



GEOCOOP RIMINI Società Cooperativa
Società di geologia tecnica ed ambientale

Via Repubblica, 75 – 47843 Misano Adriatico (RN)

Tel/Fax. 0541/610614

e mail: geocooprimini@libero.it

COMUNE DI VERUCCHIO
Provincia di Rimini

PIANO STRUTTURALE COMUNALE
2006

**RELAZIONE RELATIVA ALLA MICROZONAZIONE
SISMICA PER AMBITI DI NUOVI INSEDIAMENTI
E DI RIQUALIFICAZIONE**

I PROFESSIONISTI:

OTTOBRE 2008

AGGIORNAMENTO NUOVE AREE

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|-----------------------------|
| ALLEGATO FUORI TESTO |
|-----------------------------|

TAV. 11/B – Carta della microzonazione sismica per ambiti di nuovi insediamenti ed ambiti di riqualificazione (Scala 1:5.000)

1 PREMESSA

Su incarico dell'Amministrazione Comunale di Verucchio si è eseguito lo studio di MICROZONAZIONE SISMICA nell'ambito del PSC comunale.

Lo studio viene svolto in ottemperanza alla “*Deliberazione dell'Assemblea Legislativa della Regione Emilia-Romagna del 2 maggio 2007, n° 112*”.

Come concordato con l'Amministrazione Provinciale di Rimini – Servizio Pianificazione Territoriale e Urbanistica – Ufficio Difesa del Suolo, lo studio viene riferito ai soli ambiti di nuovi insediamenti e agli ambiti di riqualificazione.

La presente relazione integra quella presenta nell'Agosto 2008, con ulteriori n° 3 aree:

- Ponte Verucchio;
- Pieve Corena;
- Ristorante “La Tramontana”.

Si rimanda dunque alla descrizione della strumentazione impiegata e della procedura per l'analisi dei dati per stazioni singole H/V, presentata nei relativi capitoli della suddetta relazione di Agosto 2008.

2 UBICAZIONE DEGLI STAZIONAMENTI

Gli ambiti di nuovi insediamenti e agli ambiti di riqualificazione su cui sono state effettuate la misure sono così specificati:

1. Ponte Verucchio: misura TR1 – Via Cava; misura TR2 – Via Ponte; misura Tr 3 – Via Budrio.
2. Pieve Corena: misura Tr 4.
3. Ristorante “La Tramontana”: misura Tr 5.

Tutti gli stazionamenti effettuati sono ubicati in **TAV. 11/B**.

Per tutte e cinque le misure, sono state applicate le tabelle dell'art. A2.1.1 – Appennino e Margine Appenninico Padano – dell'Atto d'Indirizzo n° 112 riferite a “*substrato marino caratterizzato da Vs inferiore a 800 m/s*”..

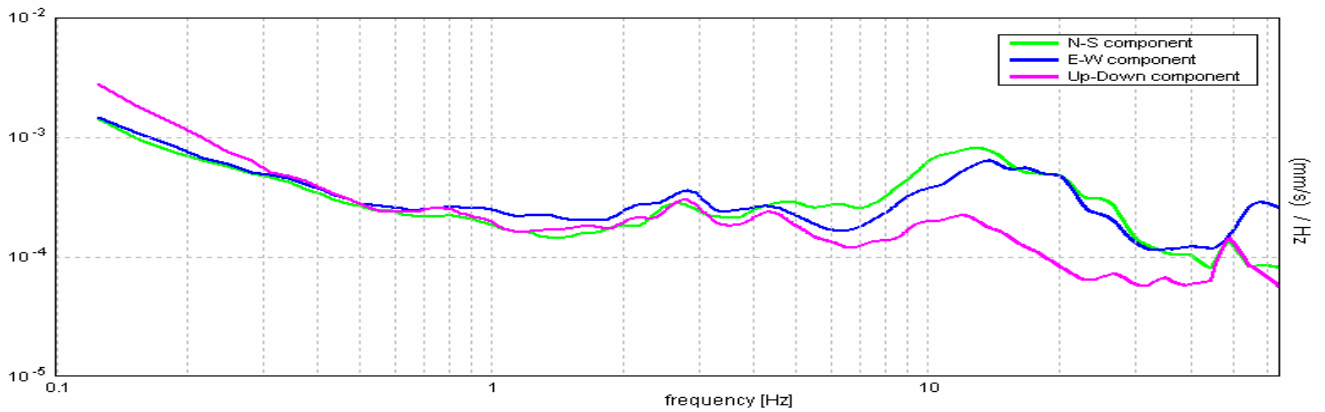
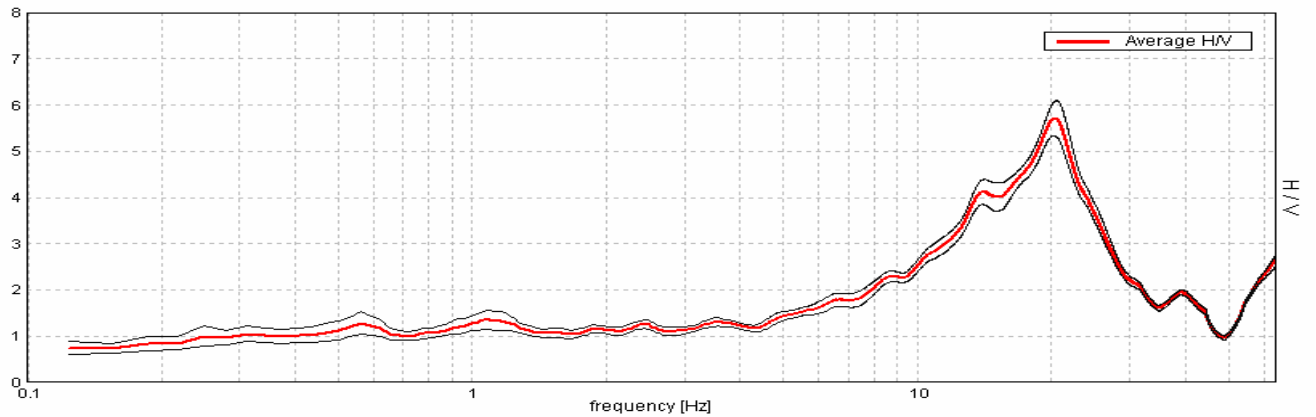
3 ANALISI DEI DATI DELLE SINGOLE STAZIONI

Di seguito, per ogni misura effettuata, si riportano i diagrammi specifici descritti nella metodologia ed il relativo valore del fattore di amplificazione ottenuto sull'applicazione delle tabelle dell'allegato A2.

