



**ASSOCIAZIONE INTERCOMUNALE AREA BAZZANESE**  
Comuni di Bazzano, Castello di Serravalle, Crespellano, Monte  
San Pietro, Monteveglio, Savigno, Zola Predosa  
Provincia di Bologna



**PIANO STRUTTURALE DEI COMUNI  
DELL'AREA BAZZANESE**

**MICROZONAZIONE SISMICA DEL COMUNE DI MONTEVEGLIO  
Allegati**

Adozione: Del. C.C. n. ... del .....

Approvazione: Del. C.C. n. ... del .....

**ASSOCIAZIONE INTERCOMUNALE AREA BAZZANESE**

**Presidente del comitato di Pianificazione Associata: ALFREDO PARINI**

	Sindaci	Assessori
<i>Bazzano</i>	Elio RIGILLO	Moreno PEDRETTI
<i>Castello di Serravalle</i>	Milena ZANNA	Cesare GIOVANARDI
<i>Crespellano</i>	Alfredo PARINI	Alfredo PARINI
<i>Monte San Pietro</i>	Stefano RIZZOLI	Pierluigi COSTA
<i>Monteveglio</i>	Daniele RUSCIGNO	Daniele RUSCIGNO
<i>Savigno</i>	Augusto CASINI ROPA	Augusto CASINI ROPA
<i>Zola Predosa</i>	Stefano FIORINI	Stefano FIORINI

***Responsabile dello studio***

dr. geol. Samuel Sangiorgi

***Ufficio di Piano***

Marco LENZI (Coordinamento)

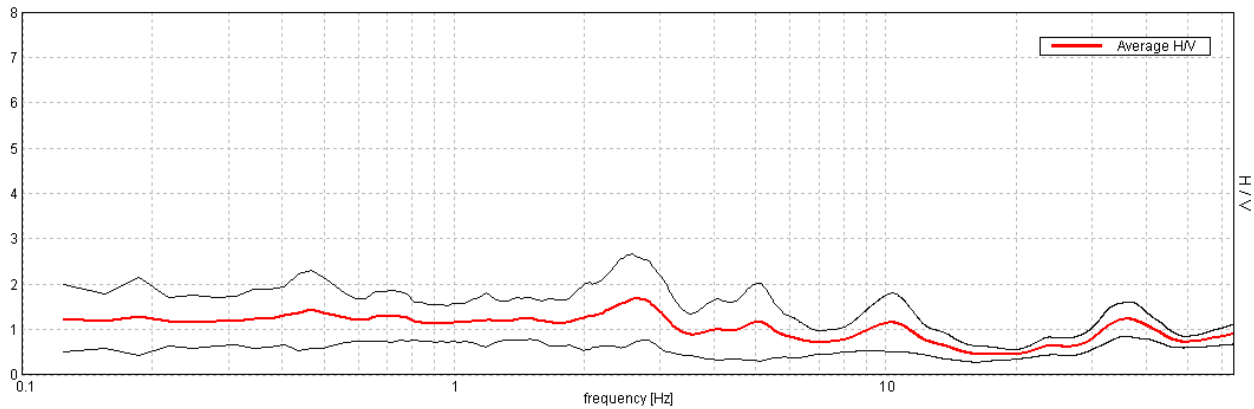
**OTTOBRE 2013**

## MONTEVEGLIO, 037043P1HVSR1

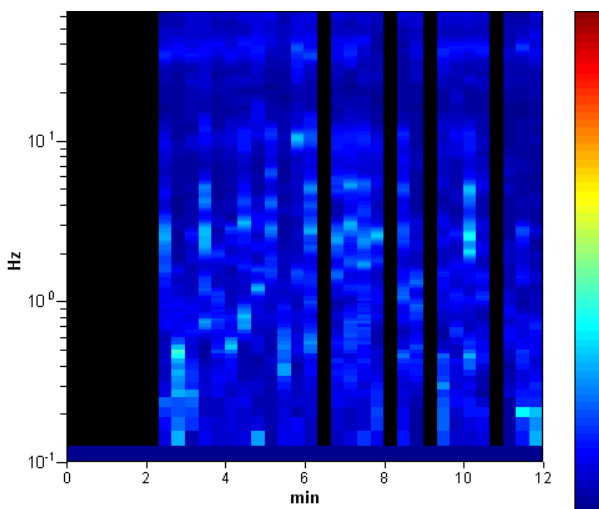
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 08:31:11      End recording: 06/05/13 08:43:12  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 69% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

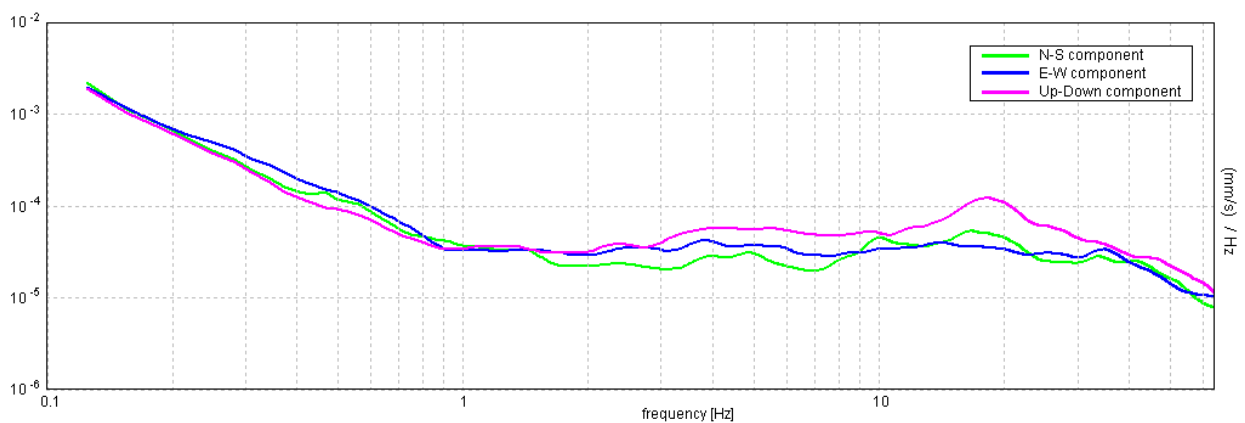
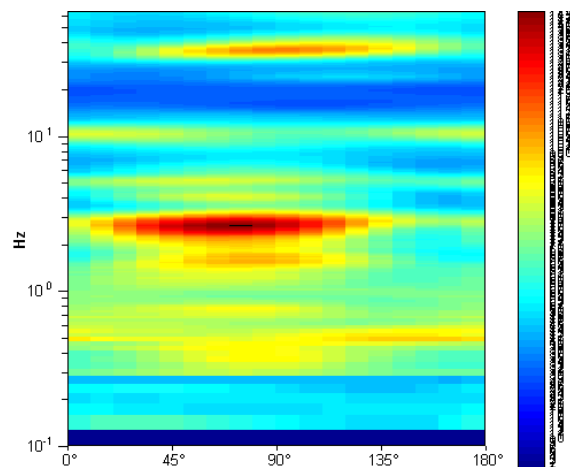
Max. H/V at 2.59 ± 0.41 Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

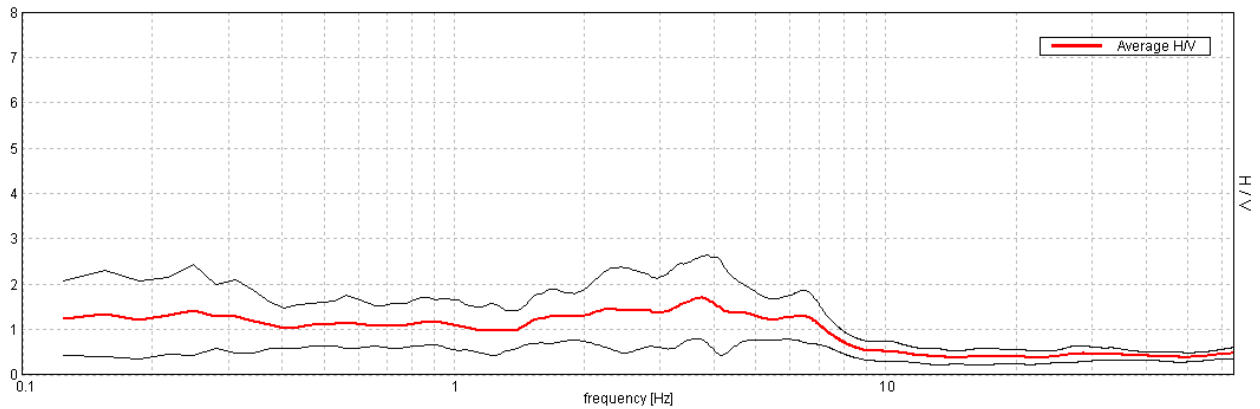


## MONTEVEGLIO, 037043P2HVSR2

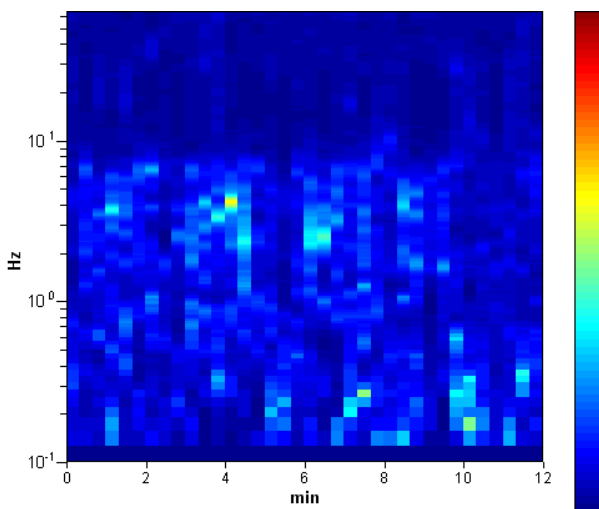
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 09:01:15      End recording: 06/05/13 09:13:16  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analysis performed on the entire trace.  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

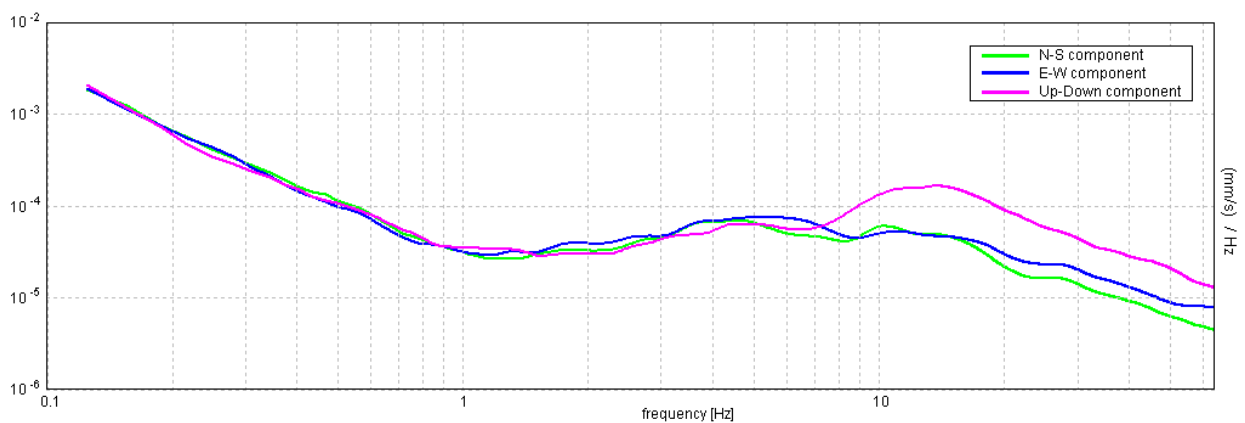
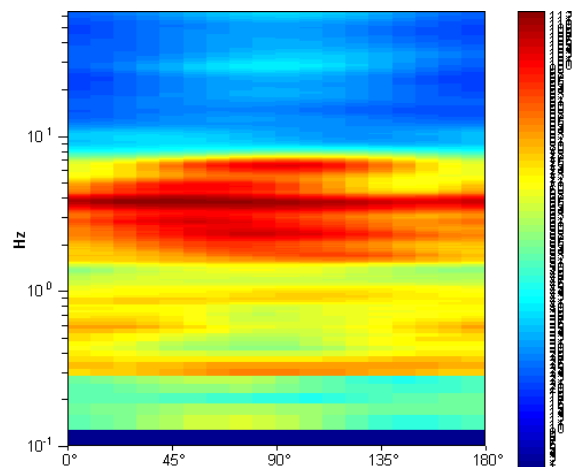
Max. H/V at  $3.75 \pm 0.33$  Hz (in the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

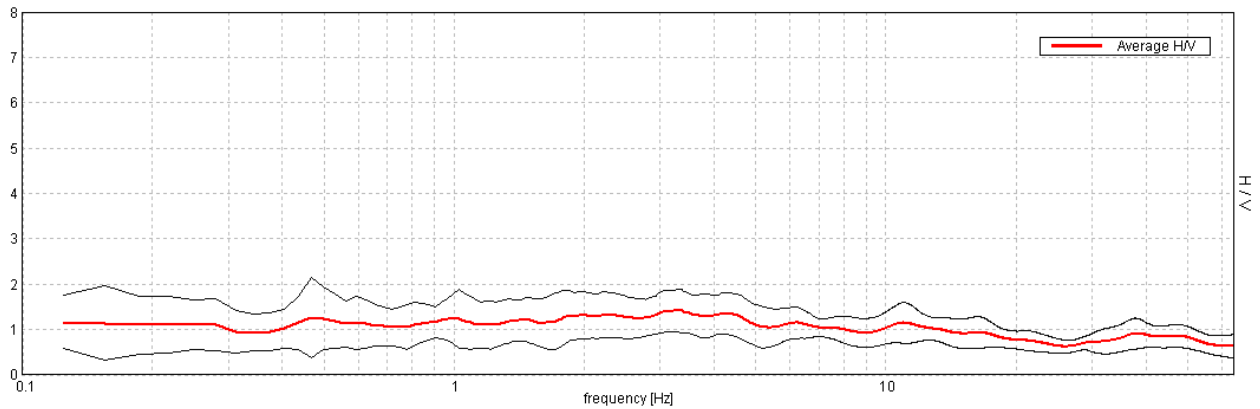


### MONTEVEGLIO, 037043P3HVSR3

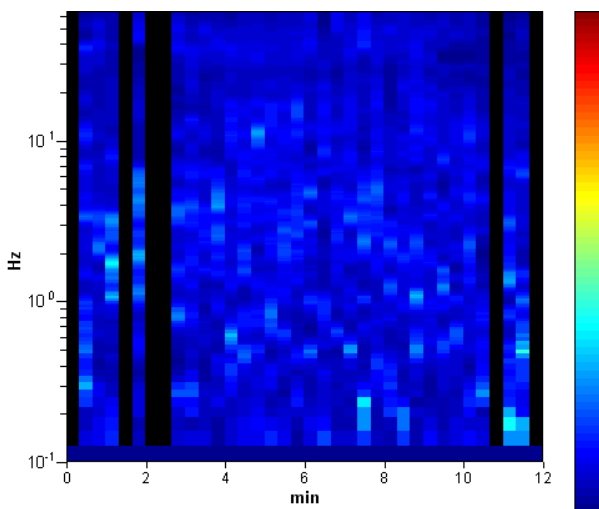
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 09:20:50      End recording: 06/05/13 09:32:51  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 83% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

#### HORIZONTAL TO VERTICAL SPECTRAL RATIO

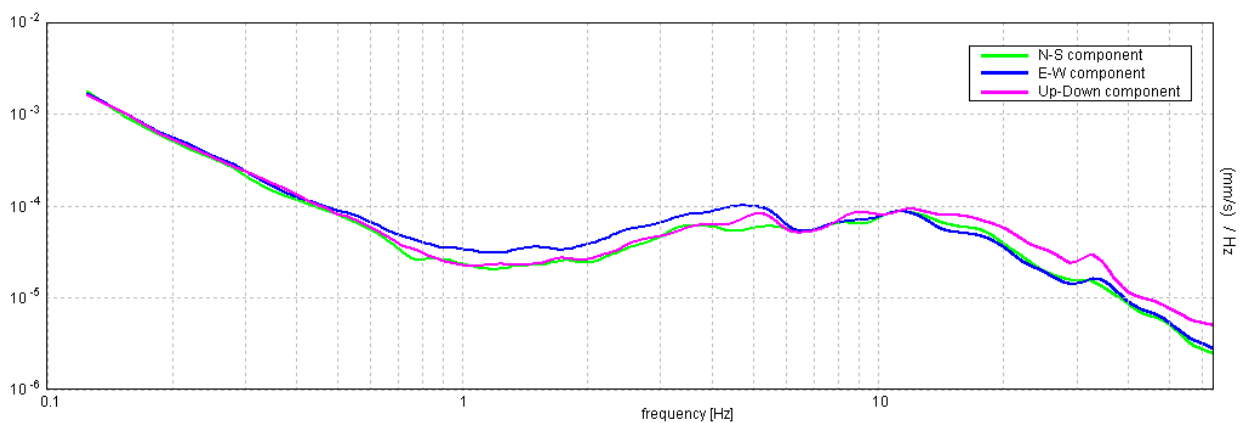
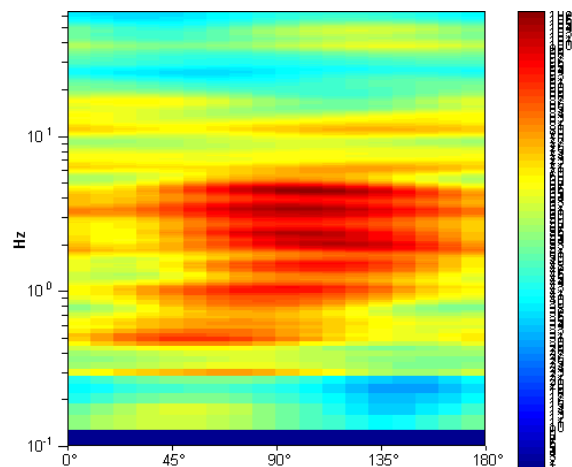
Max. H/V at  $3.31 \pm 0.3$  Hz. (In the range 0.0 - 64.0 Hz).



#### H/V TIME HISTORY



#### DIRECTIONAL H/V



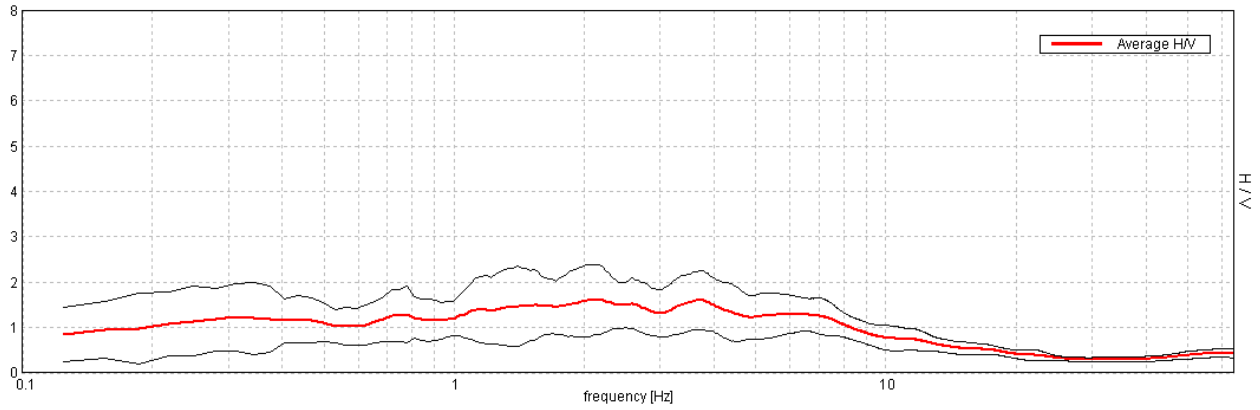


**MONTEVEGLIO, 037043P4HVSR4**

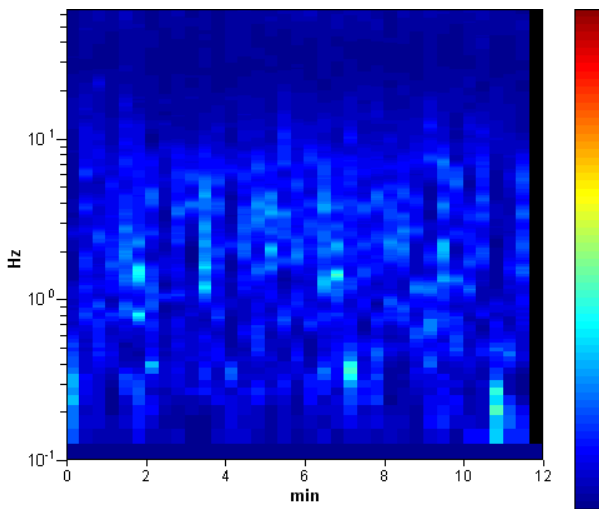
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 10:30:14      End recording: 06/05/13 10:42:15  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 97% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

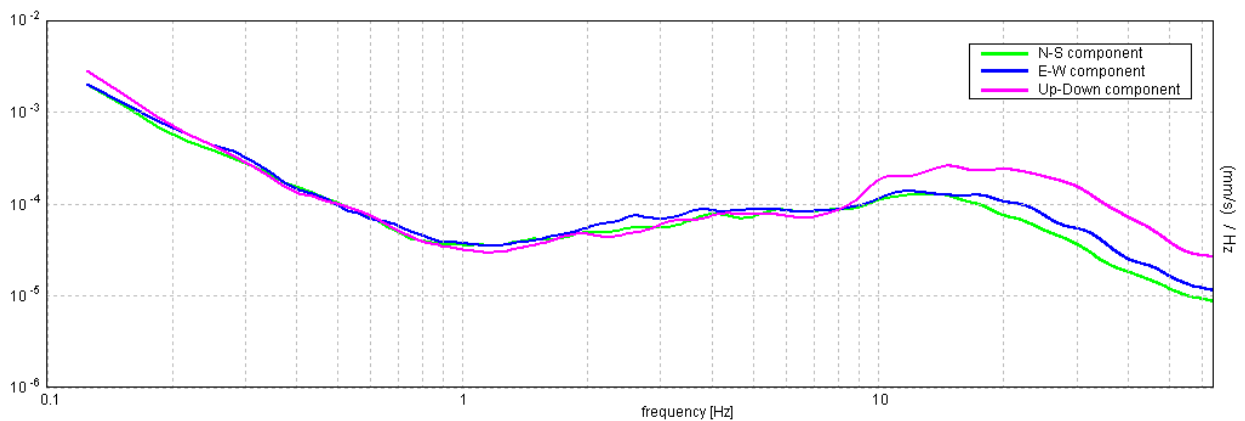
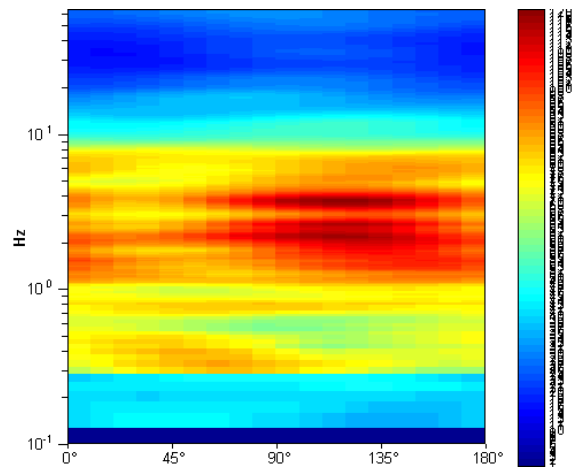
Max. H/V at 2.13 ± 0.43 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

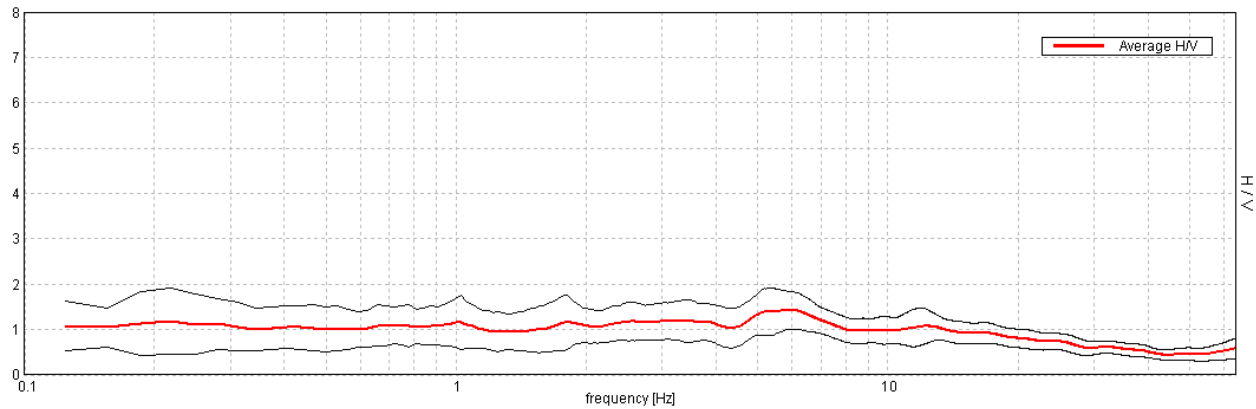


**MONTEVEGLIO, 037043P5HVSR5**

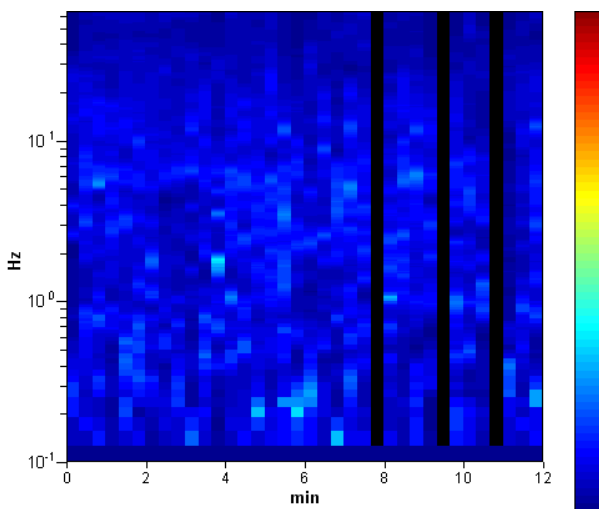
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 10:46:19      End recording: 06/05/13 10:58:20  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 92% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

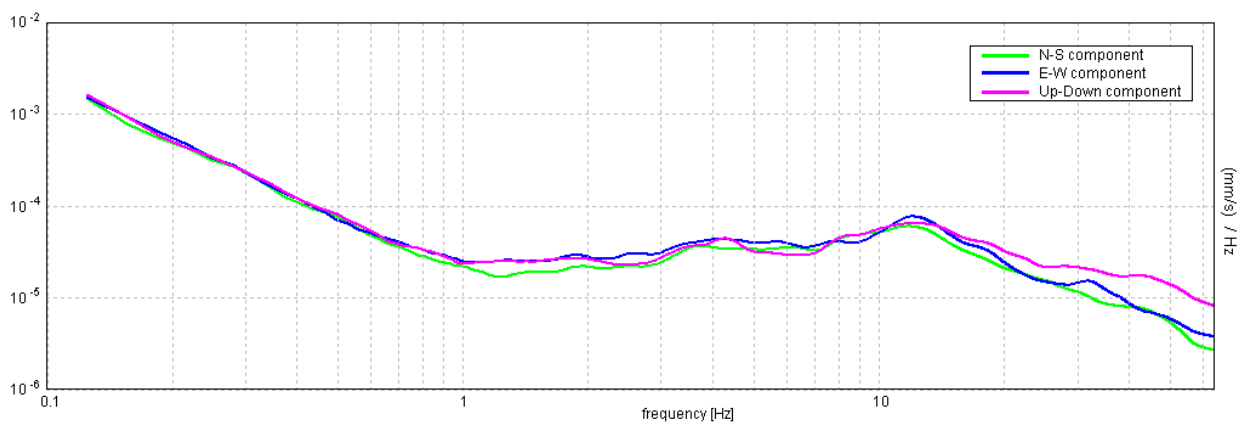
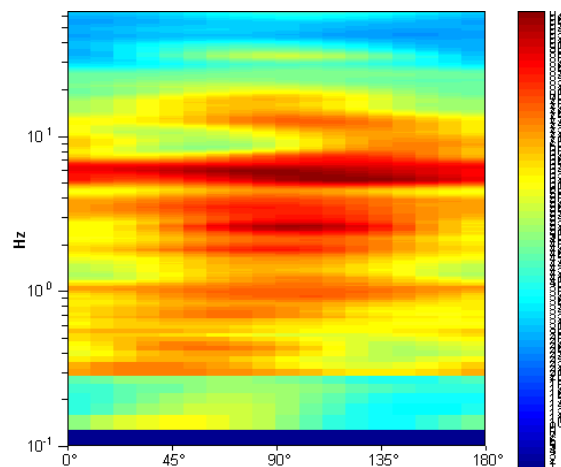
Max. H/V at 5.94 ± 0.41 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

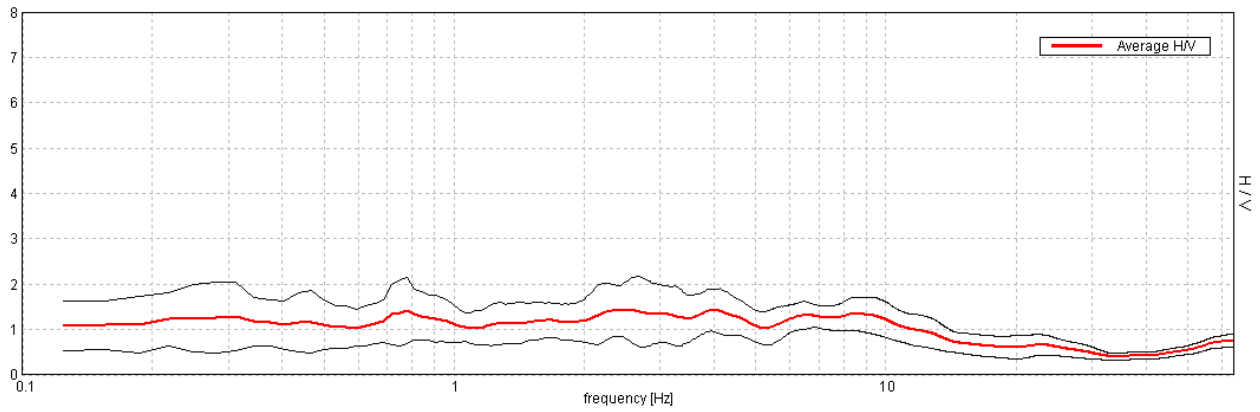


**MONTEVEGLIO, 037043P6HVSR6**

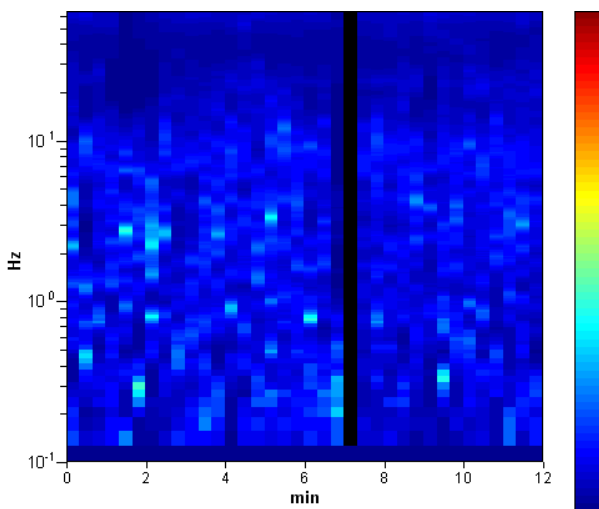
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 11:01:33      End recording: 06/05/13 11:13:34  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 97% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

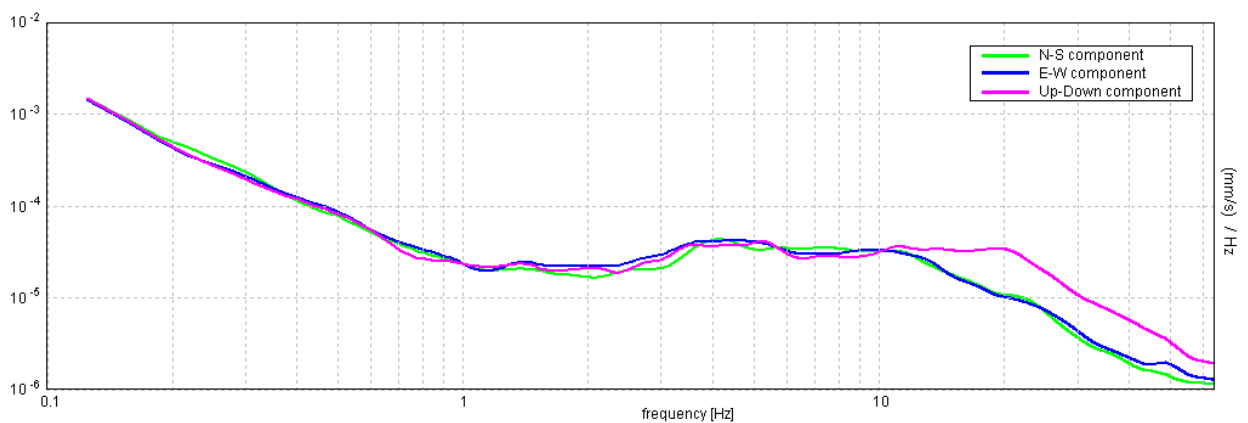
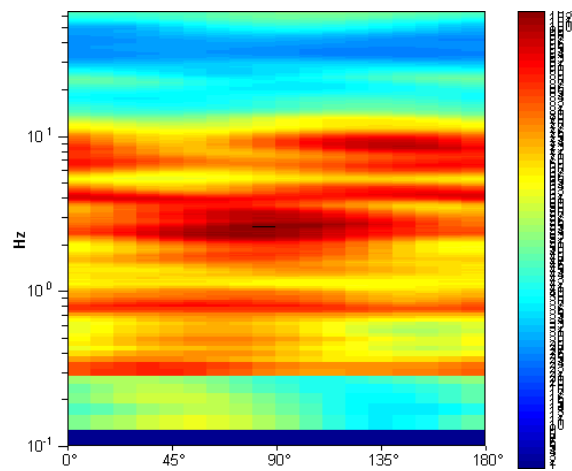
Max. H/V at 3.91 ± 0.79 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

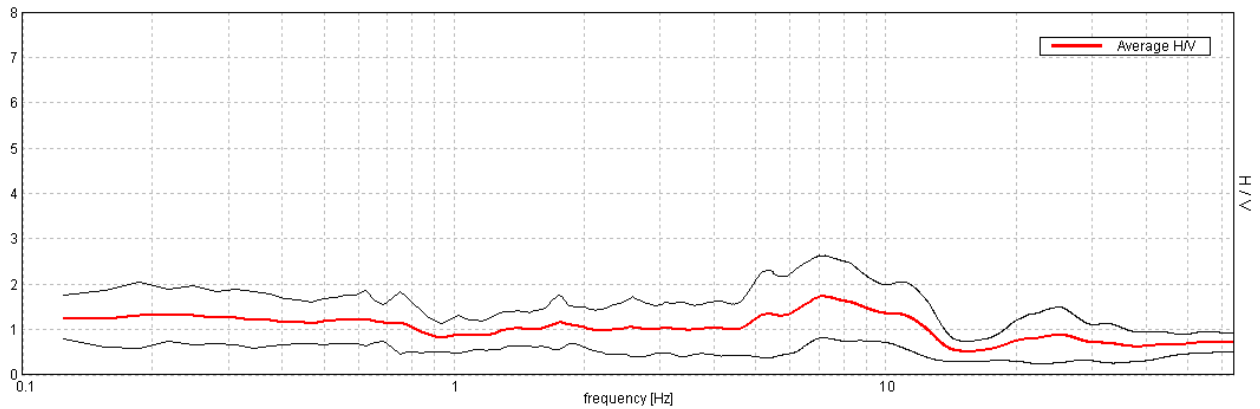


## MONTEVEGLIO, 037043P7HVSR7

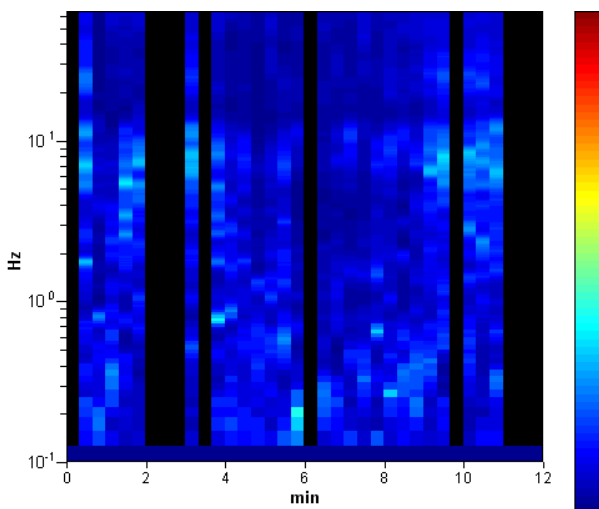
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 11:18:13      End recording: 06/05/13 11:30:14  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 72% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

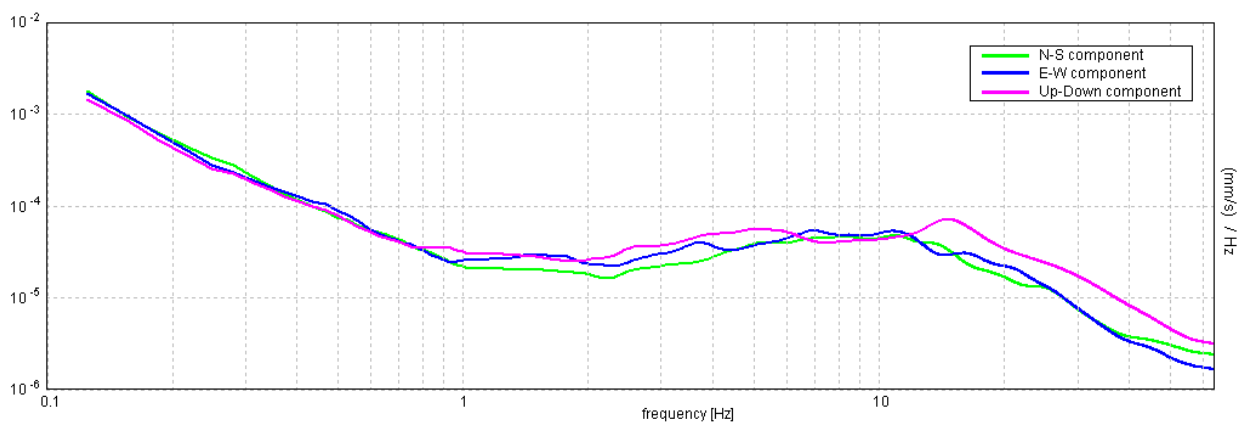
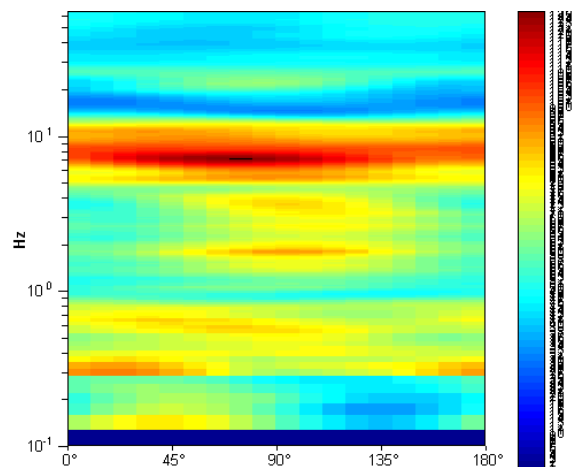
Max. H/V at 7.03 ± 0.57 Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

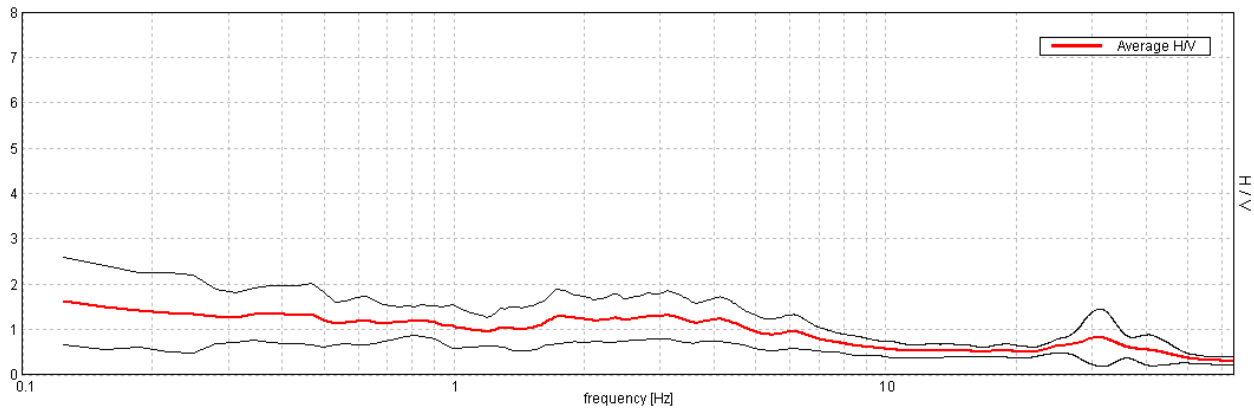


**MONTEVEGLIO, 037043P8HVSR8**

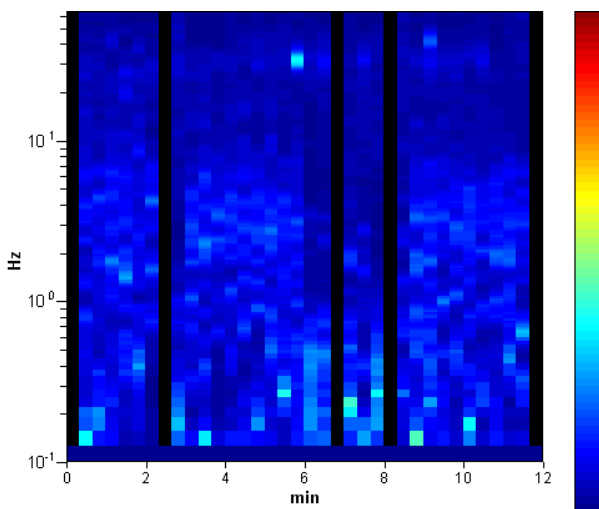
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 11:34:17      End recording: 06/05/13 11:46:18  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 86% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

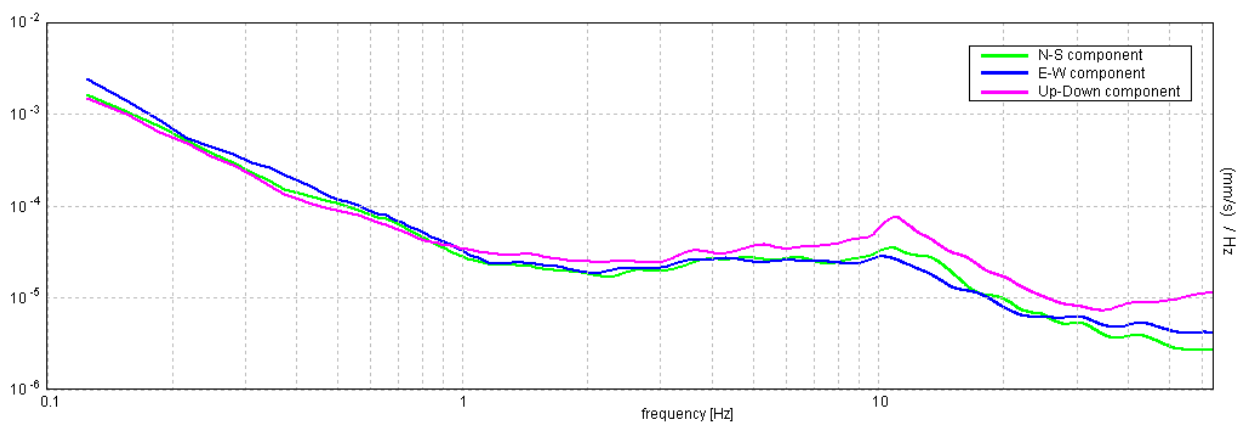
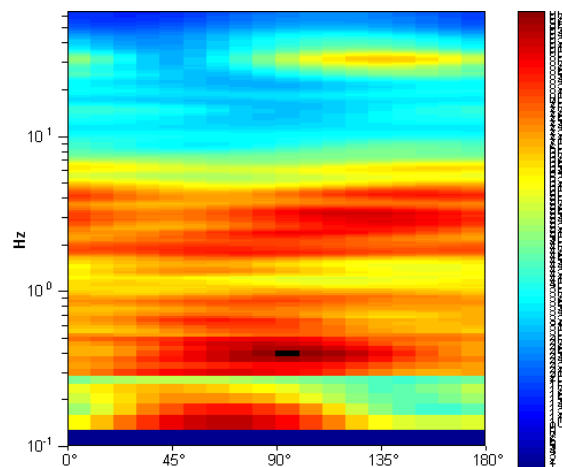
Max. H/V at 0.13 ± 0.18 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

