	0.41	1324	469
-10.0	0.0022	0.0058	1364	514	2.65	18.0	0.42	1374	485
-11.0	0.0022	0.0055	1395	547	2.55	18.0	0.41	1545	548
-12.0	0.0021	0.0052	1429	573	2.49	18.0	0.40	1692	603
-13.0	0.0020	0.0052	1500	579	2.59	18.0	0.41	1735	614
-14.0	0.0019	0.0051	1579	586	2.70	18.0	0.42	1787	629
-15.0	0.0019	0.0050	1622	596	2.72	18.0	0.42	1853	652
-16.0	0.0018	0.0049	1667	608	2.74	18.0	0.42	1933	679
-17.0	0.0018	0.0048	1667	619	2.69	18.0	0.42	1994	702
-18.0	0.0018	0.0048	1667	629	2.65	18.0	0.42	2058	726
-19.0	0.0019	0.0047	1622	640	2.53	18.0	0.41	2117	752
-20.0	0.0019	0.0046	1579	651	2.42	18.0	0.40	2176	779
-21.0	0.0019	0.0045	1579	663	2.38	18.0	0.39	2248	807
-22.0	0.0019	0.0045	1579	669	2.36	18.0	0.39	2286	822
-23.0	0.0019	0.0044	1579	676	2.34	18.0	0.39	2325	838
-24.0	0.0019	0.0044	1579	682	2.31	18.0	0.39	2365	854
-25.0	0.0019	0.0044	1579	689	2.29	18.0	0.38	2406	870
-26.0	0.0019	0.0043	1579	695	2.27	18.0	0.38	2448	887
-27.0	0.0019	0.0043	1622	702	2.31	18.0	0.38	2504	904
-28.0	0.0018	0.0042	1667	709	2.35	18.0	0.39	2563	922
-29.0	0.0018	0.0041	1667	726	2.30	18.0	0.38	2674	967
-30.0	0.0018	0.0040	1667	744	2.24	18.0	0.38	2791	1014
-31.0	0.0018	0.0039	1714	762	2.25	18.0	0.38	2935	1066
-32.0	0.0017	0.0038	1765	782	2.26	18.0	0.38	3090	1121
-33.0	0.0017	0.0037	1818	802	2.27	18.0	0.38	3257	1181
-34.0	0.0016	0.0036	1843	824	2.24	18.0	0.38	3426	1246
-35.0	0.0016	0.0035	1869	847	2.21	18.0	0.37	3608	1316
-36.0	0.0016	0.0036	1895	829	2.29	18.0	0.38	3482	1260
-37.0	0.0016	0.0037	1922	811	2.37	18.0	0.39	3360	1207
-38.0	0.0015	0.0038	1949	794	2.45	18.0	0.40	3243	1158
-39.0	0.0015	0.0039	1978	778	2.54	18.0	0.41	3131	1112
-40.0	0.0015	0.0039	2007	763	2.63	18.0	0.42	3023	1068
-41.0	0.0015	0.0039	2038	768	2.65	18.0	0.42	3066	1082
-42.0	0.0015	0.0039	2069	773	2.68	18.0	0.42	3110	1096
-43.0	0.0014	0.0039	2101	778	2.70	18.0	0.42	3154	1110
-44.0	0.0014	0.0038	2134	783	2.73	18.0	0.42	3200	1125
-45.0	0.0014	0.0037	2169	818	2.65	18.0	0.42	3482	1229
-46.0	0.0014	0.0035	2204	857	2.57	18.0	0.41	3802	1347
-47.0	0.0013	0.0033	2241	899	2.49	18.0	0.40	4167	1484

CROSS-HOLE Vp/Vs

COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Apice Hirpinia
DATA	11/02/20