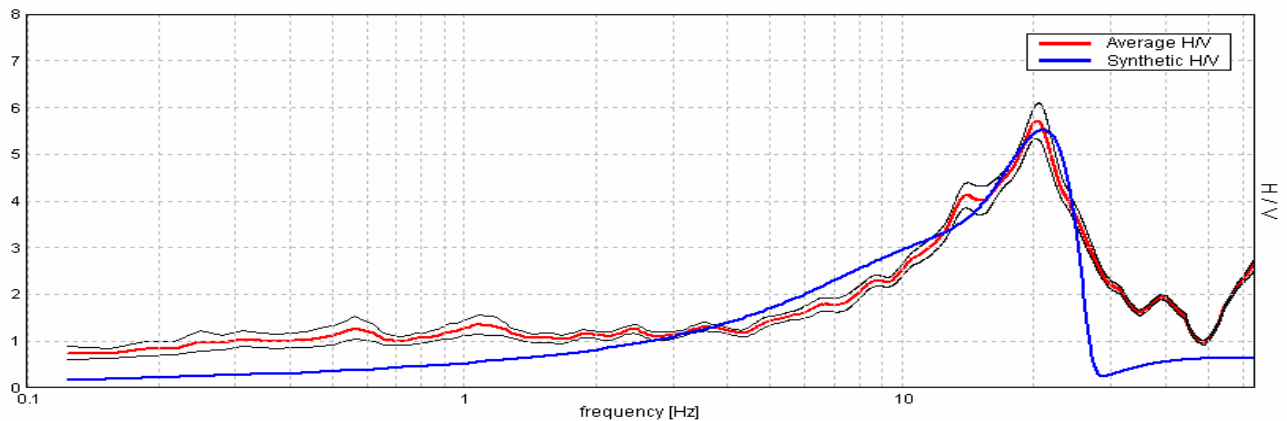
PONTE VERUCCHIO – MISURA TR 1 – Via Cava

Start recording: 10/09/08 09:13:21 End recording: 10/09/08 09:33:22
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
GPS location: 012°24.4794 E, 43°58.9798 N (133.6 m)
UTC time (synchronized to the first recording sample): not available in this acquisition mode + 0 samples
Satellite no.: 04
Trace length: 0h20'00". Analysis performed on the entire trace.
Sampling frequency: 128 Hz
Window size: 20 s
Smoothing window: Triangular window
Smoothing: 10%

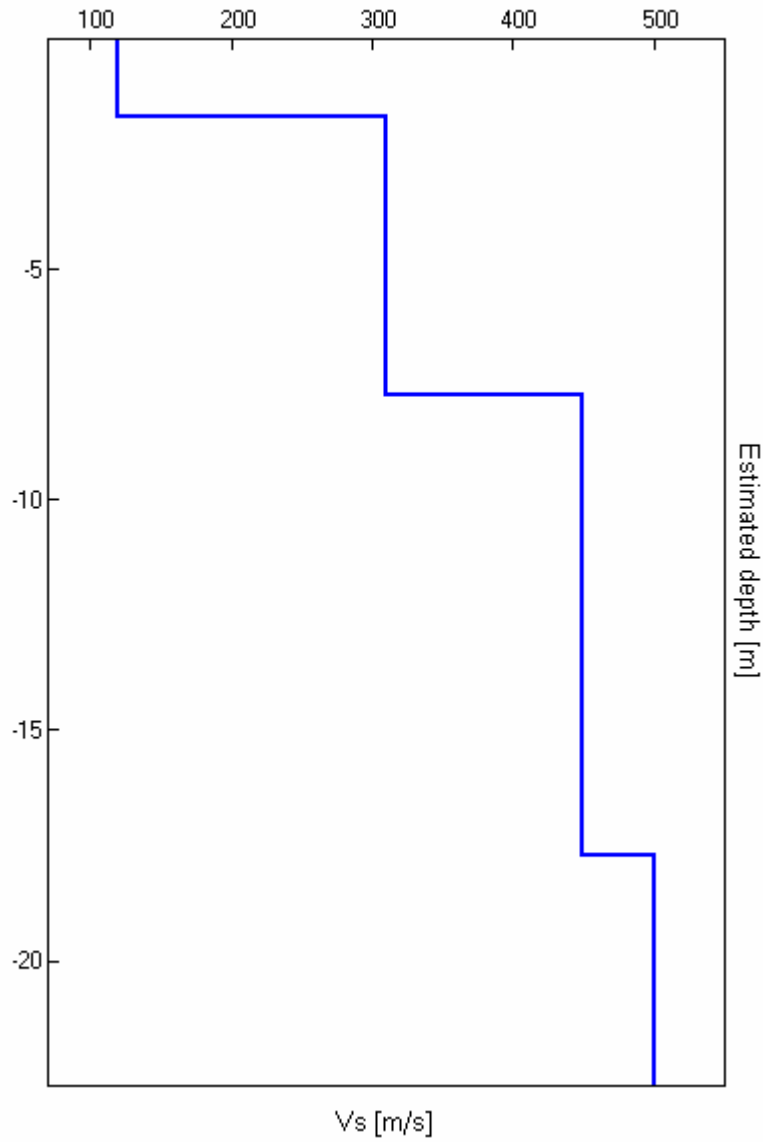
Max. HVSR at 20.31 ± 0.3 Hz. (in the range 0.0 - 64.0 Hz).