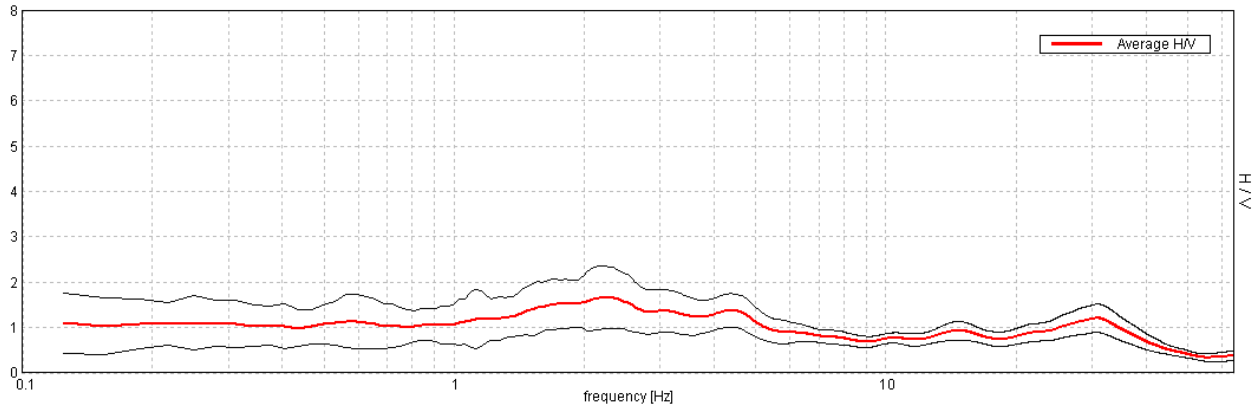


**MONTEVEGLIO, 037043P9HVSR9**

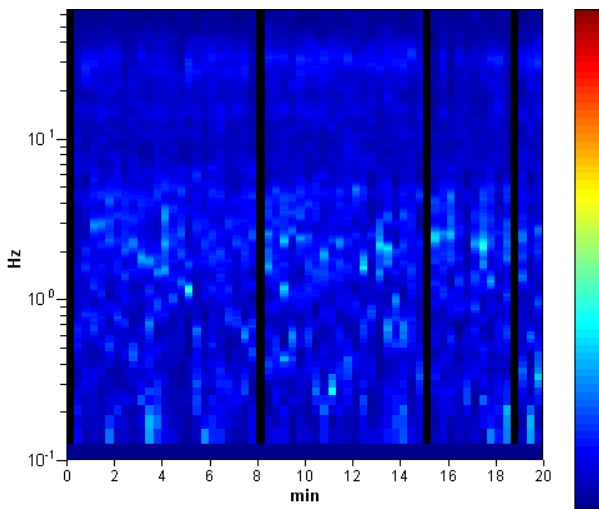
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 12:05:34      End recording: 06/05/13 12:25:35  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h20'00".      Analyzed 93% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

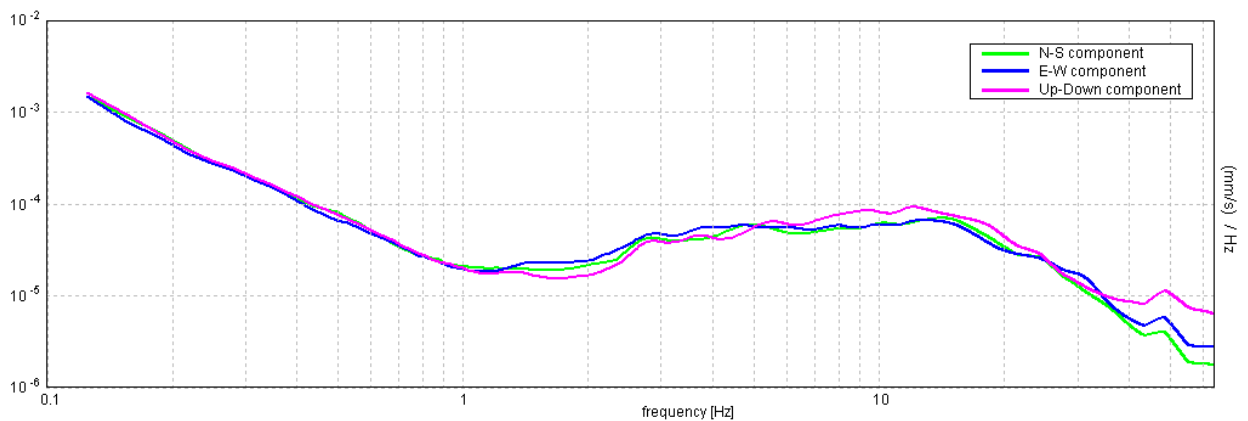
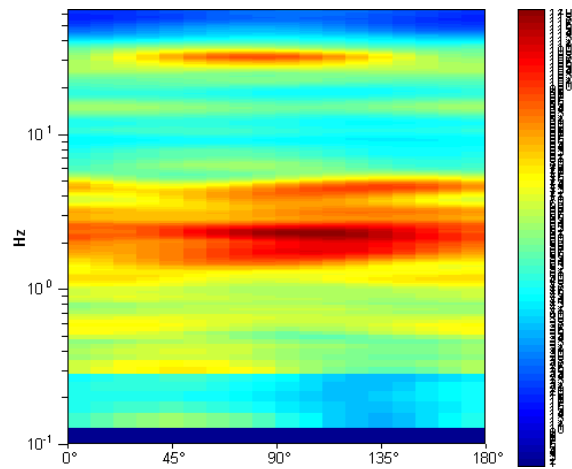
Max. H/V at 2.22 ± 0.12 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

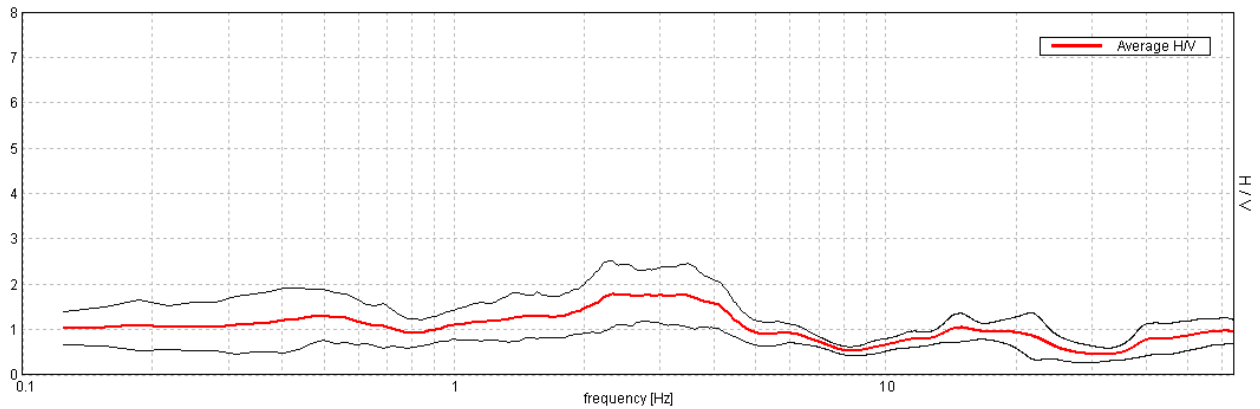


### MONTEVEGLIO, 037043P10HVSR10

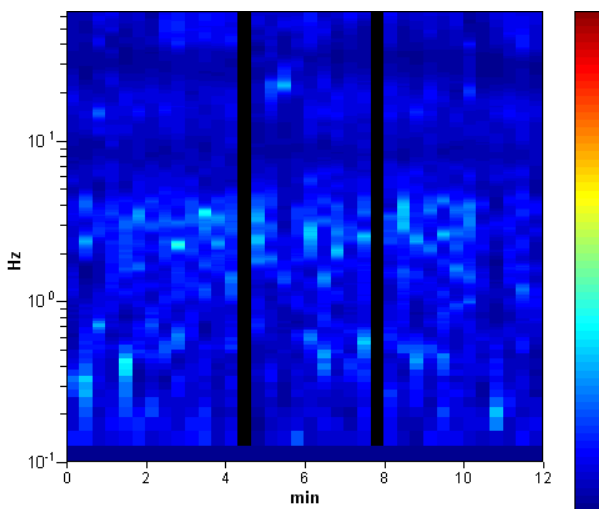
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 12:29:30      End recording: 06/05/13 12:41:31  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 94% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

#### HORIZONTAL TO VERTICAL SPECTRAL RATIO

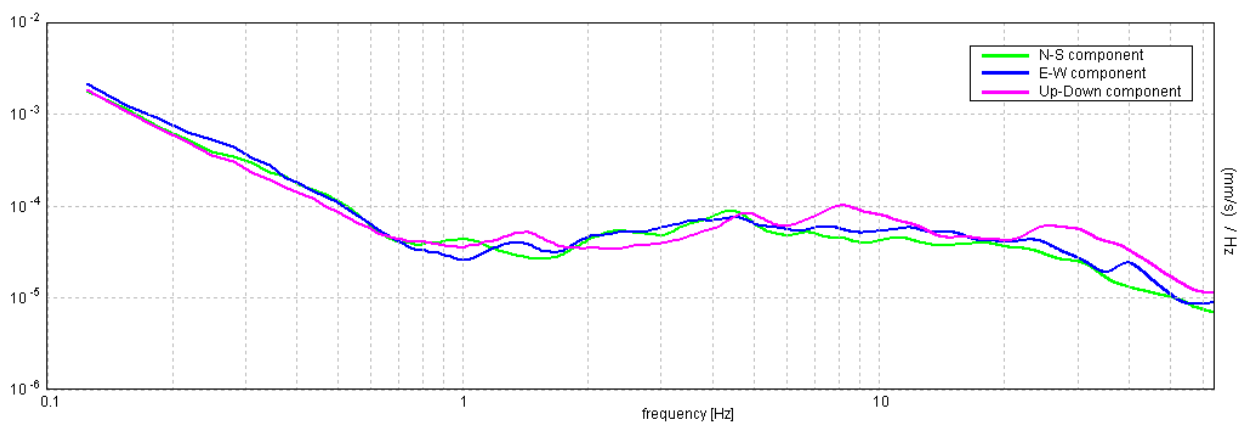
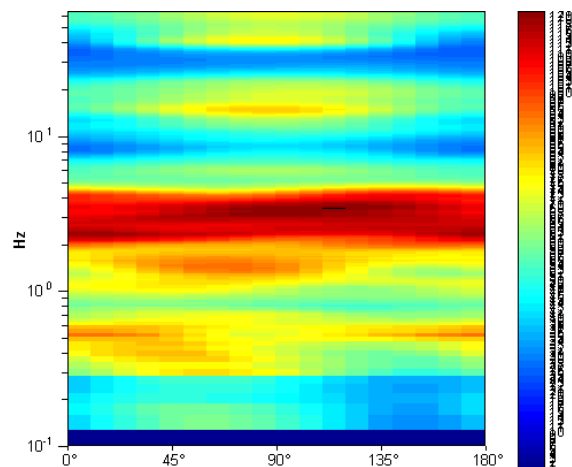
Max. H/V at 2.31 ± 0.34 Hz. (In the range 0.0 - 64.0 Hz).



#### H/V TIME HISTORY



#### DIRECTIONAL H/V

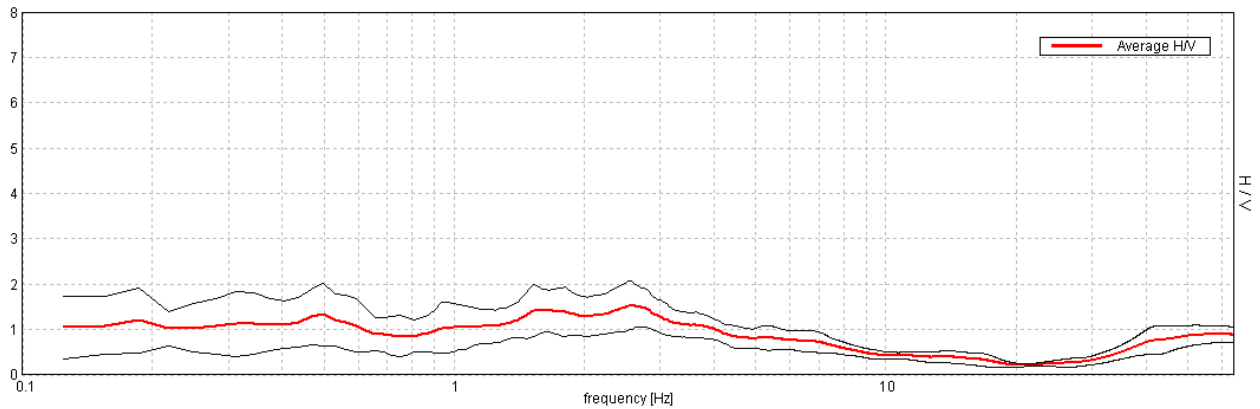


## MONTEVEGLIO, 037043P11HVSR11

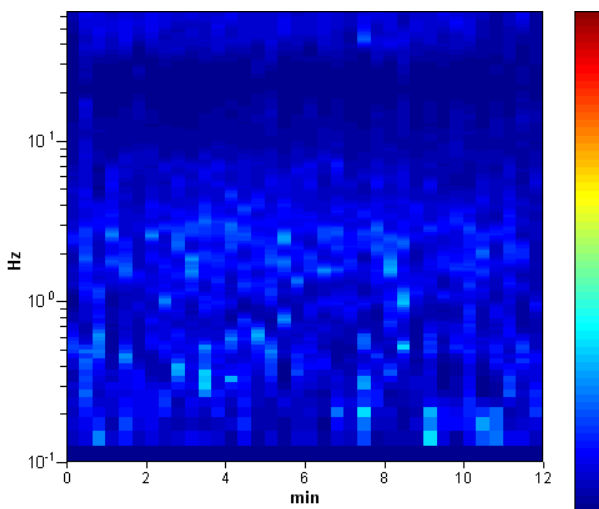
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 12:44:49      End recording: 06/05/13 12:56:50  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analysis performed on the entire trace.  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

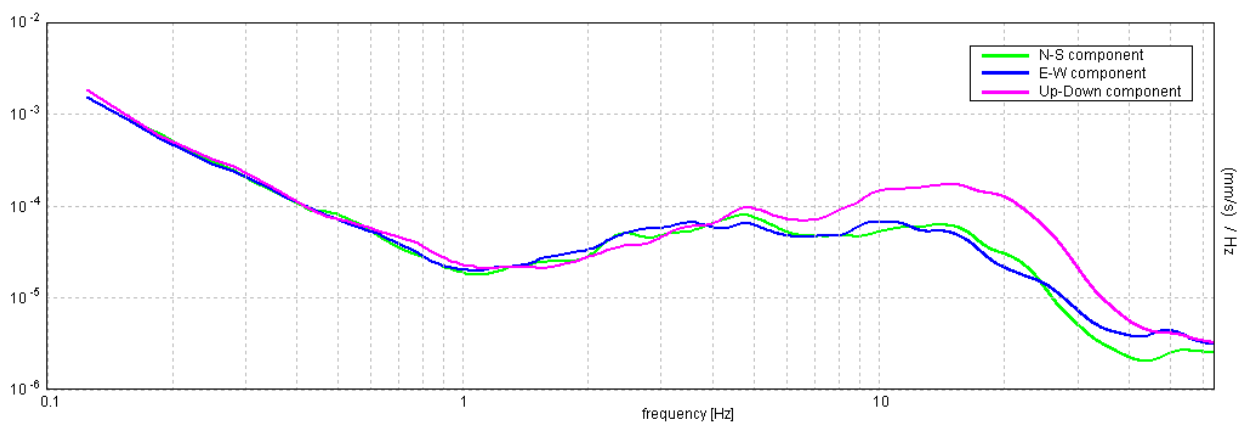
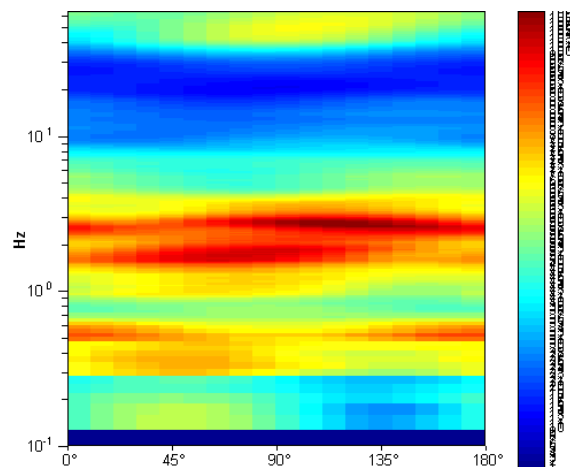
Max. H/V at  $2.56 \pm 0.29$  Hz (in the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V



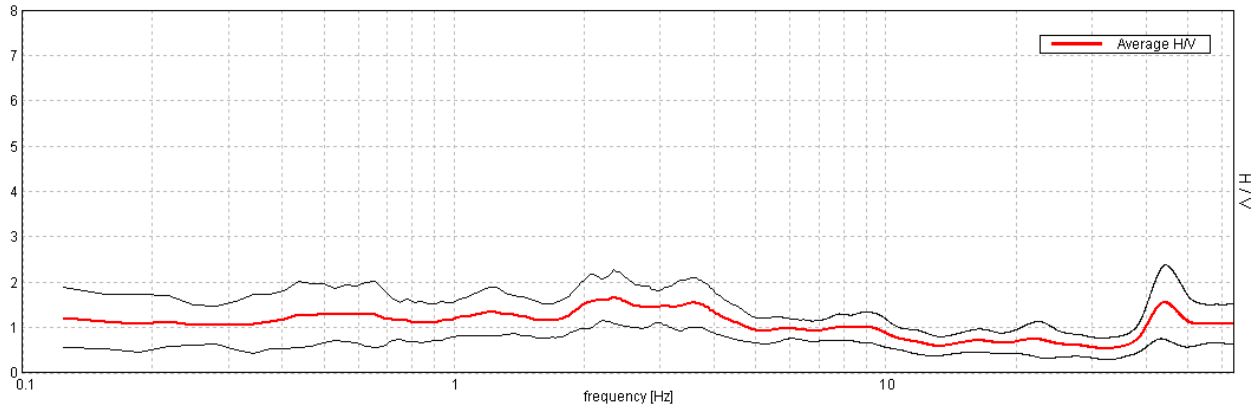


**MONTEVEGLIO, 037043P12HVSR12**

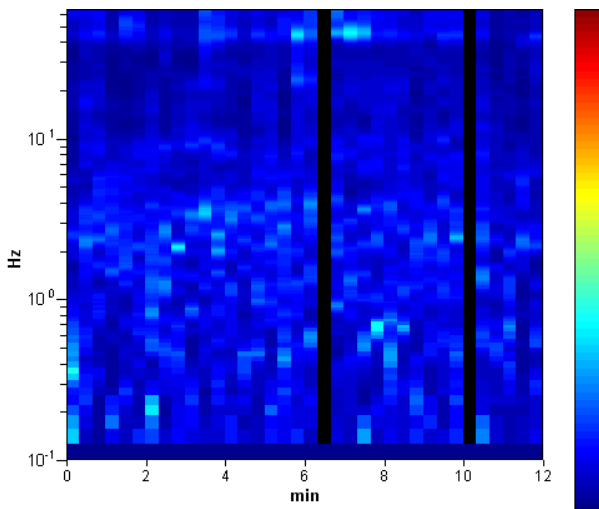
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 13:00:25      End recording: 06/05/13 13:12:26  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 94% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

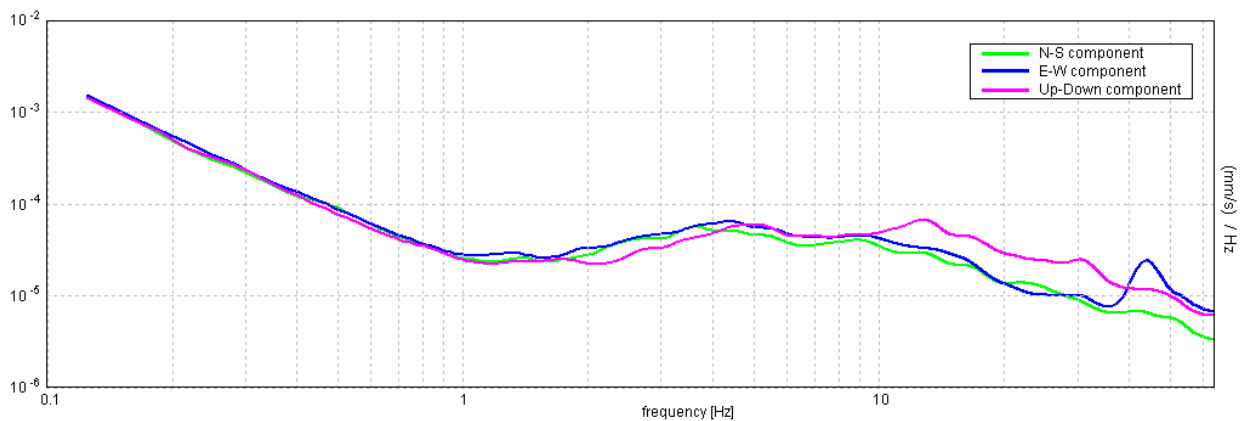
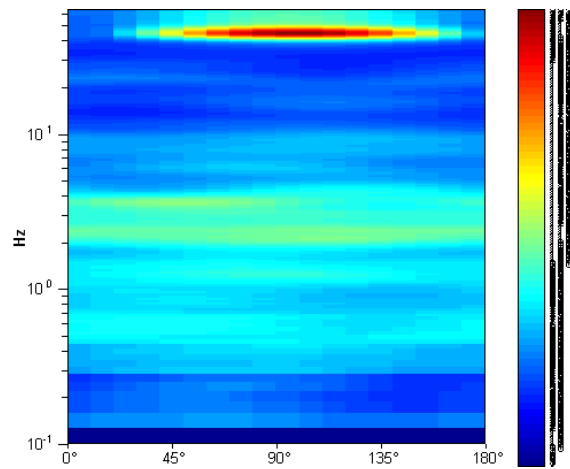
Max. H/V at 2.34 ± 7.23 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



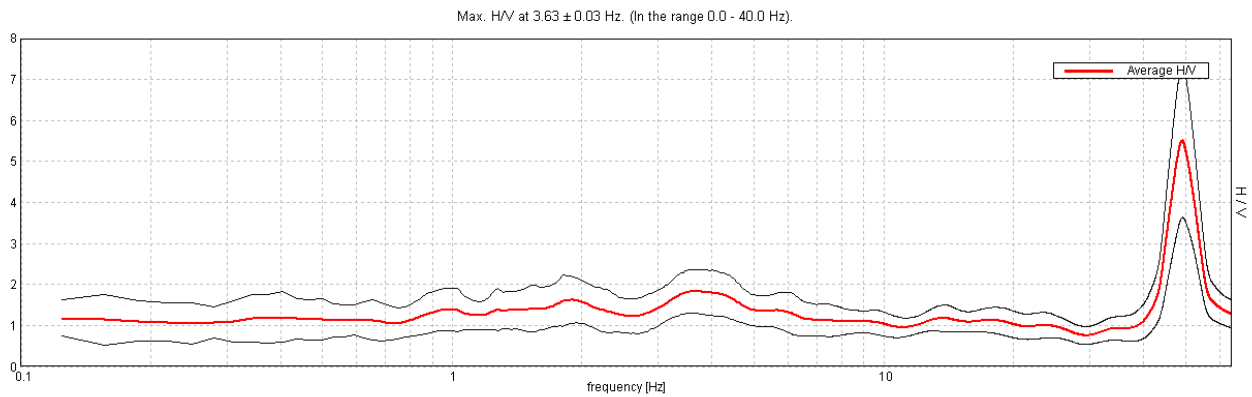
**DIRECTIONAL H/V**



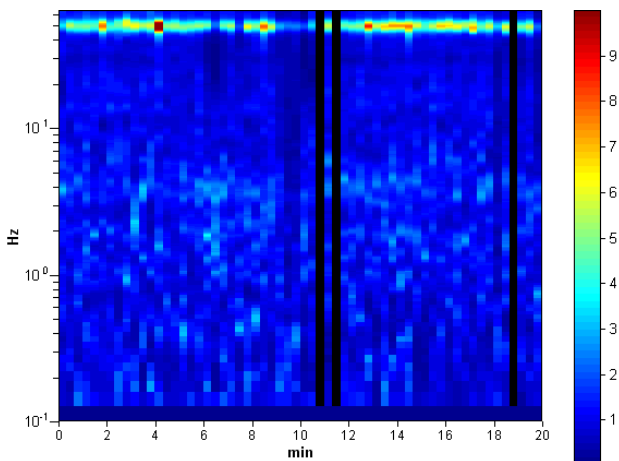
**MONTEVEGLIO, 037043P13HVSR13**

Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 13:17:40      End recording: 06/05/13 13:37:41  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h20'00".      Analyzed 95% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

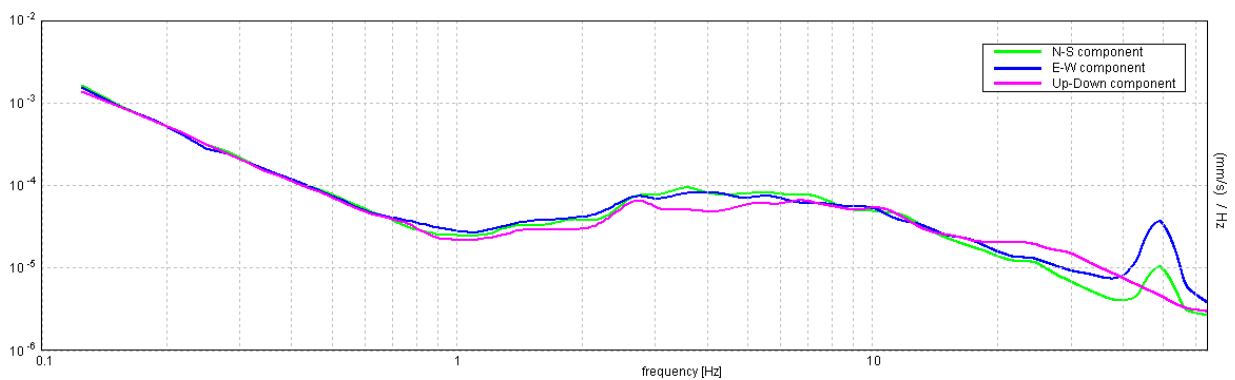
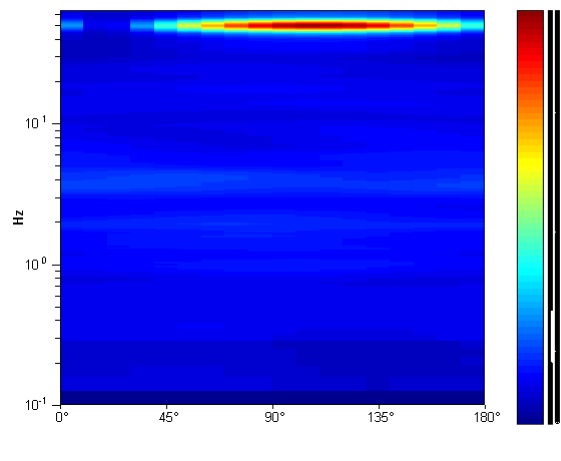
**HORIZONTAL TO VERTICAL SPECTRAL RATIO**



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

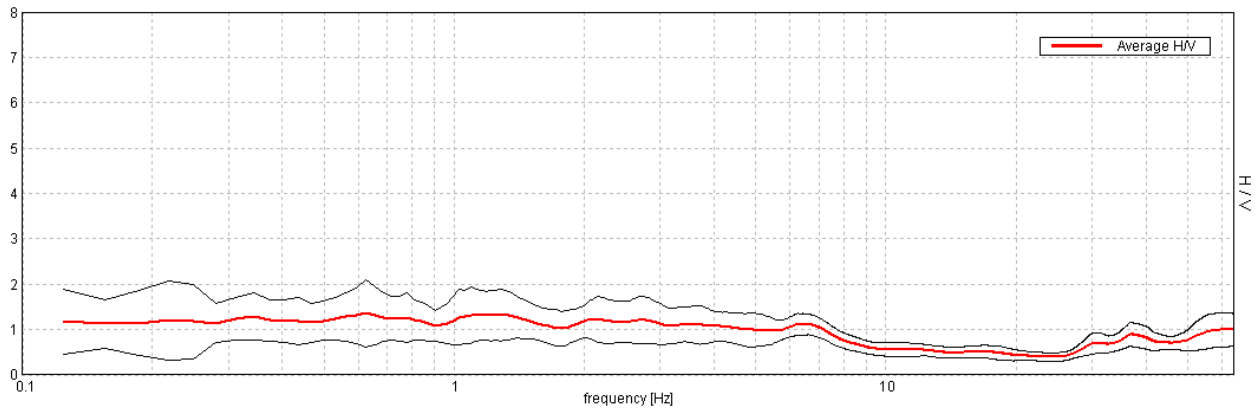


## MONTEVEGLIO, 037043P14HVSR14

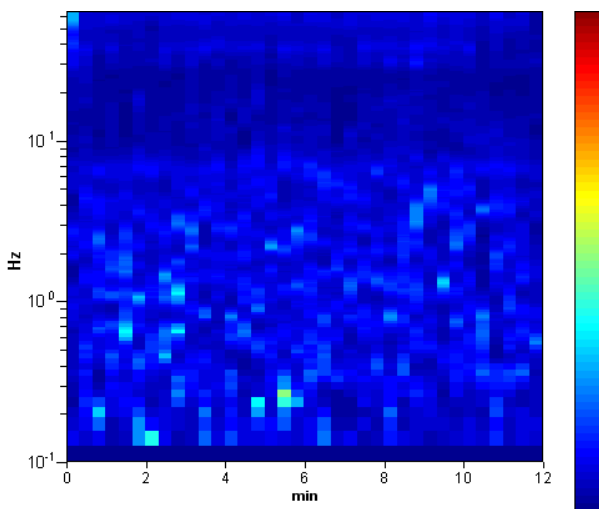
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 13:43:06      End recording: 06/05/13 13:55:07  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analysis performed on the entire trace.  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

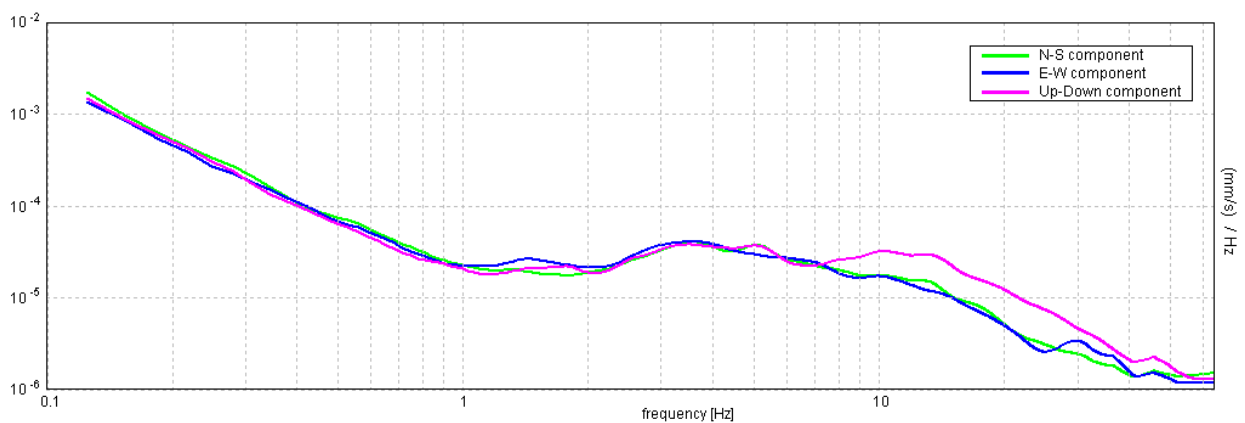
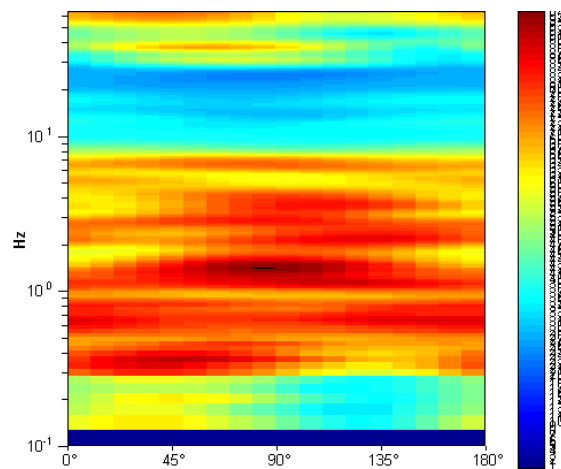
Max. H/V at  $0.63 \pm 4.83$  Hz (in the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

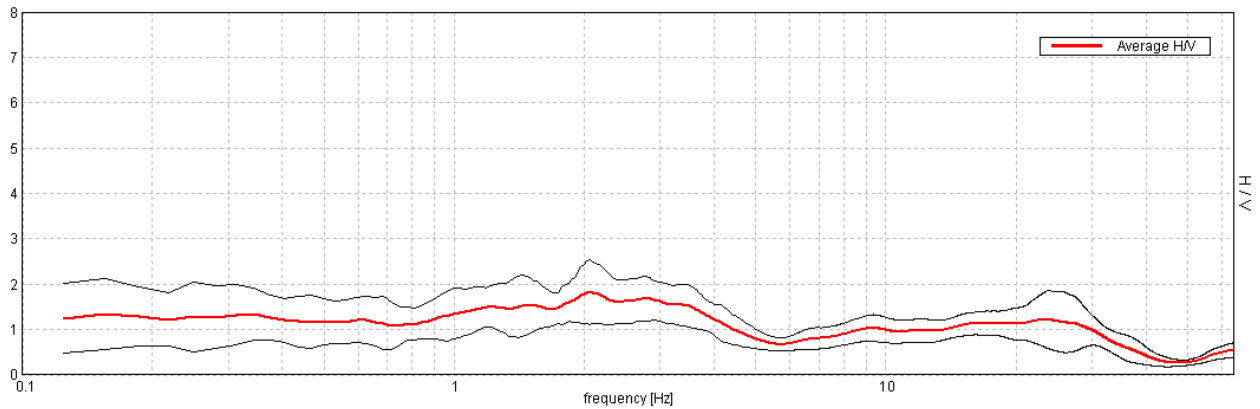


## MONTEVEGLIO, 037043P15HVSR15

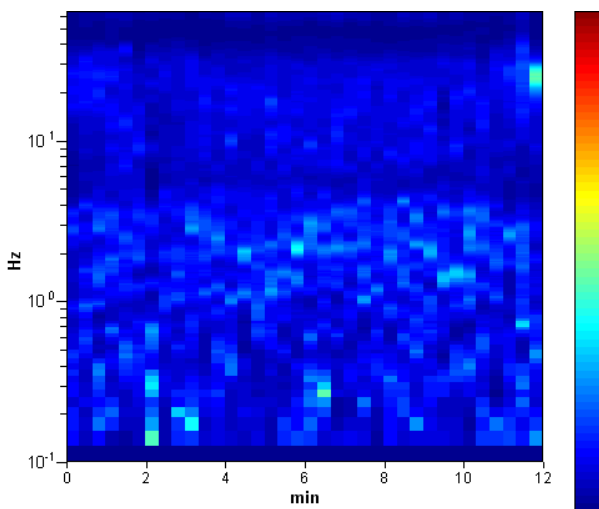
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 13:58:19      End recording: 06/05/13 14:10:20  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analysis performed on the entire trace.  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

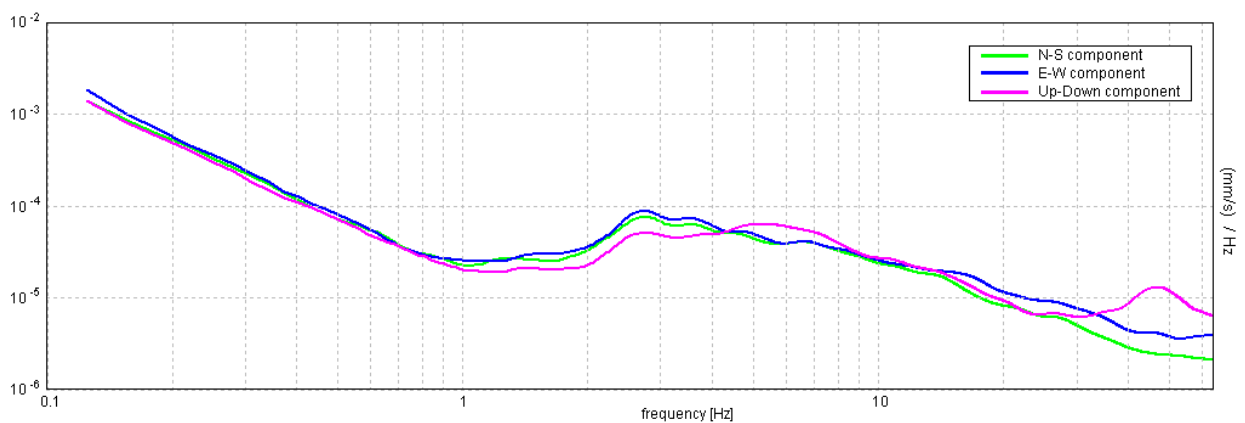
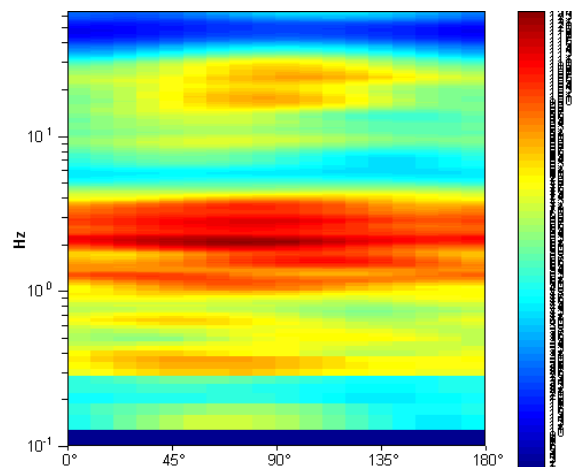
Max. H/V at  $2.06 \pm 0.25$  Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

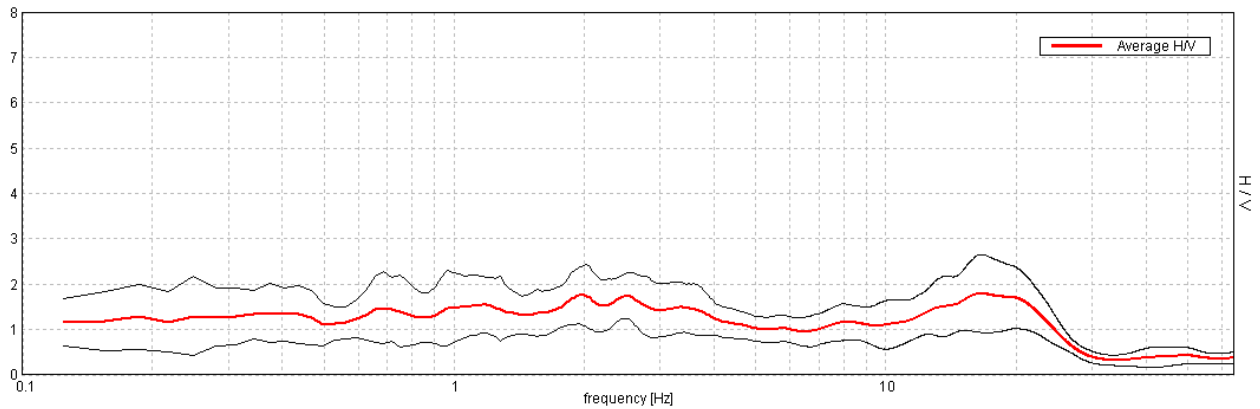


## MONTEVEGLIO, 037043P16HVSR16

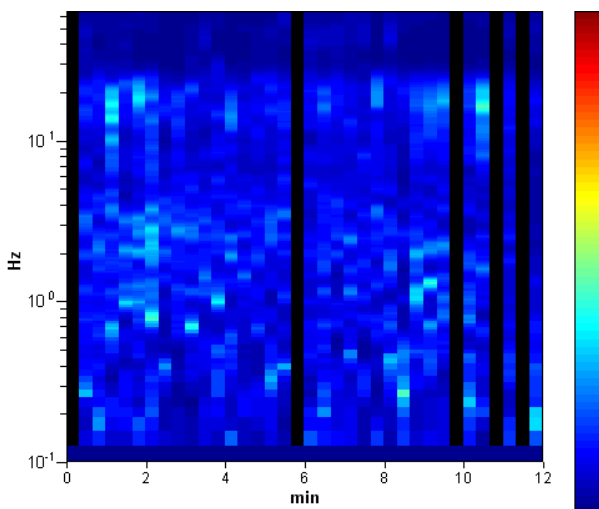
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 14:16:33      End recording: 06/05/13 14:28:34  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 86% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

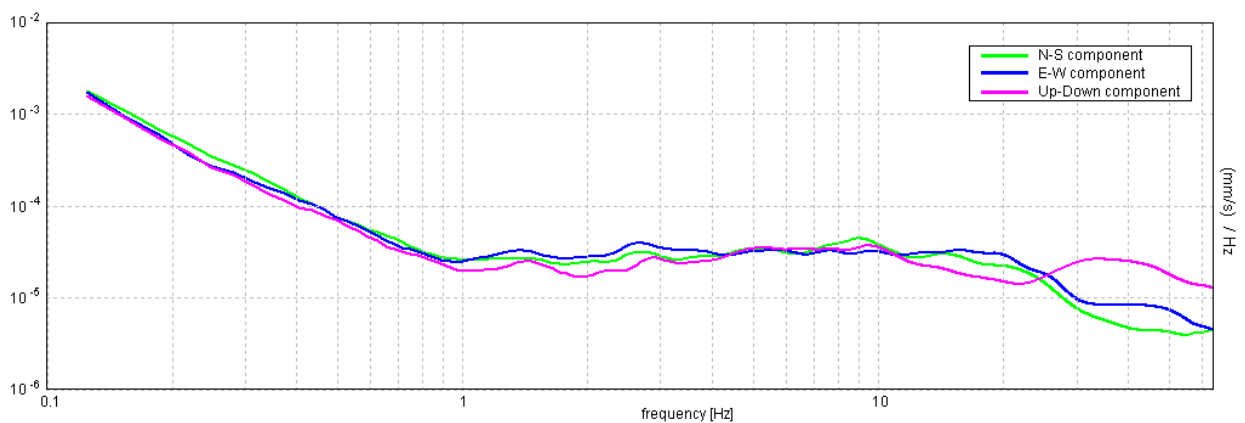
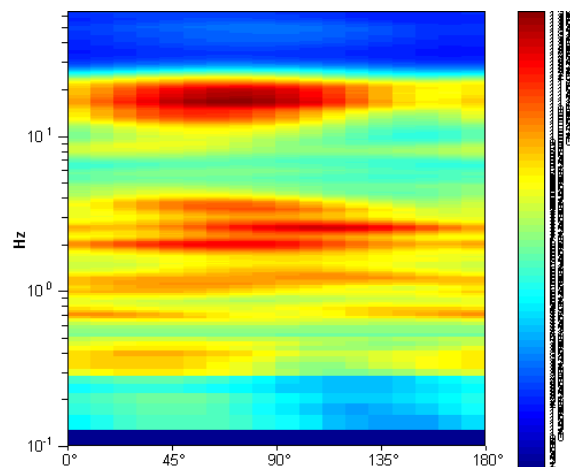
Max. H/V at 16.41 ± 4.95 Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



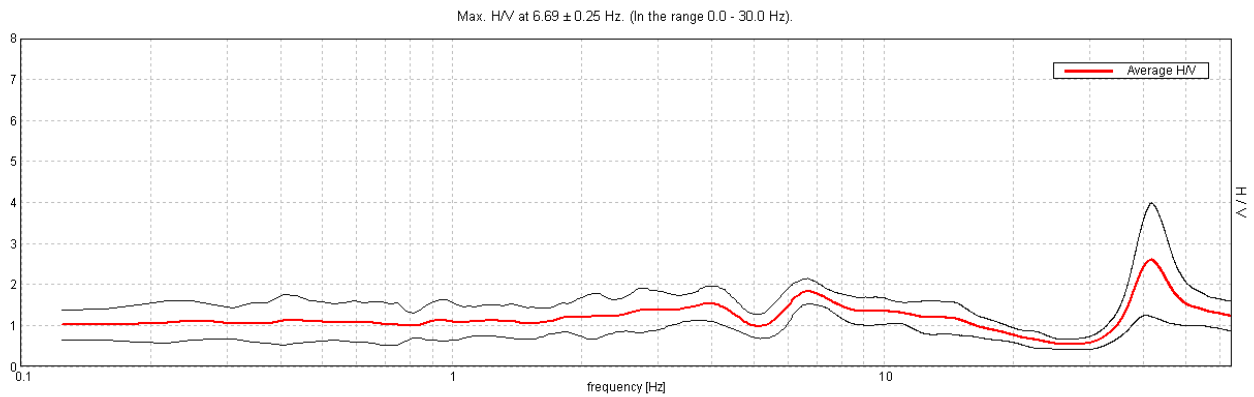
### DIRECTIONAL H/V



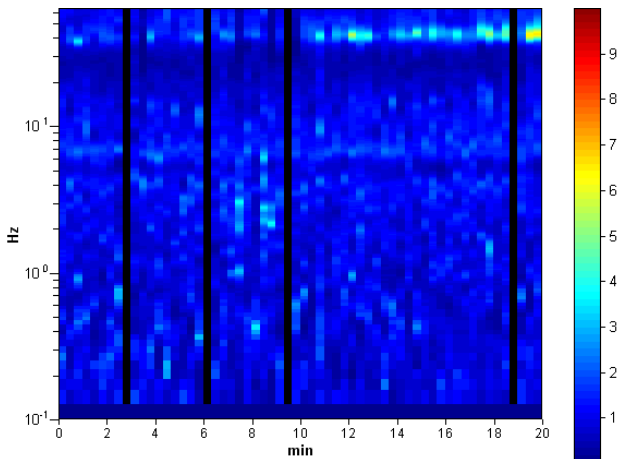
## MONTEVEGLIO, 037043P17HVSR17

Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 14:32:22      End recording: 06/05/13 14:52:23  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h20'00".      Analyzed 93% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