PROVA	SN ME08
SORGENTE	SN ME08bis
RICEVITORE	SN ME08
DISTANZA FORI	3.00 m

Depth	Tp	Ts	Vp	Vs	Vp/Vs	γ	v	Edin	Gdin
-48.0	0.0013	0.0032	2278	946	2.41	18.0	0.40	4585	1642
-49.0	0.0013	0.0030	2318	998	2.32	18.0	0.39	5067	1828
-50.0	0.0013	0.0028	2358	1056	2.23	18.0	0.37	5626	2047
-51.0	0.0013	0.0027	2400	1121	2.14	18.0	0.36	6277	2307
-52.0	0.0012	0.0025	2500	1195	2.09	18.0	0.35	7086	2621
-53.0	0.0012	0.0023	2608	1279	2.04	18.0	0.34	8057	3003
-54.0	0.0011	0.0023	2725	1290	2.11	18.0	0.36	8281	3055
-55.0	0.0011	0.0023	2721	1301	2.09	18.0	0.35	8402	3108
-56.0	0.0011	0.0023	2717	1313	2.07	18.0	0.35	8525	3163
-57.0	0.0011	0.0023	2722	1324	2.06	18.0	0.34	8658	3219
-58.0	0.0011	0.0022	2727	1336	2.04	18.0	0.34	8794	3277
-59.0	0.0011	0.0022	2726	1350	2.02	18.0	0.34	8944	3344
-60.0	0.0011	0.0022	2725	1364	2.00	18.0	0.33	9097	3413
-61.0	0.0011	0.0022	2710	1378	1.97	18.0	0.33	9236	3484
-62.0	0.0011	0.0022	2695	1392	1.94	18.0	0.32	9377	3557
-63.0	0.0011	0.0021	2681	1407	1.90	18.0	0.31	9517	3633
-64.0	0.0011	0.0021	2666	1413	1.89	18.0	0.30	9562	3665
-65.0	0.0011	0.0021	2652	1419	1.87	18.0	0.30	9606	3697
-66.0	0.0011	0.0021	2638	1426	1.85	18.0	0.29	9649	3729
-67.0	0.0011	0.0021	2624	1432	1.83	18.0	0.29	9691	3762
-68.0	0.0011	0.0021	2610	1438	1.81	18.0	0.28	9732	3796
-69.0	0.0012	0.0021	2596	1445	1.80	18.0	0.28	9771	3830
-70.0	0.0012	0.0021	2583	1451	1.78	18.0	0.27	9809	3864
-71.0	0.0012	0.0021	2569	1458	1.76	18.0	0.26	9846	3899
-72.0	0.0012	0.0020	2556	1464	1.75	18.0	0.26	9881	3934
-73.0	0.0012	0.0020	2543	1471	1.73	18.0	0.25	9913	3970
-74.0	0.0012	0.0020	2530	1478	1.71	18.0	0.24	9944	4006
-75.0	0.0012	0.0020	2517	1484	1.70	18.0	0.23	9973	4043
-76.0	0.0012	0.0020	2504	1491	1.68	18.0	0.23	9999	4080
-77.0	0.0012	0.0020	2492	1498	1.66	18.0	0.22	10022	4118
-78.0	0.0012	0.0020	2479	1505	1.65	18.0	0.21	10043	4156
-79.0	0.0012	0.0020	2500	1512	1.65	18.0	0.21	10165	4195
-80.0	0.0012	0.0020	2521	1519	1.66	18.0	0.21	10289	4234
-81.0	0.0012	0.0020	2532	1526	1.66	18.0	0.21	10382	4274
-82.0	0.0012	0.0020	2542	1533	1.66	18.0	0.21	10476	4314
-83.0	0.0012	0.0019	2521	1541	1.64	18.0	0.20	10470	4355
-84.0	0.0012	0.0019	2500	1548	1.61	18.0	0.19	10457	4397
-85.0	0.0012	0.0019	2510	1555	1.61	18.0	0.19	10552	4439
-86.0	0.0012	0.0019	2521	1563	1.61	18.0	0.19	10648	4482
-87.0	0.0012	0.0019	2500	1571	1.59	18.0	0.17	10627	4526
-88.0	0.0012	0.0019	2479	1578	1.57	18.0	0.16	10597	4570
-89.0	0.0012	0.0019	2477	1586	1.56	18.0	0.15	10640	4615
-90.0	0.0012	0.0019	2475	1594	1.55	18.0	0.15	10681	4660
-91.0	0.0012	0.0019	2507	1602	1.57	18.0	0.16	10875	4706
-92.0	0.0012	0.0019	2540	1609	1.58	18.0	0.16	11071	4753
-93.0	0.0012	0.0019	2525	1622	1.56	18.0	0.15	11089	4825
-94.0	0.0012	0.0018	2510	1657	1.51	18.0	0.11	11227	5041

CROSS-HOLE Vp/Vs

COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Apice Hirpinia
DATA	11/02/20