Max. HVSR at 20.31 ± 0.3 Hz. (in the range 0.0 - 64.0 Hz).



| Depth at the bottom of the layer [m] | Thickness [m] | Vs [m/s] |
|---|---------------|----------|
| 1.70 | 1.70 | 120 |
| 7.70 | 6.00 | 310 |
| 17.70 | 10.00 | 450 |
| inf. | inf. | 500 |

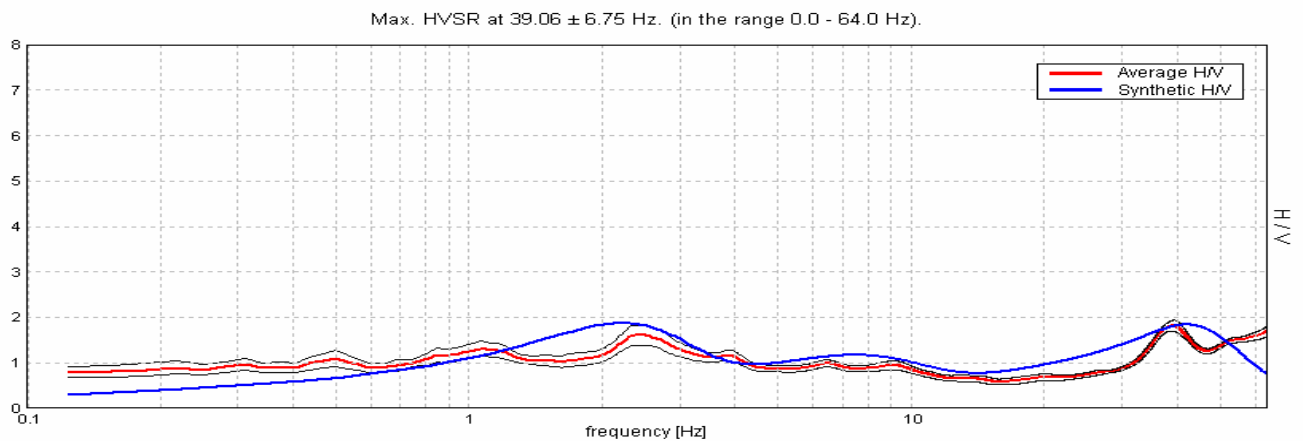
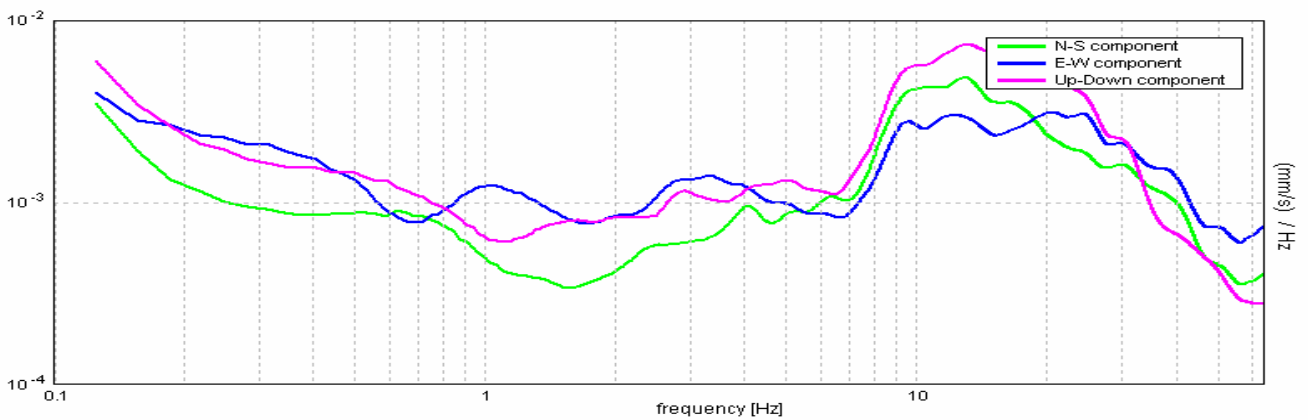
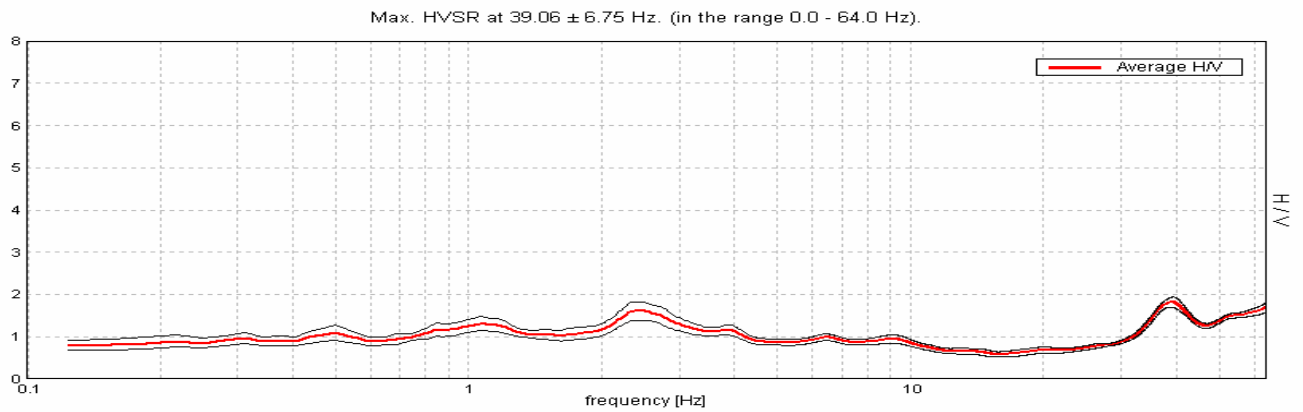