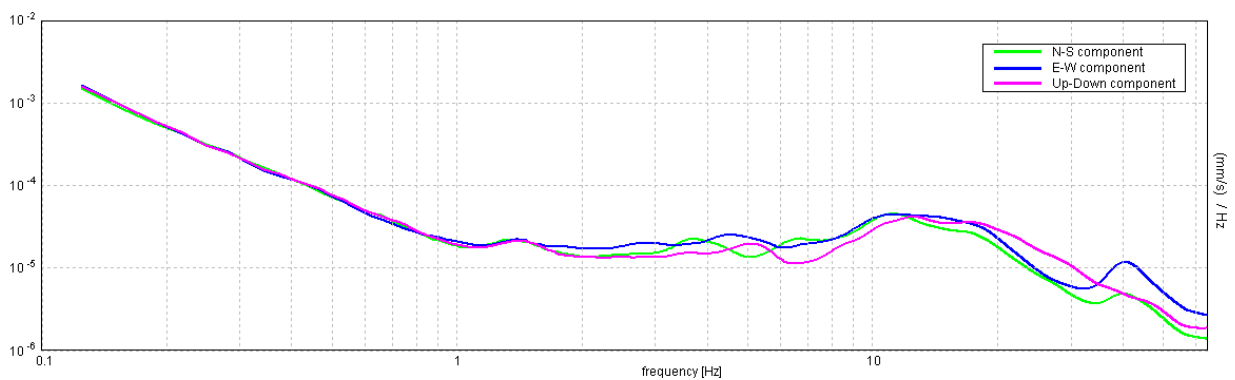
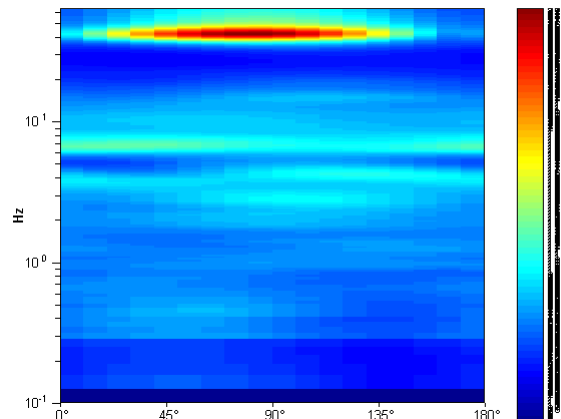
### HORIZONTAL TO VERTICAL SPECTRAL RATIO



### H/V TIME HISTORY



### DIRECTIONAL H/V

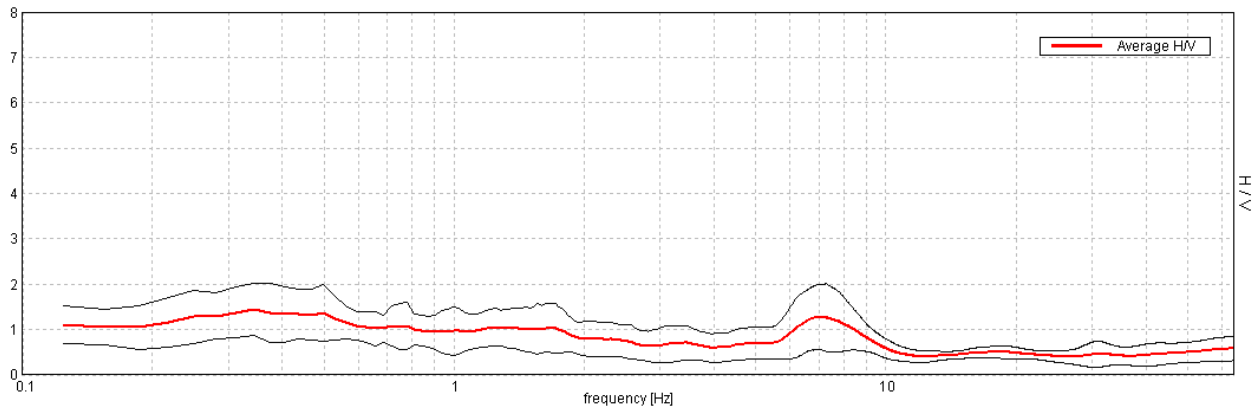


### MONTEVEGLIO, 037043P18HVSR18

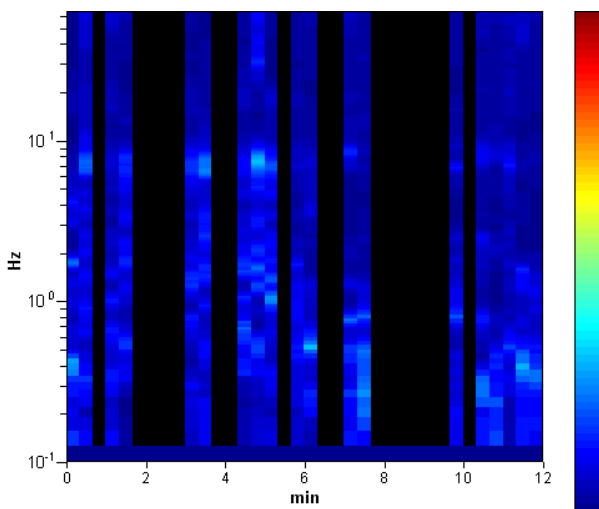
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 14:56:06      End recording: 06/05/13 15:08:07  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 53% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

#### HORIZONTAL TO VERTICAL SPECTRAL RATIO

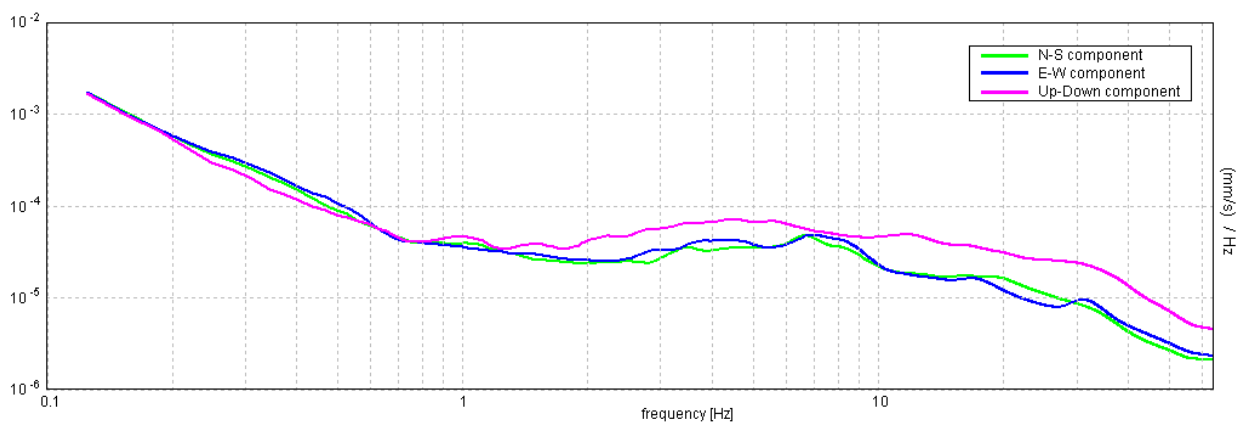
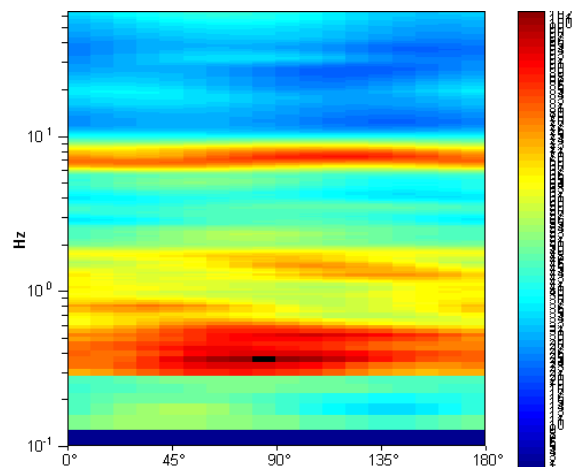
Max. H/V at 0.34 ± 2.39 Hz. (In the range 0.0 - 64.0 Hz).



#### H/V TIME HISTORY



#### DIRECTIONAL H/V

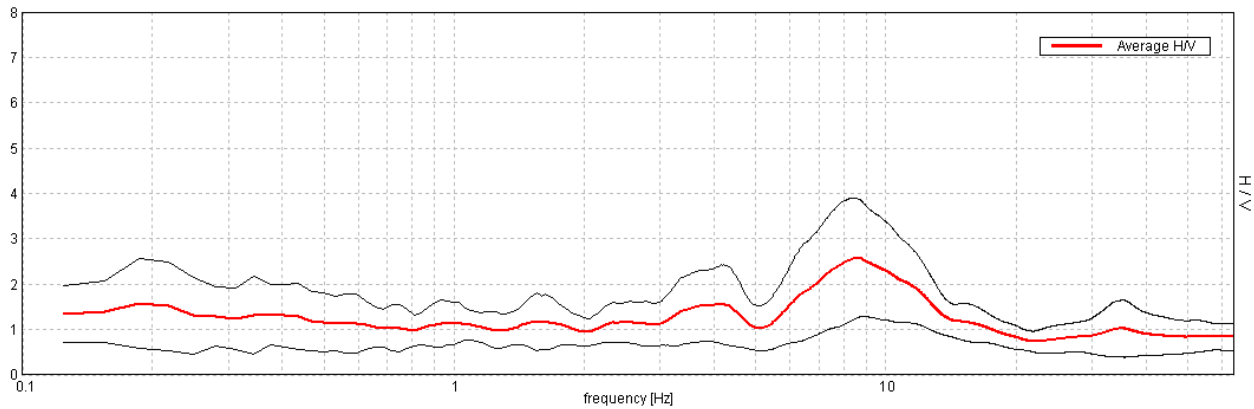


### MONTEVEGLIO, 037043P19HVSR19

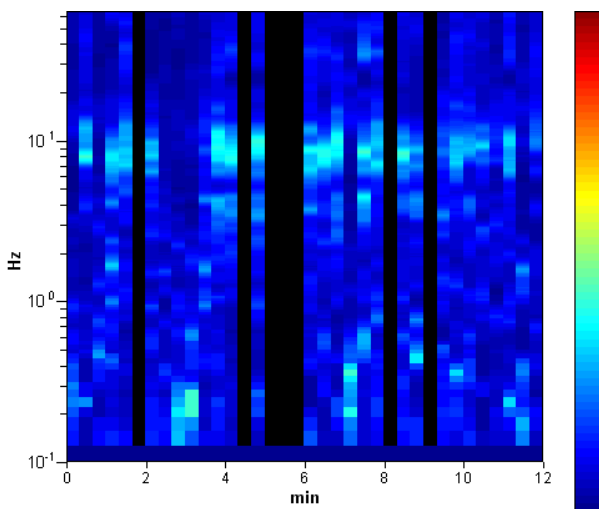
Instrument: TRZ-0108/01-10  
Start recording: 06/05/13 15:12:46      End recording: 06/05/13 15:24:47  
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
Trace length: 0h12'00".      Analyzed 81% trace (manual window selection)  
Sampling rate: 128 Hz  
Window size: 20 s  
Smoothing type: Triangular window  
Smoothing: 12%

#### HORIZONTAL TO VERTICAL SPECTRAL RATIO

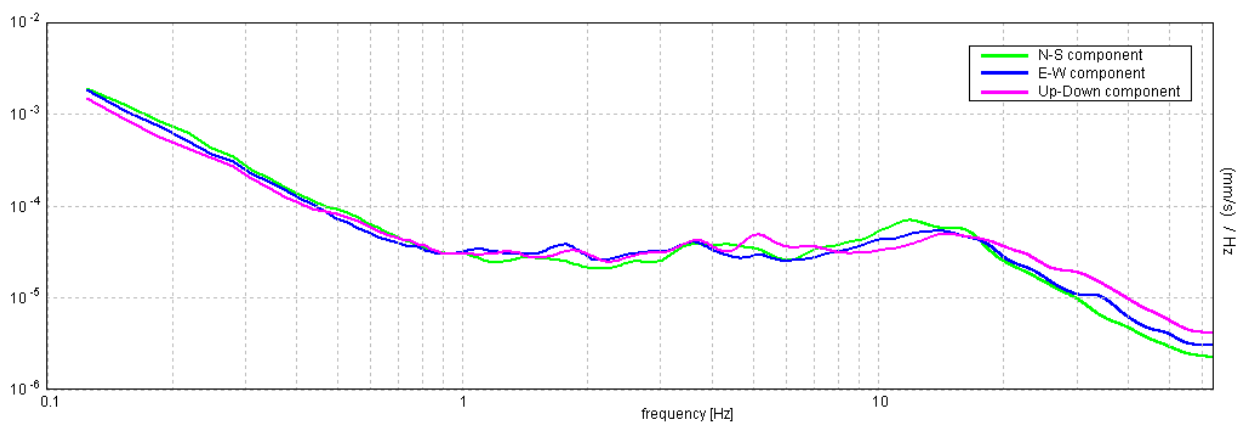
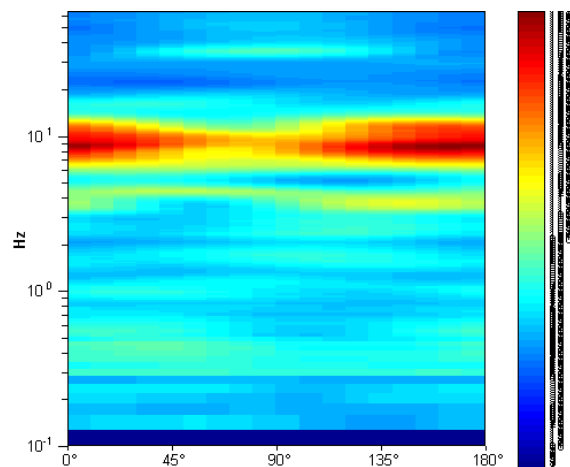
Max. H/V at 8.59 ± 1.21 Hz. (In the range 0.0 - 64.0 Hz).



#### H/V TIME HISTORY



#### DIRECTIONAL H/V



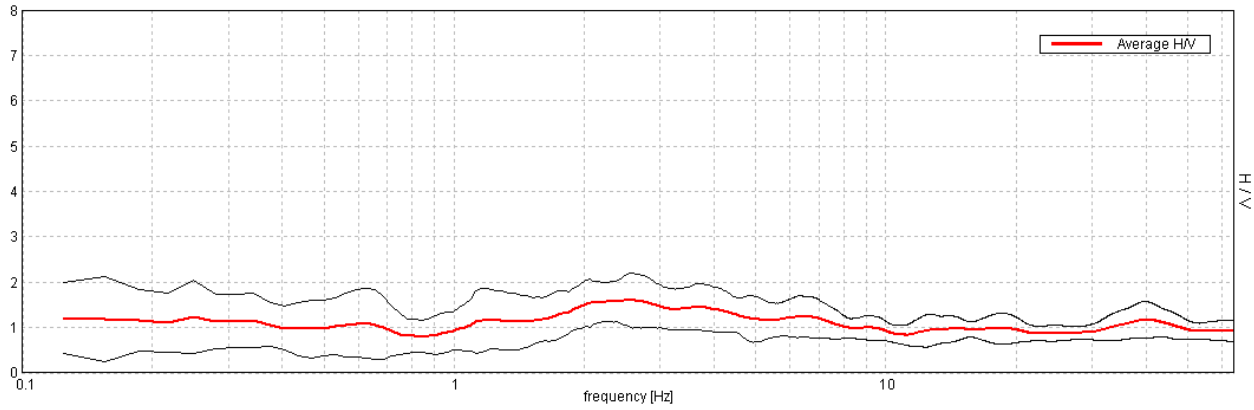


**MONTEVEGLIO, 037043P20HVSR20**

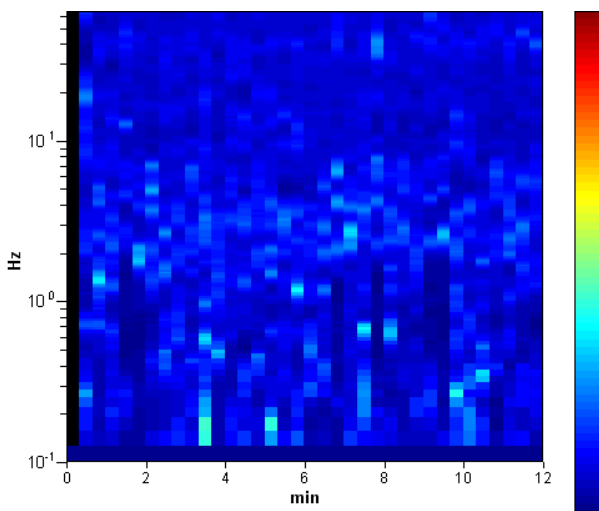
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 15:27:56      End recording: 06/05/13 15:39:57  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 97% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

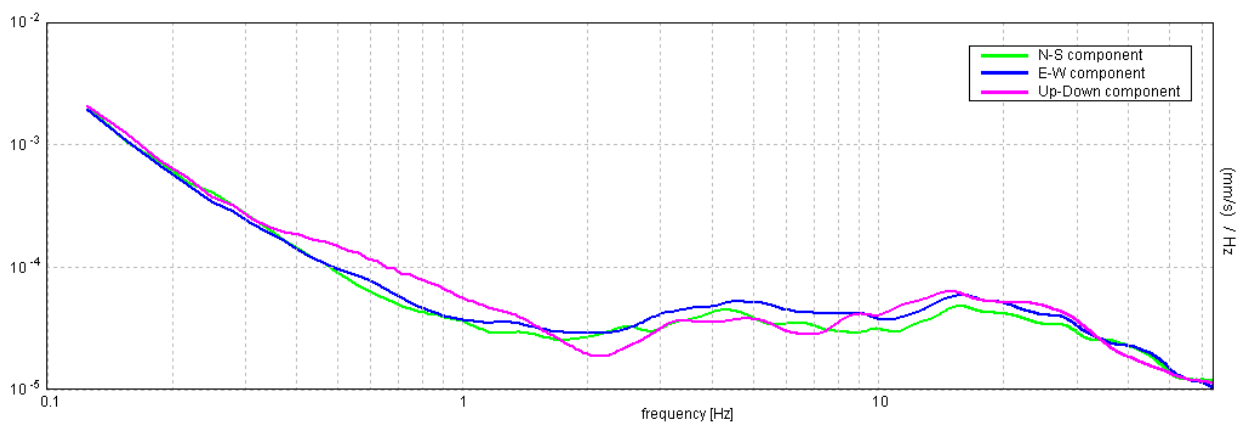
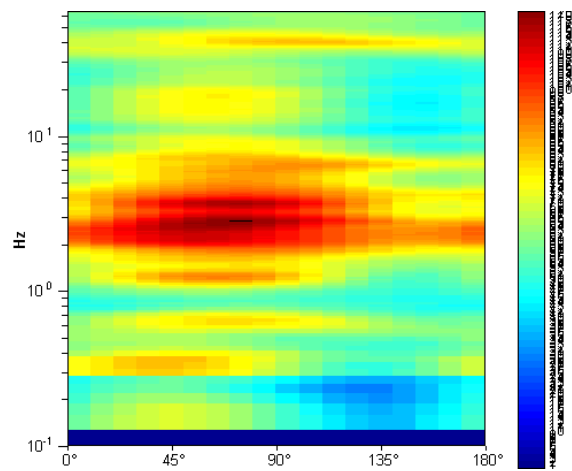
Max. H/V at 2.5 ± 0.22 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

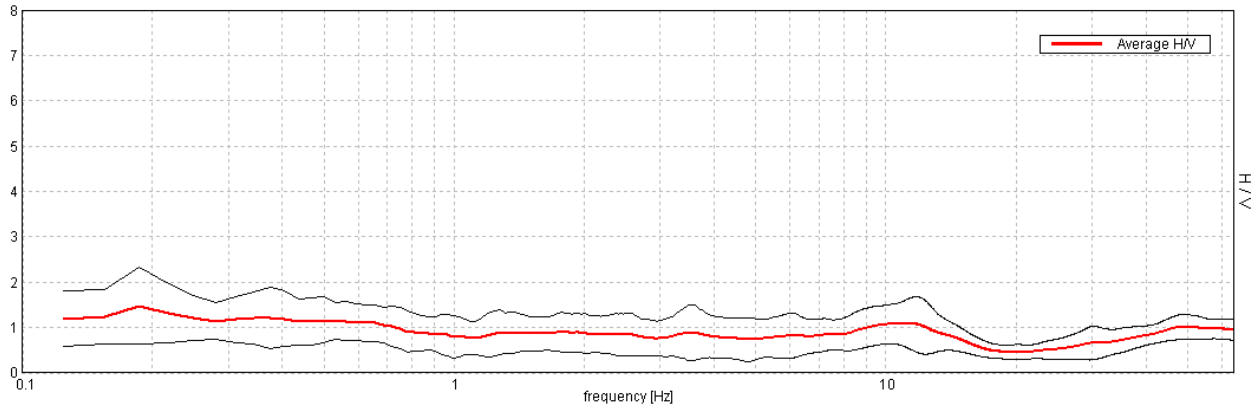


## MONTEVEGLIO, 037043P21HVSR21

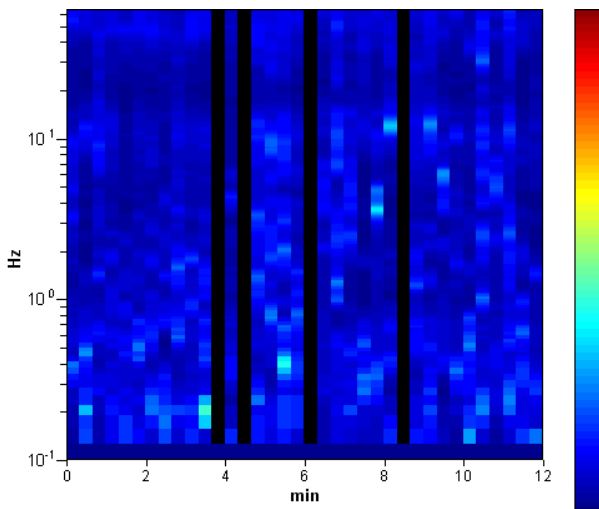
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 15:48:38      End recording: 06/05/13 16:00:39  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 89% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

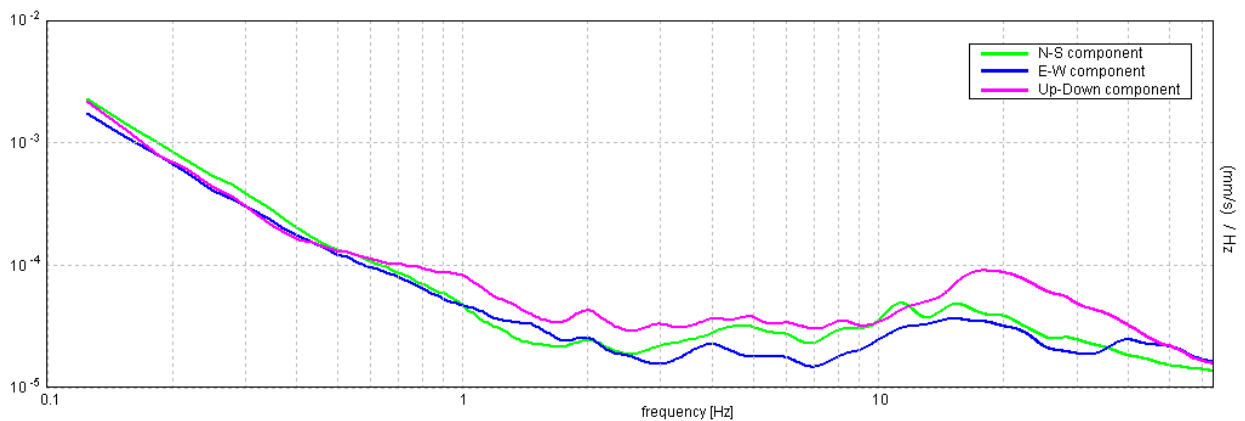
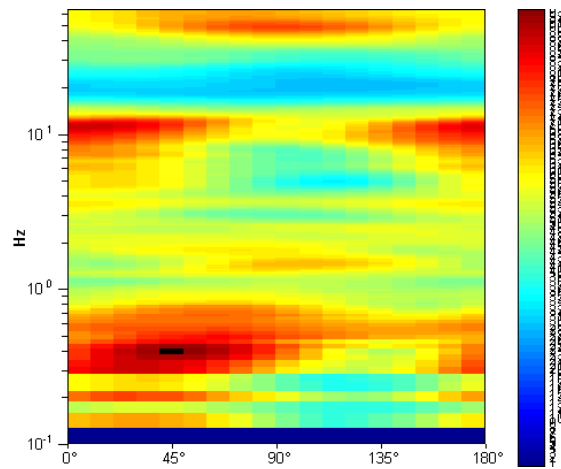
Max. H/V at 0.19 ± 0.03 Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

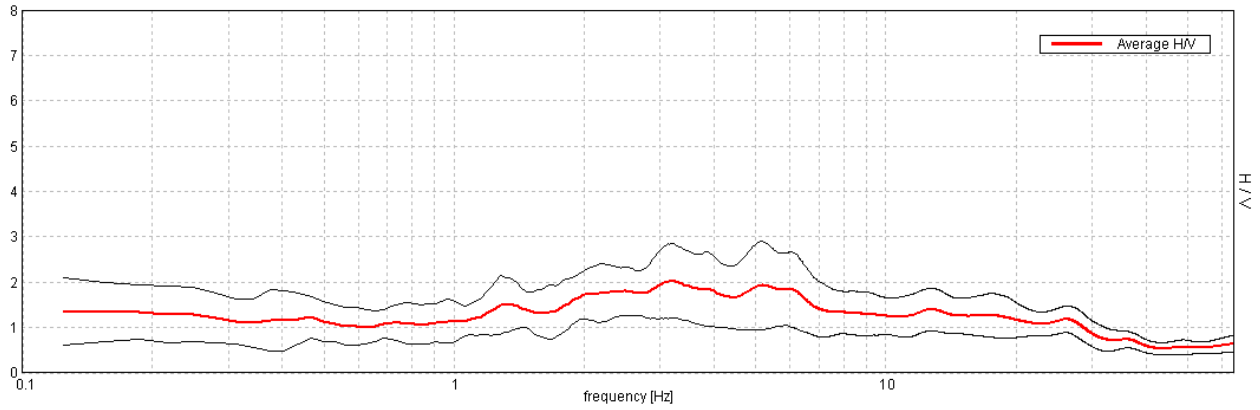


**MONTEVEGLIO, 037043P22HVSR22**

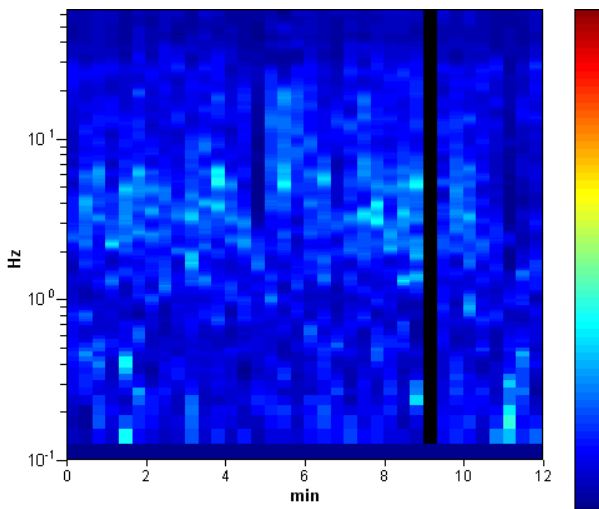
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 16:06:33      End recording: 06/05/13 16:18:34  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 97% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

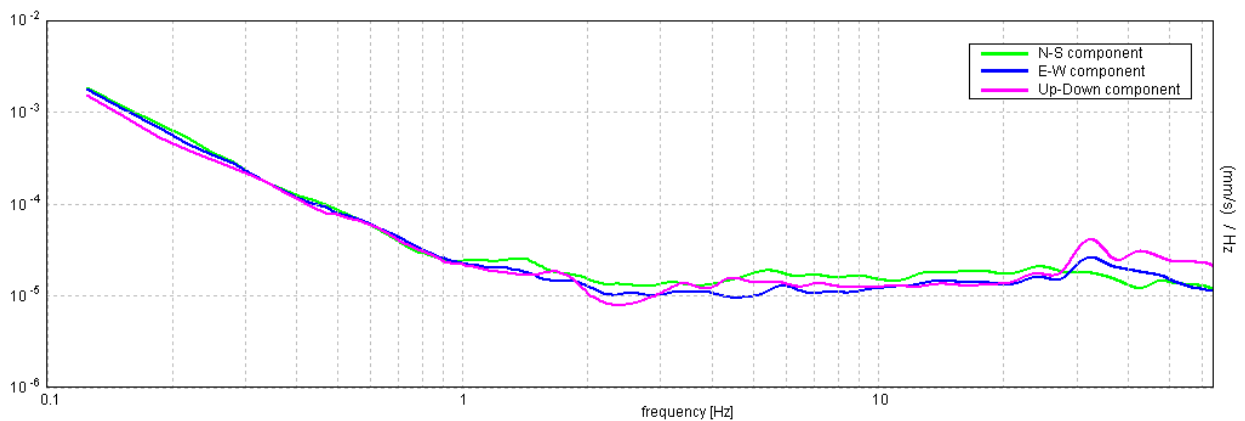
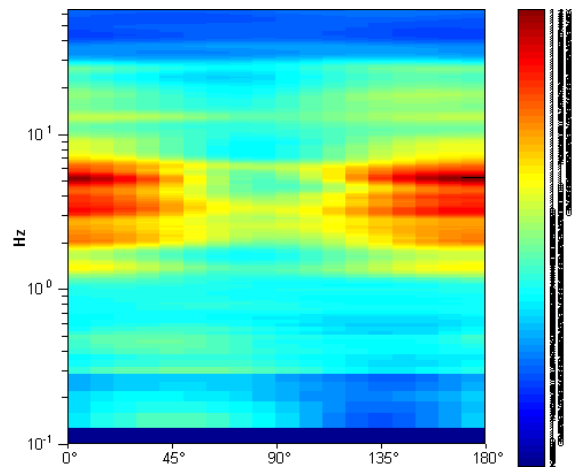
Max. H/V at 3.22 ± 0.14 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

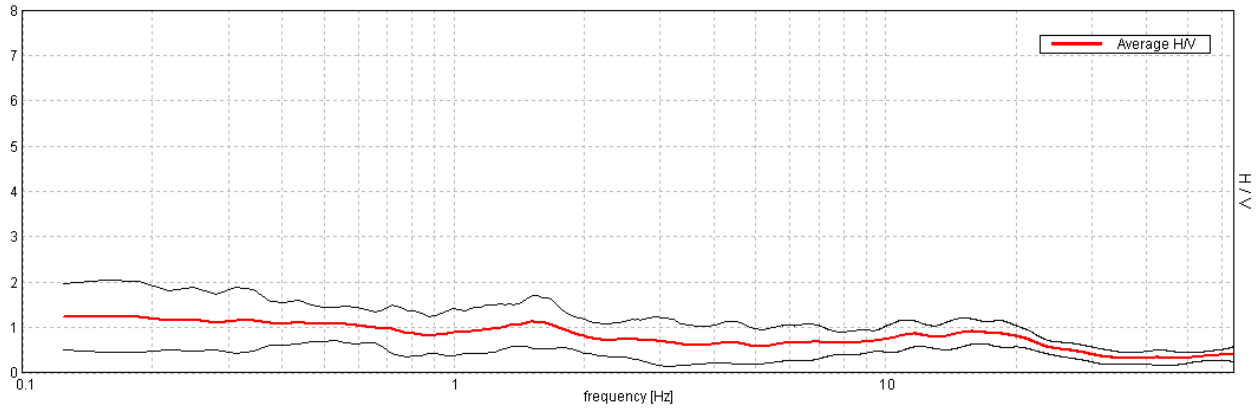


**MONTEVEGLIO, 037043P23HVSR23**

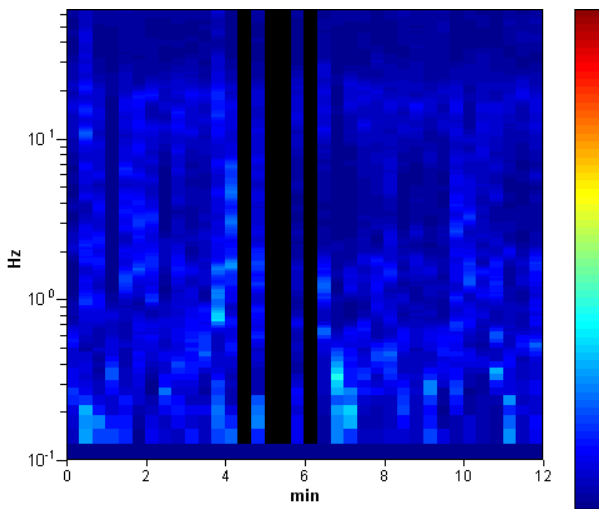
Instrument: TRZ-0108/01-10  
 Start recording: 06/05/13 16:23:25      End recording: 06/05/13 16:35:26  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 89% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

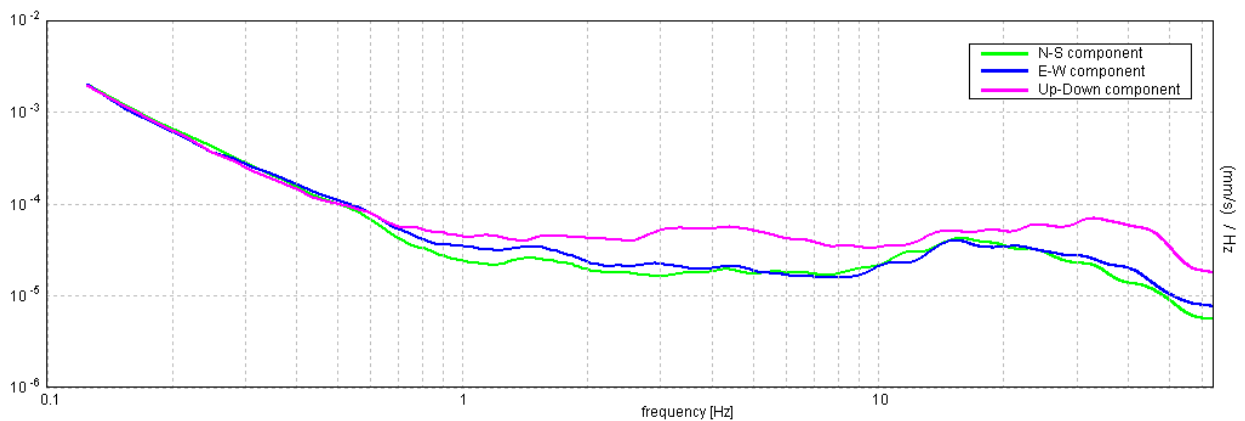
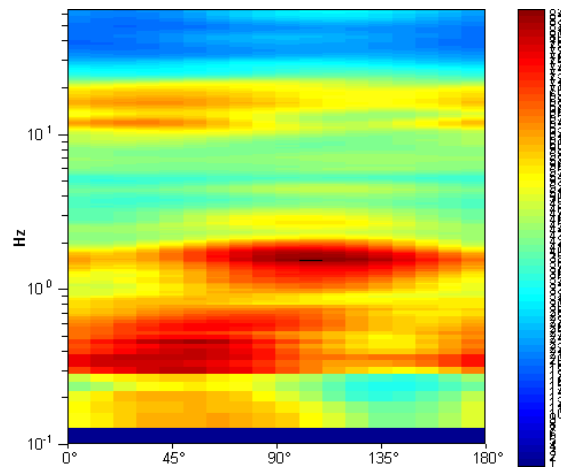
Max. H/V at 0.16 ± 0.01 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

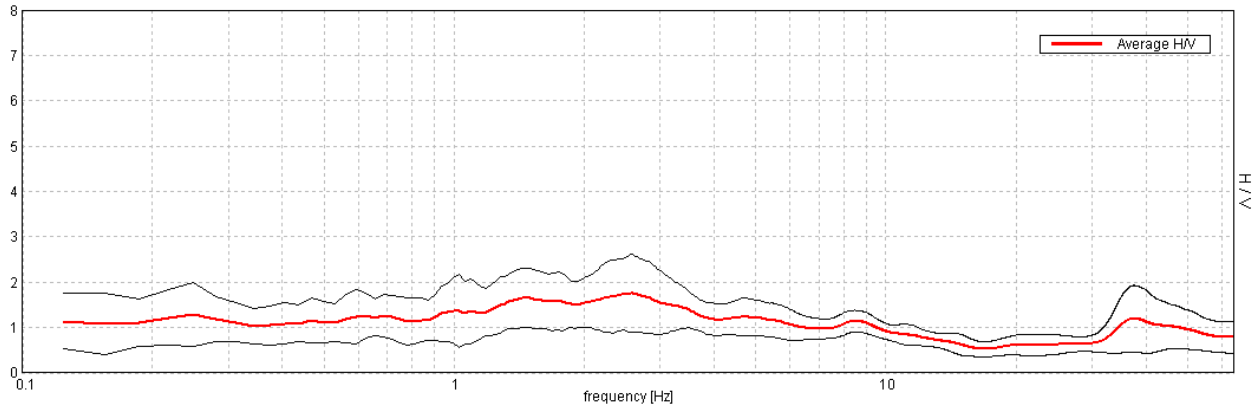


**MONTEVEGLIO, 037043P24HVSR24**

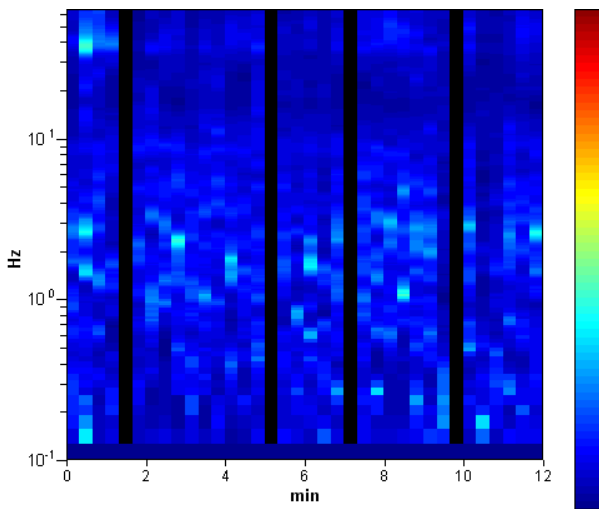
Instrument: TRZ-0108/01-10  
 Start recording: 14/05/13 14:20:17      End recording: 14/05/13 14:32:18  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 89% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

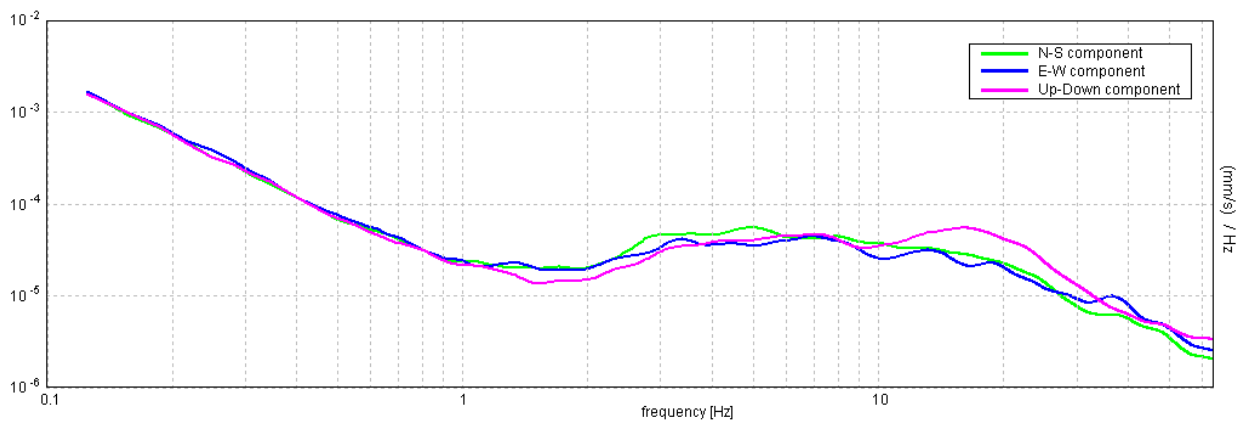
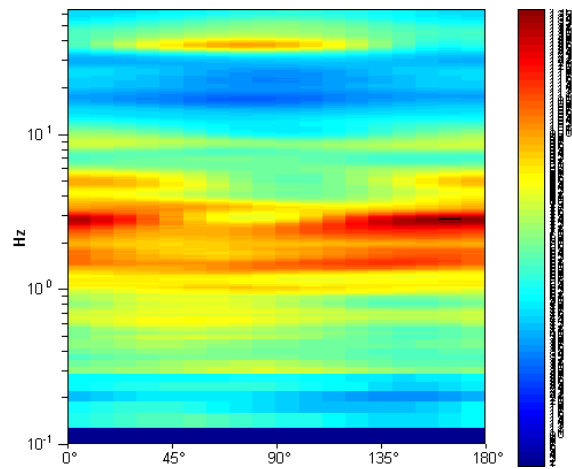
Max. H/V at 2.59 ± 4.61 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

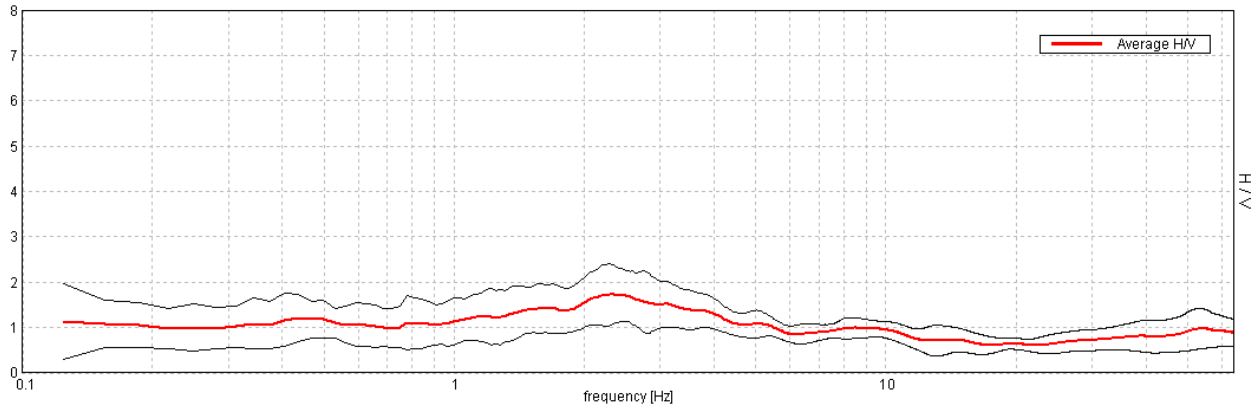


**MONTEVEGLIO, 037043P25HVSR25**

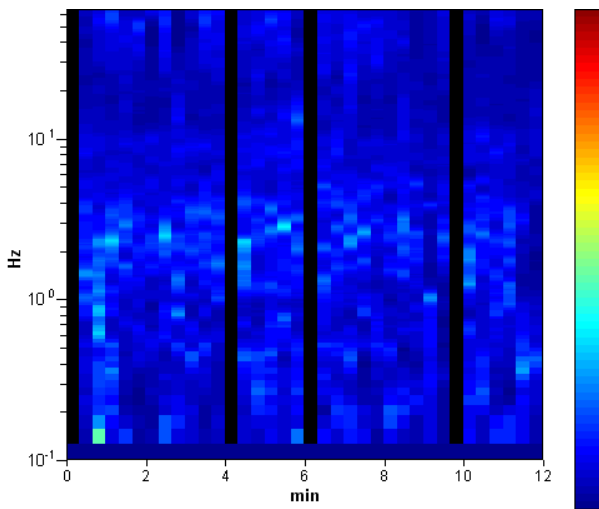
Instrument: TRZ-0108/01-10  
 Start recording: 14/05/13 14:36:09      End recording: 14/05/13 14:48:10  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 89% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

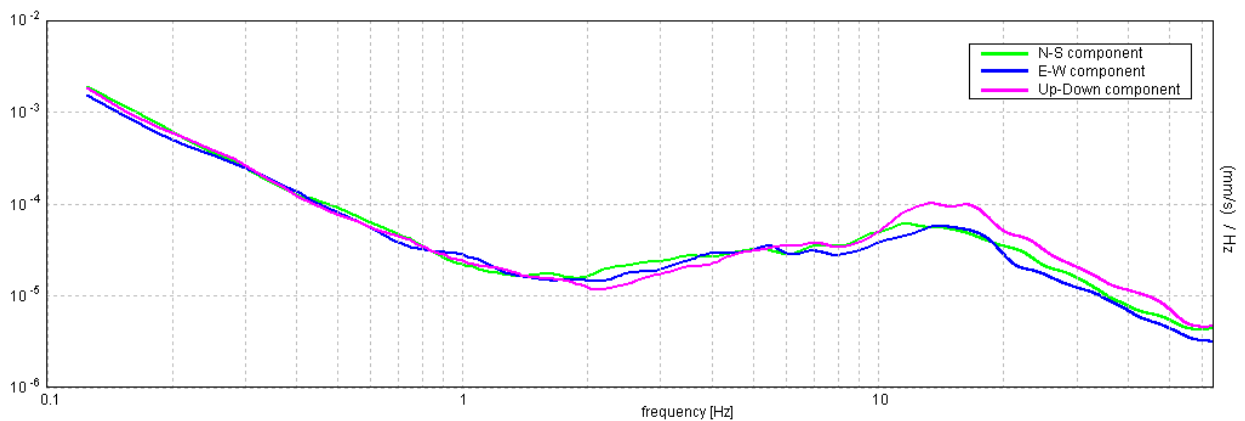
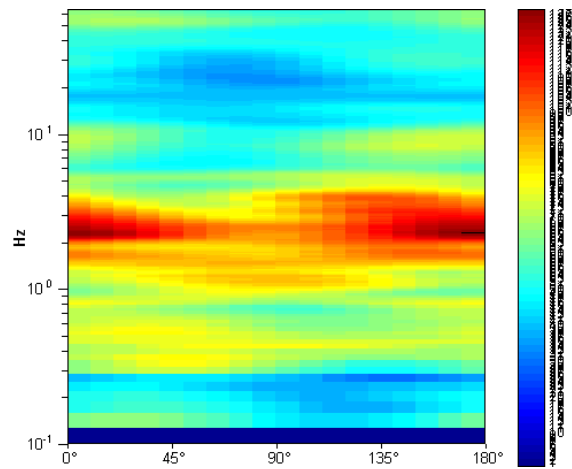
Max. H/V at  $2.31 \pm 0.15$  Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