PROVA	SN ME08
SORGENTE	SN ME08bis
RICEVITORE	SN ME08
DISTANZA FORI	3.00 m

Depth	Tp	Ts	Vp	Vs	Vp/Vs	γ	ν	Edin	Gdin
<i>maximum</i>	0.0029	0.0075	2727	1512	2.74		0.42	10165	4195
<i>minimum</i>	0.0011	0.0020	1034	400	1.65		0.21	829	294
<i>average</i>	0.0016	0.0038	2014	939	2.26		0.36	4939	1868
<i>st. deviation</i>	0.0005	0.0016	538	372	0.33		0.06	3421	1368

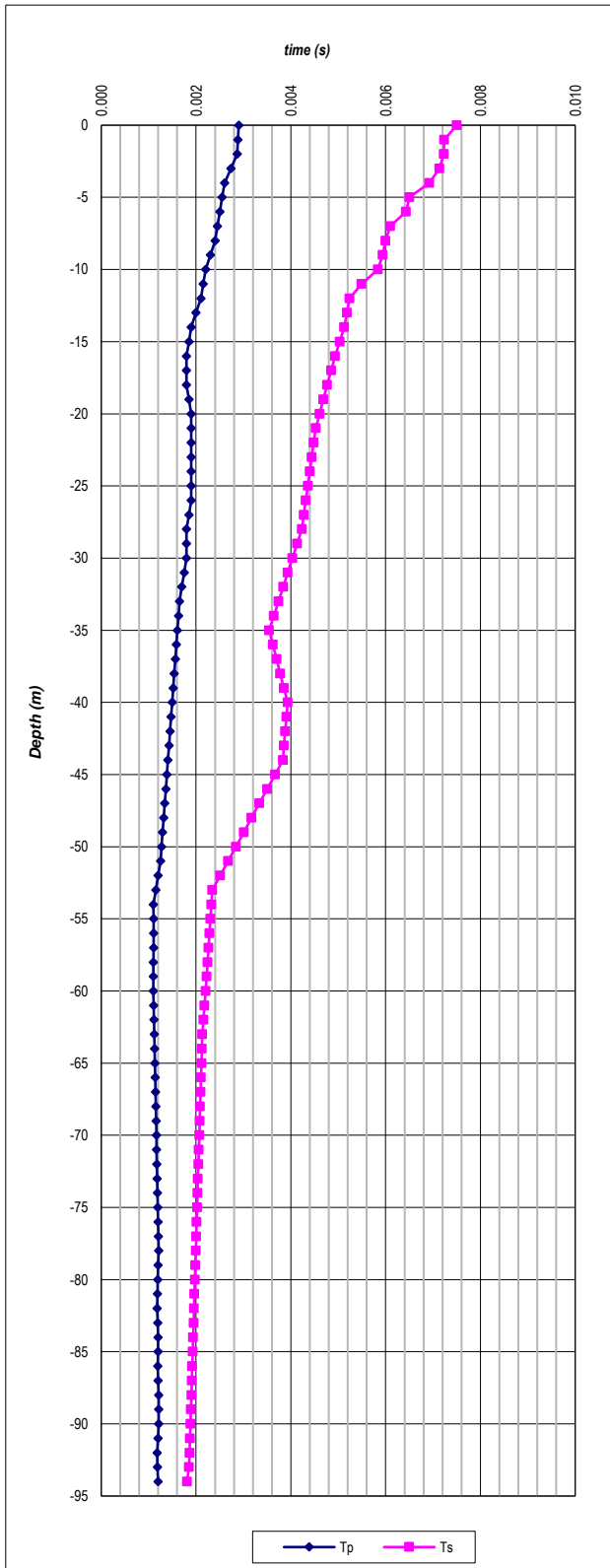
PARAMETER	DEFINITION	UNIT OF MEASUREMENT
Depth	depth from land surface	m
D	distance between source and receiver	m
Tp	P waves arrival time	s
Ts	S waves arrival time	s
Vp	P waves interval velocity	m/s
Vs	S waves interval velocity	m/s
Vp/Vs	P velocity and S velocity ratio	
γ	density	kN/m ³
ν	Poisson's ratio	
Edin	Dynamic elastic modulus	MPa
Gdin	Dynamic shear modulus	MPa