$V_{s30} = 373 \text{ m/s}$

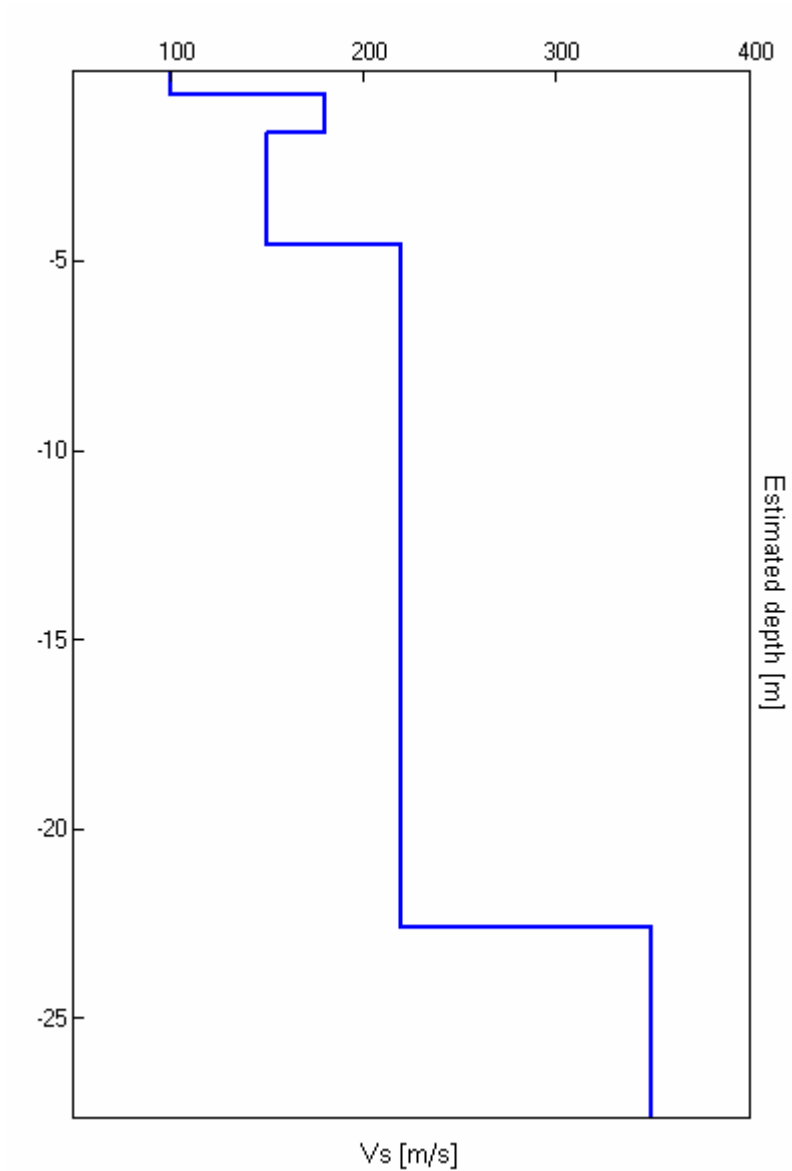
F.A. PGA = 1.5

PONTE VERUCCHIO – MISURA TR 2 – Via Ponte

Start recording: 10/09/08 10:33:33 End recording: 10/09/08 10:53:34
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
GPS location: 012°24.5054 E, 43°58.8098 N (166.4 m)
UTC time (synchronized to the first recording sample): not available in this acquisition mode + 0 samples
Satellite no.: 04
Trace length: 0h20'00". Analysis performed on the entire trace.
Sampling frequency: 128 Hz
Window size: 20 s
Smoothing window: Triangular window
Smoothing: 10%



| Depth at the bottom of the layer [m] | Thickness [m] | Vs [m/s] |
|---|---------------|----------|
| 0.60 | 0.60 | 100 |
| 1.60 | 1.00 | 180 |
| 4.60 | 3.00 | 150 |
| 22.60 | 18.00 | 220 |
| inf. | inf. | 350 |

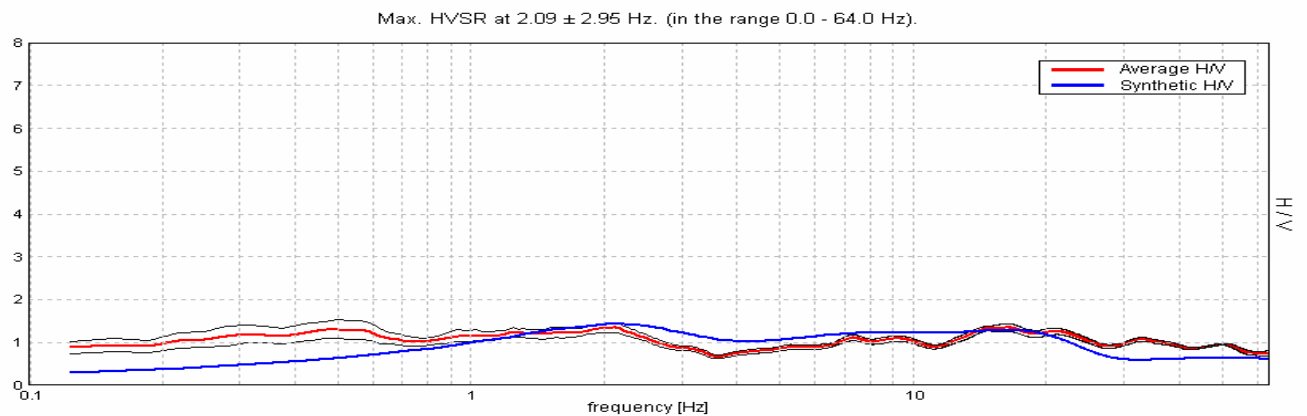
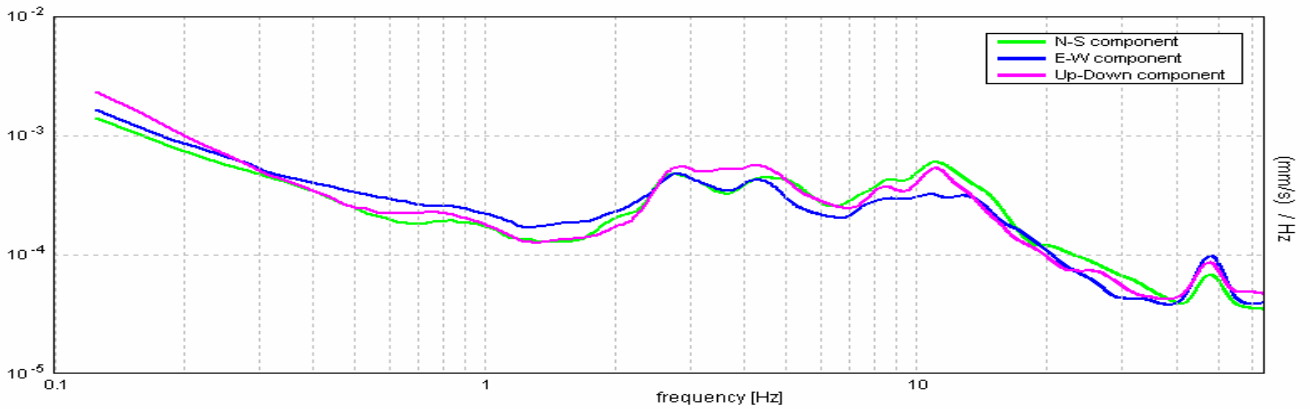
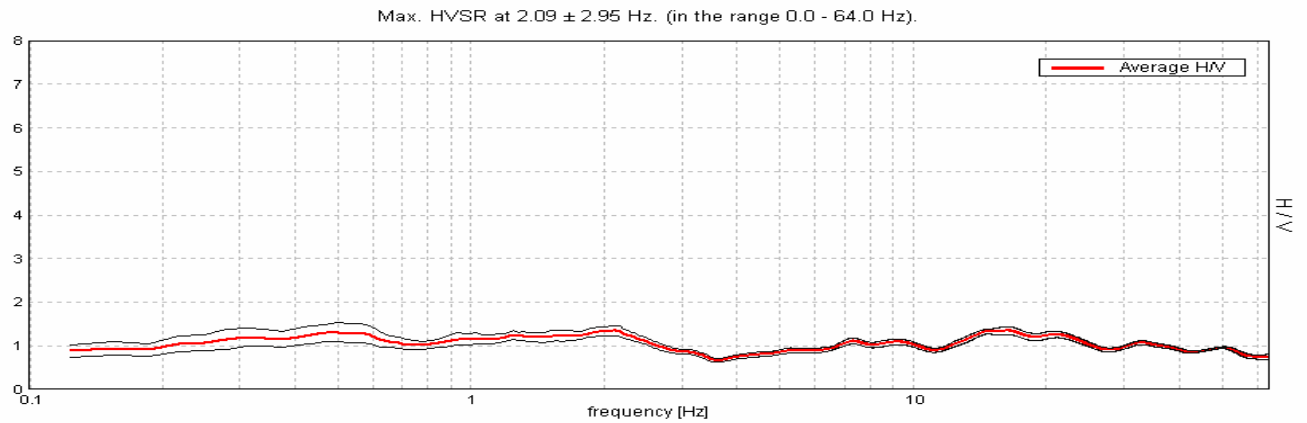