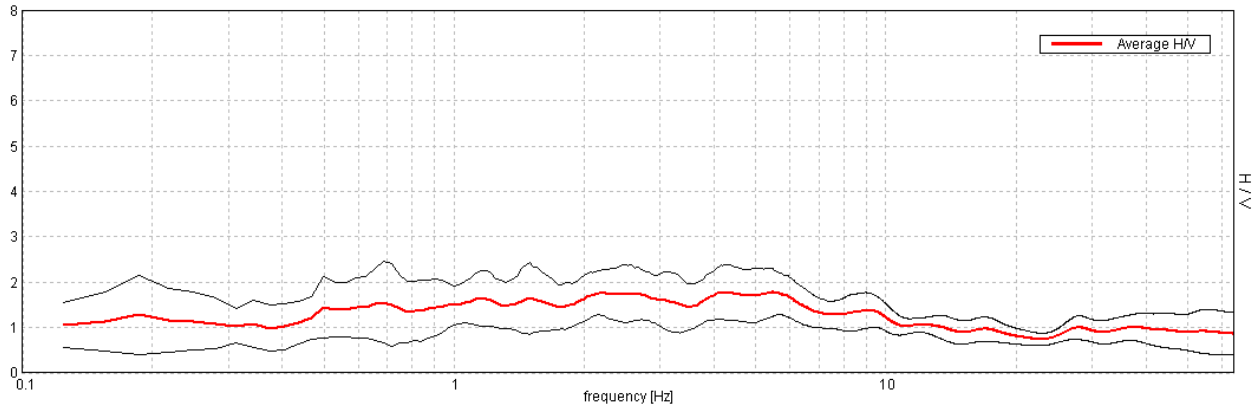


**MONTEVEGLIO, 037043P26HVSR26**

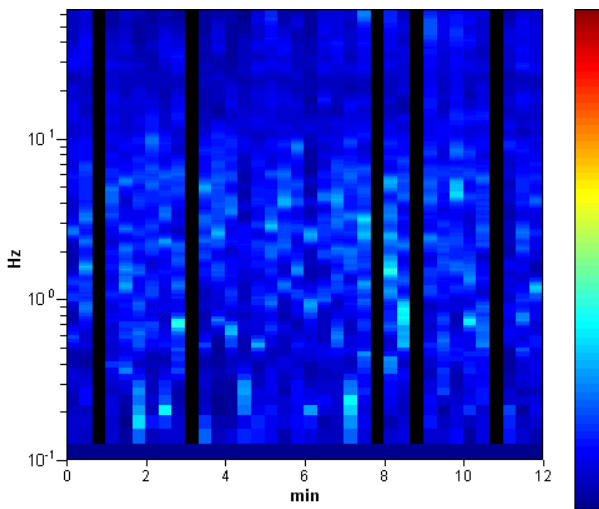
Instrument: TRZ-0108/01-10  
 Start recording: 14/05/13 14:51:29      End recording: 14/05/13 15:03:30  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 86% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

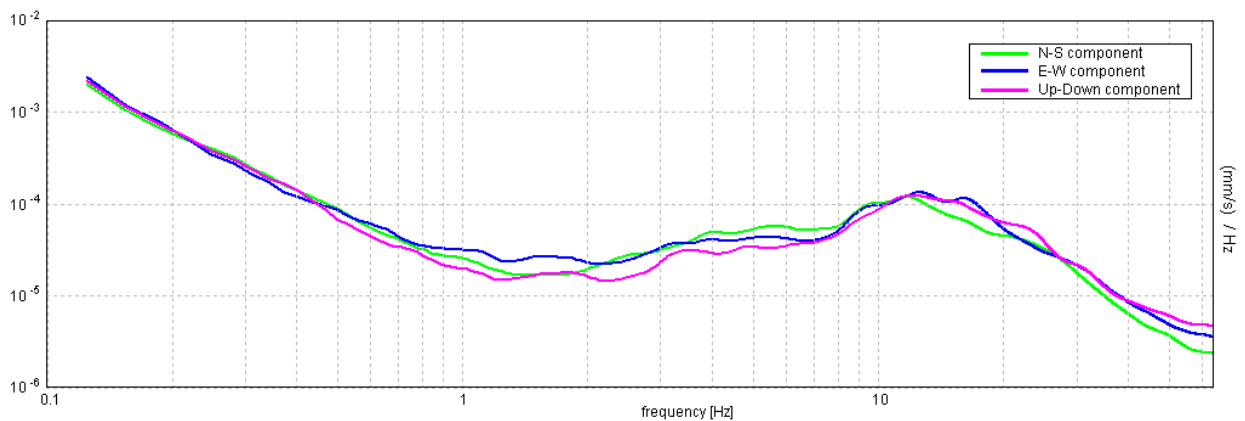
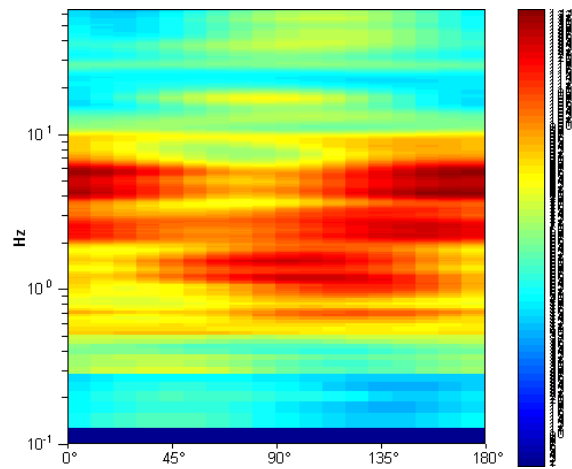
Max. H/V at 5.47 ± 1.04 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

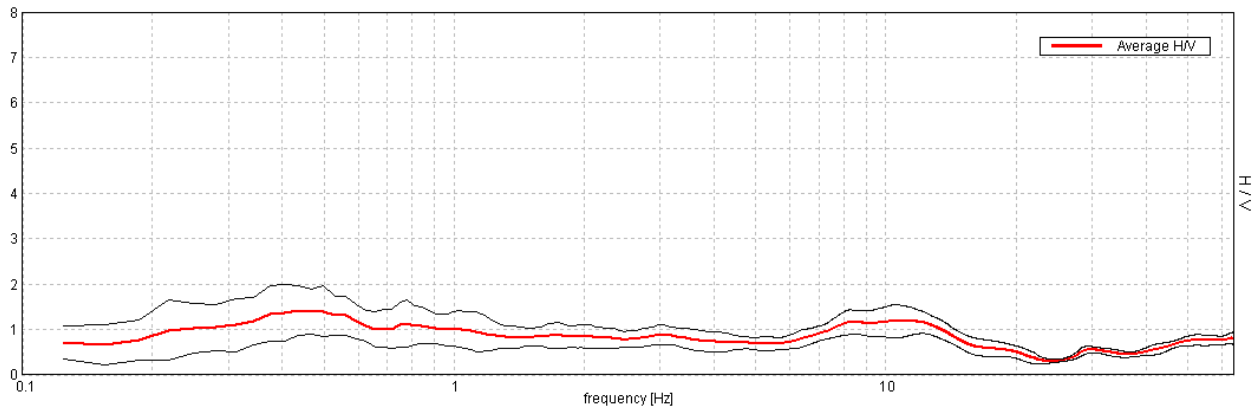


**MONTEVEGLIO, 037043P27HVSR27**

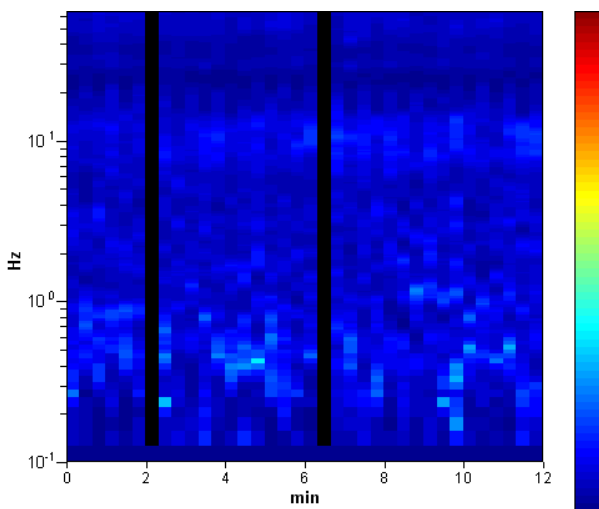
Instrument: TRZ-0108/01-10  
 Start recording: 17/05/13 09:10:54      End recording: 17/05/13 09:22:55  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 94% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

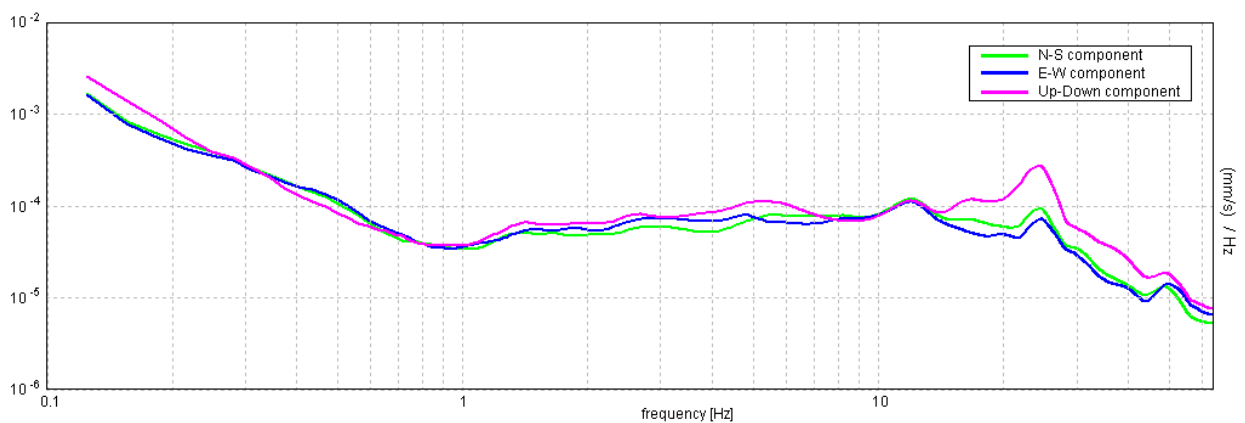
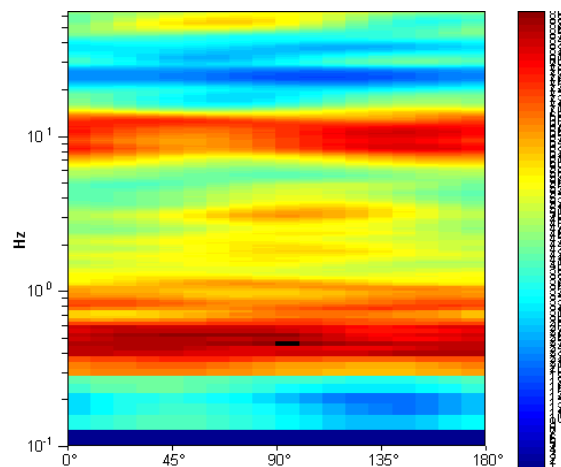
Max. H/V at 0.44 ± 0.06 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**



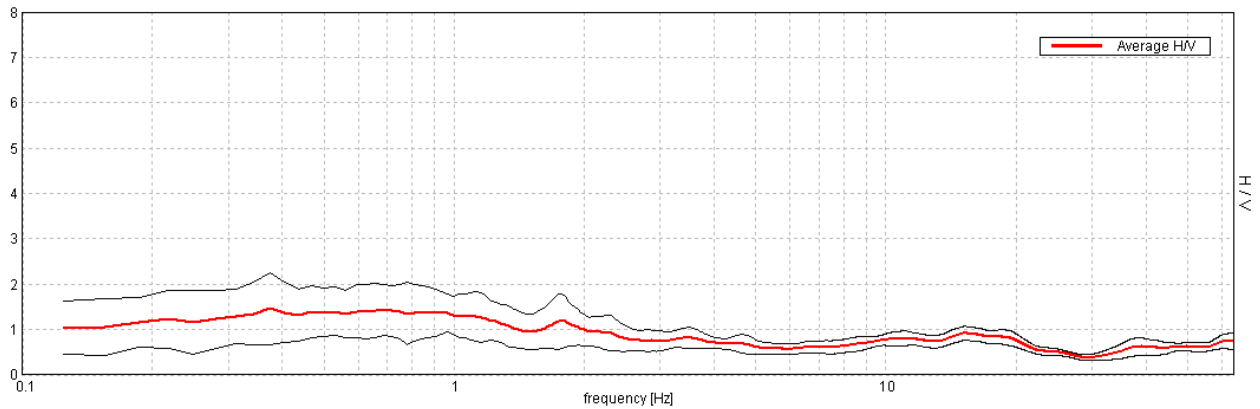


## MONTEVEGLIO, 037043P28HVSR28

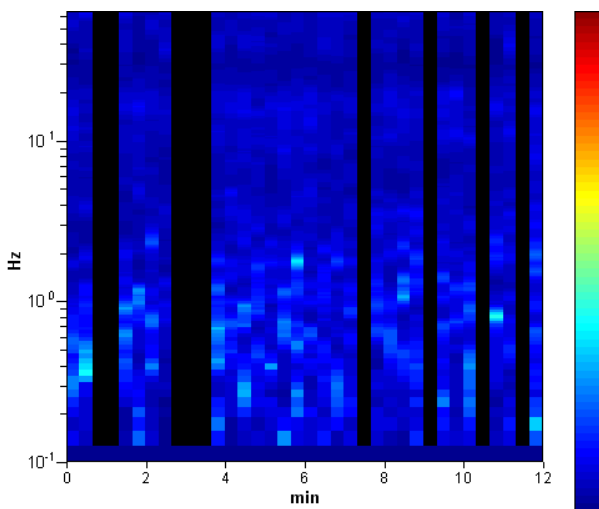
Instrument: TRZ-0108/01-10  
Start recording: 17/05/13 09:28:07      End recording: 17/05/13 09:40:07  
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
Trace length: 0h12'00".      Analyzed 75% trace (manual window selection)  
Sampling rate: 128 Hz  
Window size: 20 s  
Smoothing type: Triangular window  
Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

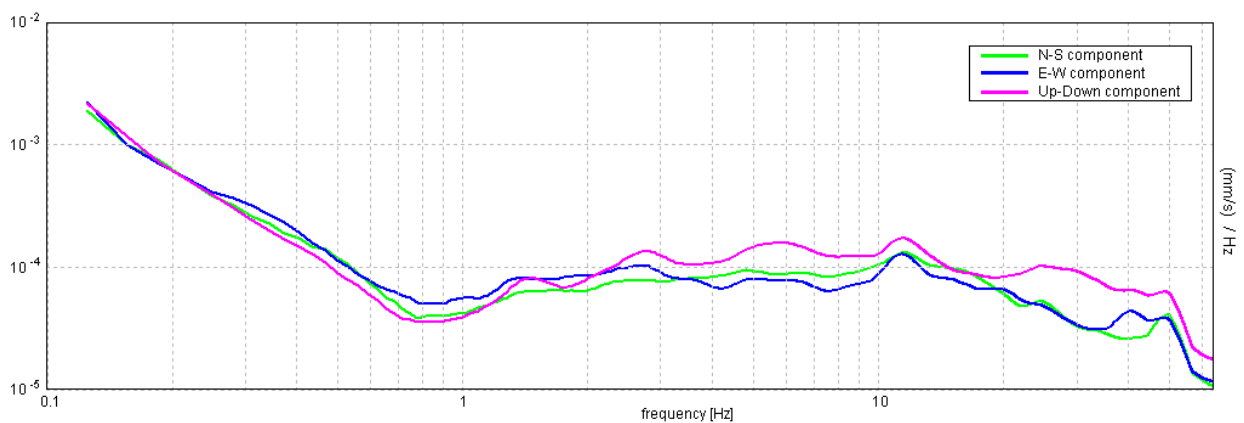
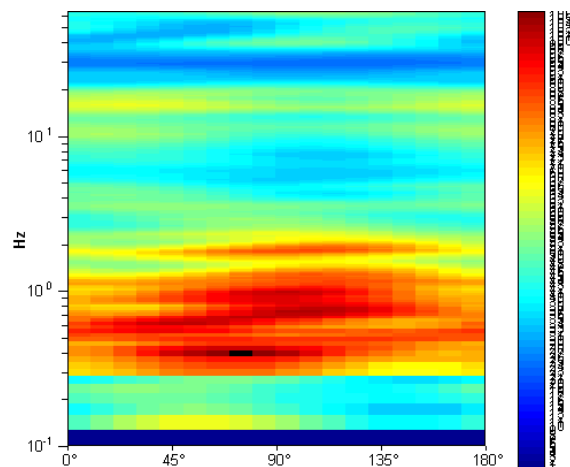
Max. H/V at  $0.38 \pm 0.02$  Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

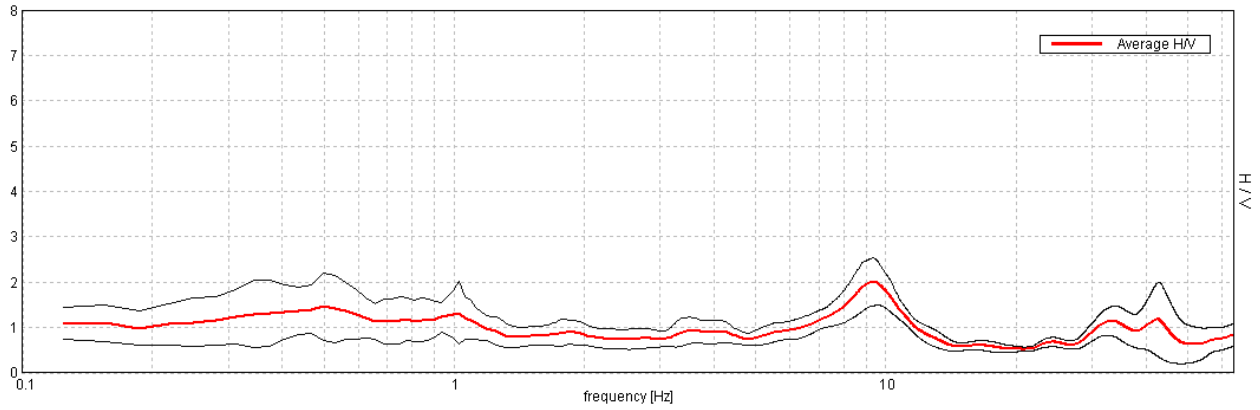


**MONTEVEGLIO, 037043P29HVSR29**

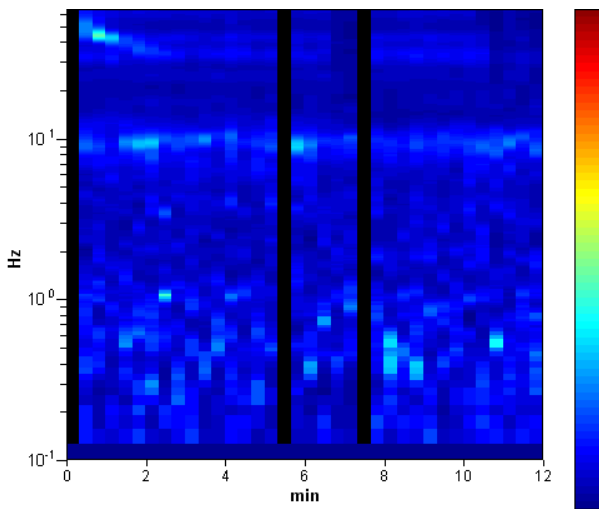
Instrument: TRZ-0108/01-10  
 Start recording: 17/05/13 09:53:15      End recording: 17/05/13 10:05:16  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 92% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

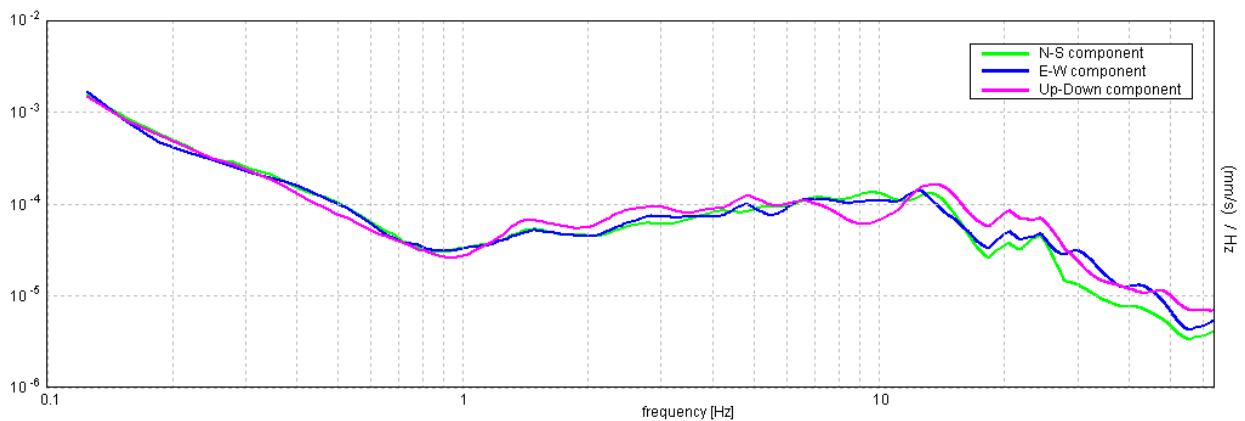
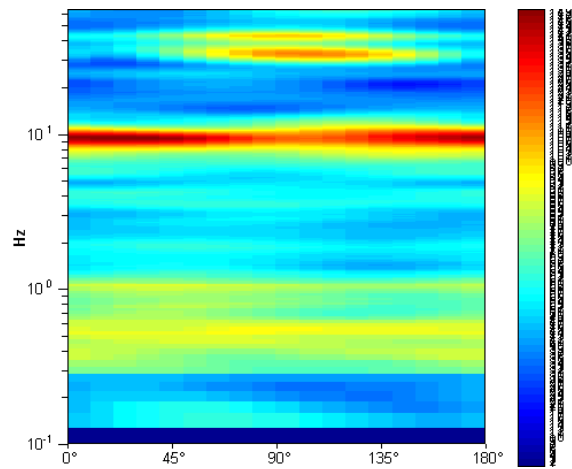
Max. H/V at 9.38 ± 4.93 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

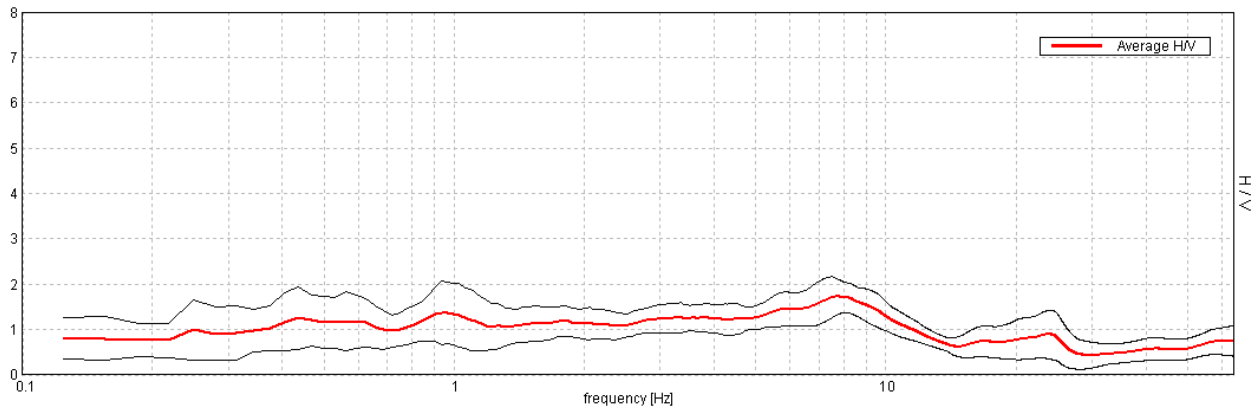


## MONTEVEGLIO, 037043P30HVSR30

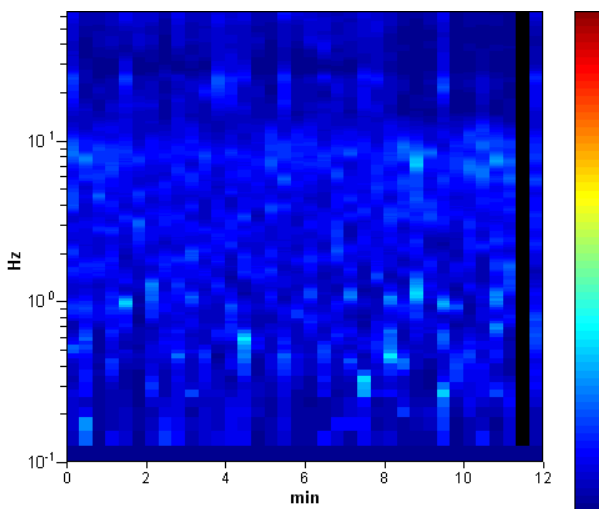
Instrument: TRZ-0108/01-10  
 Start recording: 17/05/13 10:13:31      End recording: 17/05/13 10:25:32  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 97% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

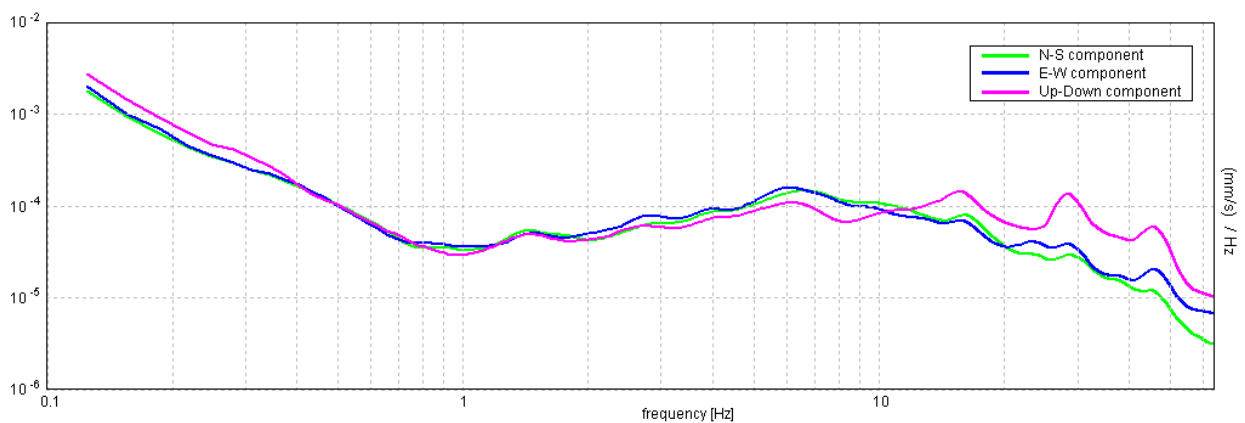
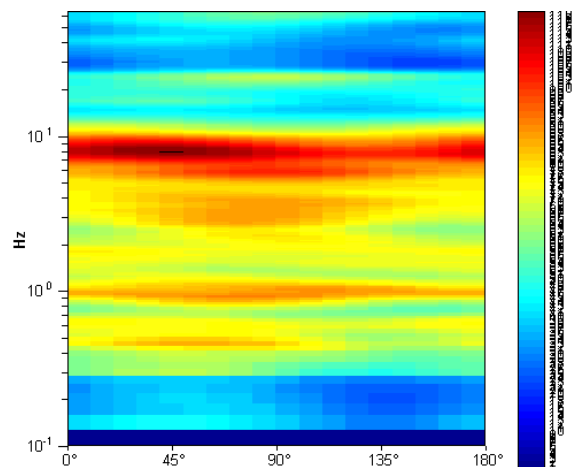
Max. H/V at 7.69 ± 0.08 Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V

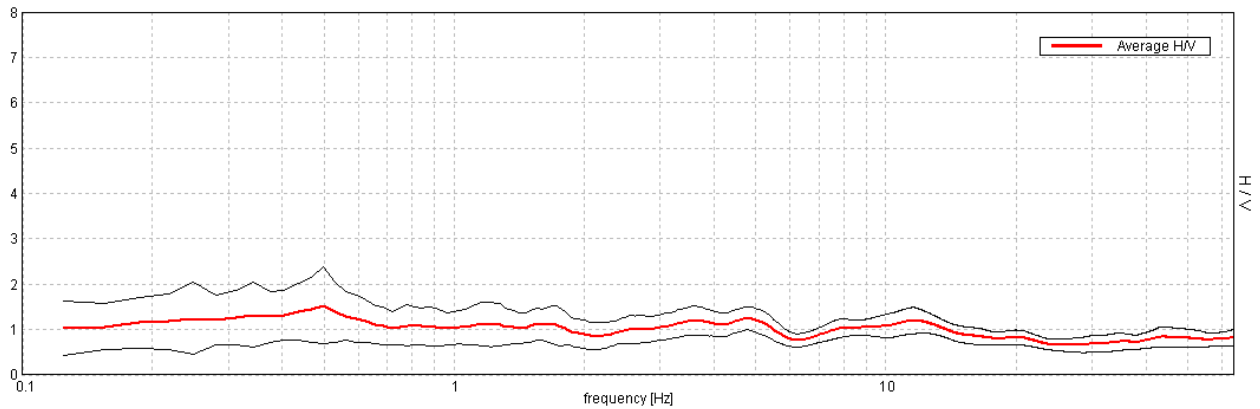


## MONTEVEGLIO, 037043P31HVSR31

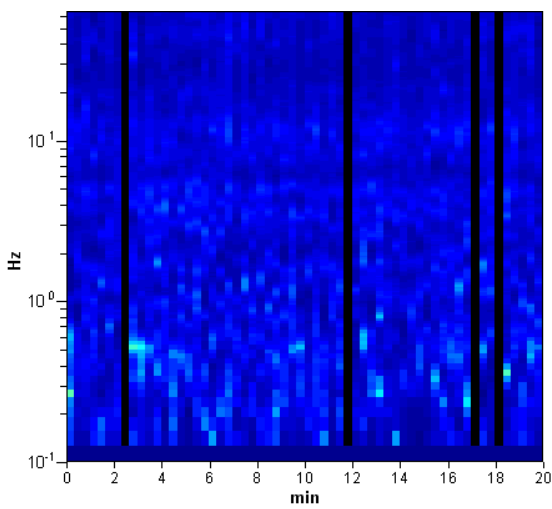
Instrument: TRZ-0108/01-10  
 Start recording: 17/05/13 10:32:04      End recording: 17/05/13 10:52:05  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h20'00".      Analyzed 93% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

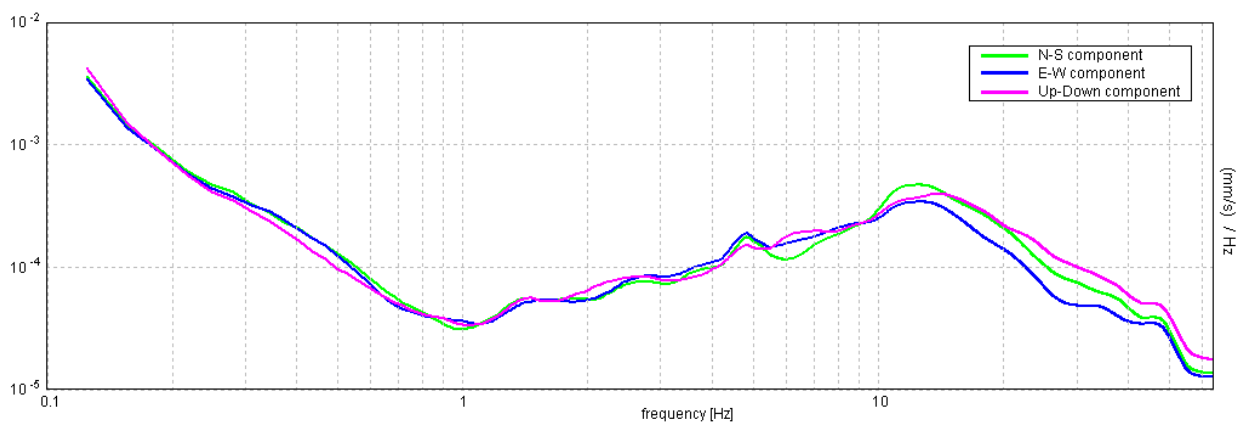
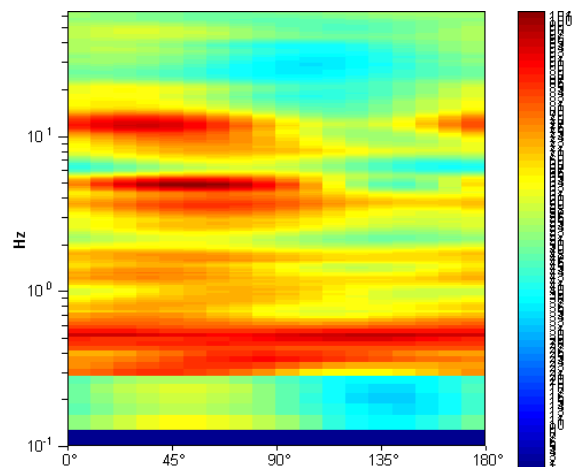
Max. H/V at  $0.5 \pm 0.02$  Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



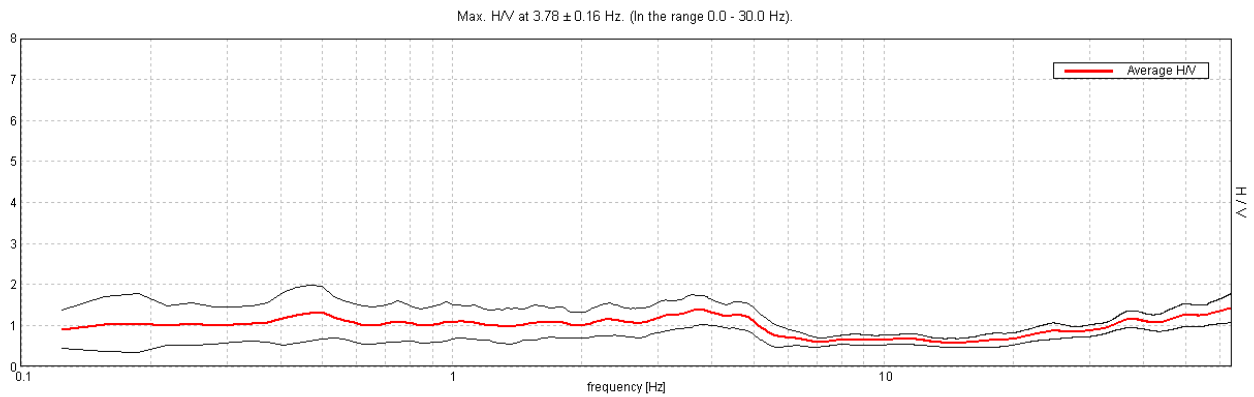
### DIRECTIONAL H/V



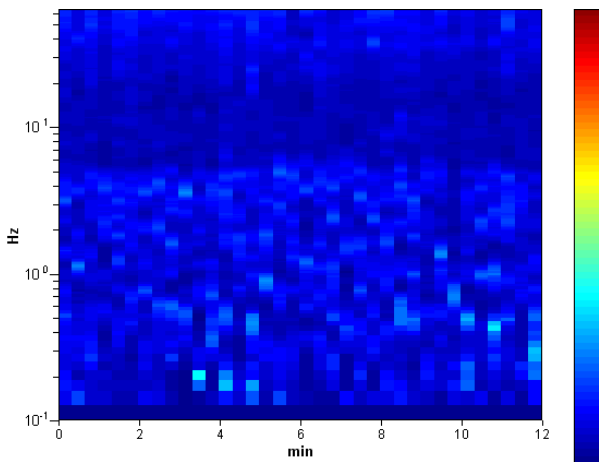
## MONTEVEGLIO, 037043P32HVSR32

Instrument: TRZ-0108/01-10  
 Start recording: 17/05/13 10:57:14      End recording: 17/05/13 11:09:15  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analysis performed on the entire trace.  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

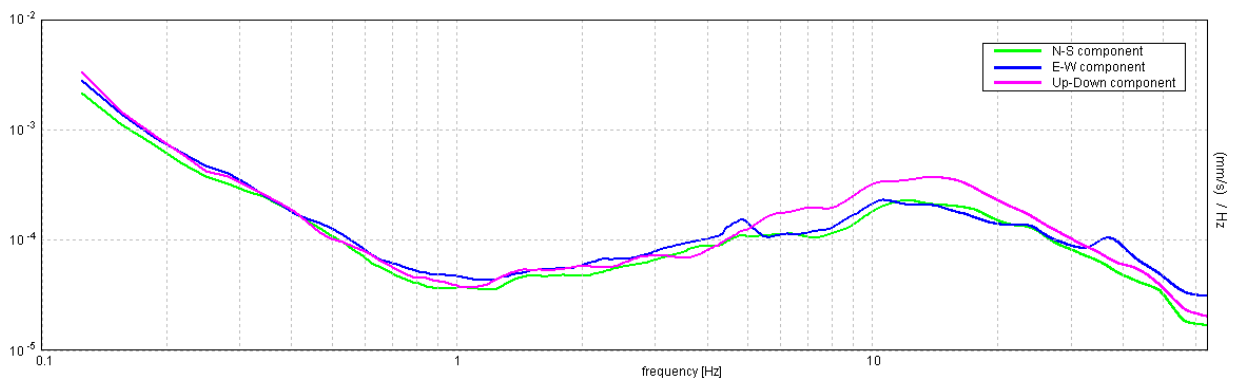
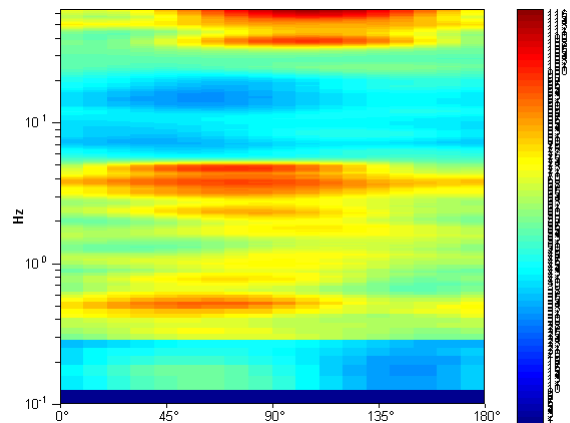
### HORIZONTAL TO VERTICAL SPECTRAL RATIO



### H/V TIME HISTORY



### DIRECTIONAL H/V

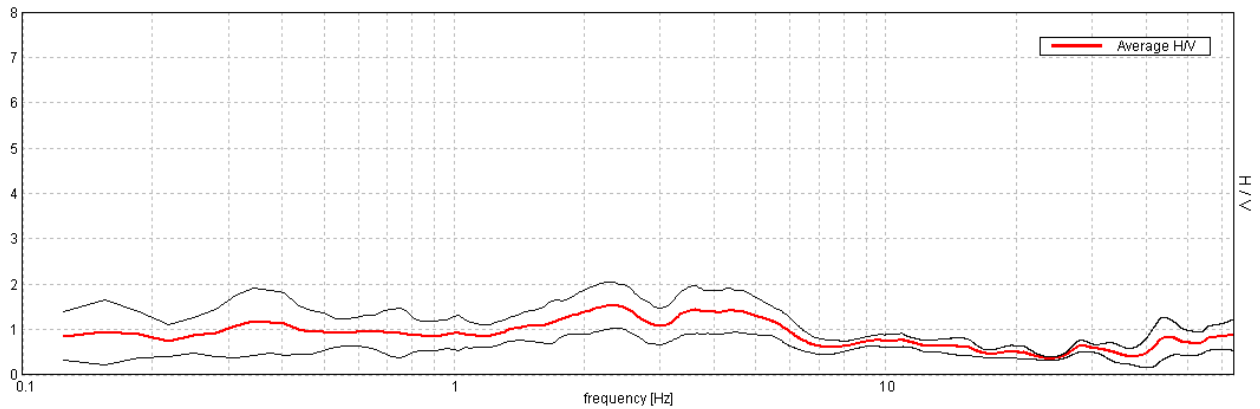


### MONTEVEGLIO, 037043P33HVSR33

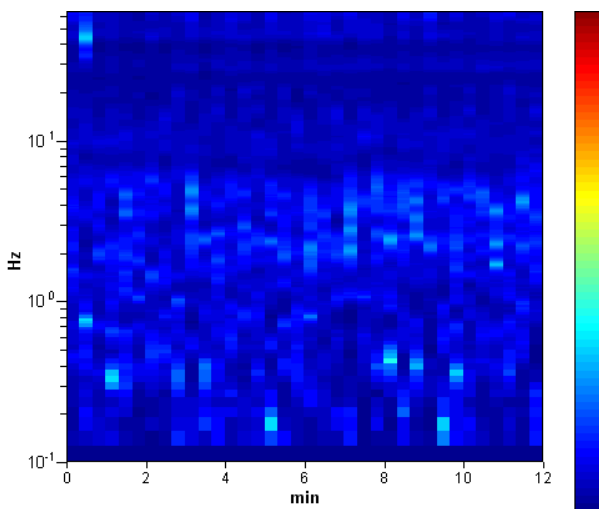
Instrument: TRZ-0108/01-10  
Start recording: 17/05/13 11:13:21      End recording: 17/05/13 11:25:22  
Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
Trace length: 0h12'00".      Analysis performed on the entire trace.  
Sampling rate: 128 Hz  
Window size: 20 s  
Smoothing type: Triangular window  
Smoothing: 12%

#### HORIZONTAL TO VERTICAL SPECTRAL RATIO

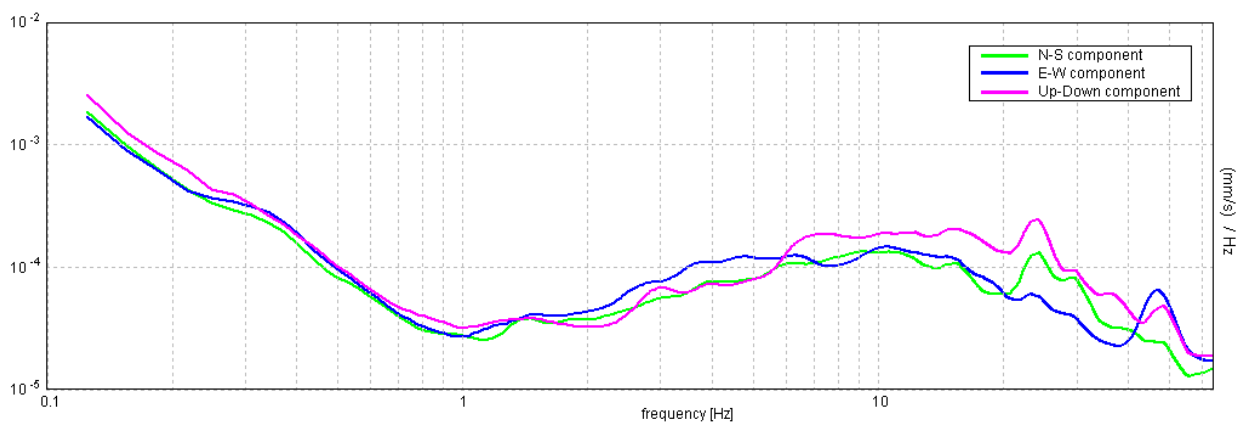
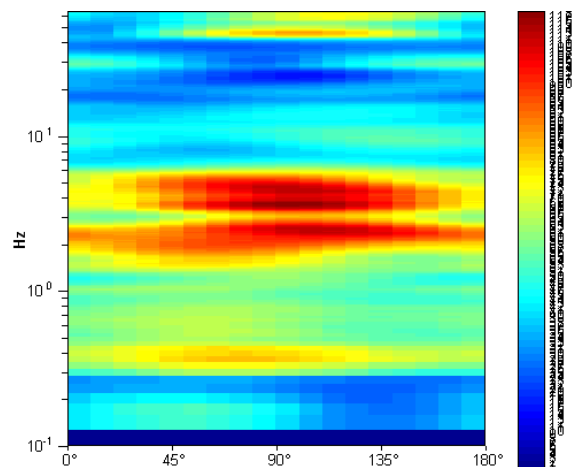
Max. H/V at  $2.34 \pm 2.4$  Hz. (In the range 0.0 - 64.0 Hz).