CROSS-HOLE Vp/Vs

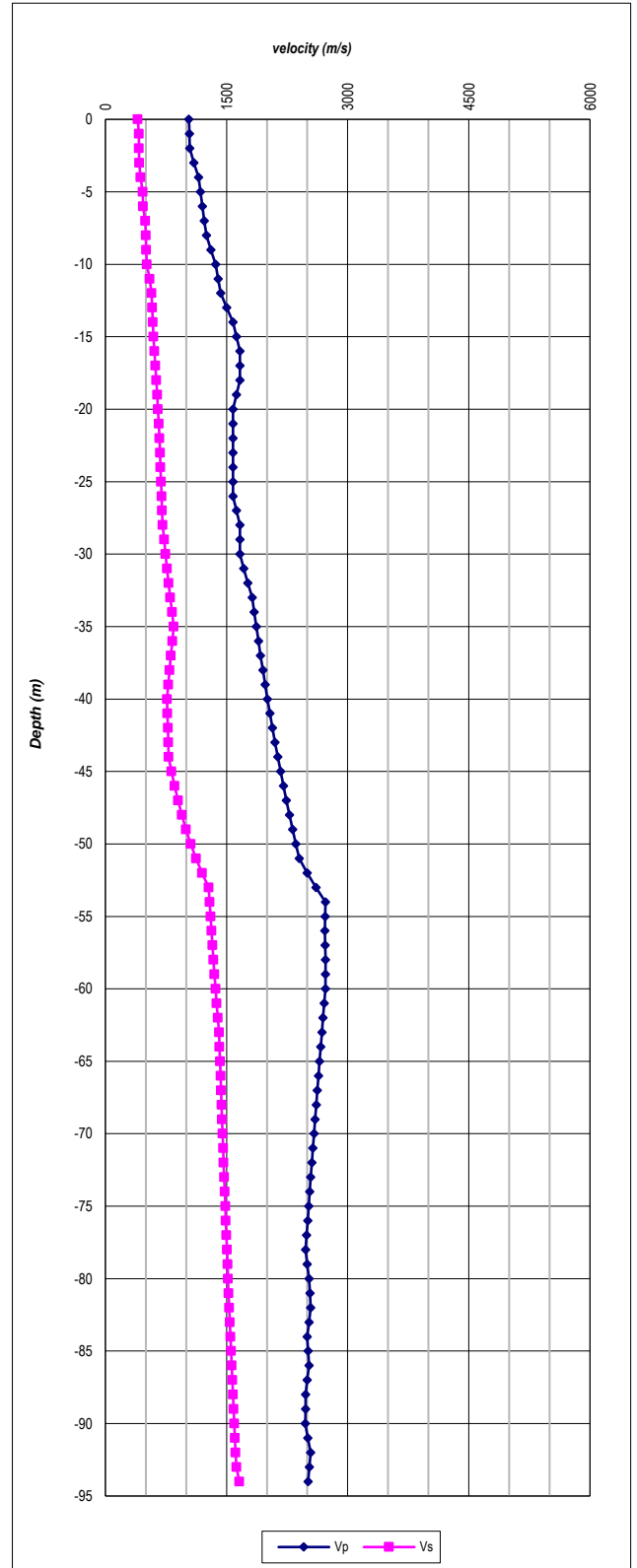
COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Hirpinia AV
DATA	11/02/20