$V_{s30} = 223 \text{ m/s}$

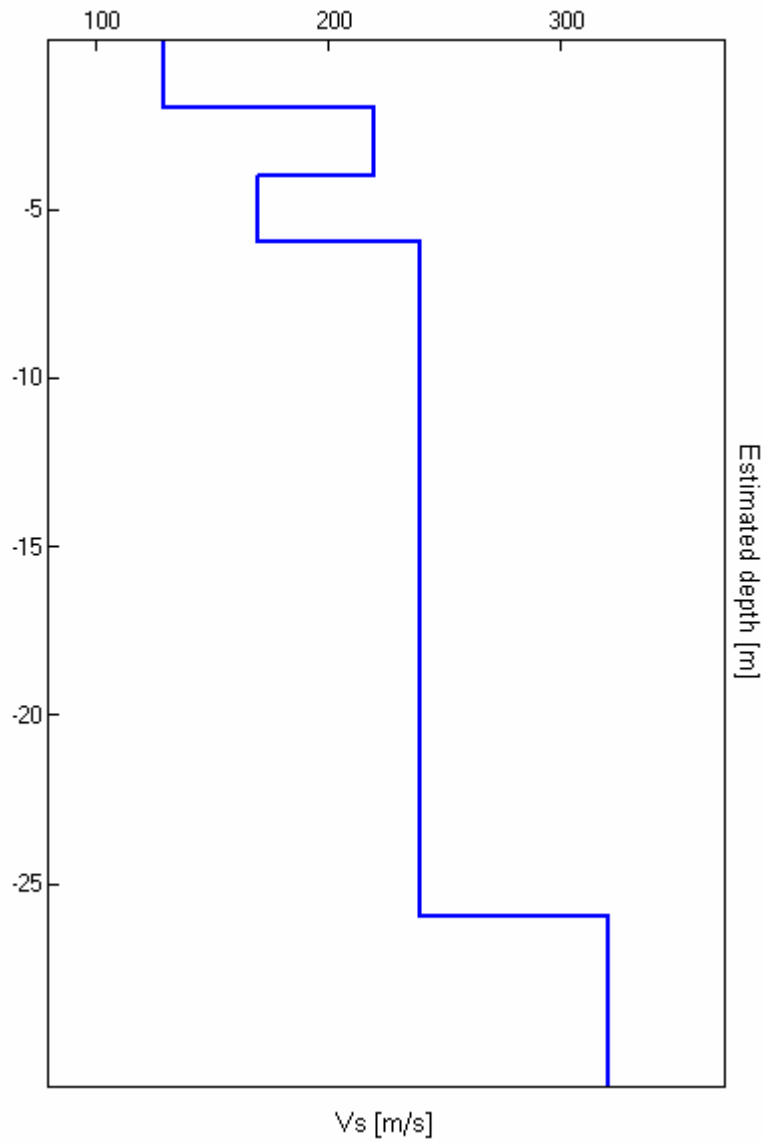
F.A. PGA = 2.0

PONTE VERUCCHIO – MISURA TR 3 – Via Budrio

Start recording: 10/09/08 09:54:26 End recording: 10/09/08 10:14:27
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
GPS location: 012°24.5545 E, 43°58.8585 N (175.9 m)
UTC time (synchronized to the first recording sample): not available in this acquisition mode + 0 samples
Satellite no.: 04
Trace length: 0h20'00". Analysis performed on the entire trace.
Sampling frequency: 128 Hz
Window size: 20 s
Smoothing window: Triangular window
Smoothing: 10%



| Depth at the bottom of the layer [m] | Thickness [m] | Vs [m/s] |
|---|---------------|----------|
| 2.00 | 2.00 | 130 |
| 4.00 | 2.00 | 220 |
| 6.00 | 2.00 | 170 |
| 26.00 | 20.00 | 240 |
| inf. | inf. | 320 |