#### H/V TIME HISTORY



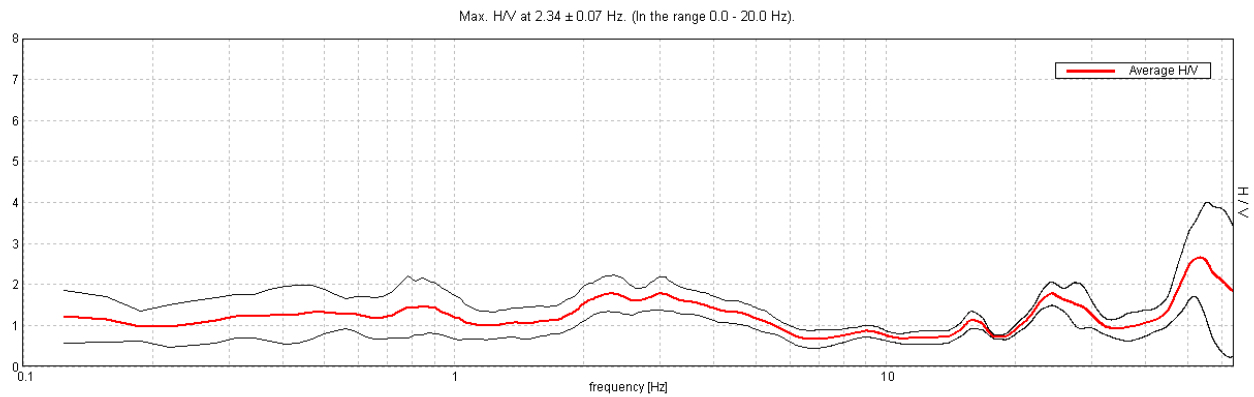
#### DIRECTIONAL H/V



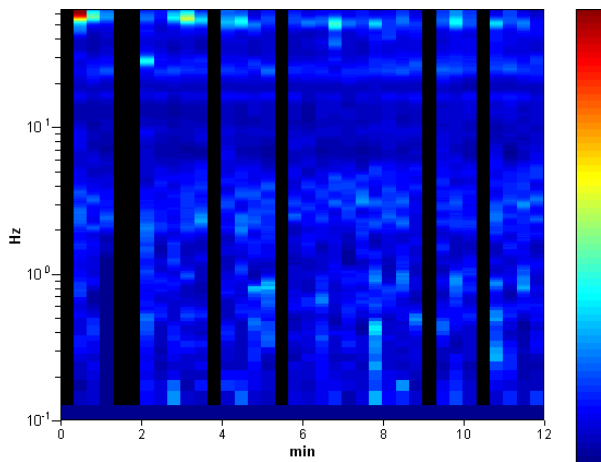
## MONTEVEGLIO, 037043P34HVSR34

Instrument: TRZ-0108/01-10  
 Start recording: 17/05/13 11:35:12      End recording: 17/05/13 11:47:13  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 81% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

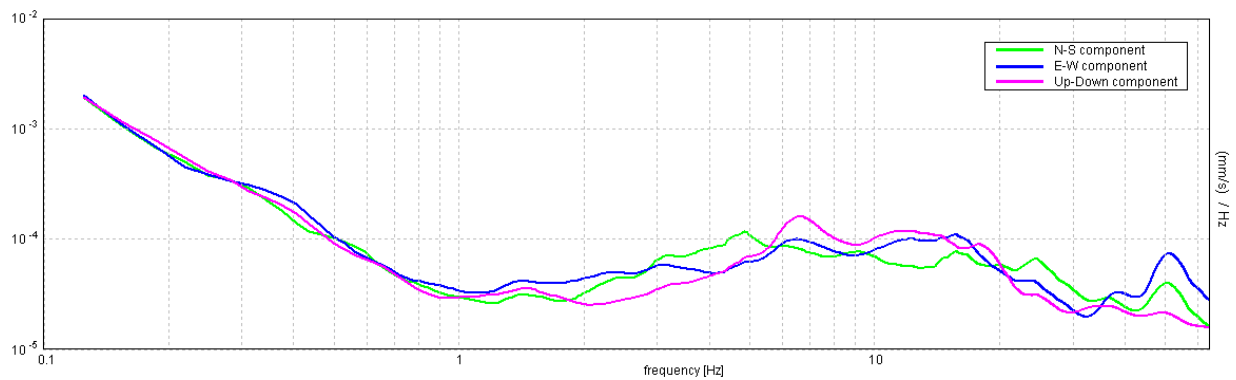
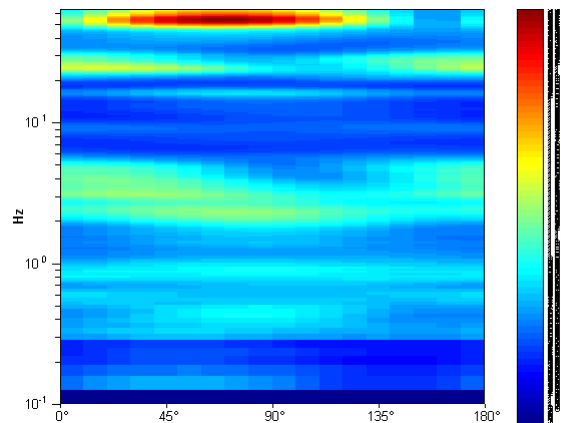
### HORIZONTAL TO VERTICAL SPECTRAL RATIO



### H/V TIME HISTORY



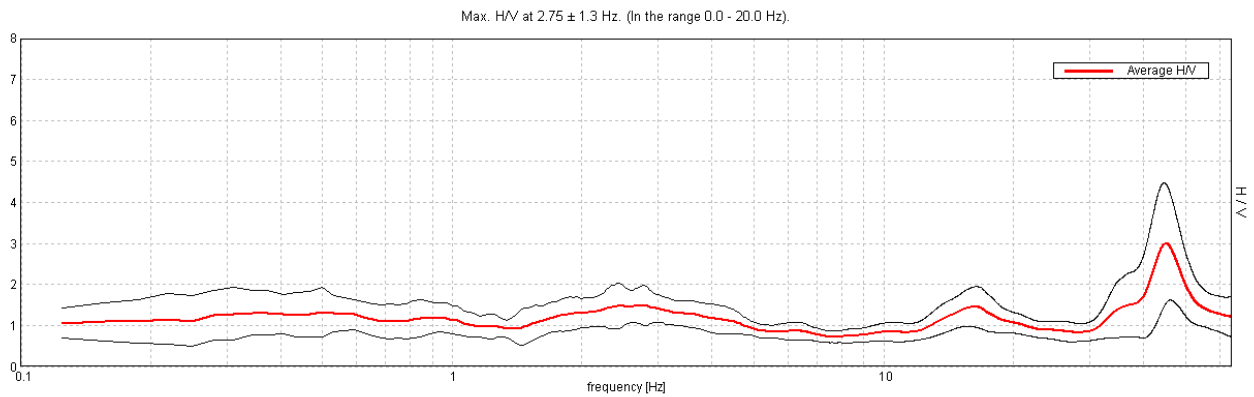
### DIRECTIONAL H/V



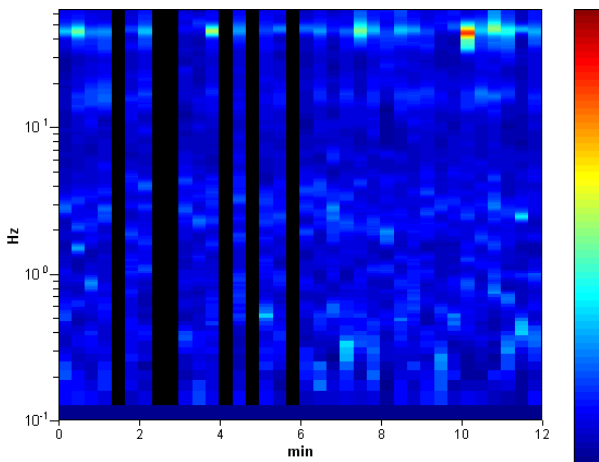
## MONTEVEGLIO, 037043P35HVSR35

Instrument: TRZ-0108/01-10  
 Start recording: 17/05/13 11:56:52      End recording: 17/05/13 12:08:53  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 83% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

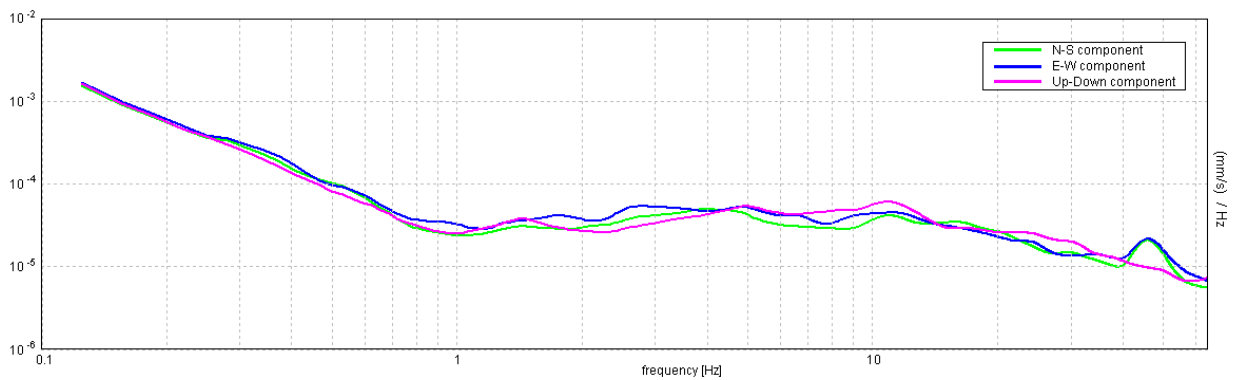
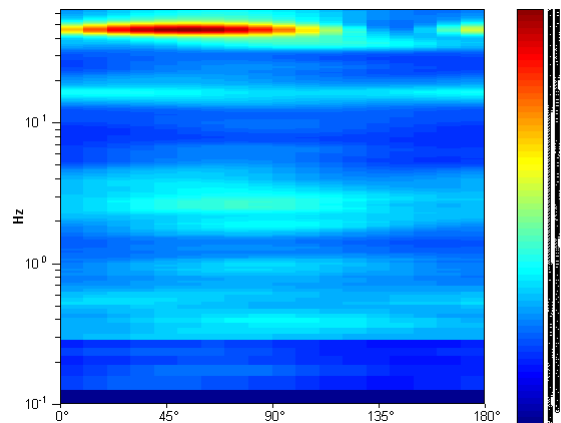
### HORIZONTAL TO VERTICAL SPECTRAL RATIO



### H/V TIME HISTORY



### DIRECTIONAL H/V

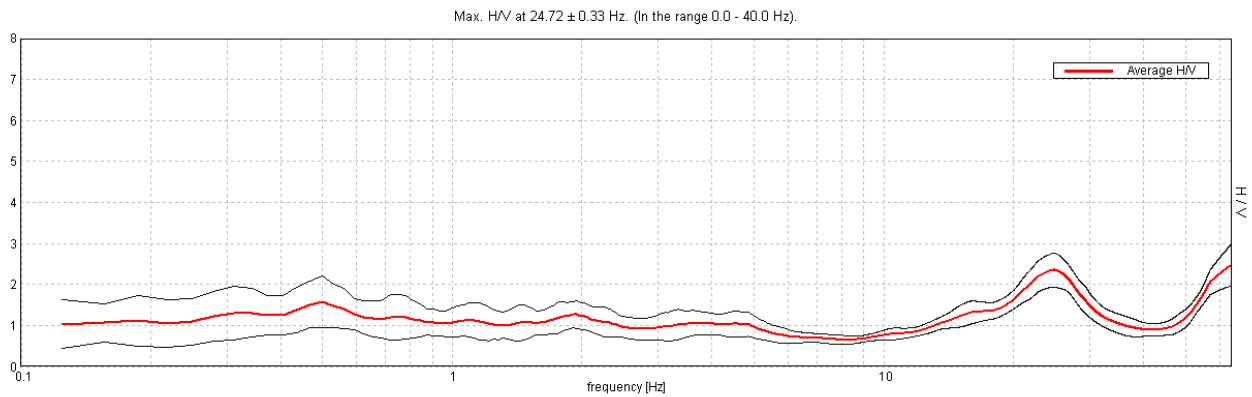




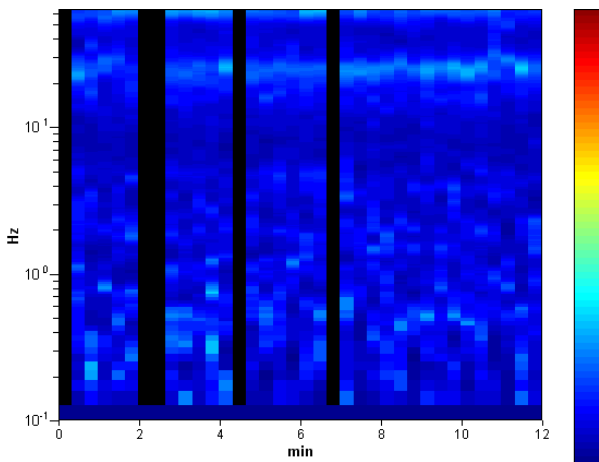
**MONTEVEGLIO, 037043P36HVSR36**

Instrument: TRZ-0108/01-10  
 Start recording: 17/05/13 12:19:10      End recording: 17/05/13 12:31:11  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 86% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

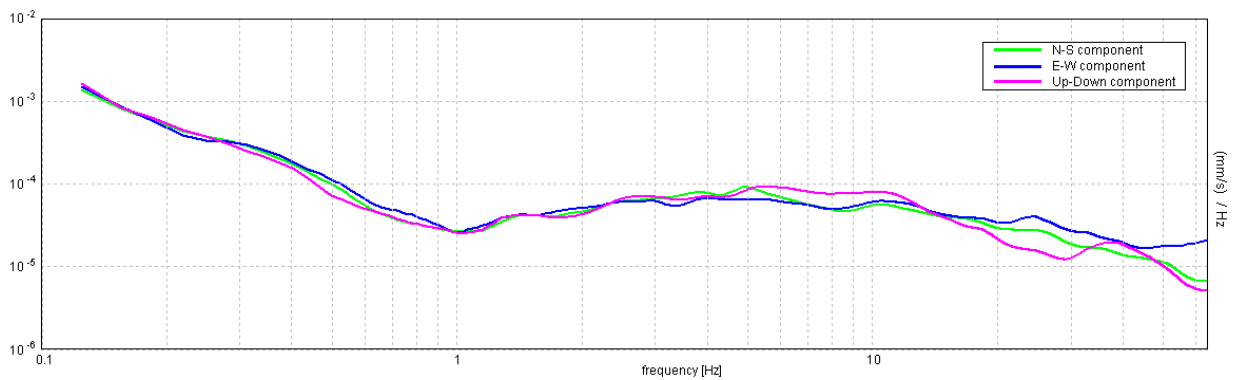
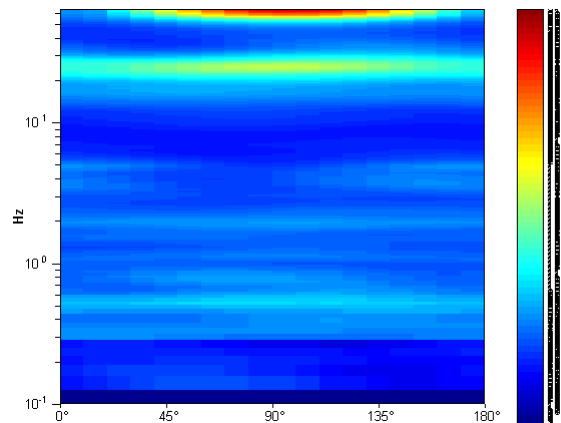
**HORIZONTAL TO VERTICAL SPECTRAL RATIO**



**H/V TIME HISTORY**



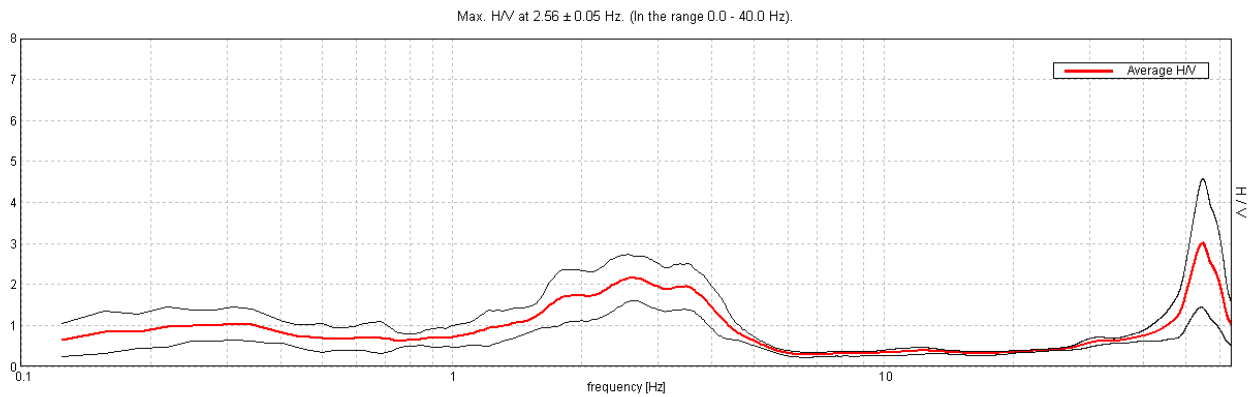
**DIRECTIONAL H/V**



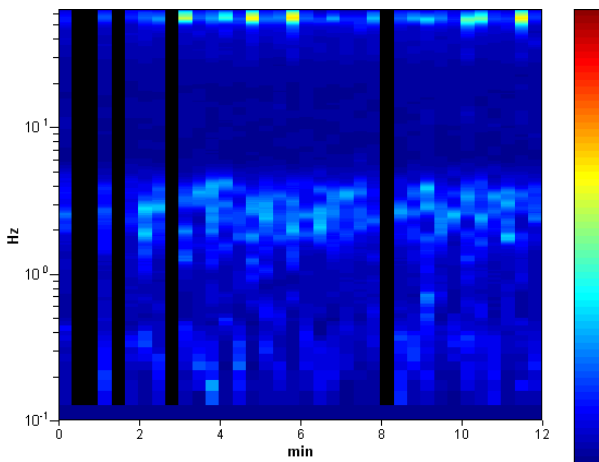
**BAZZANO, 037043P37HVSR37**

Instrument: TRZ-0108/01-10  
 Start recording: 22/05/13 16:13:02      End recording: 22/05/13 16:25:03  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 86% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

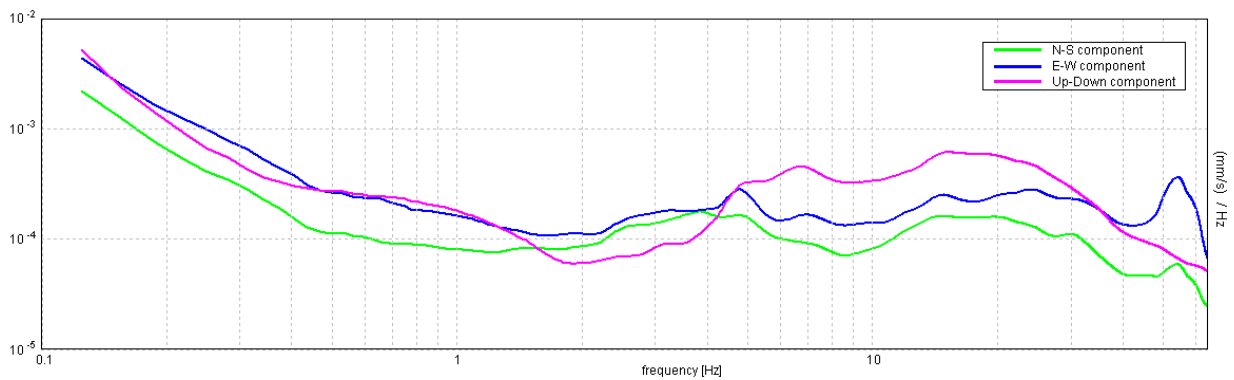
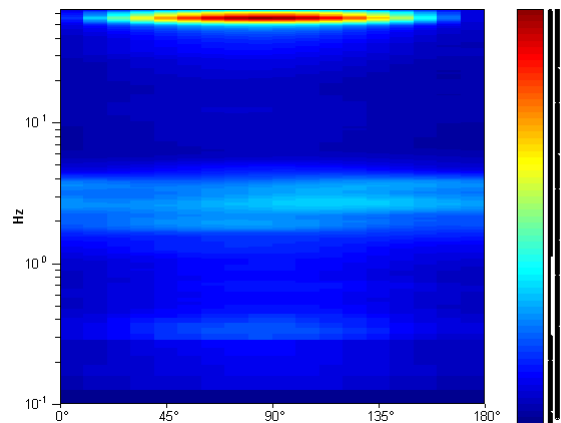
**HORIZONTAL TO VERTICAL SPECTRAL RATIO**



**H/V TIME HISTORY**



**DIRECTIONAL H/V**

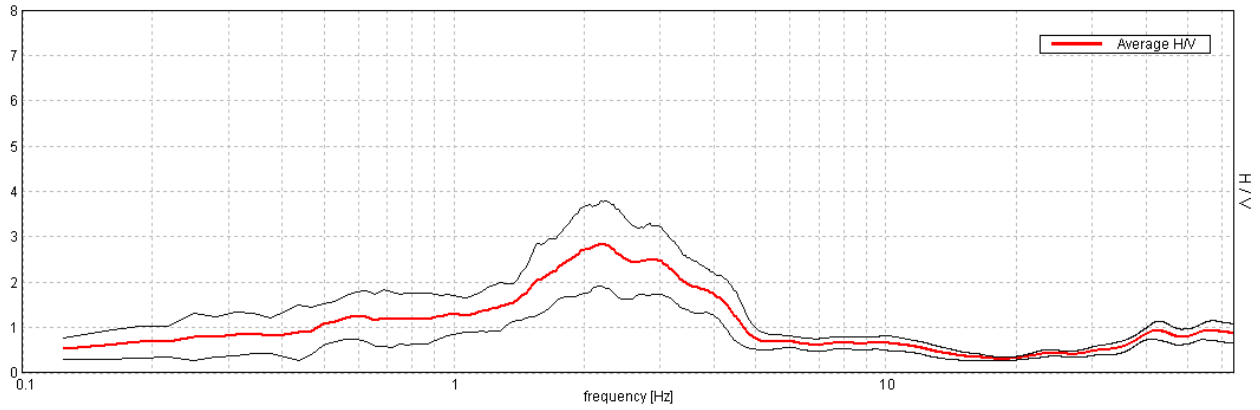


**MONTEVEGLIO, 037043P38HVSR38**

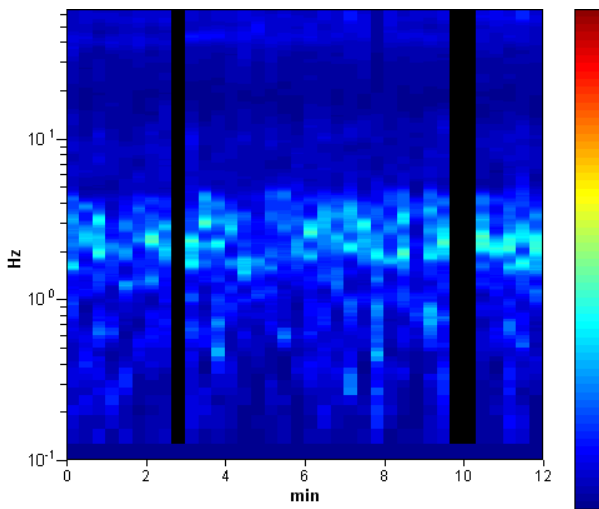
Instrument: TRZ-0108/01-10  
 Start recording: 22/05/13 16:28:33      End recording: 22/05/13 16:40:33  
 Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN  
 Trace length: 0h12'00".      Analyzed 92% trace (manual window selection)  
 Sampling rate: 128 Hz  
 Window size: 20 s  
 Smoothing type: Triangular window  
 Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

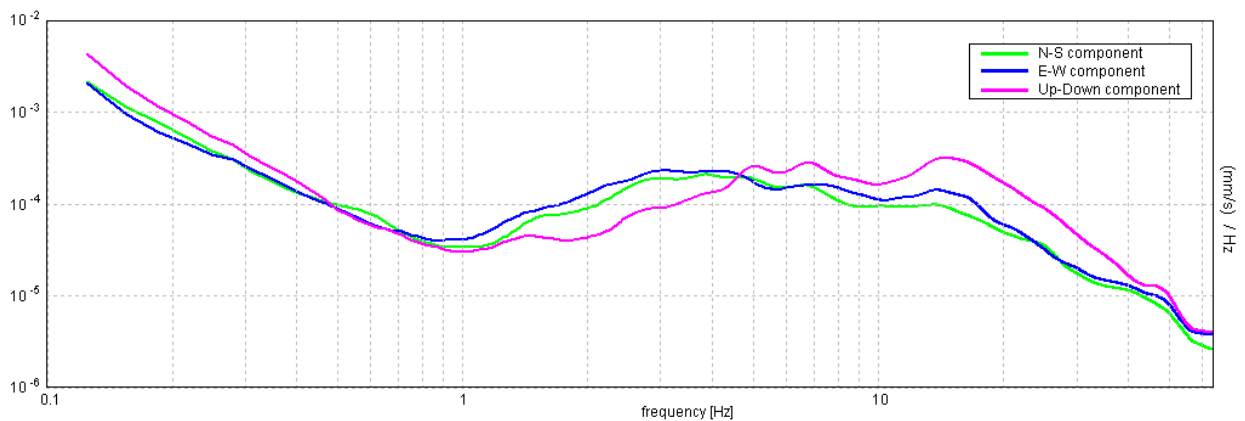
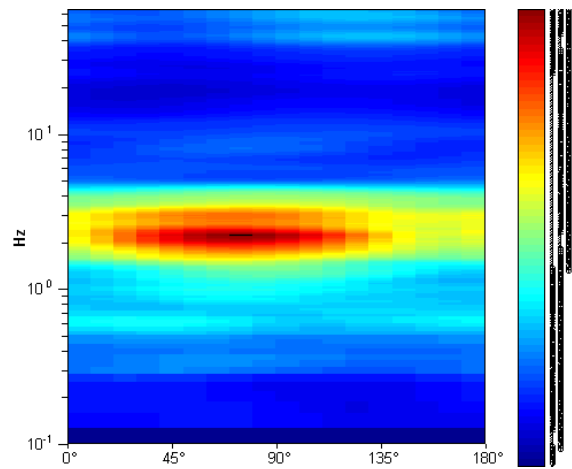
Max. H/V at 2.19 ± 0.04 Hz. (In the range 0.0 - 64.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**



PROVA PENETROMETRICA DINAMICA 037043P29DP39

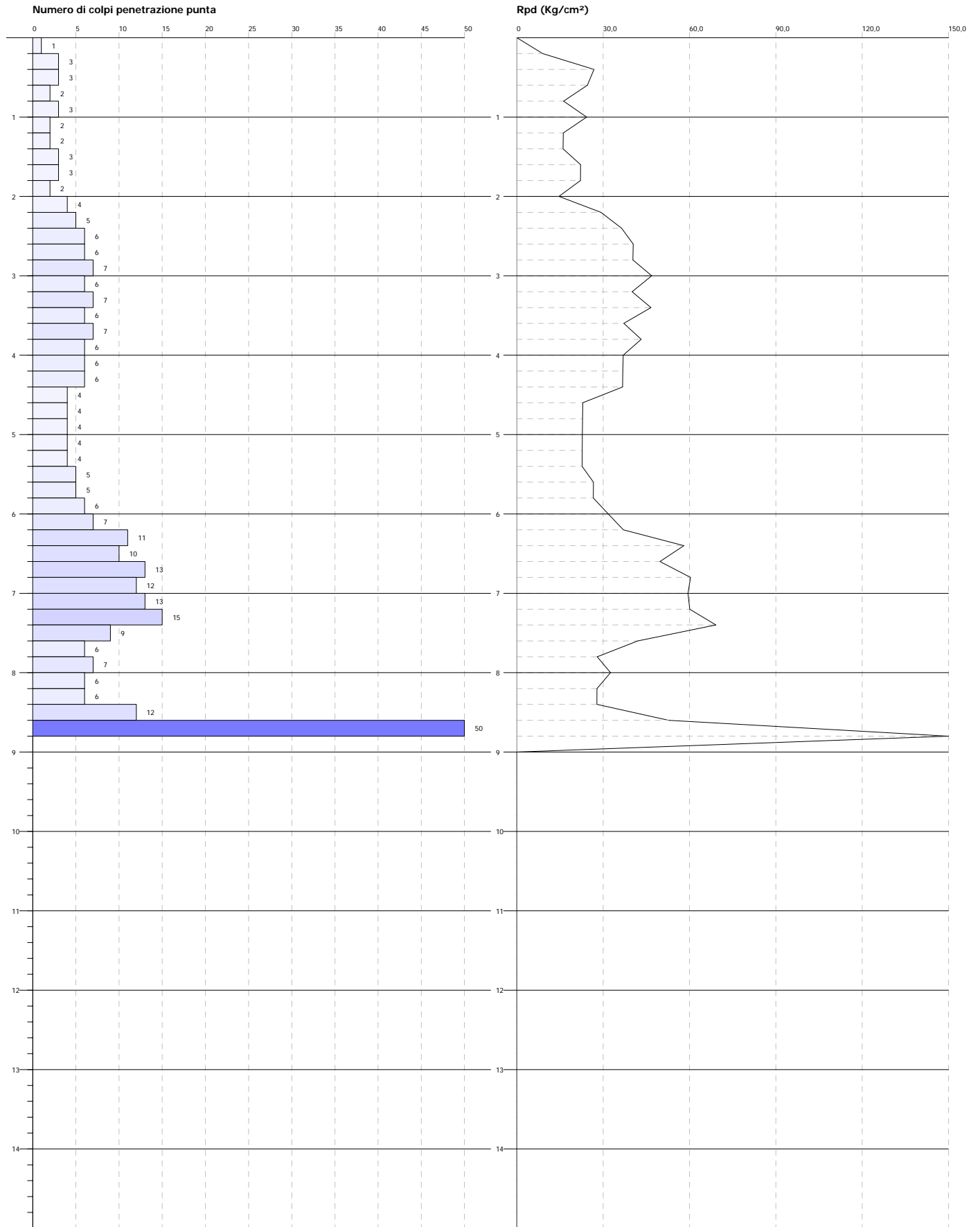
Strumento utilizzato... DPSH TG 63-200 PAGANI

DIAGRAMMA NUMERO COLPI PUNTA-Rpd

Committente :  
Cantiere : DPSH VALSAMOGGIA  
Località : Monteveglio

Data :08/05/2013  
falda: foro occluso a m 6,20 - acqua a m 3,70

Scala 1:66



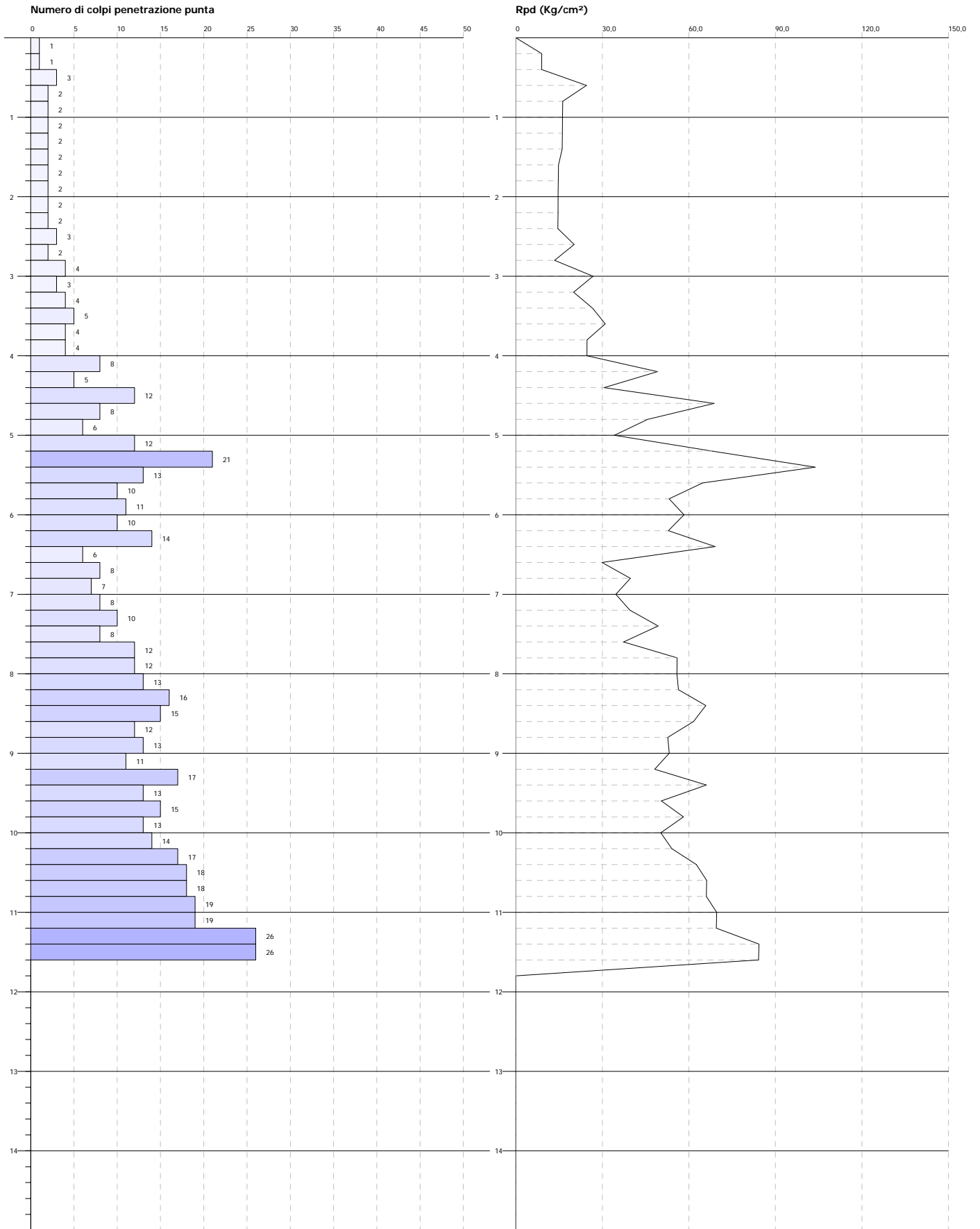


**PROVA PENETROMETRICA DINAMICA O37043P7DP341**  
**Strumento utilizzato... DPSH TG 63-200 PAGANI**  
**DIAGRAMMA NUMERO COLPI PUNTA-Rpd**

Committente :  
 Cantiere : DPSH VALSAMOGGIA  
 Località : Monteveglio

Data : 11/05/2013  
 falda: foro occluso a m 4,90 - elevata umidità a m 4,90

Scala 1:66

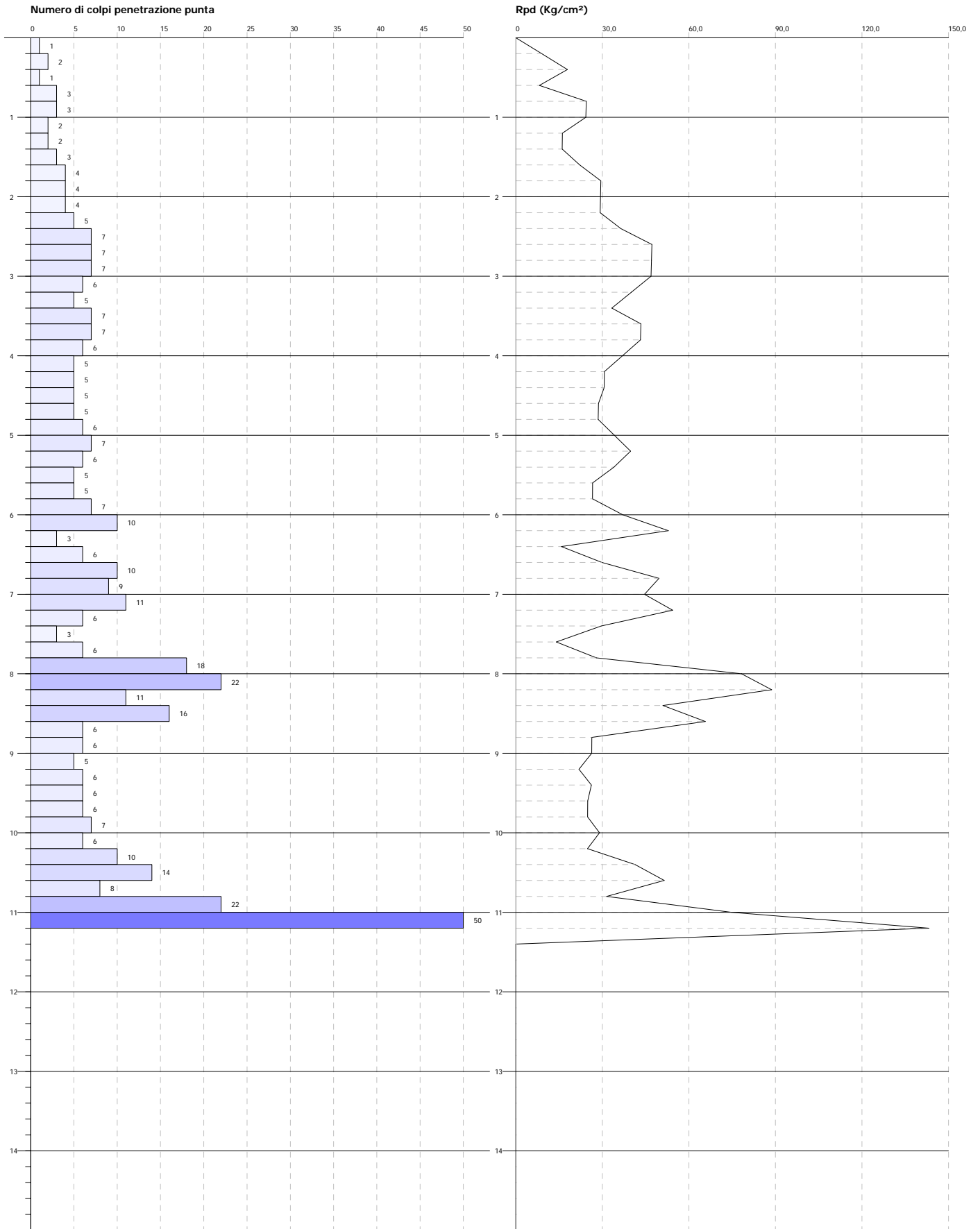


**PROVA PENETROMETRICA DINAMICA 037043P39DP42**  
**Strumento utilizzato... DPSH TG 63-200 PAGANI**  
**DIAGRAMMA NUMERO COLPI PUNTA-Rpd**

Committente :  
 Cantiere : DPSH VALSAMOGGIA  
 Località : Monteveglio

Data : 11/05/2013  
 falda: foro occluso a m 7,60 - acqua a m 7,60

Scala 1:66

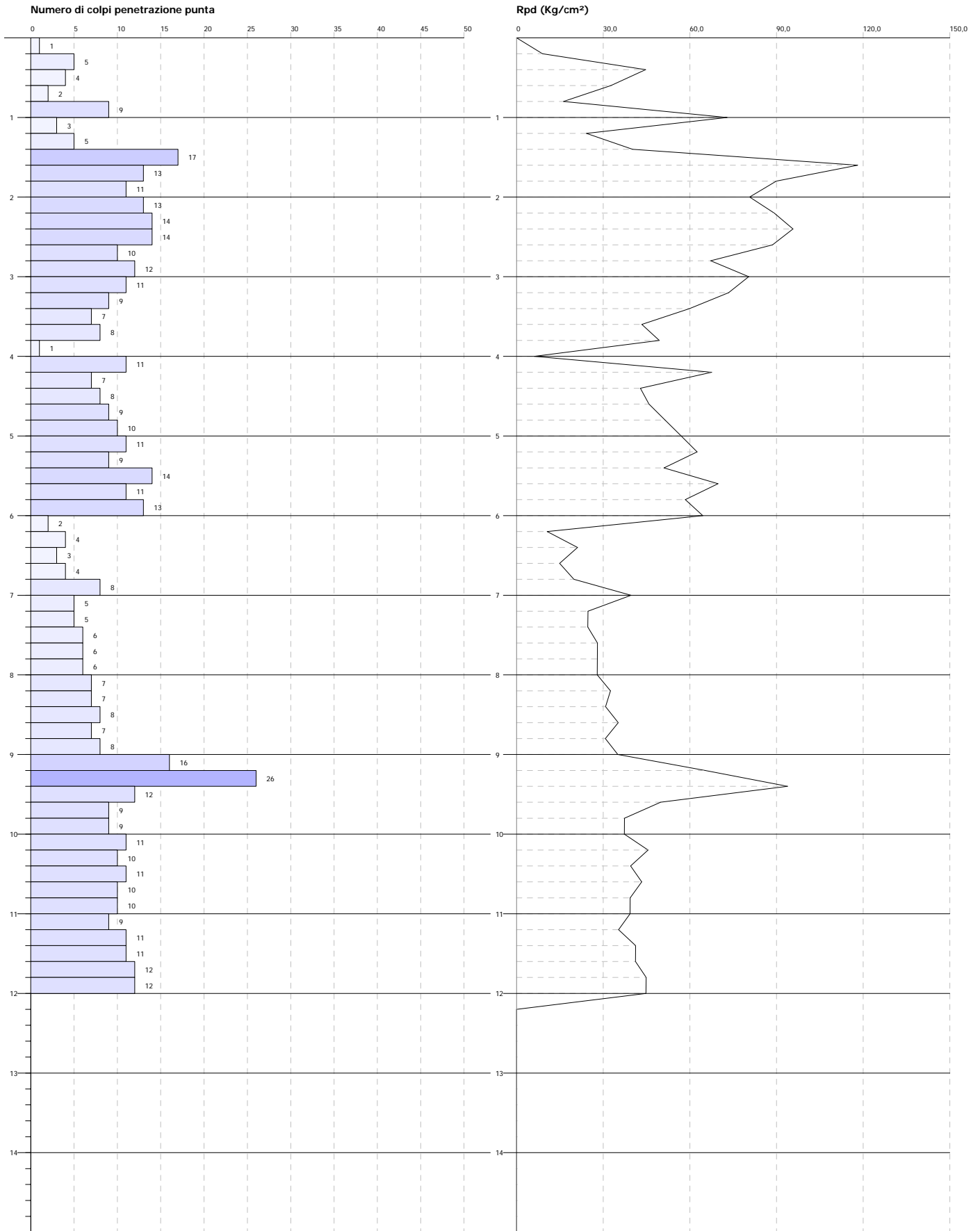


**PROVA PENETROMETRICA DINAMICA 037043P40DP43**  
**Strumento utilizzato... DPSH TG 63-200 PAGANI**  
**DIAGRAMMA NUMERO COLPI PUNTA-Rpd**

Committente :  
 Cantiere : DPSH VALSAMOGGIA  
 Località : Monteveglio

Data : 11/05/2013  
 falda: foro occluso a m 2,80 - acqua a m 2,75

Scala 1:66



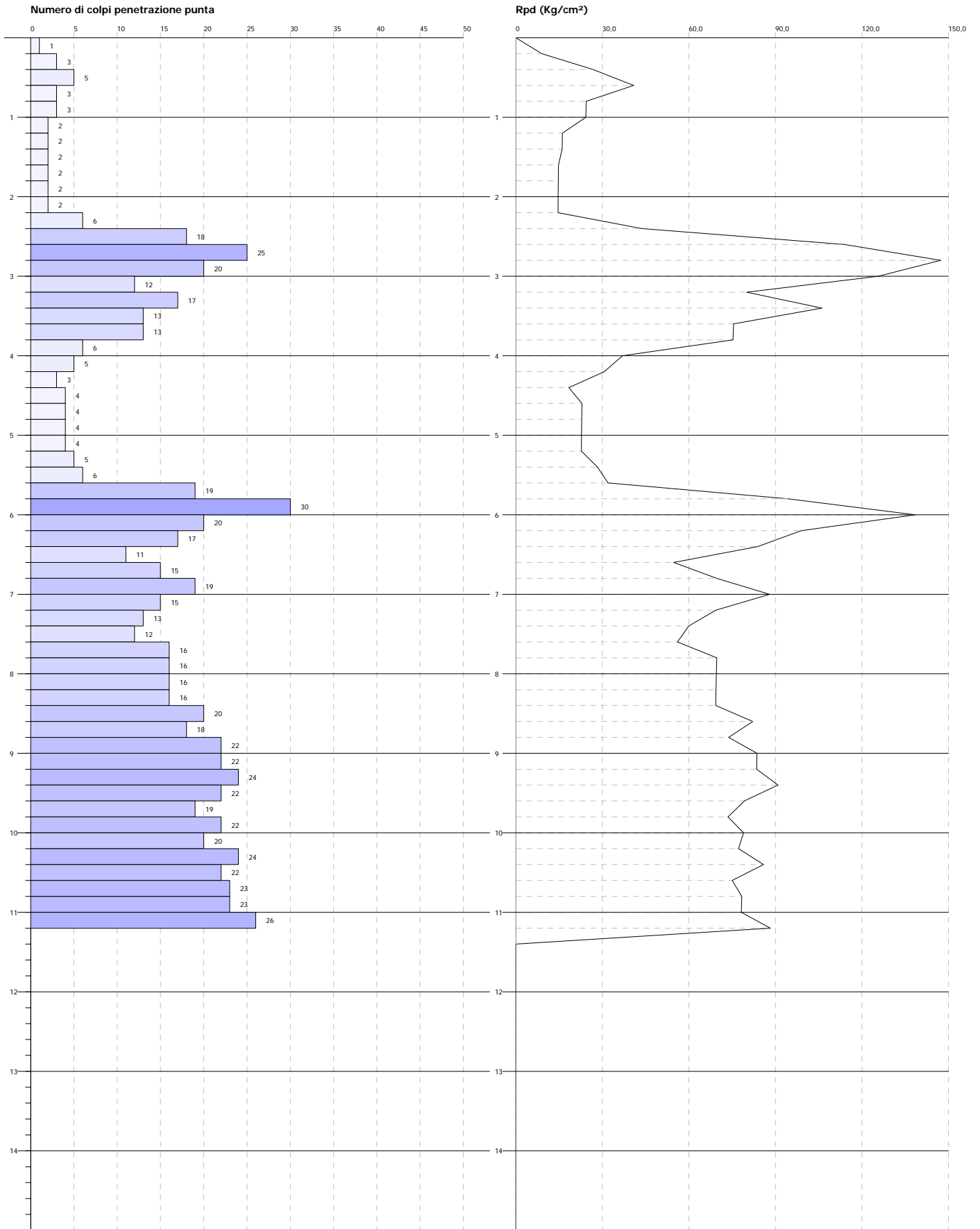


**PROVA PENETROMETRICA DINAMICA O37043P11DP44**  
**Strumento utilizzato... DPSH TG 63-200 PAGANI**  
**DIAGRAMMA NUMERO COLPI PUNTA-Rpd**