PROVA	SN ME08
SORGENTE	SN ME08bis
RICEVITORE	SN ME08
DISTANZA FORI	3.00 m

Time profile



Velocity profile

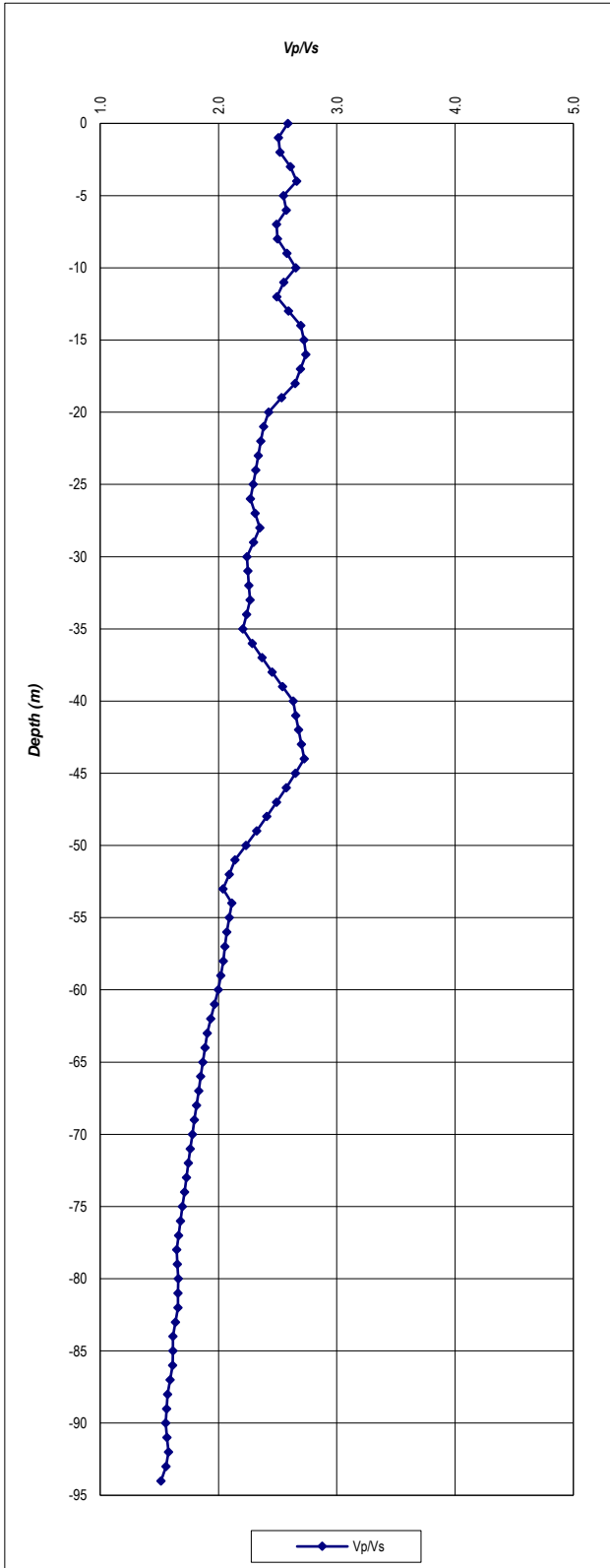


CROSS-HOLE Vp/Vs

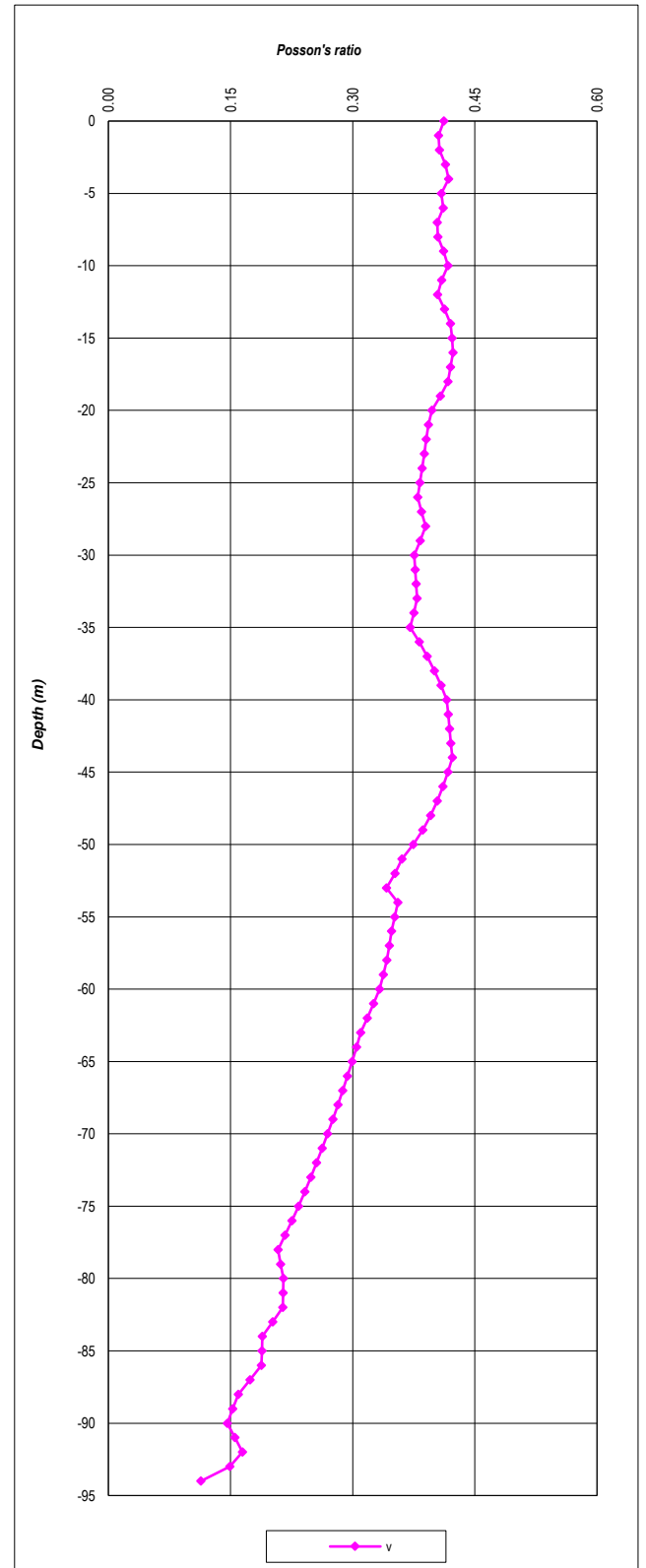
COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Hirpinia AV
DATA	11/02/20