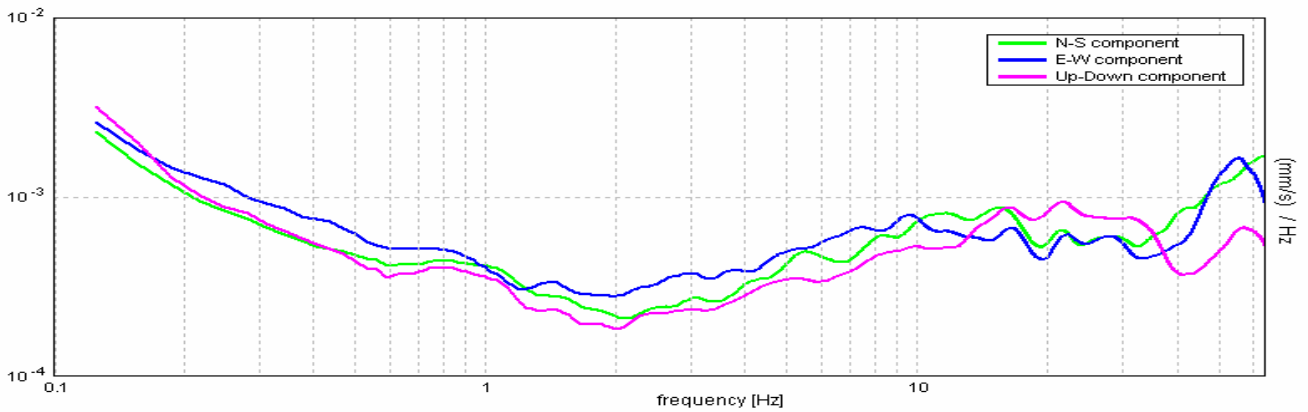
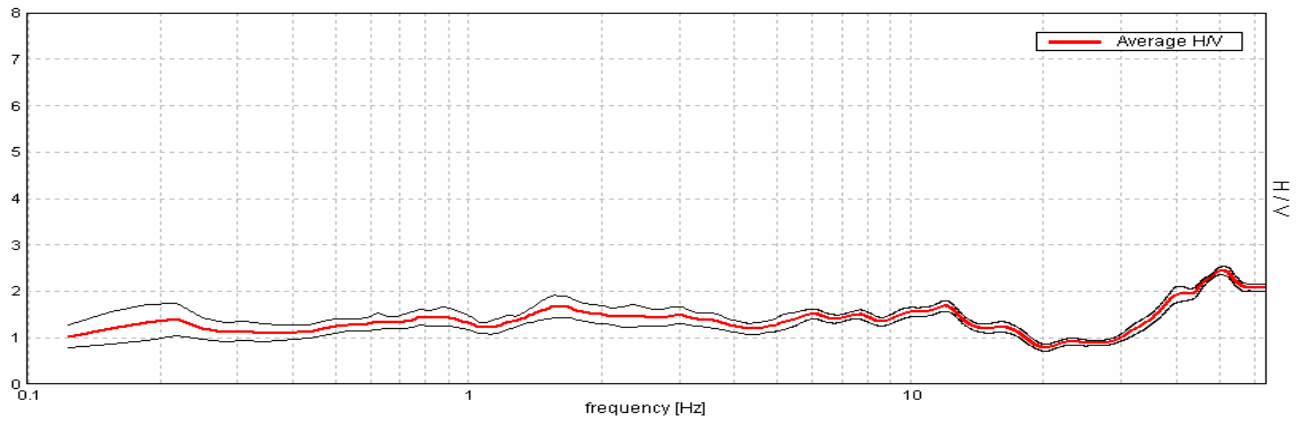
$Vs_{30} = 227 \text{ m/s}$

F.A. PGA = 2.3

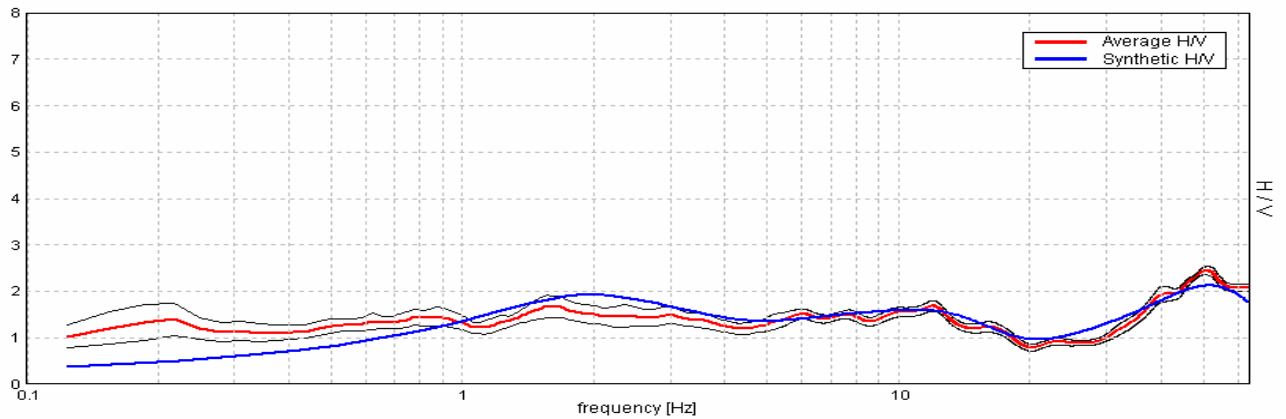
PIEVE CORENA – MISURA TR 4

Start recording: 10/09/08 11:25:56 End recording: 10/09/08 11:45:57
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
GPS location: 012°24.7352 E, 43°54.0225 N (530.9 m)
UTC time (synchronized to the first recording sample): not available in this acquisition mode + 0 samples
Satellite no.: 04
Trace length: 0h20'00". Analysis performed on the entire trace.
Sampling frequency: 128 Hz
Window size: 20 s
Smoothing window: Triangular window
Smoothing: 10%