Committente :  
 Cantiere : DPSH VALSAMOGGIA  
 Località : Monteveglio

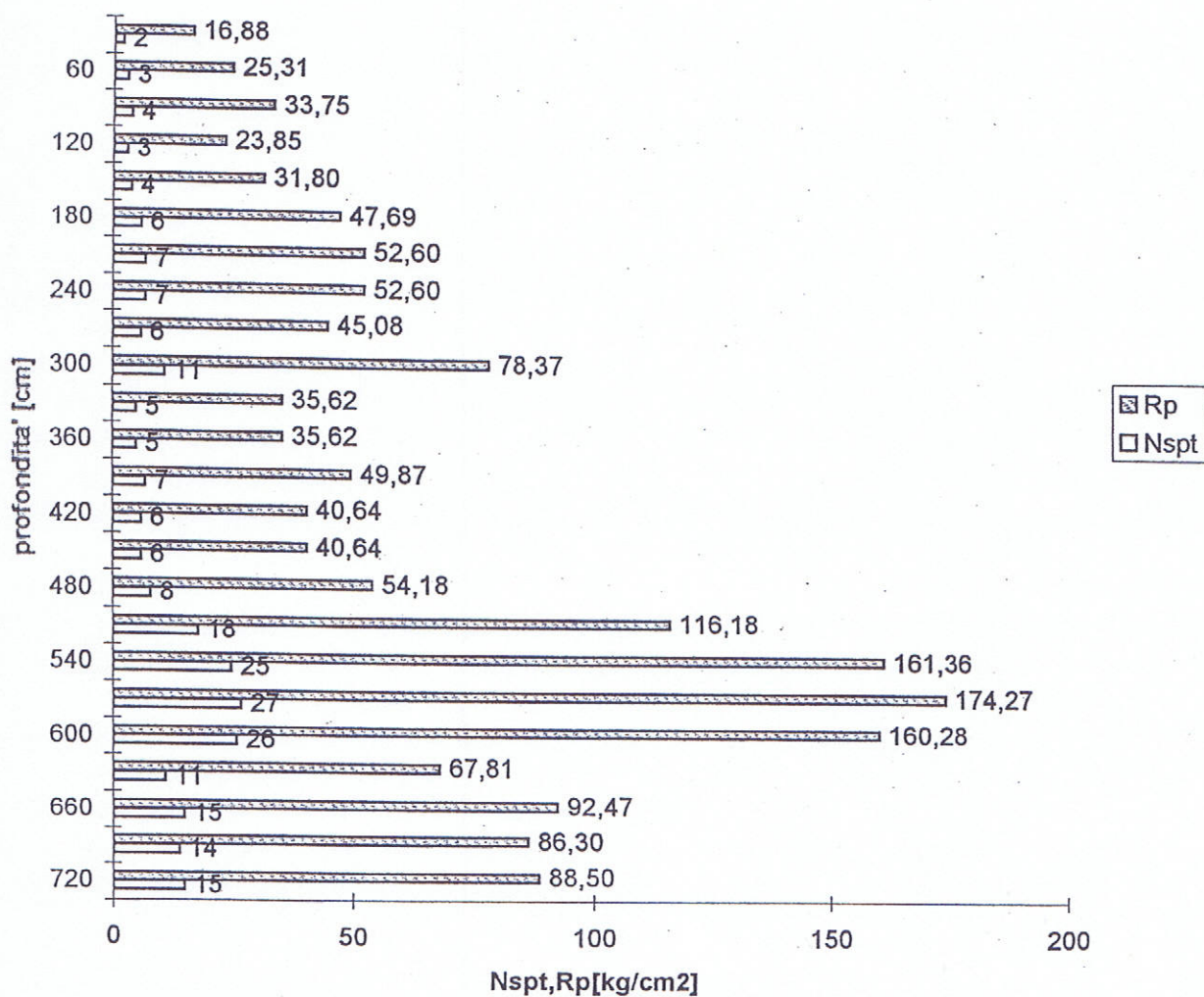
Data : 11/05/2013  
 falda: foro occluso a m 2,80 - acqua a m 1,30

Scala 1:66



037 043 PA1 DP45

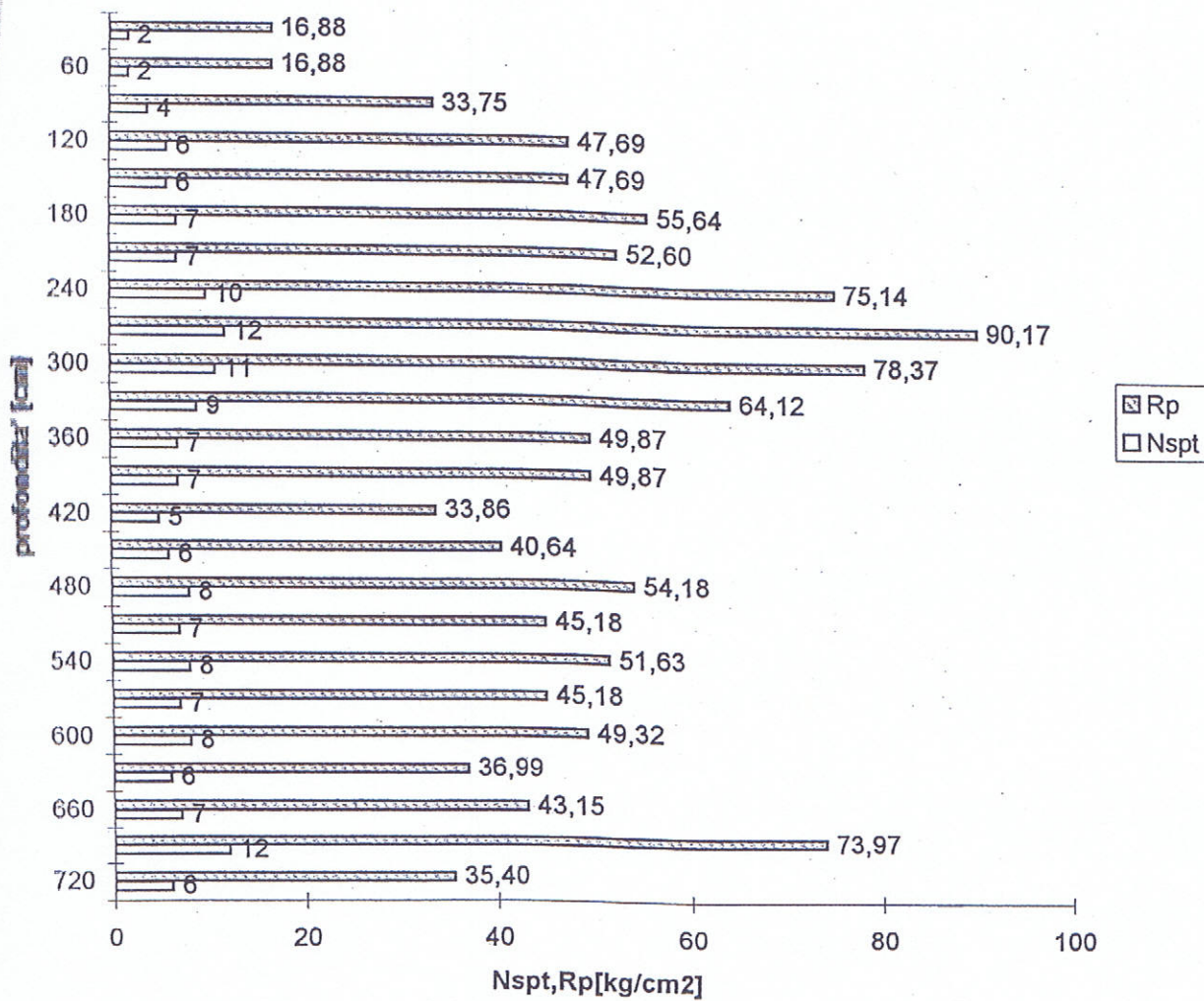
### prova 1 Monteveglio





037043 P420P46

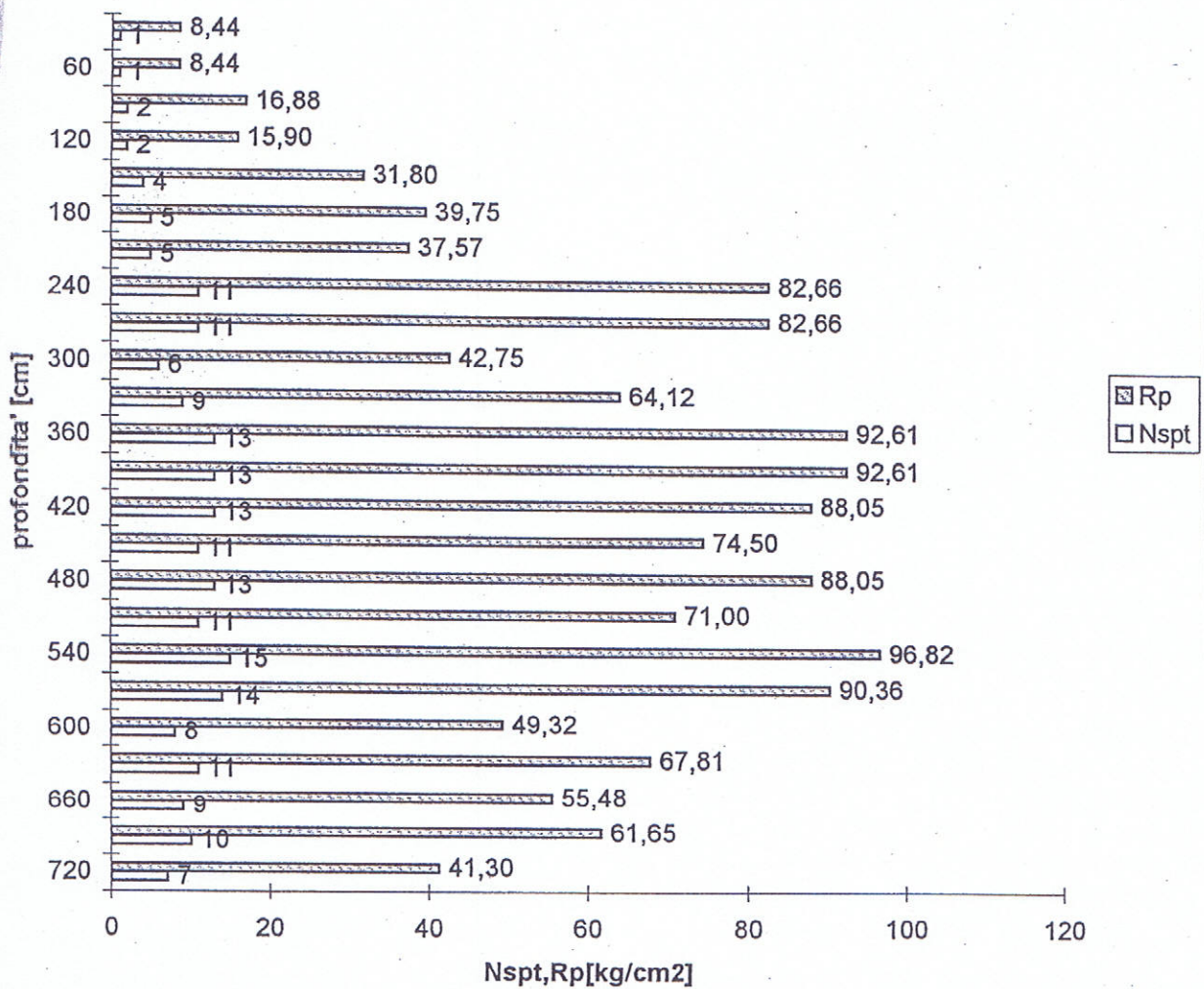
prova 2 Monteveglio





037043 P43 DP47

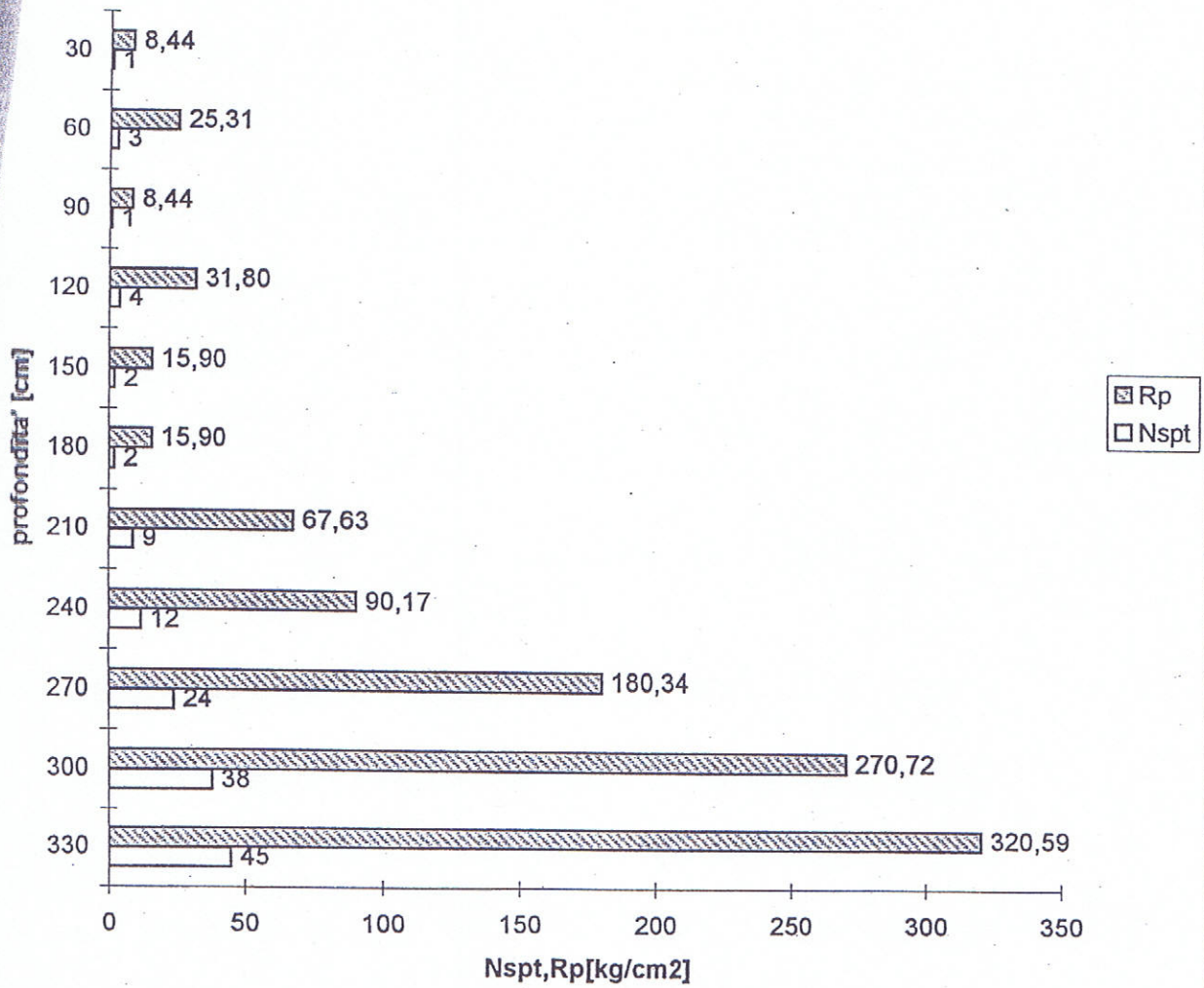
prova 5 Monteveglio





037043 P44DP48

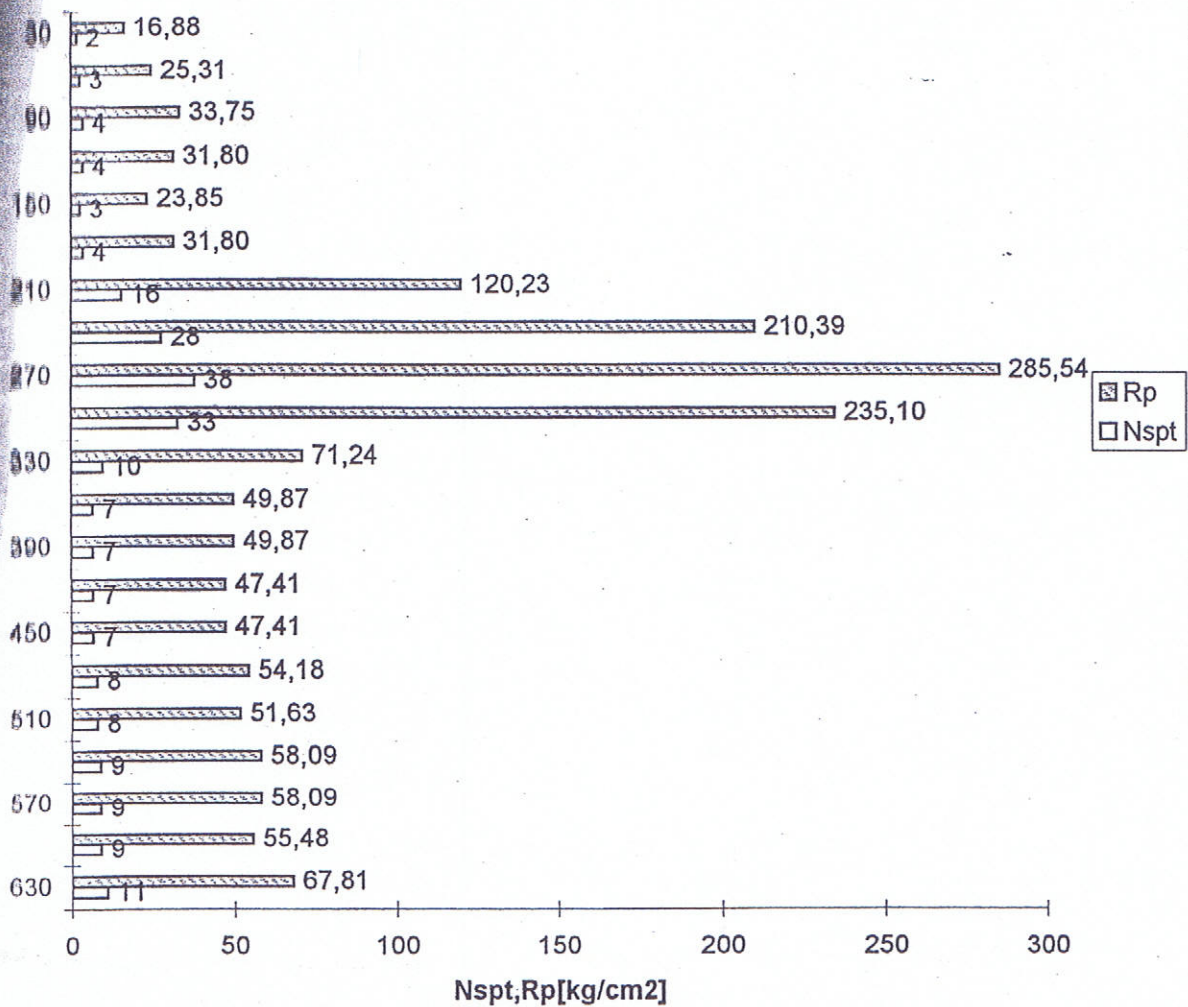
prova 6 Monteveglio





037043P45 DP49

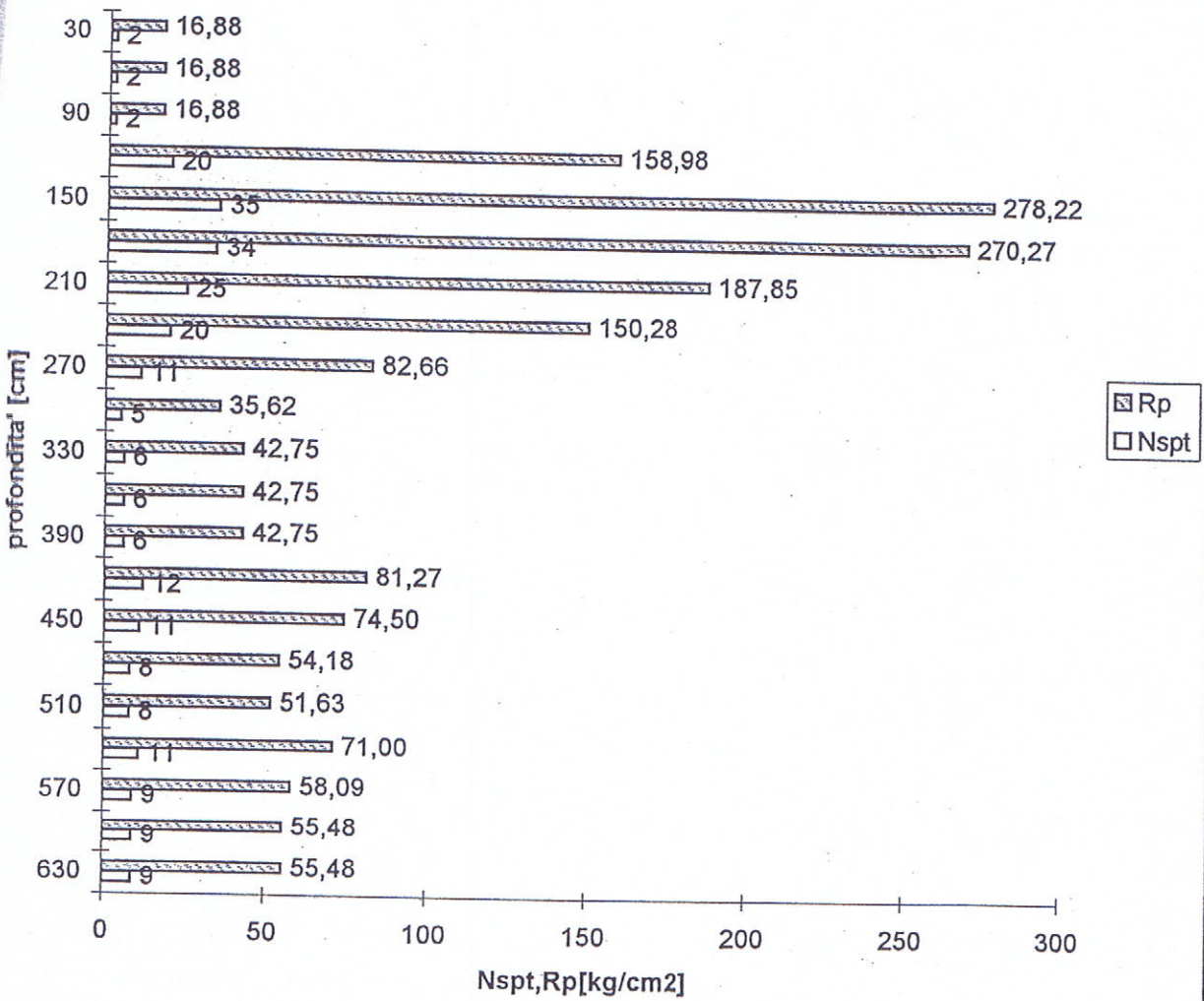
prova 7 Monteveglio





037043P46DP50

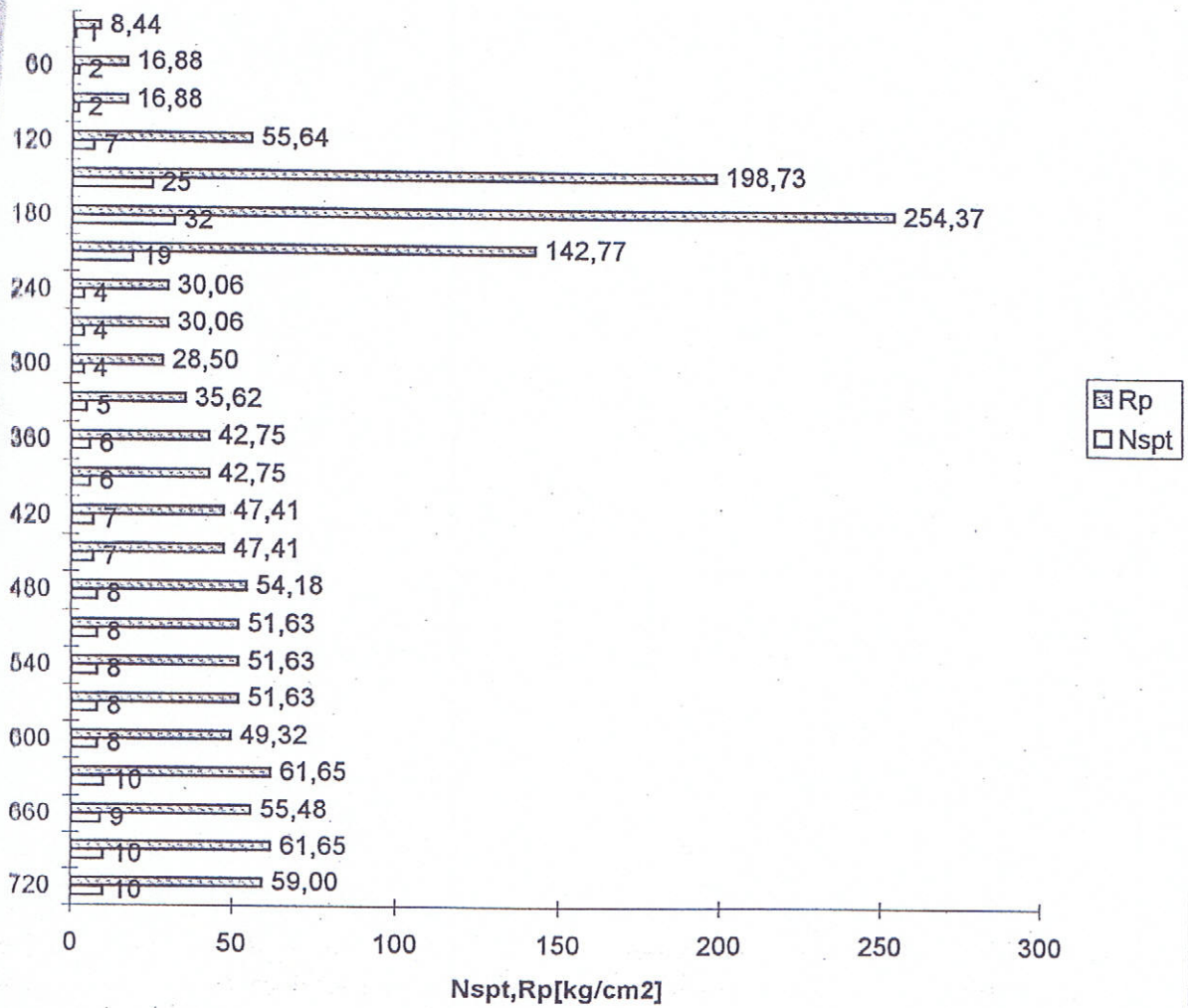
prova 8 Monteveglio





037043P47DP51

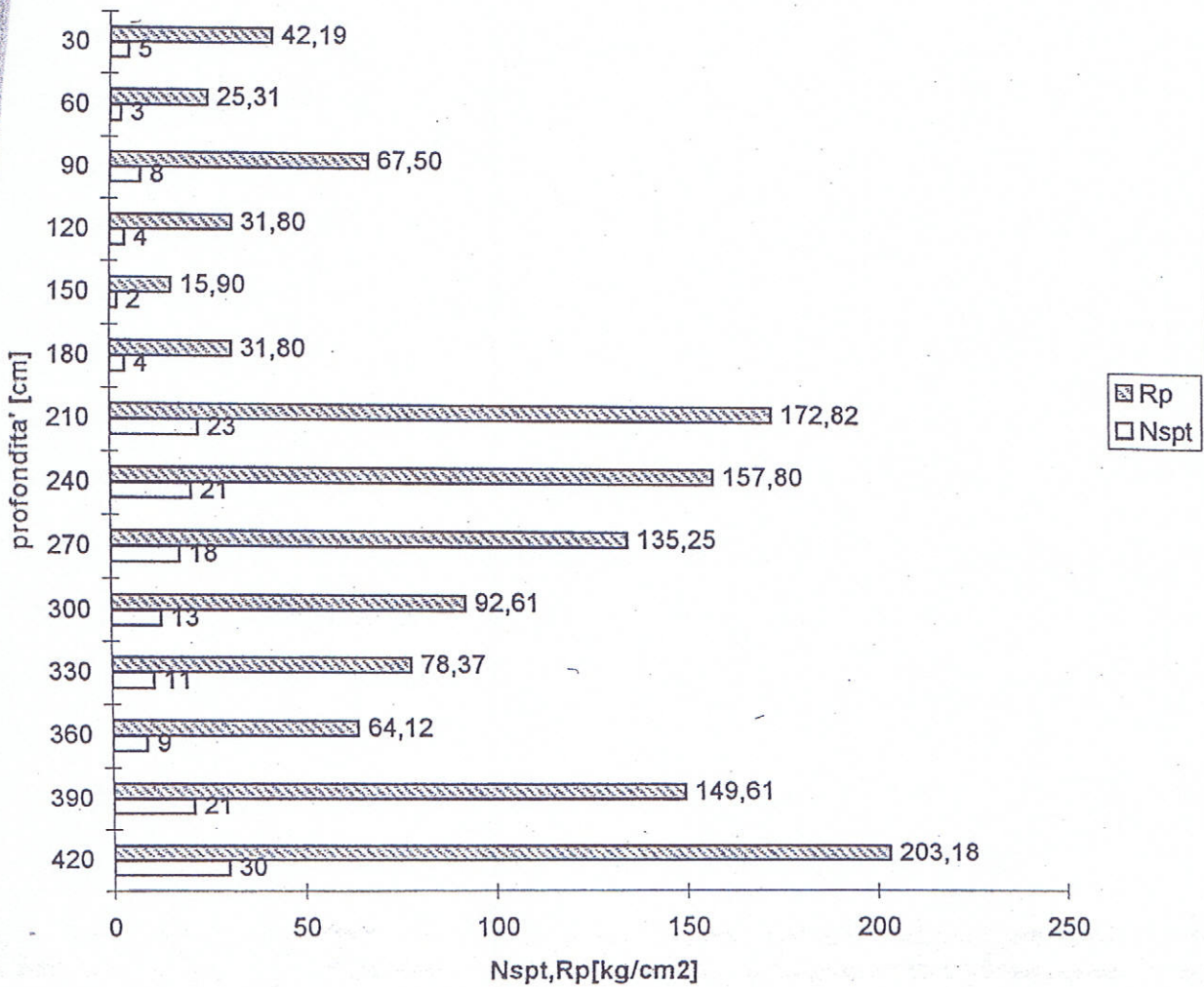
prova 11 Monteveglio





037043P48DP52

prova 15 Monteveglio





**GEO-PROBE S.r.l.**

- Indagini Geognostiche -

40033 CASALECCHIO DI RENO

Via Cimaraosa, 119 - Tel. 051/61.33.072

**CPT (CONE PENETRATION TEST)**

**N. 1**

Rapporto di Prova N°:

**11.0529 /RSP**

Committente:

Sig.ra Loli Sara

Località:

Montevoglio (BO)

via Cassola - via Abitazione

Attrezzatura:

Penetrometro da 100 KN

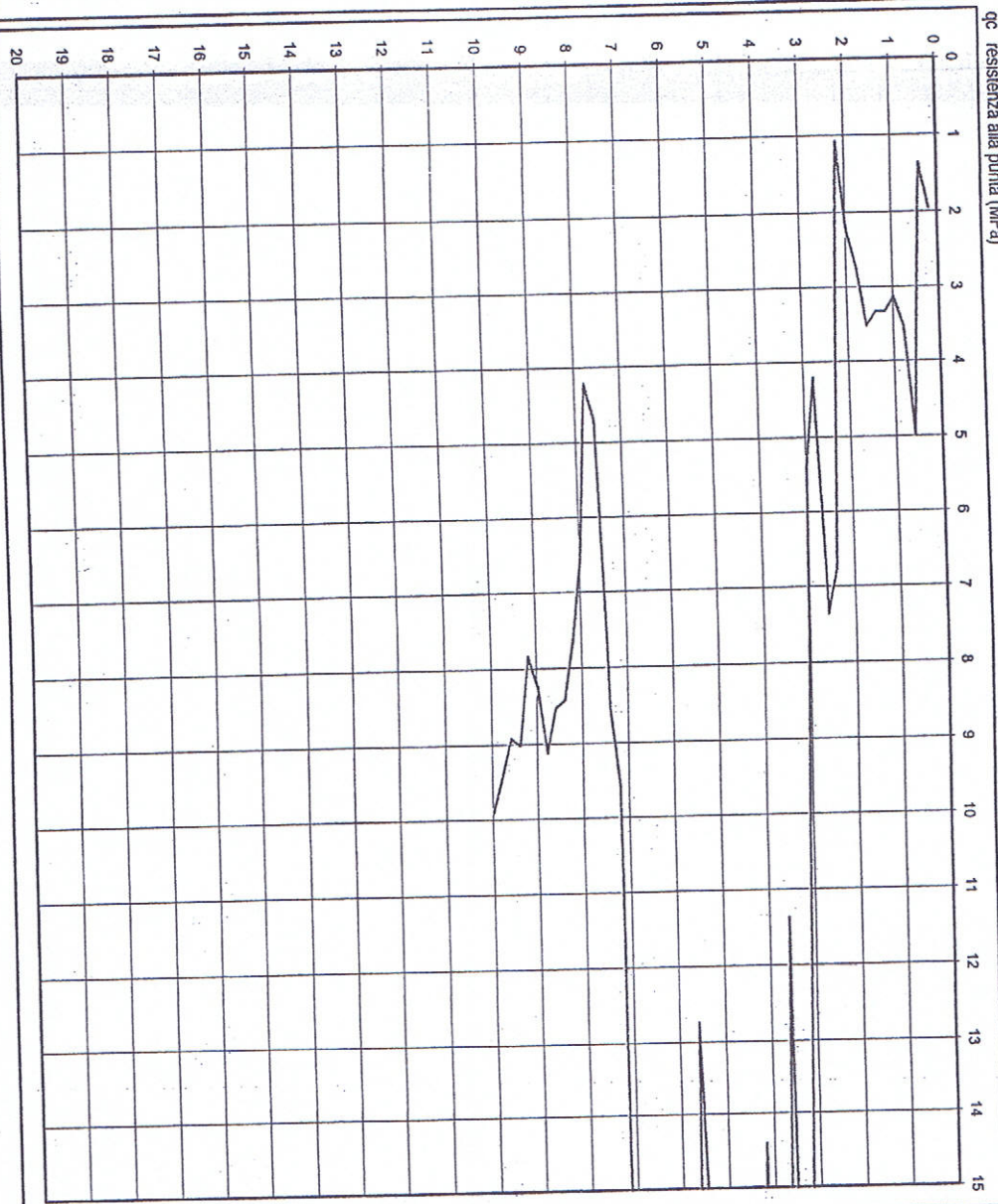
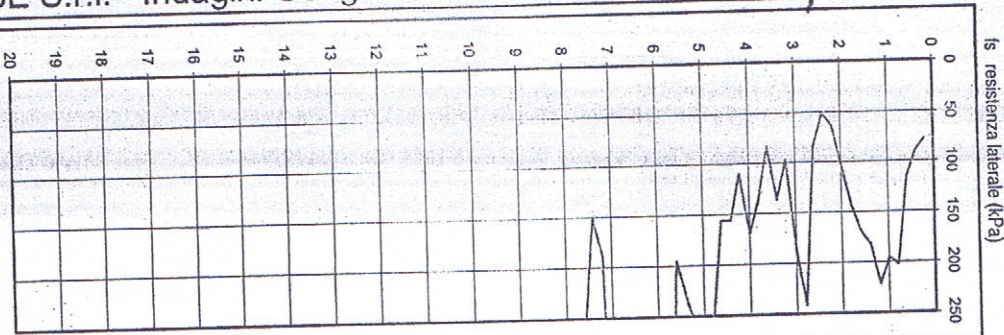
Quota:

Data prova:

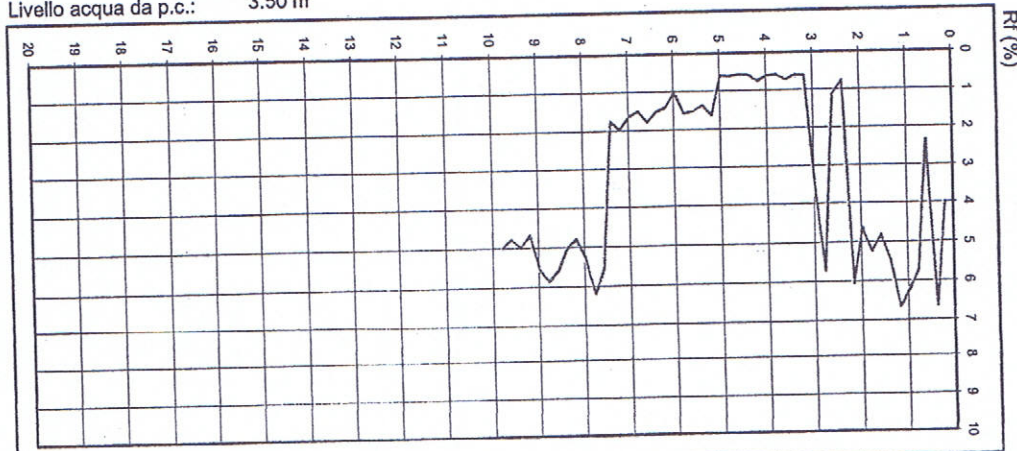
10/06/2011

Codice lavoro:

2011.107



Livello acqua da p.c.: 3.50 m



Note: ---	Procedura di prova	Normativa di riferimento	Rev. 0	Data emissione 10/06/2011	Sperimentatore Dr. Chelli	Il Direttore di Laboratorio Dr. Luca Confi
-----------	--------------------	--------------------------	--------	---------------------------	---------------------------	--



**GEO-PROBE S.r.l.**

- Indagini Geognostiche -

40033 CASALECCHIO DI RENO

Via Cimara, 119 - Tel. 051/61.33.072

**CPT (CONE PENETRATION TEST)**

**N. 3**

Rapporto di Prova N°:

**11.0531 /RSP**

Quota: ---

Data prova: 10/06/2011

Codice lavoro: 2011.107

Committente:

Sig.ra Lolli Sara

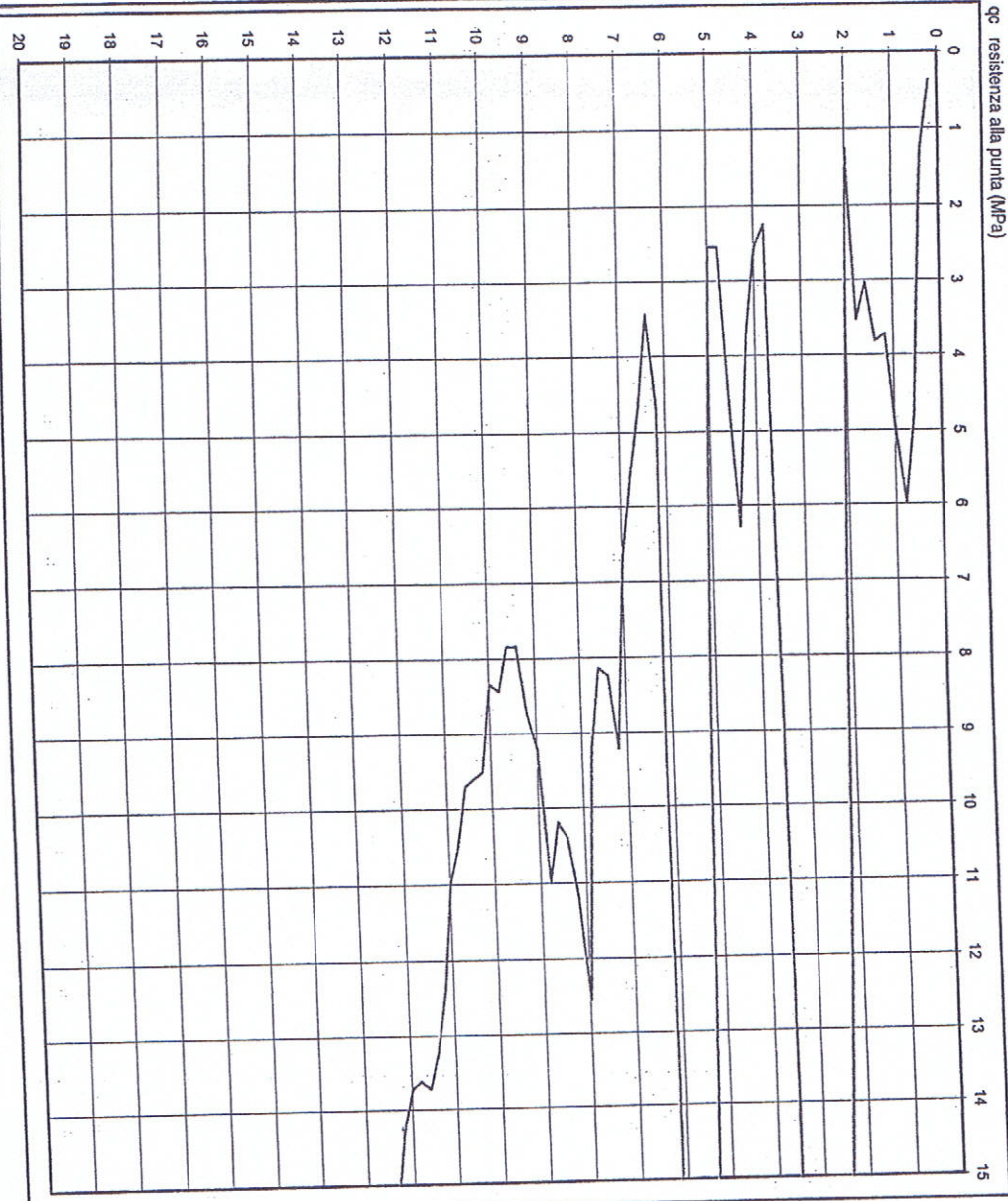
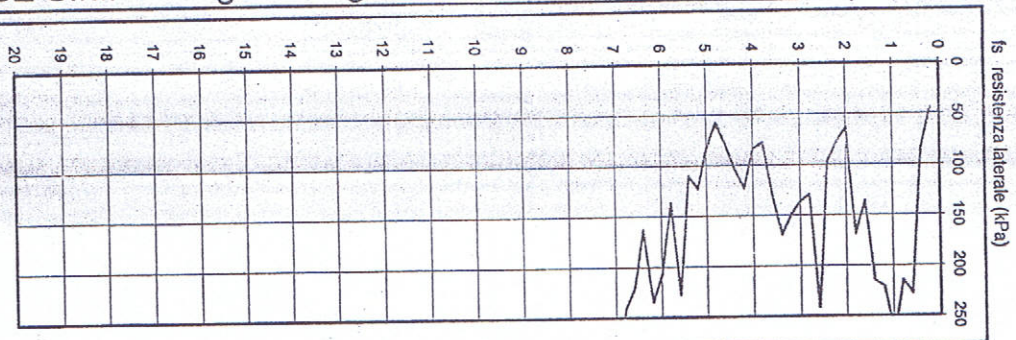
Località:

Monteveglie (BO)

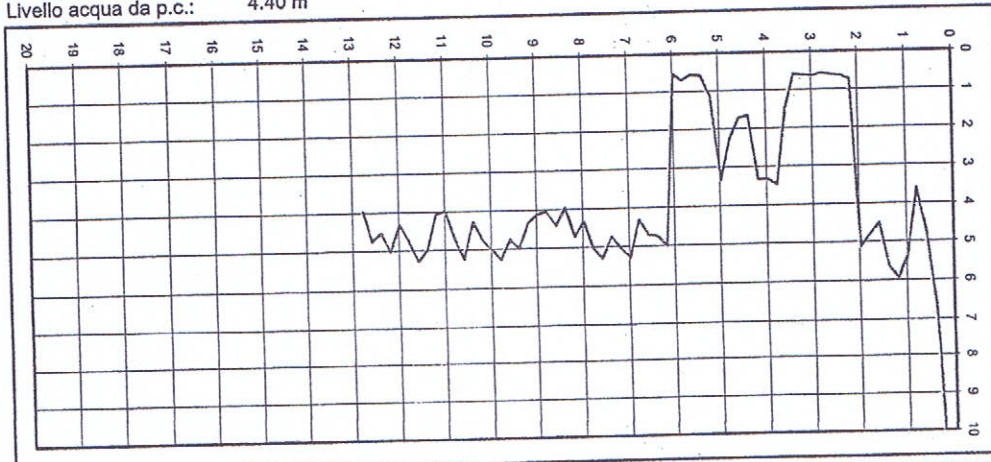
via Cassola - via Abitazione

Attrezzatura:

Penetrometro da 100 KN



Livello acqua da p.c.: 4.40 m



Note: ---

Procedura di prova	Normativa di riferimento	Rev.	Data emissione	Sperimentatore	Il Direttore di Laboratorio
---	---	0	10/06/2011	Dr. Chelli	Dr. Luca Conti



**GEO-PROBE S.r.l.**

- Indagini Geognostiche -

40033 CASALECCHIO DI RENO

Via Cimara, 119 - Tel. 051/61.33.072

**CPT (CONE PENETRATION TEST)**

**N. 4**

Rapporto di Prova N°:

11.0532 /RSP

Committente : Sig.ra Lolli Sara

Località : Montevoglio (BO)