PROVA	SN ME08
SORGENTE	SN ME08bis
RICEVITORE	SN ME08
DISTANZA FORI	3.00 m

Vp/Vs ratio



Poisson's ratio

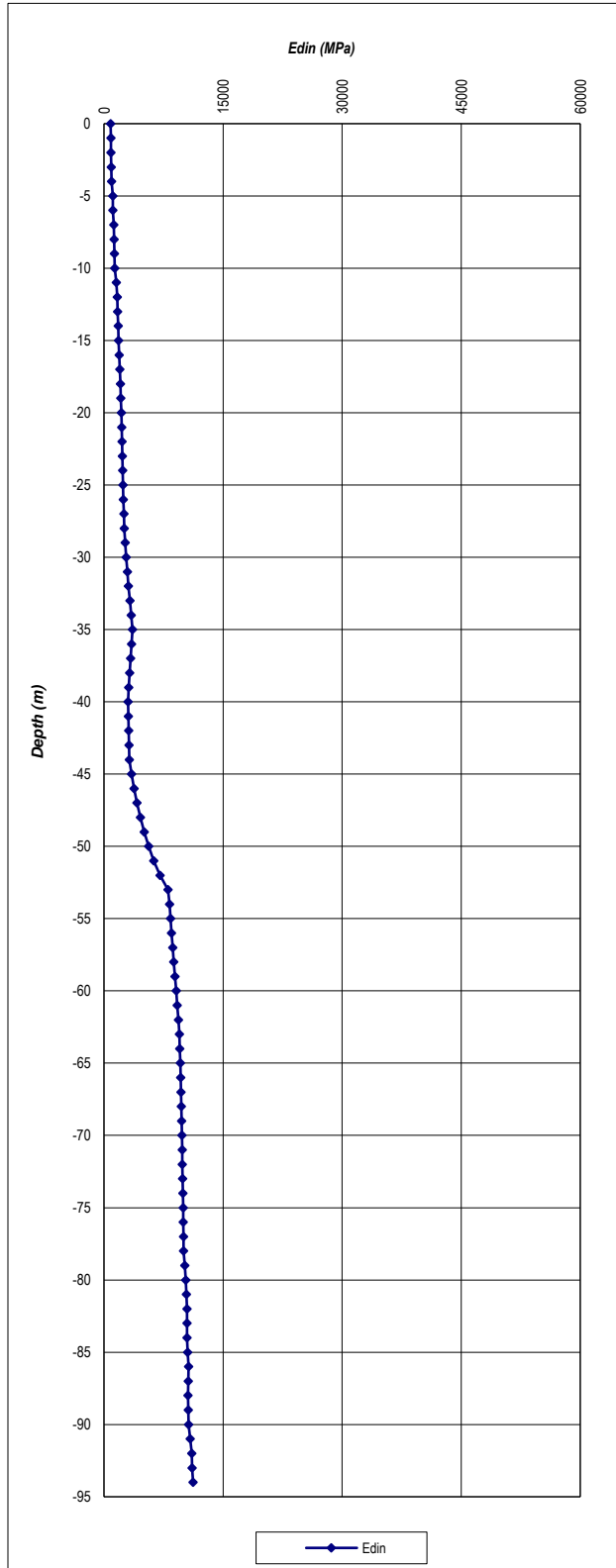


CROSS-HOLE Vp/Vs

COMMESSA	19087
AREA	Grottaminarda
CLIENTE	Hirpinia AV
DATA	11/02/20

PROVA	SN ME08
SORGENTE	SN ME08bis
RICEVITORE	SN ME08
DISTANZA FORI	3.00 m

Dynamic elastic modulus



Dynamic shear modulus