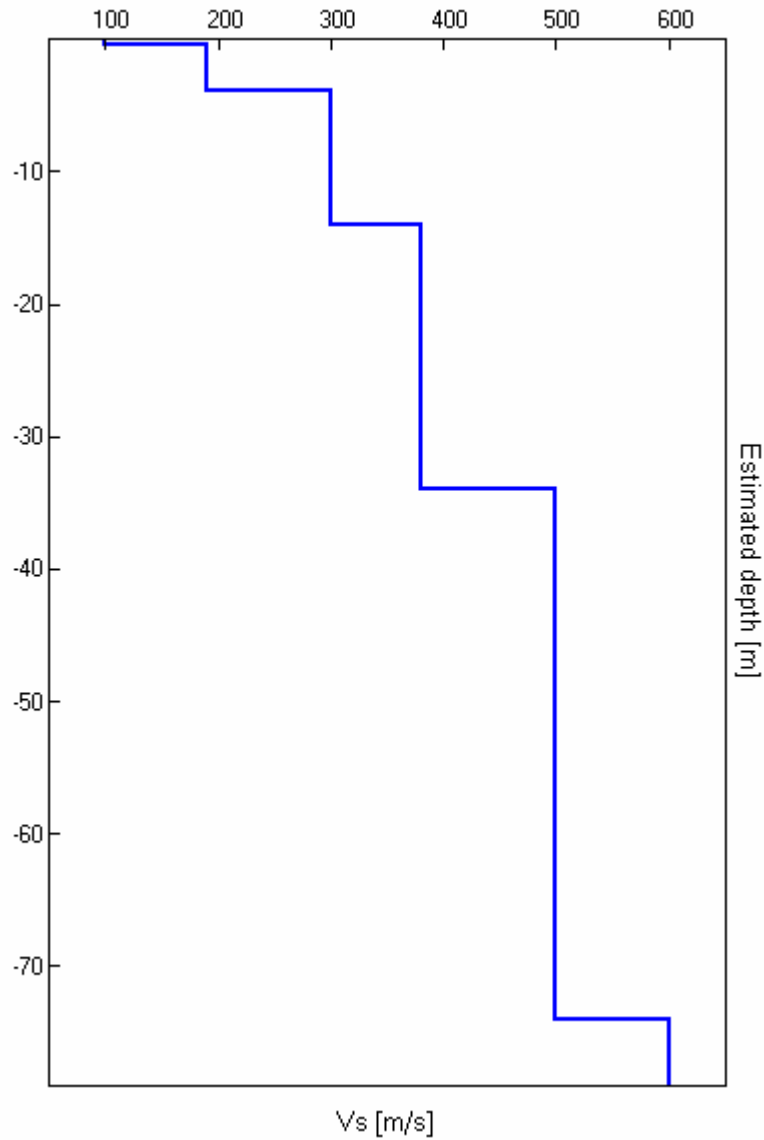
Max. HVSR at 50.94 ± 4.72 Hz. (in the range 0.0 - 64.0 Hz).



Max. HVSR at 50.94 ± 4.72 Hz. (in the range 0.0 - 64.0 Hz).



| Depth at the bottom of the layer [m] | Thickness [m] | Vs [m/s] |
|---|---------------|----------|
| 0.45 | 0.45 | 100 |
| 3.95 | 3.50 | 190 |
| 13.95 | 10.00 | 300 |
| 33.95 | 20.00 | 380 |
| 73.95 | 40.00 | 500 |
| inf. | inf. | 600 |



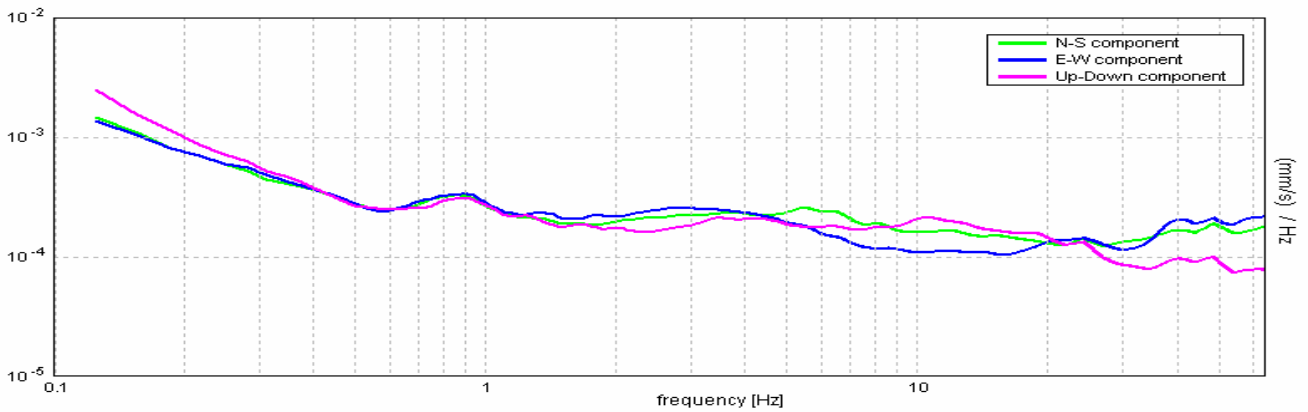
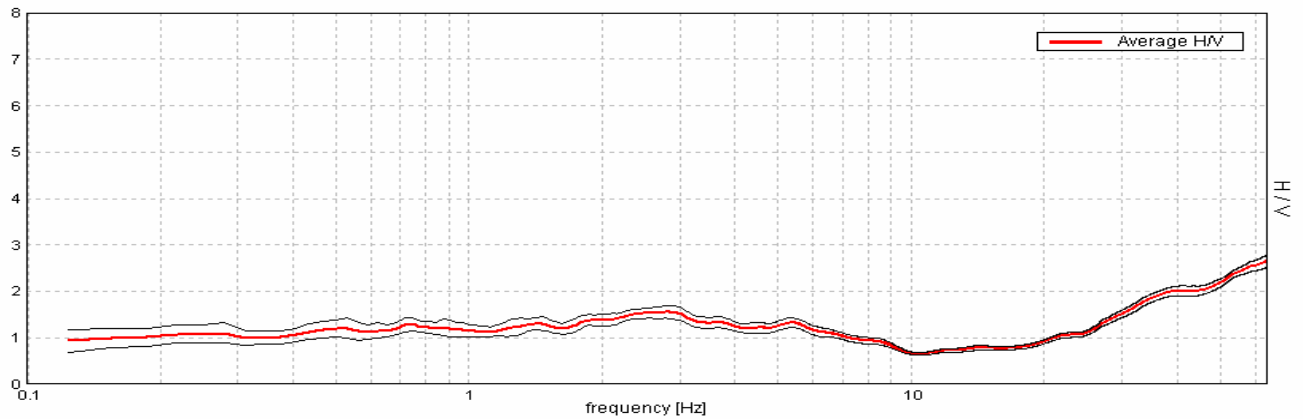
$V_{s30} = 305 \text{ m/s}$