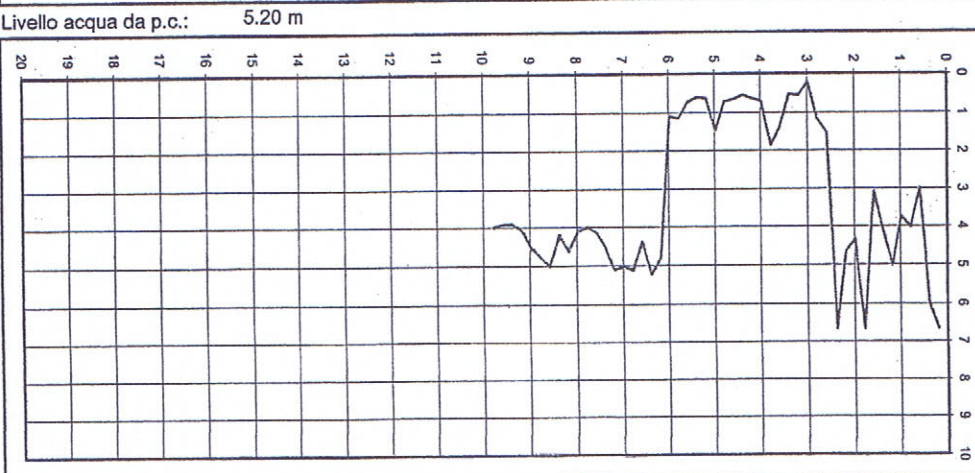
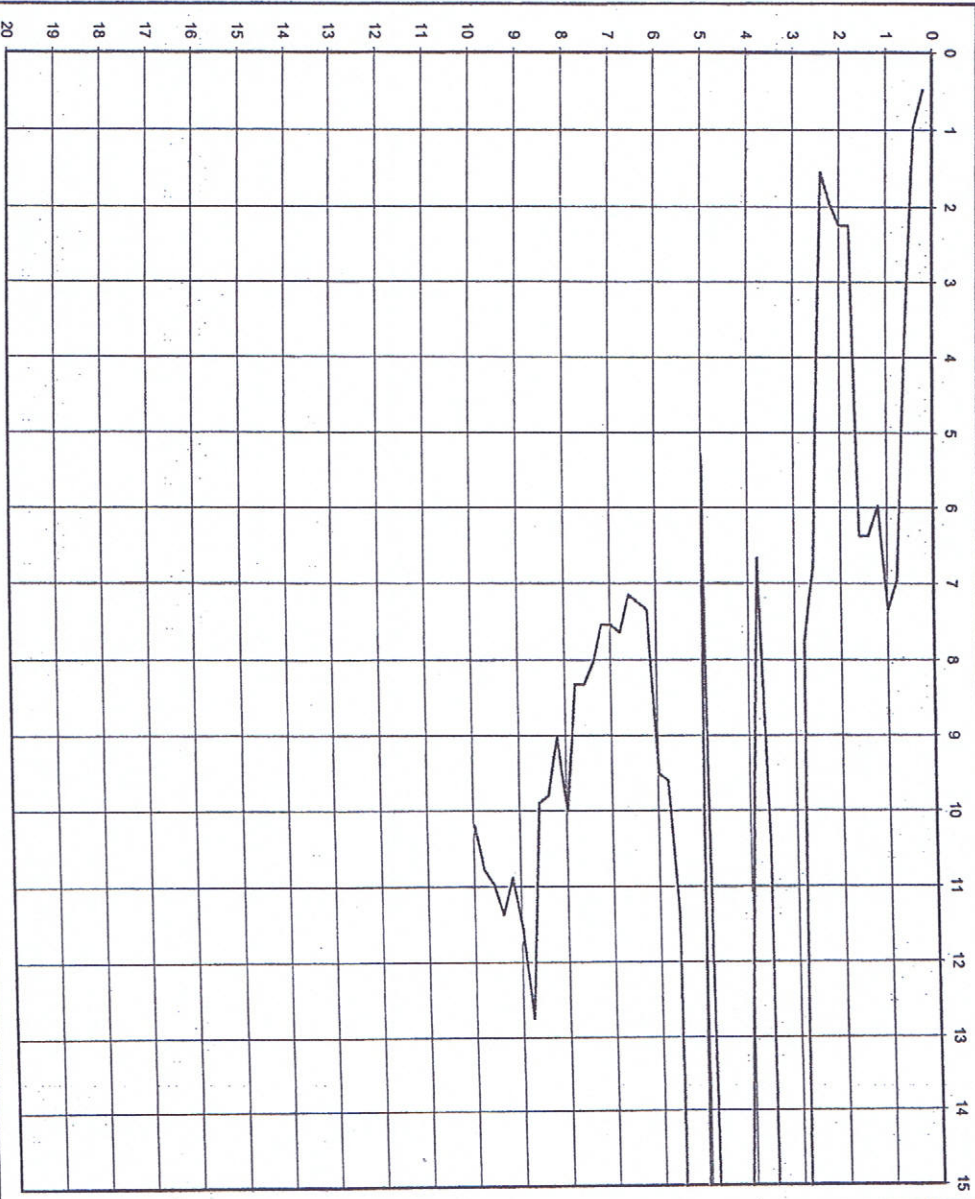
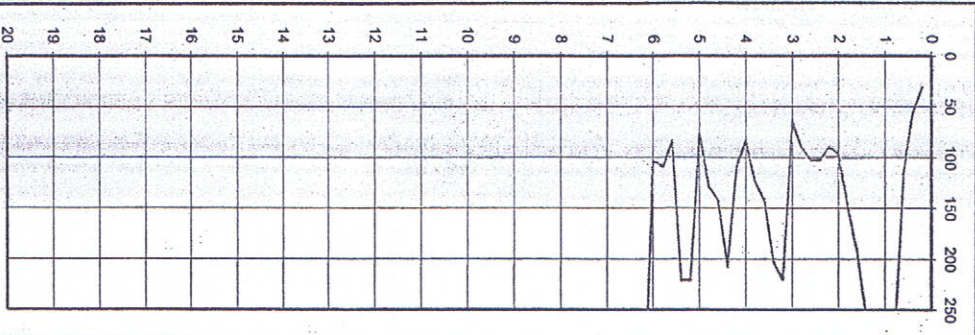
Attrezzatura : Penetrometro da 100 KN

via Cassola - via Abitazione

Quota: ---

Data prova : 10/06/2011

Codice lavoro: 2011.107

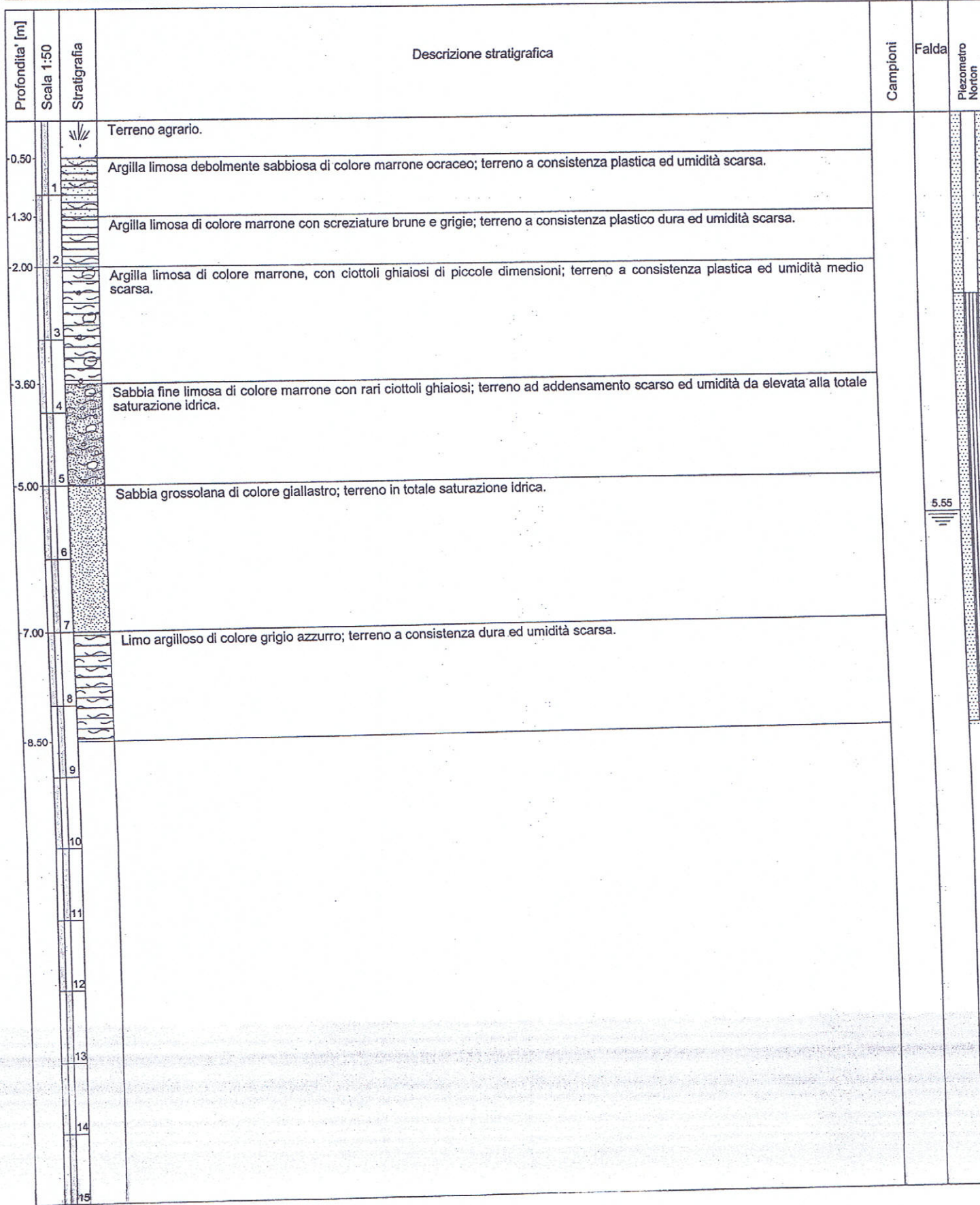


Note: ---

Procedura di prova	Normativa di riferimento	Rev.	Data emissione	Sperimentatore	Il Direttore di Laboratorio
--	--	0	10/06/2011	Dr. Tabarroni	Dr. Luca Conti



<b>GEO-PROBE</b> s.r.l. Indagini Geognostiche  40033 CASALECCHIO DI RENO (BO) Via Cimara, 119 - Tel. 051/61.33.072	Committente: <u>Sig.ra Lolli Sara</u>		Quota: <u>---</u>	Rap. Pr. N°11.0536/RSP	
	Località: <u>Monteveglia (BO)</u>		Profondità: <u>8.50 m</u>	Codice Lavoro 2011.107	
	Cantiere: <u>via Cassola - via Abitazione</u>		Data Inizio: <u>14/06/2011</u>	SONDAGGIO <b>1</b> FOGLIO <b>1/1</b>	
	Perforazione: <u>Trivellazione a secco d 120 mm</u>		Data Fine: <u>14/06/2011</u>		
Attrezzatura: <u>Unimog U400L</u>			Il geologo: <u>Dr. Conti</u>		
Procedura di Prova -	Rapporto di Prova N° 11.0536/RSP	Rev. 0	Data di emissione 14/06/2011	Lo Sperimentatore Dr. Chelli	Il Direttore di Laboratorio Dr. L. Conti





037043P52DP57

<b>GEO-PROBE</b> s.r.l. Indagini Geognostiche 40033 CASALECCHIO DI RENO (BO) Via Cimarosa, 119 - Tel. 051/61.33.072		Committente: <u>Sig.ra Lolli Sara</u>	Quota: <u>--</u>	Rap. Pr. N°11.0537/RSP	
		Località: <u>Monteveglia (BO)</u>	Profondità: <u>8.50 m</u>	Codice Lavoro 2011.107	
		Cantiere: <u>via Cassola - via Abitazione</u>	Data Inizio: <u>14/06/2011</u>	SONDAGGIO	FOGLIO
		Perforazione: <u>Trivellazione a secco d 120 mm</u>	Data Fine: <u>14/06/2011</u>		
Attrezzatura: <u>Unimog U400L</u>		Il geologo: <u>Dr. Conti</u>			
Procedura di Prova -	Rapporto di Prova N° 11.0537/RSP	Rev. 0	Data di emissione 14/06/2011	Lo Sperimentatore Dr. Chelli	Il Direttore di Laboratorio Dr. L. Conti

Profondità [m]	Stratigrafia	Descrizione stratigrafica	Campioni	Falda	Piezometro Norton
0.50		Terreno agrario.			
1		Argilla limosa di colore marrone ocreo con screziature nocciola; terreno a consistenza plastica ed umidità scarsa.			
1.50		Argilla limosa di colore marrone con ciottoli ghiaiosi; terreno a consistenza plastica ed umidità medio scarsa.			
1.90		Ghiaia da fine a media in matrice limo sabbiosa; terreno ad addensamento medio ed umidità scarsa.			
2.80		Argilla limosa di colore marrone con ciottoli ghiaiosi; terreno a consistenza plastica ed umidità scarsa.			
3.30		Ghiaia da fine a media in matrice limo argilloso sabbiosa di colore nocciola; terreno ad addensamento da medio a scarso ed umidità media.			
4					
5					
6					
6.50		Argilla limosa di colore grigio azzurro; terreno a consistenza plastica ed umidità scarsa.			
7					
8					
8.50					
9					
10					
11					
12					
13					
14					
15					

5.15

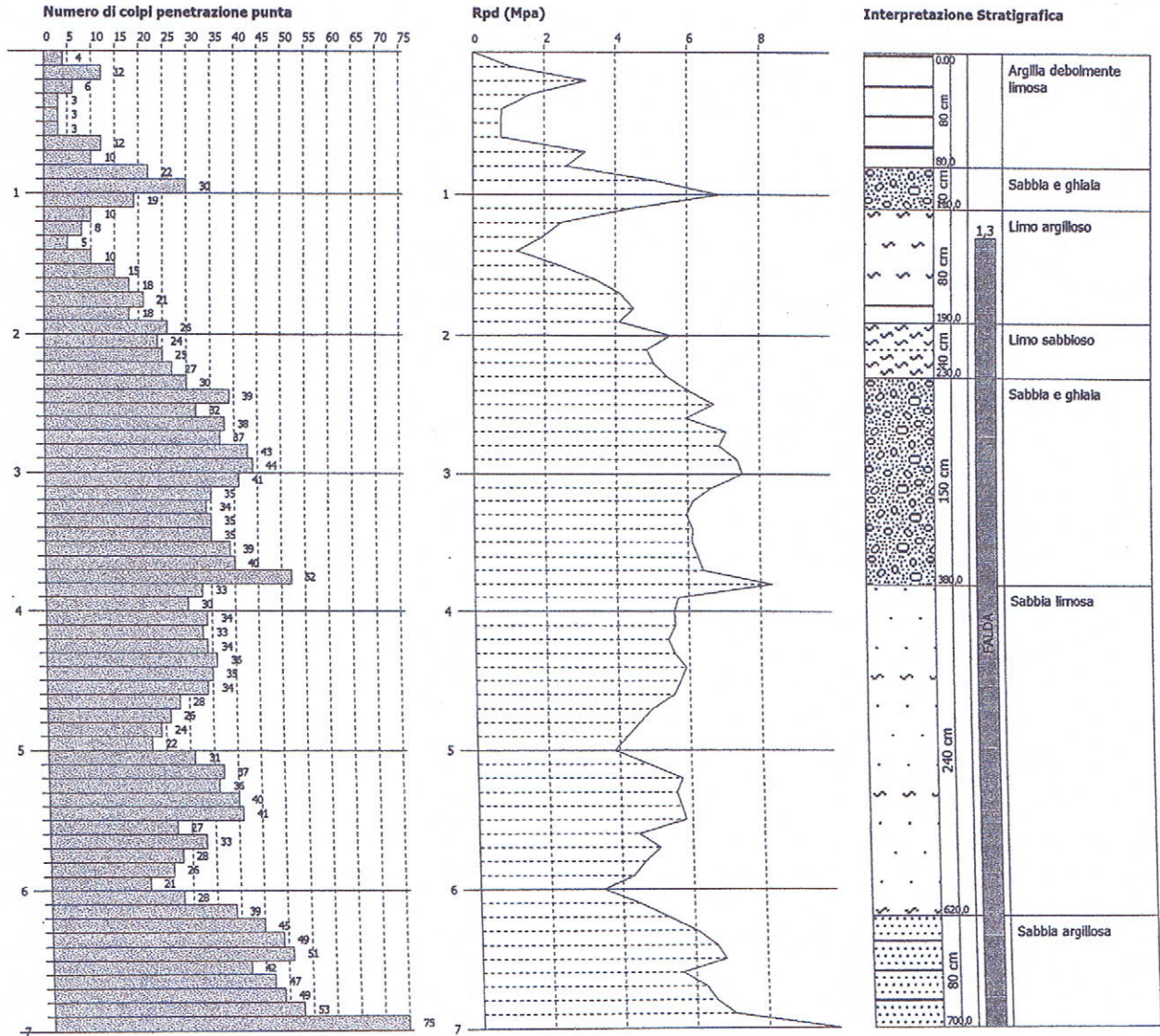


**PROVA PENETROMETRICA DINAMICA DPM01**  
**DIAGRAMMA NUMERO COLPI PUNTA-Rpd**

Committente : Agostino Azzurri - Antonio Turco e Filomena Librandi - Giorgio Zacchi  
 Cantiere : Variante al P.R.G. di Monteveglio  
 Località : Ziribega di Monteveglio (BO)

Data :22/05/2002

Scala 1:50



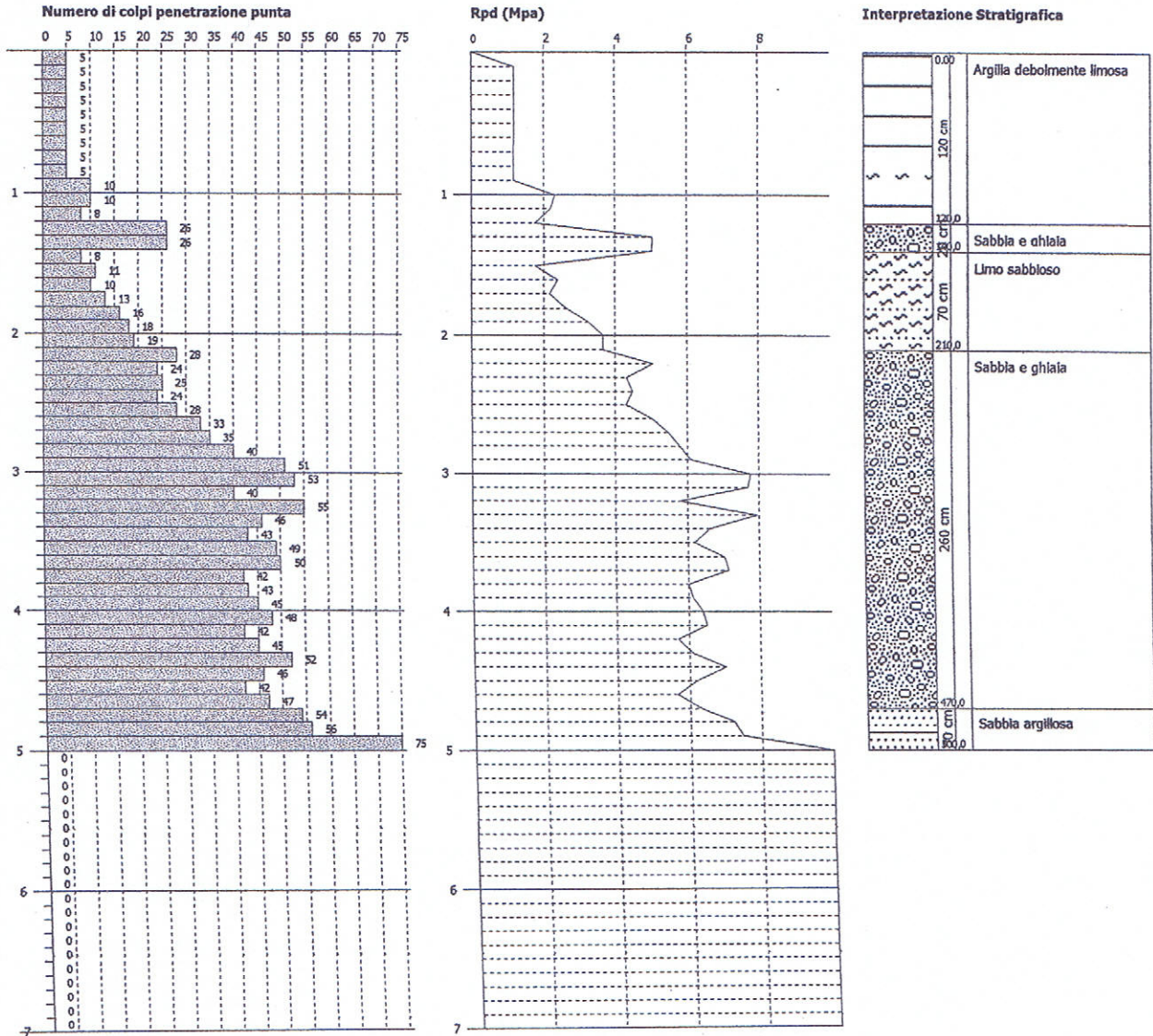
037043P54DL59

**PROVA PENETROMETRICA DINAMICA DPM04**  
**DIAGRAMMA NUMERO COLPI PUNTA-Rpd**

Committente : Agostino Azzurri - Antonio Turco e Filomena Librandi - Giorgio Zacchi  
 Cantiere : Variante al P.R.G. di Monteveglio  
 Località : Ziribega di Monteveglio (BO)

Data :22/05/2002

Scala 1:50





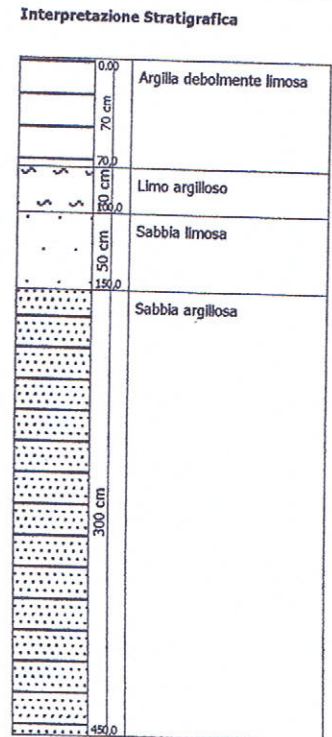
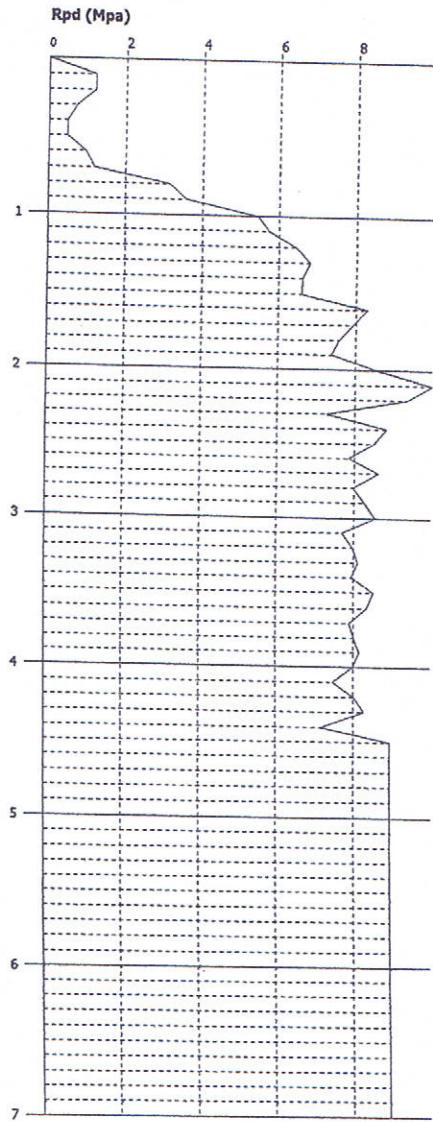
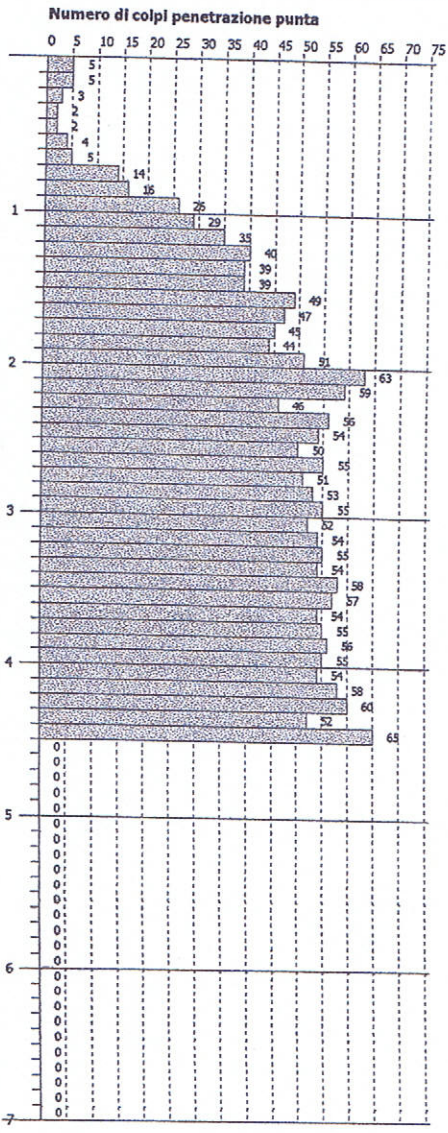
037043P55DL60

**PROVA PENETROMETRICA DINAMICA DPM05  
 DIAGRAMMA NUMERO COLPI PUNTA-Rpd**

Committente : Agostino Azzurri - Antonio Turco e Filomena Librandi - Giorgio Zacchi  
 Cantiere : Variante al P.R.G. di Monteveglio  
 Località : Zinibega di Monteveglio (BO)

Data :22/05/2002

Scala 1:50





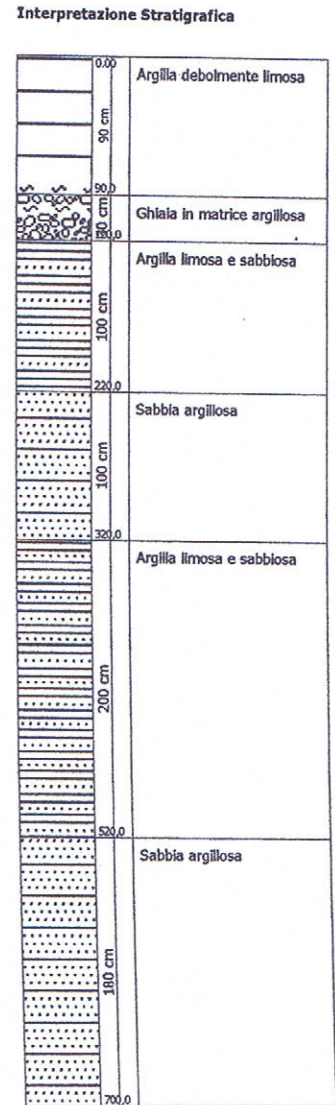
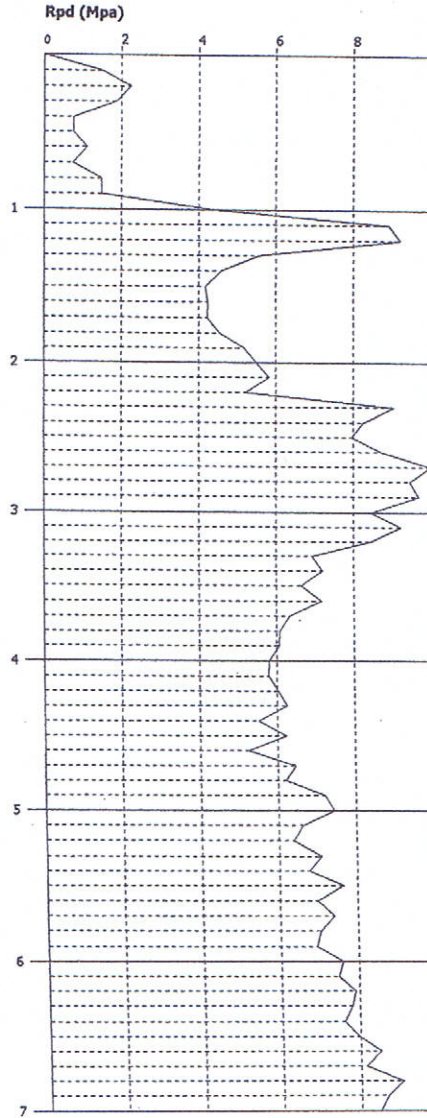
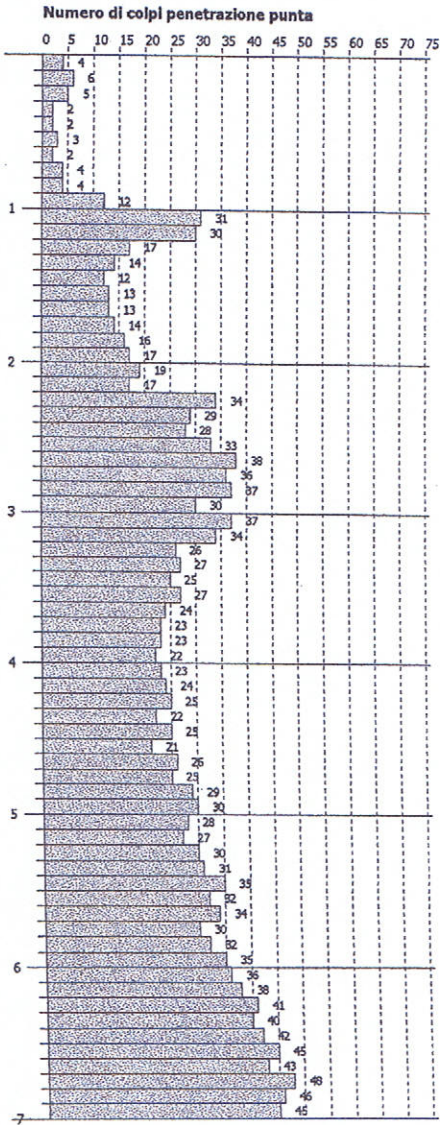
037 043 P56DL61

**PROVA PENETROMETRICA DINAMICA DPM07**  
**DIAGRAMMA NUMERO COLPI PUNTA-Rpd**

Committente : Agostino Azzurri - Antonio Turco e Filomena Librandi - Giorgio Zacchi  
 Cantiere : Variante al P.R.G. di Monteveglio  
 Località : Ziribega di Monteveglio (BO)

Data :22/05/2002

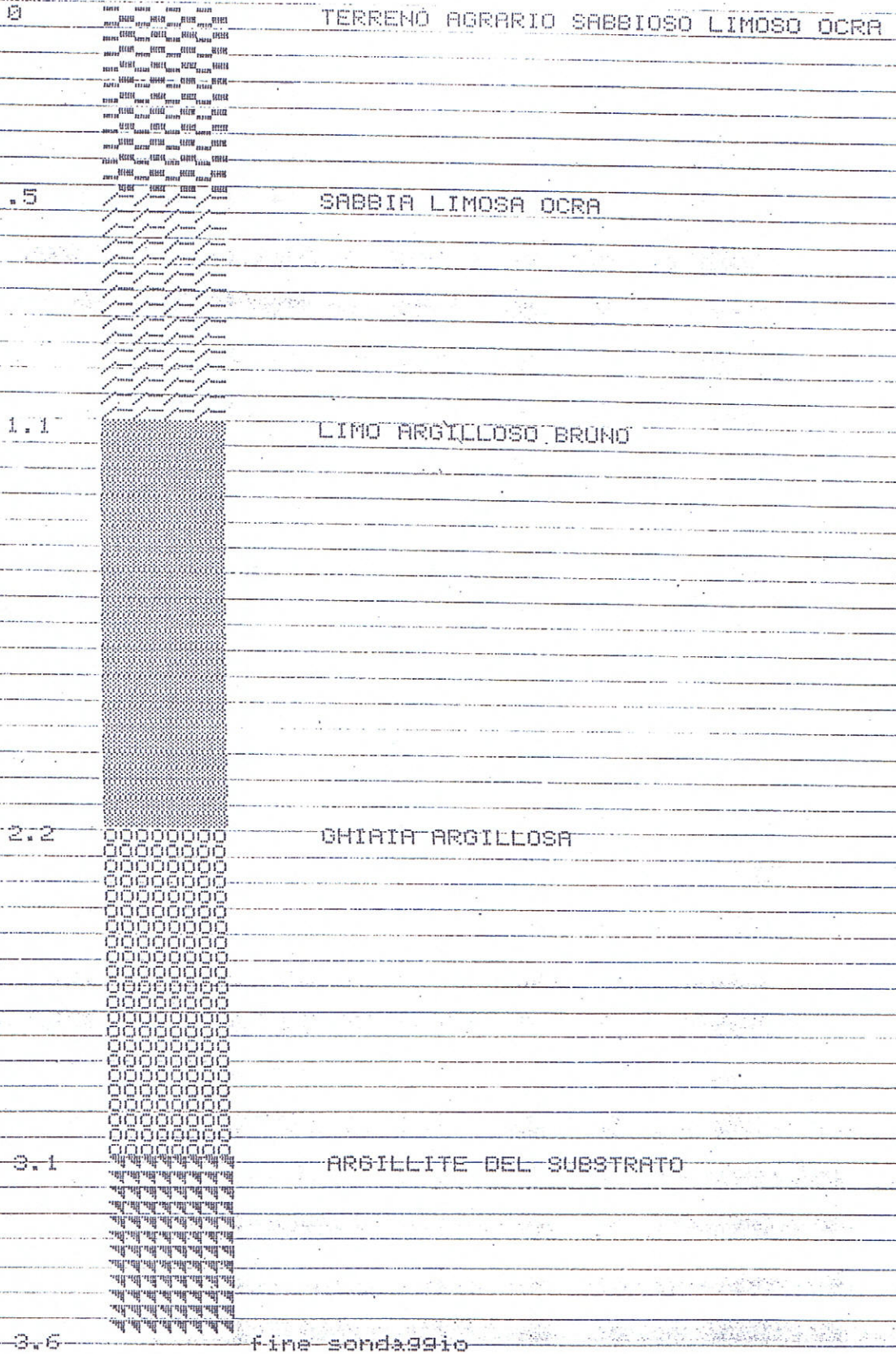
Scala 1:50





037043P57T62

SONDAGGIO 2

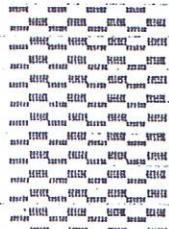




037043P58T63

SONDAGGIO 4

0



TERRENO AGRARIO LIMOSO SABBIOSO OCRA

.5



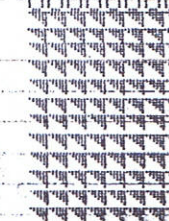
SABBIA LIMOSA OCRA

1.3



GHIAIA ARGILLOSA

4



ARGILLITE DEL SUBSTRATO

4.5

fine sondaggio



037043P16T64

SONDAGGIO 6

0 TERRENO AGRARIO SABBIOSO LIMOSO OCRA

.5 SABBIA LIMOSA OCRA

1.6 ARGILLA-LIMOSA-BRUNA

3.4 GHIAIA ARGILLOSA

5.3 fine sondaggio



037043P59T65

SONDAGGIO 7

0 TERRENO AGRARIO SABBIOSO LIMOSO OCRA

.5 SABBIA LIMOSA OCRA

1.8 LIMO ARGILLOSO BRUNO

2.8 GHIAIA ARGILLOSA

3.4 fine sondaggio



037043P60CPT66

GEO-PROBE S.r.l. Indagini Geognostiche

**GEO-PROBE S.r.l.**

- Indagini Geognostiche -

40033 CASALECCHIO DI RENO

Via Cimara, 119 - Tel. 051/61.33.072

**CPT (CONE PENETRATION TEST)**

**N. 2**

Committente: Comune di Montevoglio

Località: Montevoglio (BO)

Attrezzatura: Penetrometro da 200 kN

Torre Gazzone

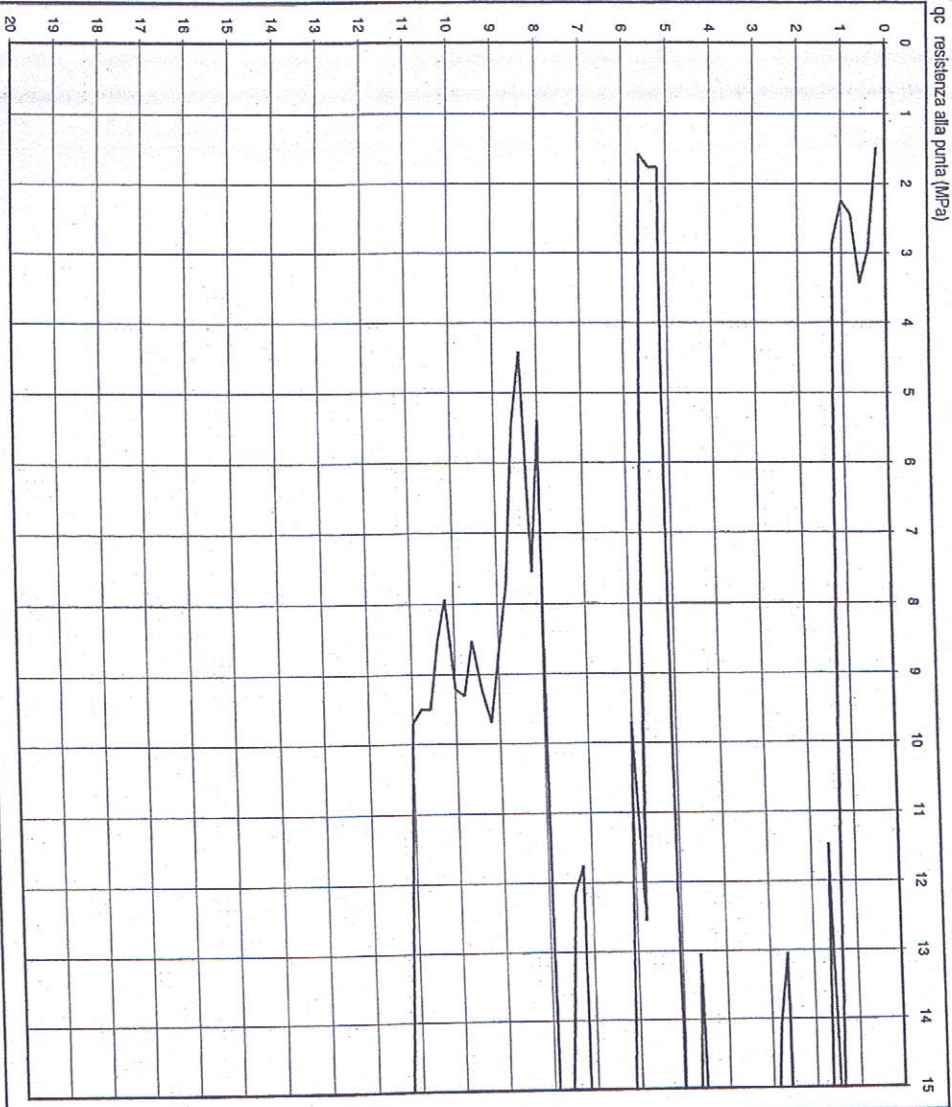
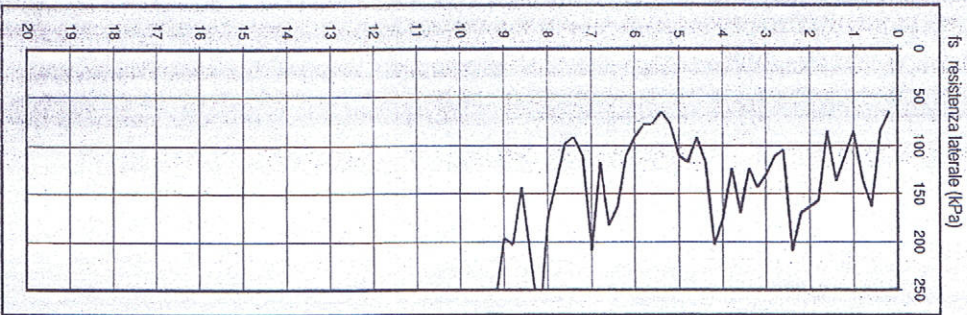
Rapporto di Prova N°:

**09.0594 /RSP**

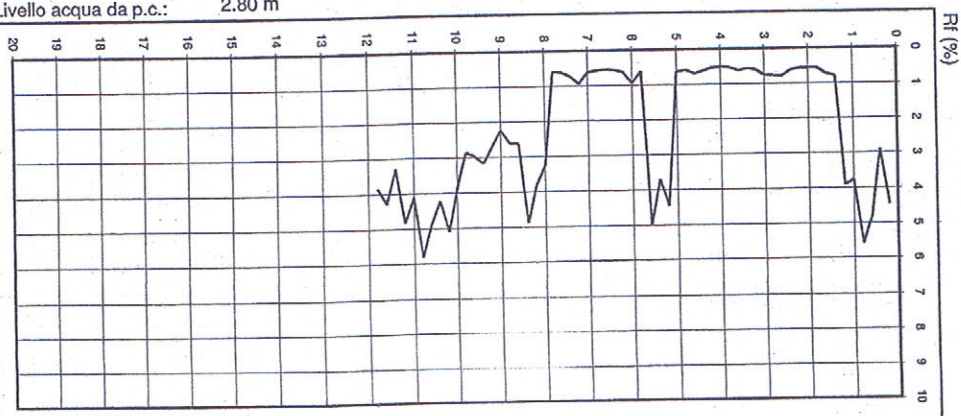
Quota: ---

Data prova: 08/06/2009

Codice lavoro: 2009.098



Livello acqua da p.c.: 2.80 m



Note: ---

Procedura di prova	Normativa di riferimento	Rev.	Data emissione	Sperimentatore	Il Direttore di Laboratorio
IP_2	ASTM D 3441-94	0	08/06/2009	Dr. Tabarroni	Dr. Luca Conti



037043P61CPT67

GEO-PROBE S.r.l. Indagini Geognostiche

**GEO-PROBE S.r.l.**

- Indagini Geognostiche -

40033 CASALECCHIO DI RENO

Via Cinarosa, 119 - Tel. 051/61.33.072

**CPT (CONE PENETRATION TEST)**

**N. 4**

Rapporto di Prova N°:

**09.0596 /RSP**

Committente : Comune di Montevoglio

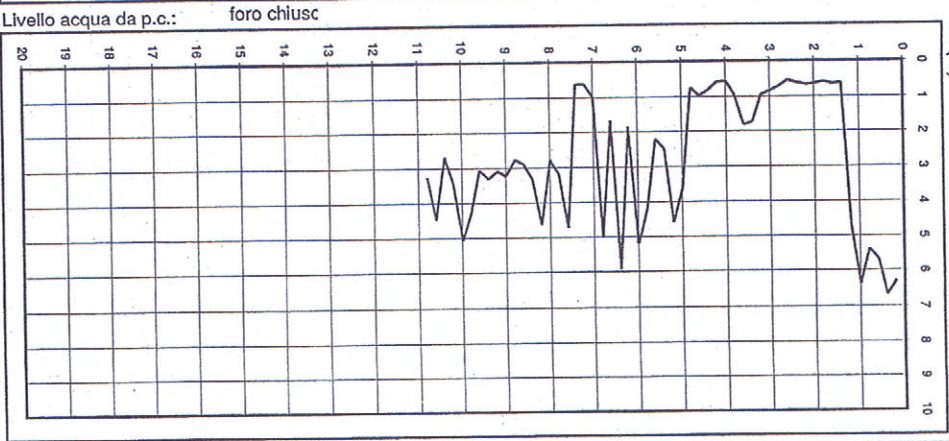
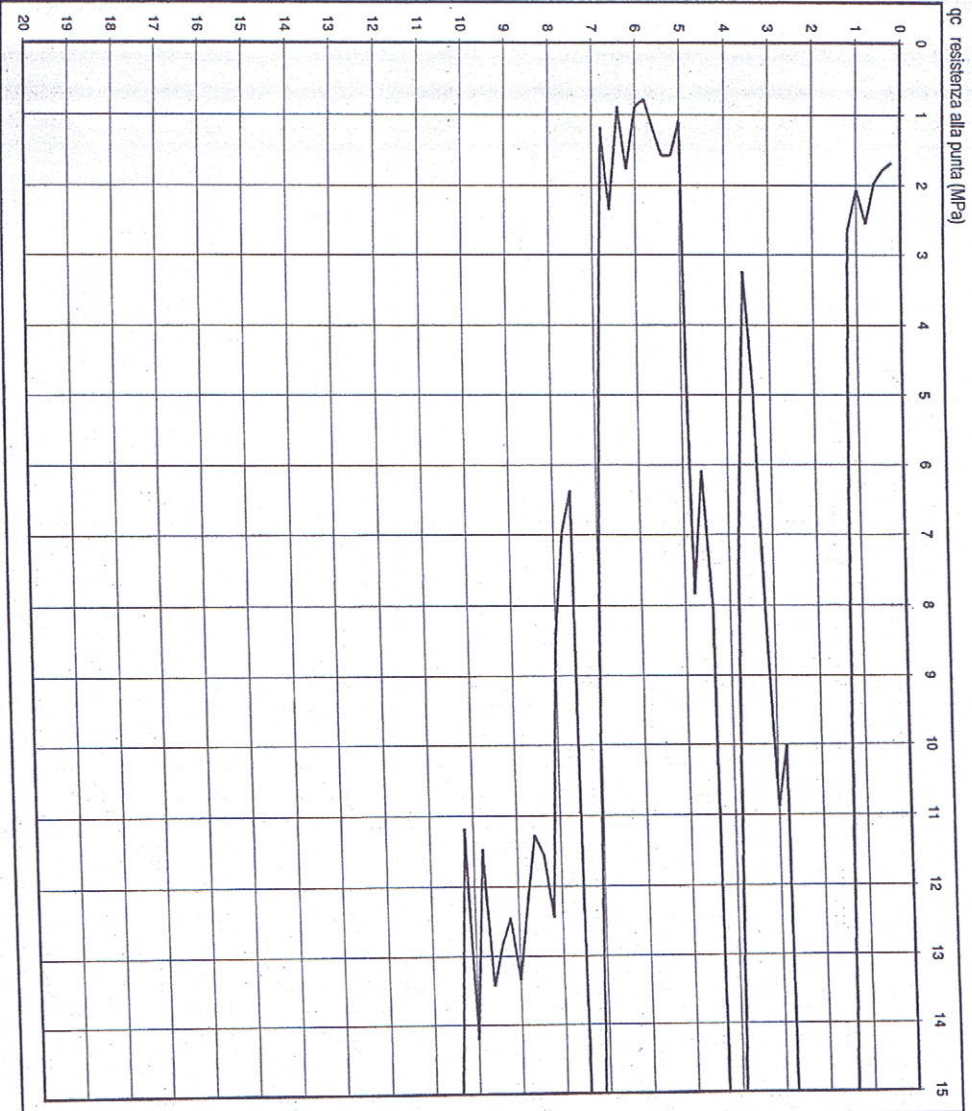
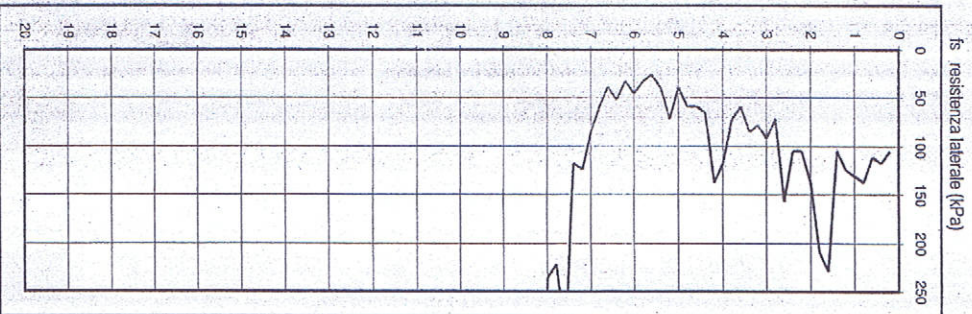
Località : Montevoglio (BO)