F.A. PGA = 1.5

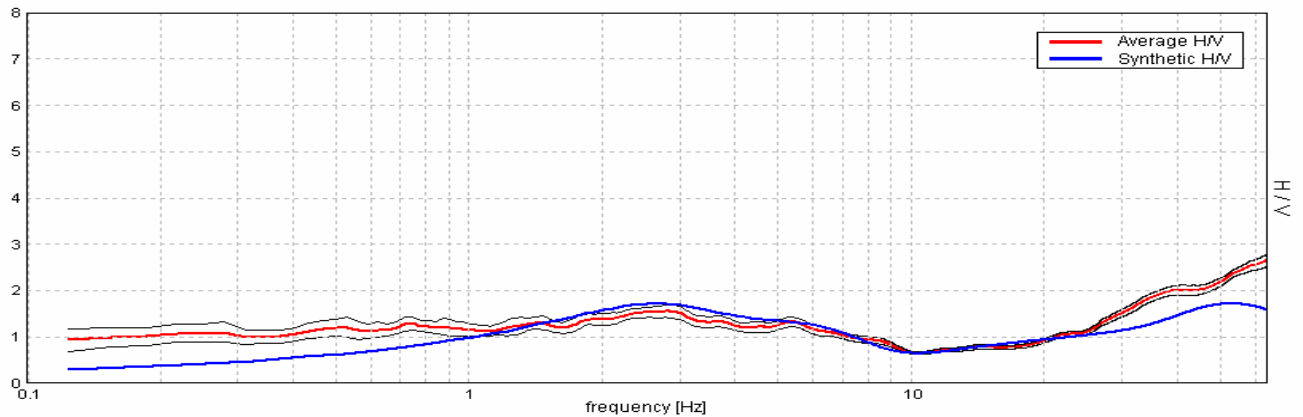
RISTORANTE “LA TRAMONTANA” – MISURA TR 5

Start recording: 10/09/08 12:19:20 End recording: 10/09/08 12:39:21
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN
GPS location: 012°26.6093 E, 43°59.5901 N (222.8 m)
UTC time (synchronized to the first recording sample): not available in this acquisition mode + 0 samples
Satellite no.: 04
Trace length: 0h20'00". Analysis performed on the entire trace.
Sampling frequency: 128 Hz
Window size: 20 s
Smoothing window: Triangular window
Smoothing: 10%

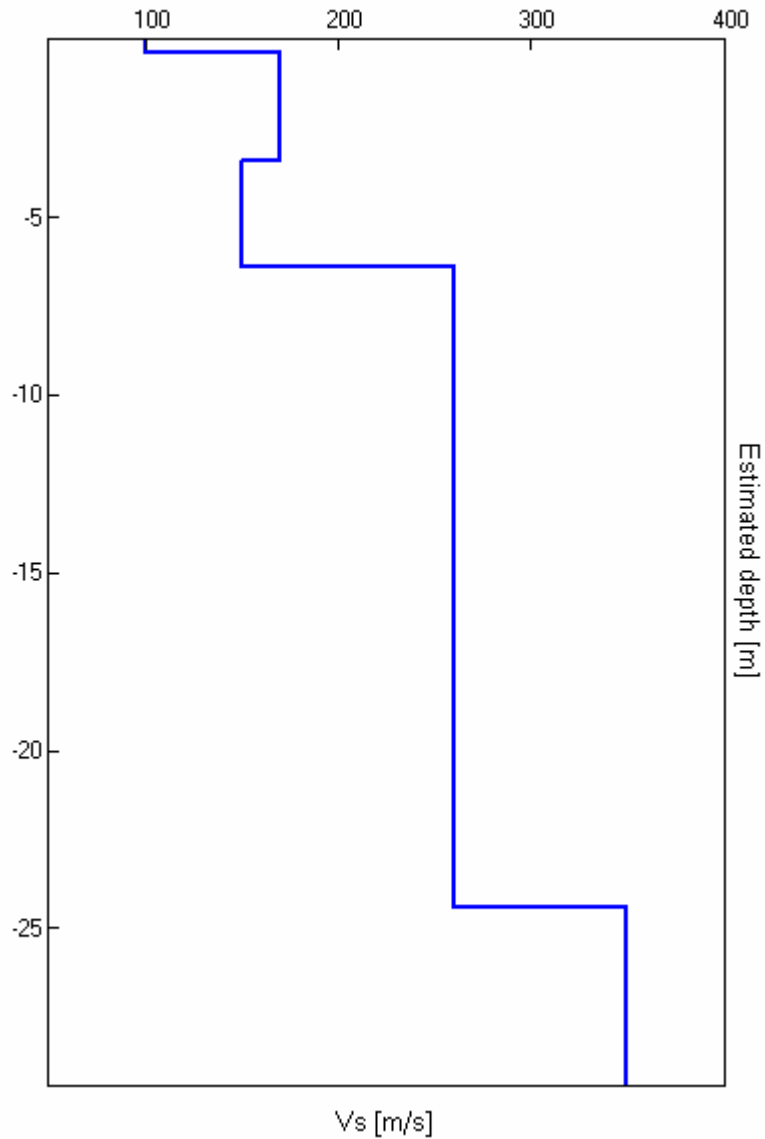
Max. HVSR at 63.97 ± 2.01 Hz. (in the range 0.0 - 64.0 Hz).



Max. HVSR at 63.97 ± 2.01 Hz. (in the range 0.0 - 64.0 Hz).



| Depth at the bottom of the layer [m] | Thickness [m] | Vs [m/s] |
|--------------------------------------|---------------|----------|
| 0.40 | 0.40 | 100 |
| 3.40 | 3.00 | 170 |
| 6.40 | 3.00 | 150 |
| 24.40 | 18.00 | 260 |
| inf. | inf. | 350 |



$V_{s30} = 236 \text{ m/s}$

F.A. PGA = 2.3