Attrezzatura : Penetrometro da 200 kN

Quota: ---

Data prova : 08/06/2009

Codice lavoro: 2009.098



Note: ---

Procedura di prova	Normativa di riferimento	Rev.	Data emissione	Sperimentatore	Il Direttore di Laboratorio
IP_2	ASTM D 3441-94	0	08/06/2009	Dr. Tabaroni	Dr. Luca Conti



037043P62CPT68

GEO-PROBE S.r.l. Indagini Geognostiche

**GEO-PROBE S.r.l.**

- Indagini Geognostiche -

40033 CASALECCHIO DI RENO

Via Cimara, 119 - Tel. 051/61.33.072

**CPT (CONE PENETRATION TEST)**

**N. 7**

Committente : Comune di Montevoglio

Località : Montevoglio (BO)

Attrezzatura : Penetrometro da 200 KN

Torre Gazzone

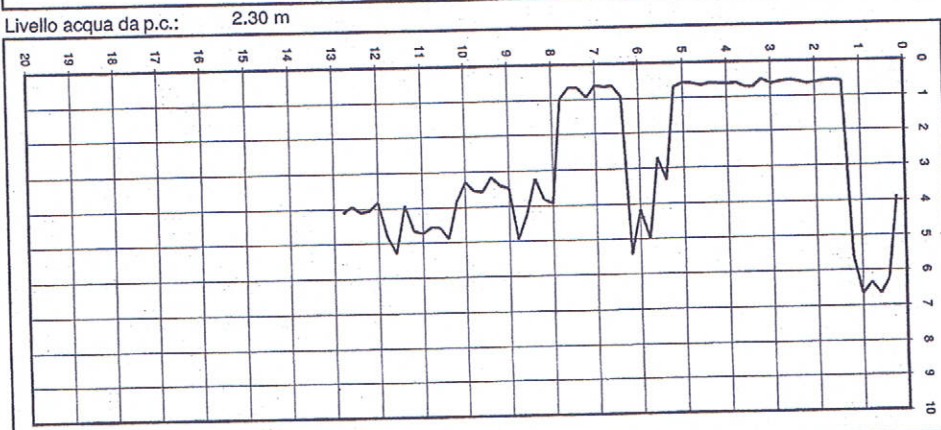
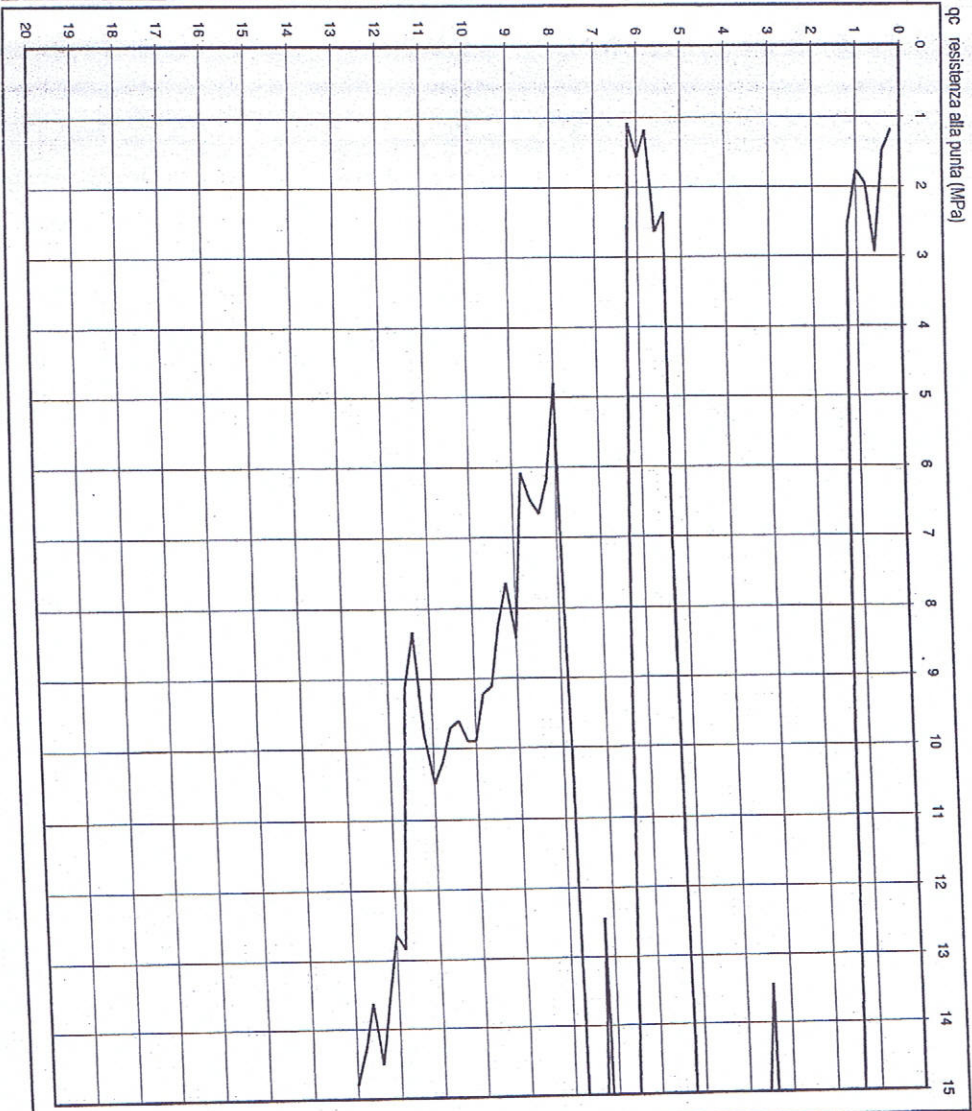
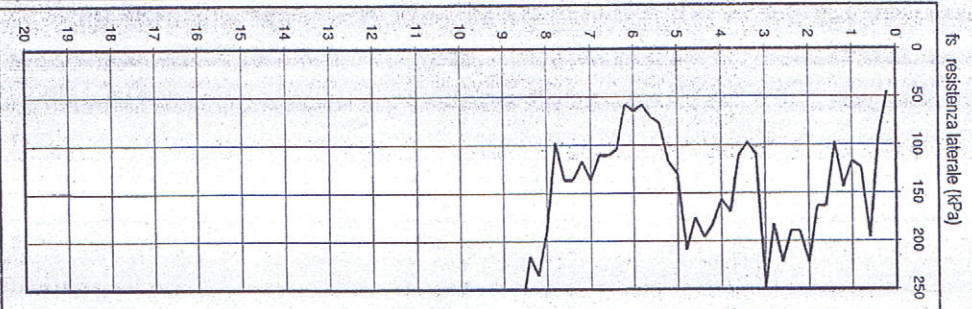
Rapporto di Prova N°:

09.0599 /RSP

Quota: ---

Data prova : 08/06/2009

Codice lavoro : 2009.098



Livello acqua da p.c.: 2.30 m

Note: ---

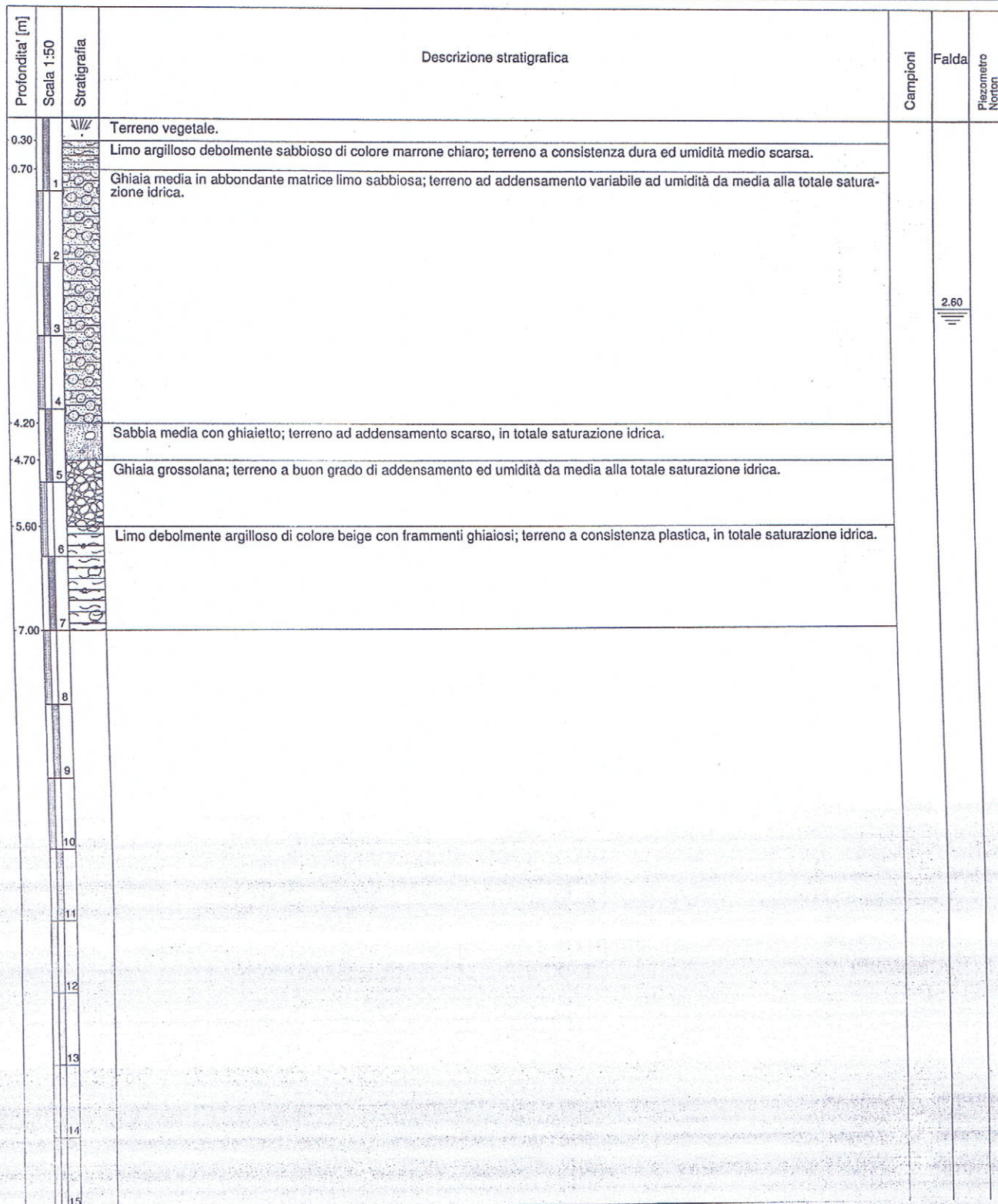
Procedura di prova	Normativa di riferimento	Rev.	Data emissione	Sperimentatore	Il Direttore di Laboratorio
IP_2	ASTM D 3441 -94	0	08/06/2009	Dr. Tabaroni	Dr. Luca Conti



037043 P63 8069

MOD.0 RSP STRAT

<b>GEO-PROBE</b> s.r.l. <i>Indagini Geognostiche</i> 40033 CASALECCHIO DI RENO (BO) Via Cimara, 119 - Tel. 051/61.33.072		Committente: <u>Comune di Monteveglio</u>	Quota: <u>--</u>	Rap. Pr. N°09.0600/RSP	
		Località: <u>Monteveglio (BO)</u>	Profondità: <u>7.00 m</u>	Codice Lavoro2009.098	
		Cantiere: <u>Torre Gazzone</u>	Data Inizio: <u>08/06/2009</u>	SONDAGGIO	FOGLIO
		Perforazione: <u>Trivellazione a secco d 120 mm</u>	Data Fine: <u>08/06/2009</u>		
		Attrezzatura: <u>Unimog U400L</u>	Il geologo: <u>Dr. L. Conti</u>		
Procedura di Prova	Rapporto di Prova N°	Rev.	Data di emissione	Lo Sperimentatore	Il Direttore di Laboratorio
--	09.0600/RSP	0	08/06/2009	Dr. Tabaroni	Dr. L. Conti



2.60



# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

037043P 38CPT70  
CPT (CONE PENETRATION TEST)

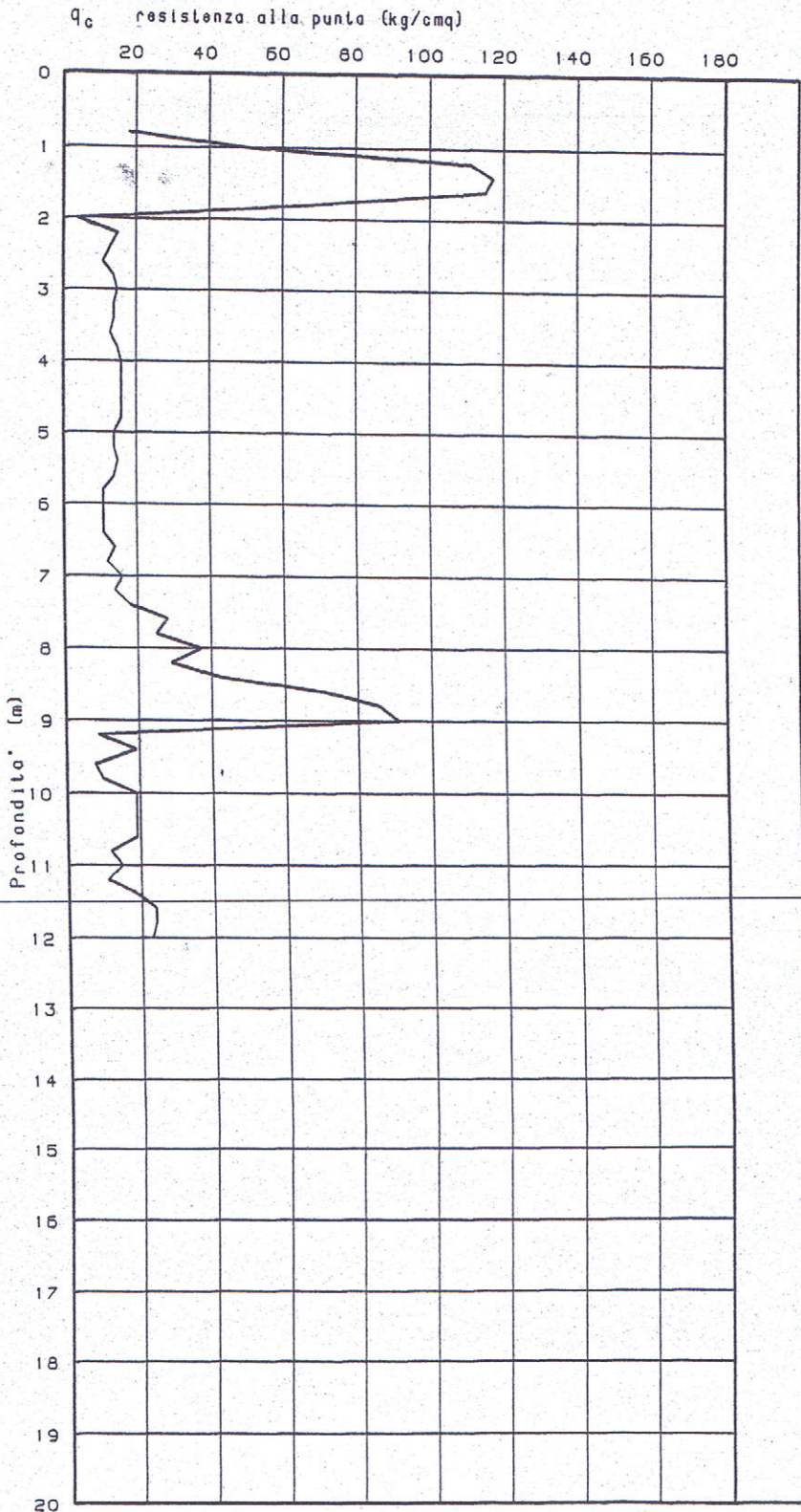
Data: 27/07/2001

N. 2

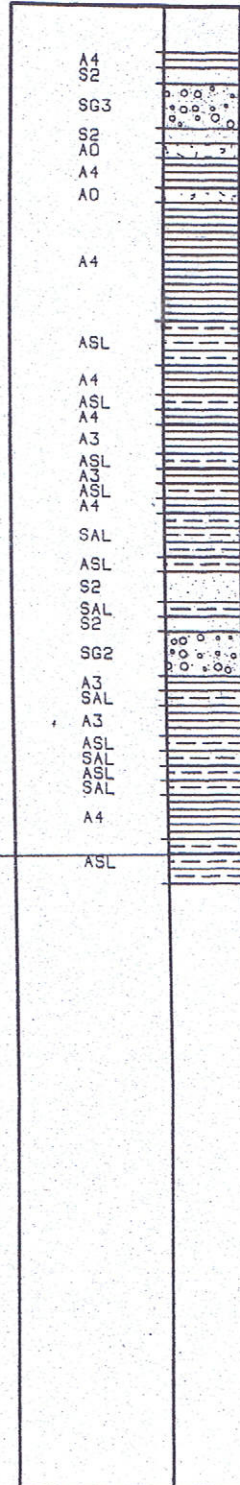
Committente: Lomec

N. Certificato: 01229002

Localita': Montevoglio (BO) via San Luca 11



CLASSIFICAZIONE  
DEI TERRENTI SEC.  
SCHMERTMANN 1978



Profondita' acqua da p.c.: foro chiuso a -0.90 m

STUDIO GEOLOGICO ASSOCIATO



# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

# CPT (CONE PENETRATION TEST)

037043P64CPT71

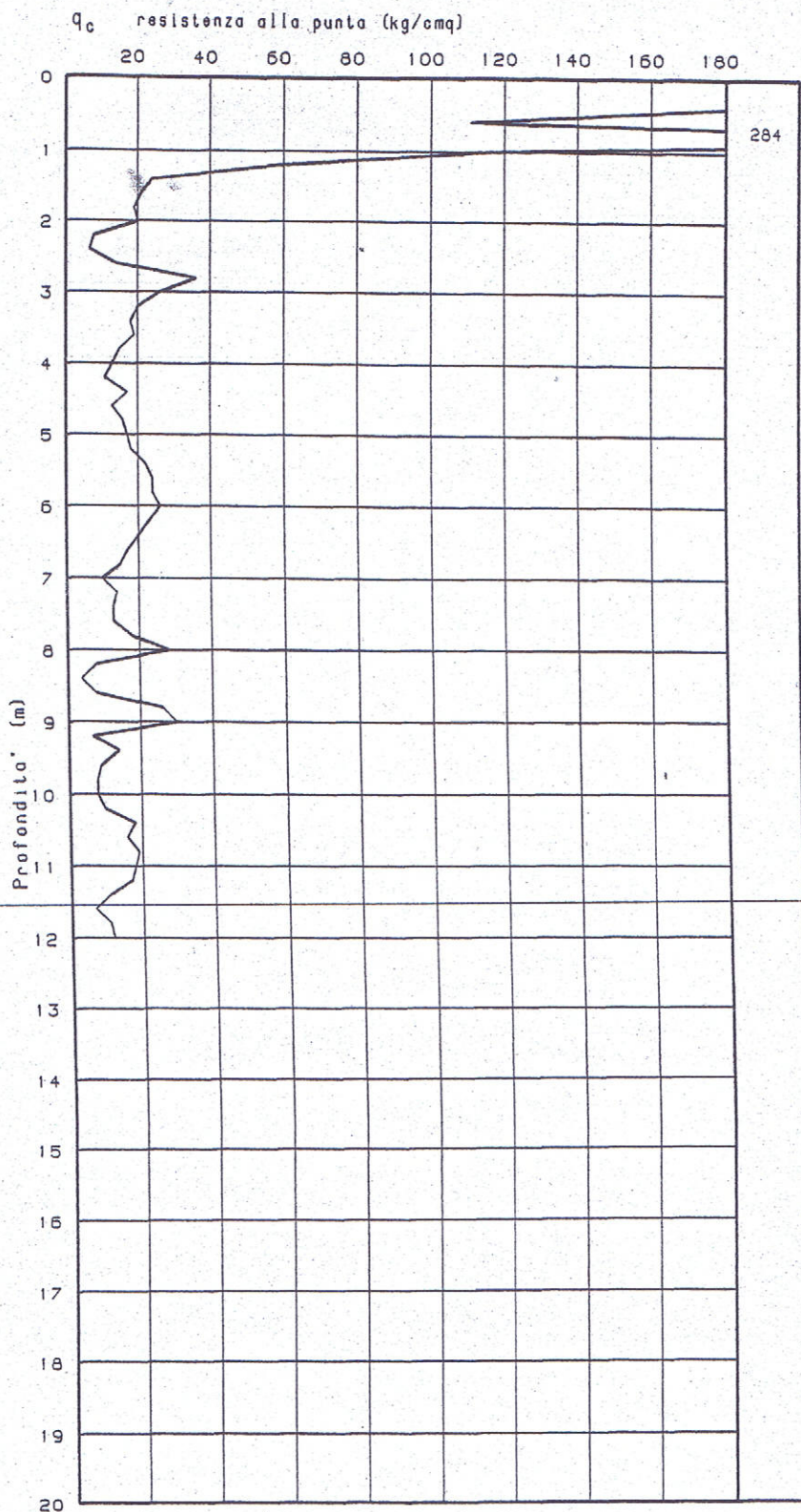
Data: 27/07/2001

N. 4

Committente: Lomec

N. Certificato: 01229004

Localita': Montevoglio (BO) via San Luca 11



## CLASSIFICAZIONE DEI TERRENI SEC. SCHMERTMANN 1978

GS	8 00 0 0
S2	8 00 0 0
GS	8 00 0 0
S2	8 00 0 0
GS	8 00 0 0
S2	8 00 0 0
ASL	
SAL	
A3	
A0	
A4	
S2	
ASL	
A5	
A4	
ASL	
A4	
ASL	
A5	
A4	
ASL	
SAL	
ASL	
A0	
ASL	
S2	
A3	
A2	
A0	
S2	
A3	
SAL	
A0	
A3	
A0	
ASL	
A4	
A0	
ASL	

Profondita' acqua da p.c.: foro chiuso a -1.00 m

STUDIO GEOLOGICO ASSOCIATO



# GEO-PROBE

40133 BOLOGNA

Via R. Grieco, 7 - Tel. 051/61.45.360

# 037043 P65CPT72

## CPT (CONE PENETRATION TEST)

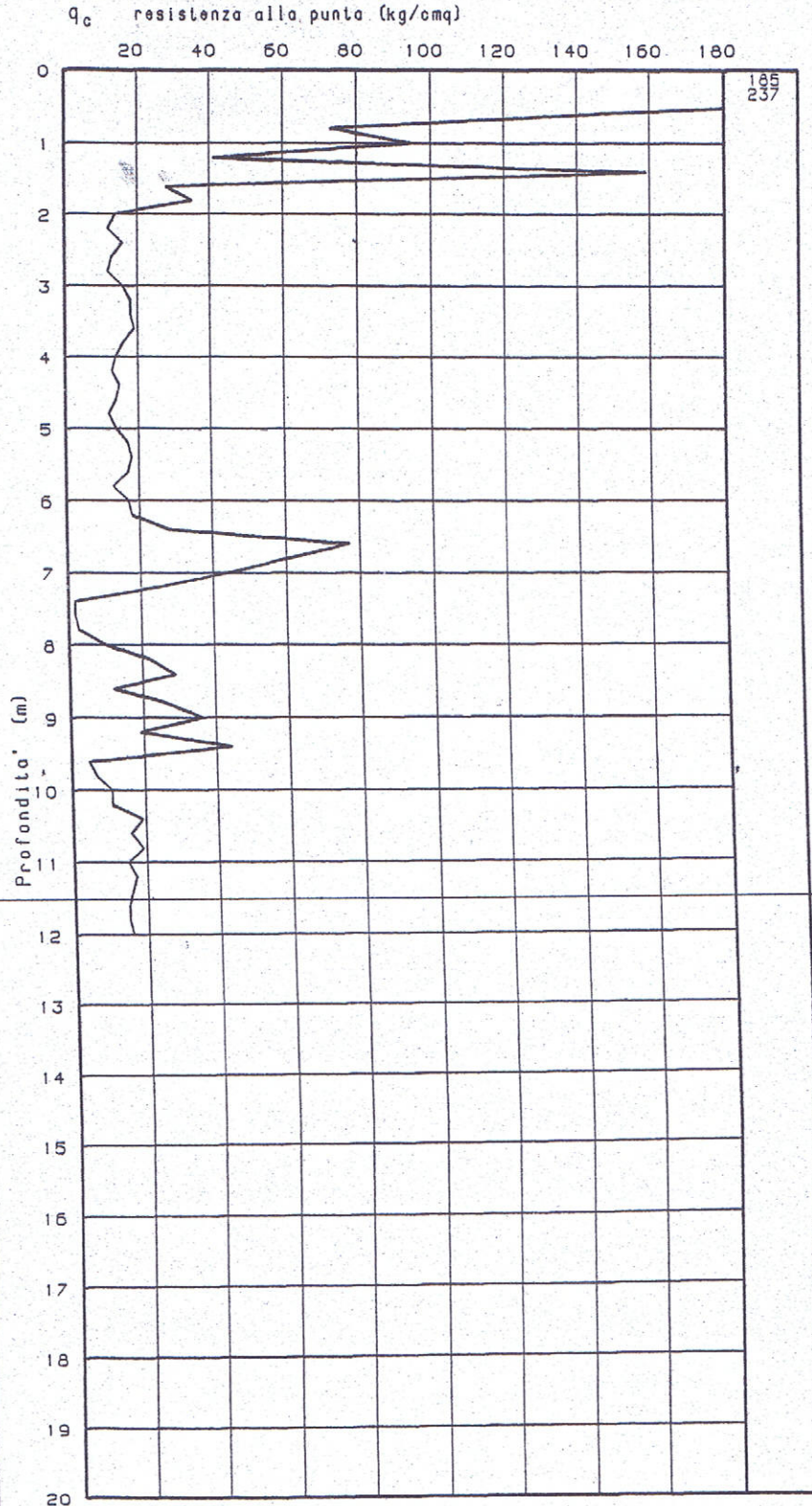
Data: 27/07/2001

N. 5

Committente: Lomec

N. Certificato: 01229005

Localita': Montevoglio (BO) via San Luca 11



CLASSIFICAZIONE  
DEI TERRENI SEC.  
SCHMERTMANN 1978

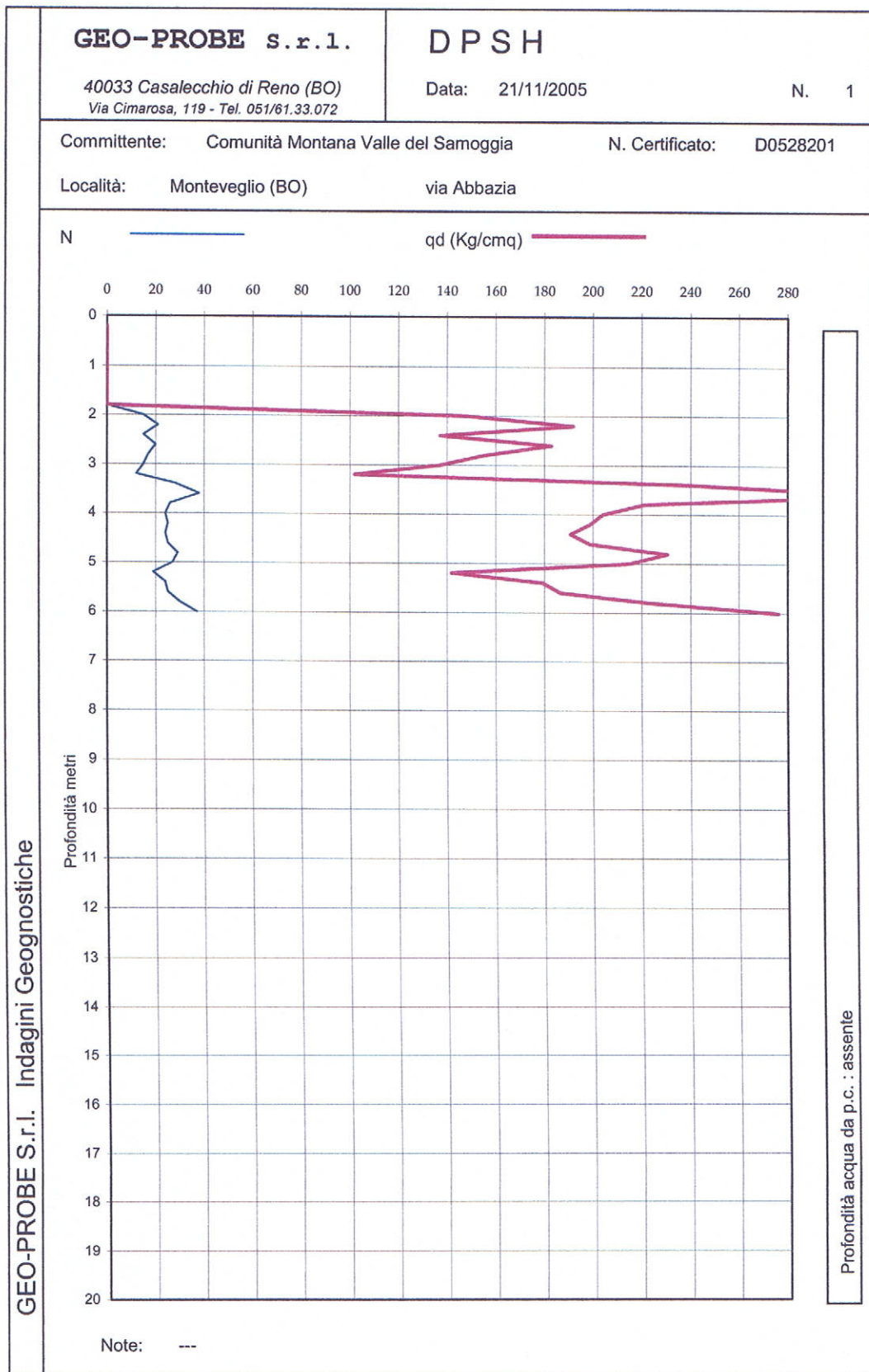
GS	○ ○ ○ ○ ○ ○
SG3	○ ○ ○ ○ ○ ○
S2	○ ○ ○ ○ ○ ○
SG2	○ ○ ○ ○ ○ ○
GS	○ ○ ○ ○ ○ ○
A5	○ ○ ○ ○ ○ ○
SAL	○ ○ ○ ○ ○ ○
A0	○ ○ ○ ○ ○ ○
A4	○ ○ ○ ○ ○ ○
A5	○ ○ ○ ○ ○ ○
A4	○ ○ ○ ○ ○ ○
ASL	○ ○ ○ ○ ○ ○
A4	○ ○ ○ ○ ○ ○
ASL	○ ○ ○ ○ ○ ○
A3	○ ○ ○ ○ ○ ○
A4	○ ○ ○ ○ ○ ○
ASL	○ ○ ○ ○ ○ ○
A4	○ ○ ○ ○ ○ ○
ASL	○ ○ ○ ○ ○ ○
A4	○ ○ ○ ○ ○ ○
SAL	○ ○ ○ ○ ○ ○
S2	○ ○ ○ ○ ○ ○
A0	○ ○ ○ ○ ○ ○
SAL	○ ○ ○ ○ ○ ○
S2	○ ○ ○ ○ ○ ○
A4	○ ○ ○ ○ ○ ○
S2	○ ○ ○ ○ ○ ○
A0	○ ○ ○ ○ ○ ○
A3	○ ○ ○ ○ ○ ○
A4	○ ○ ○ ○ ○ ○
ASL	○ ○ ○ ○ ○ ○
A4	○ ○ ○ ○ ○ ○

Profondita' acqua da p.c.: foro chiuso a -0.50 m

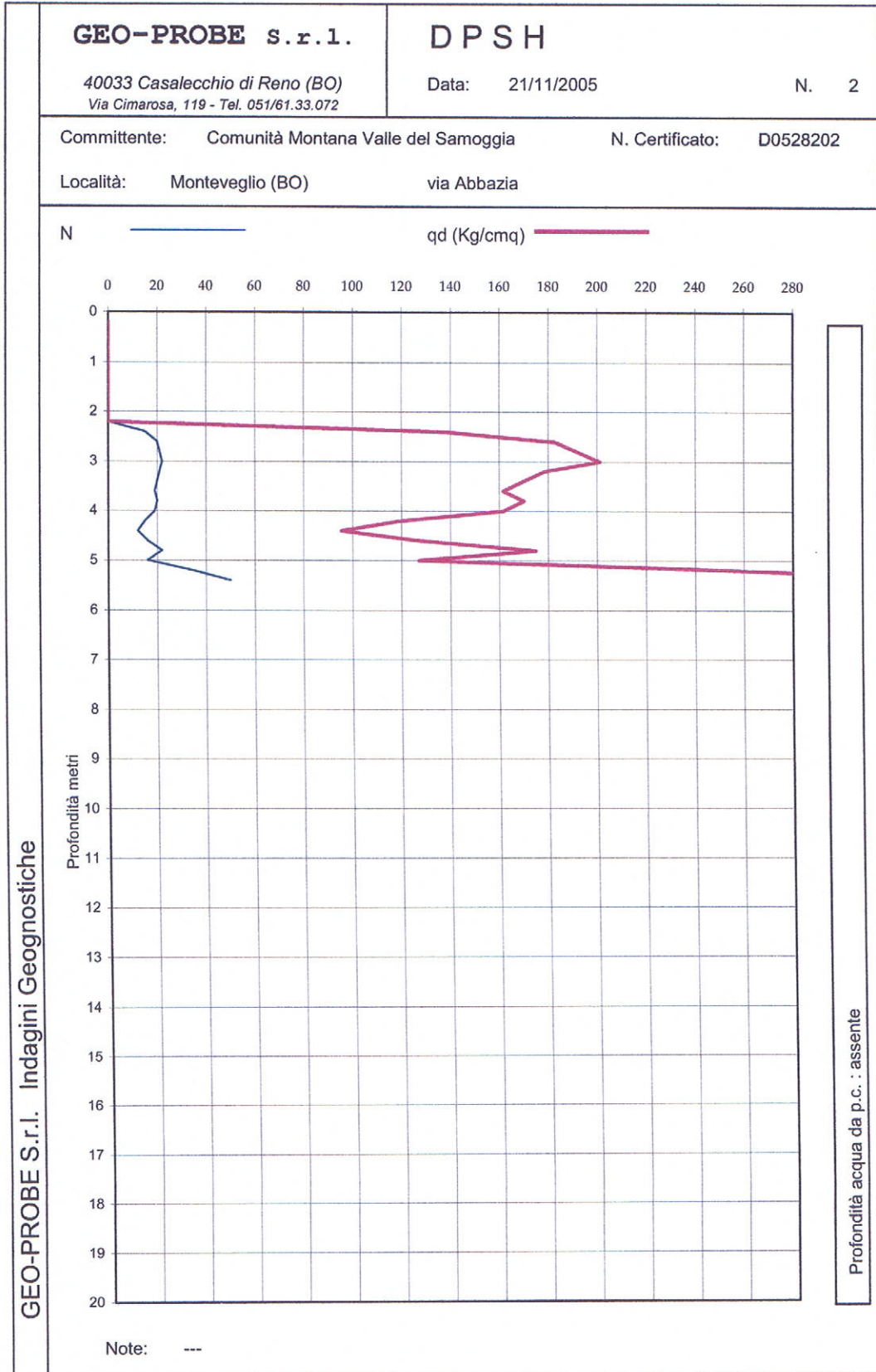
STUDIO GEOLOGICO ASSOCIATO



037043P66DP73



037043P67DP74



037043P685075

Relazione GEOLOGICA: "Ampliamento cimitero Abbazia"-Progetto ESECUTIVO-2007

<b>GEO-PROBE</b> s.r.l. <i>Indagini Geognostiche</i> 40033 CASALECCHIO DI RENO (BO) Via Cimara, 119 - Tel. 051/61.33.072	Committente: <u>Comunità Montana Valle del Samoggia</u>	Quota: <u>—</u>	N. Certificato: <b>05282001</b>	
	Località: <u>Montevoglio (BO)</u>	Profondità: <u>5.50 m</u>		
	Cantiere: <u>via Abbazia</u>	Data Inizio: <u>21/11/2005</u>	SONDAGGIO	FOGLIO
	Perforazione: <u>Trivellazione a secco d 65 mm</u>	Data Fine: <u>21/11/2005</u>	<b>1</b>	<b>1/1</b>
	Attrezzatura: <u>Cingolato Pagani TG60</u>	Il geologo: <u>Dr. Luca Conti</u>		

Profondità [m]	Scala 1:50	Stratigrafia	Descrizione stratigrafica	Falda	Campioni	Piezometro Noton
0.30			Terreno di riporto di natura limo argillosa con frammenti lapidei eterogenei.			
	1		Limo argilloso di colore beige, presenza di concrezioni calcaree di piccole dimensioni; terreno a consistenza plastica ed umidità da scarsa a media.			
	2					
3.00	3		Limo argilloso di colore marrone, presenza di concrezioni calcaree di piccole dimensioni; terreno a consistenza plastica ed umidità da scarsa a media.			
	4					
	5					
5.50	6					
	7					
	8					
	9					
	10					
	11					
	12					
	13					
	14					
	15					



# PROVA PENETROMETRICA DINAMICA

## DIAGRAMMI COLPI / RESISTENZA

n°	1
riferimento	002-08
certificato n°	
n° verb. accett.	

Committente: Studio Viel

Cantiere:

Località: Monteveglio (BO)

037043P69 DP76

U.M.: kg/cm<sup>2</sup>

Scala: 1:55

Pagina: 1

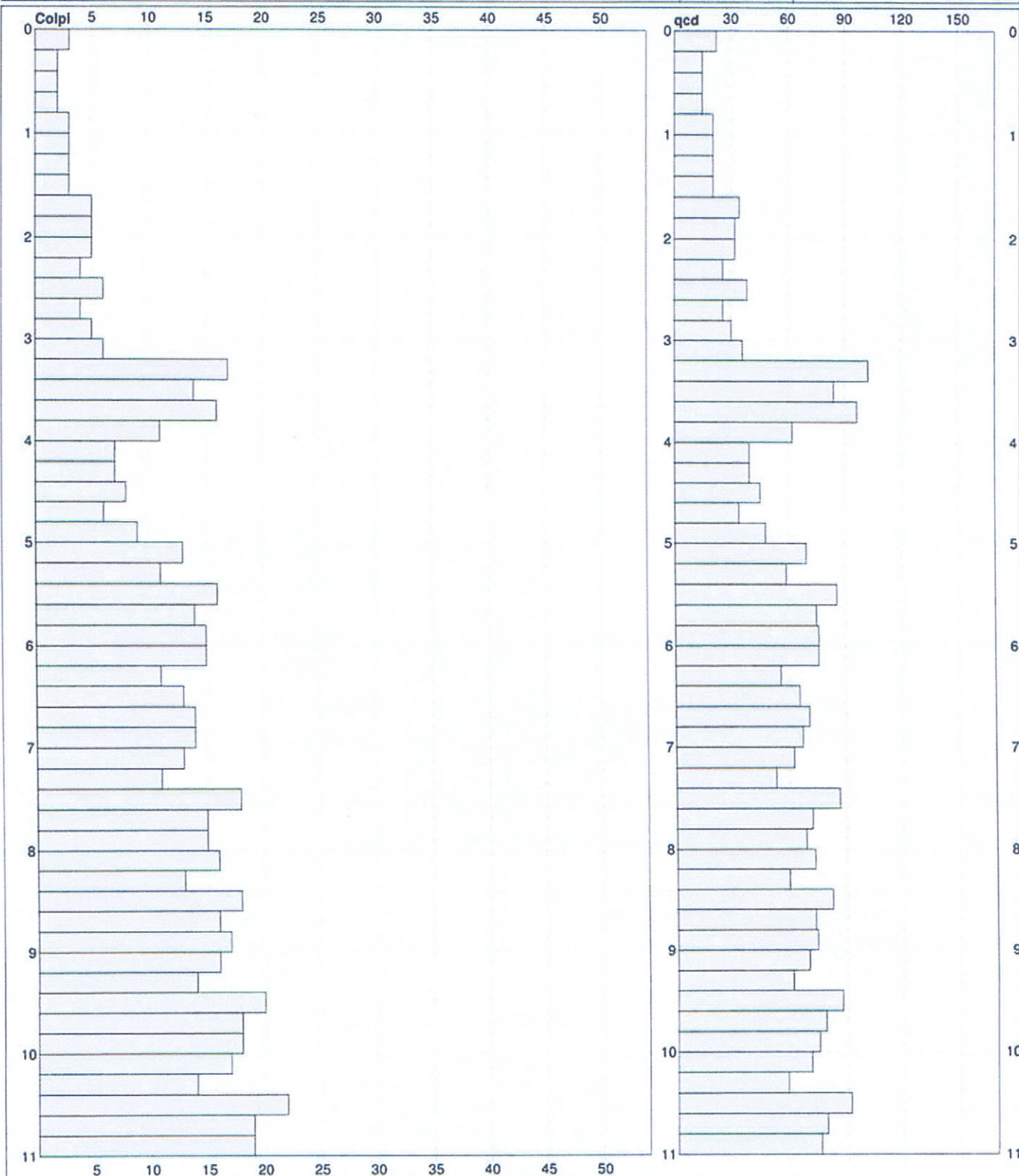
Elaborato:

Data esec.: 28/02/2008

Data certificato: 25/03/2008

Preforo: m

Falda: Foro chiuso



Penetrometro: DPSH (S. Heavy)

Massa battente: 63,50 m

Altezza caduta: 0,75 m

Avanzamento: 0,20 m

Responsabile: R. Sacchetti

Assistente: M. Rinaldo

Quota ass.:

Corr. astine: kg/ml

Cod. ISTAT: 0

FON007

Sperimentatore \_\_\_\_\_

Direttore \_\_\_\_\_

pag.

# PROVA PENETROMETRICA DINAMICA

## DIAGRAMMI COLPI / RESISTENZA

n°	<b>2</b>
riferimento	002-08
certificato n°	
n° verb. accett.	

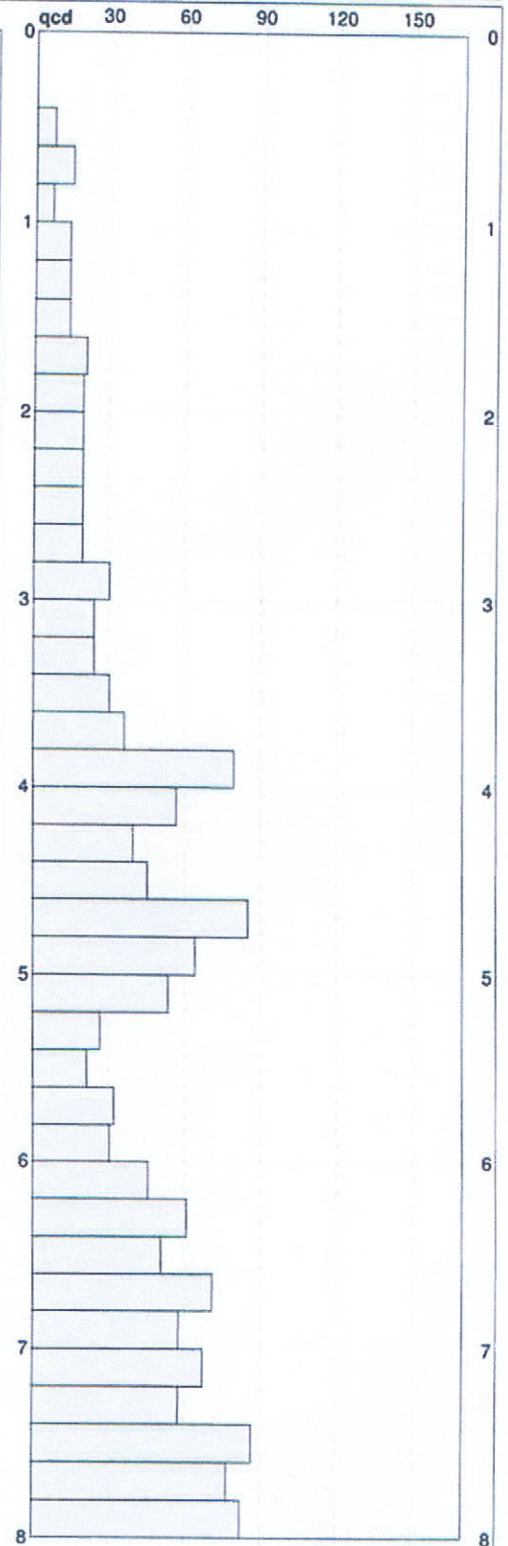
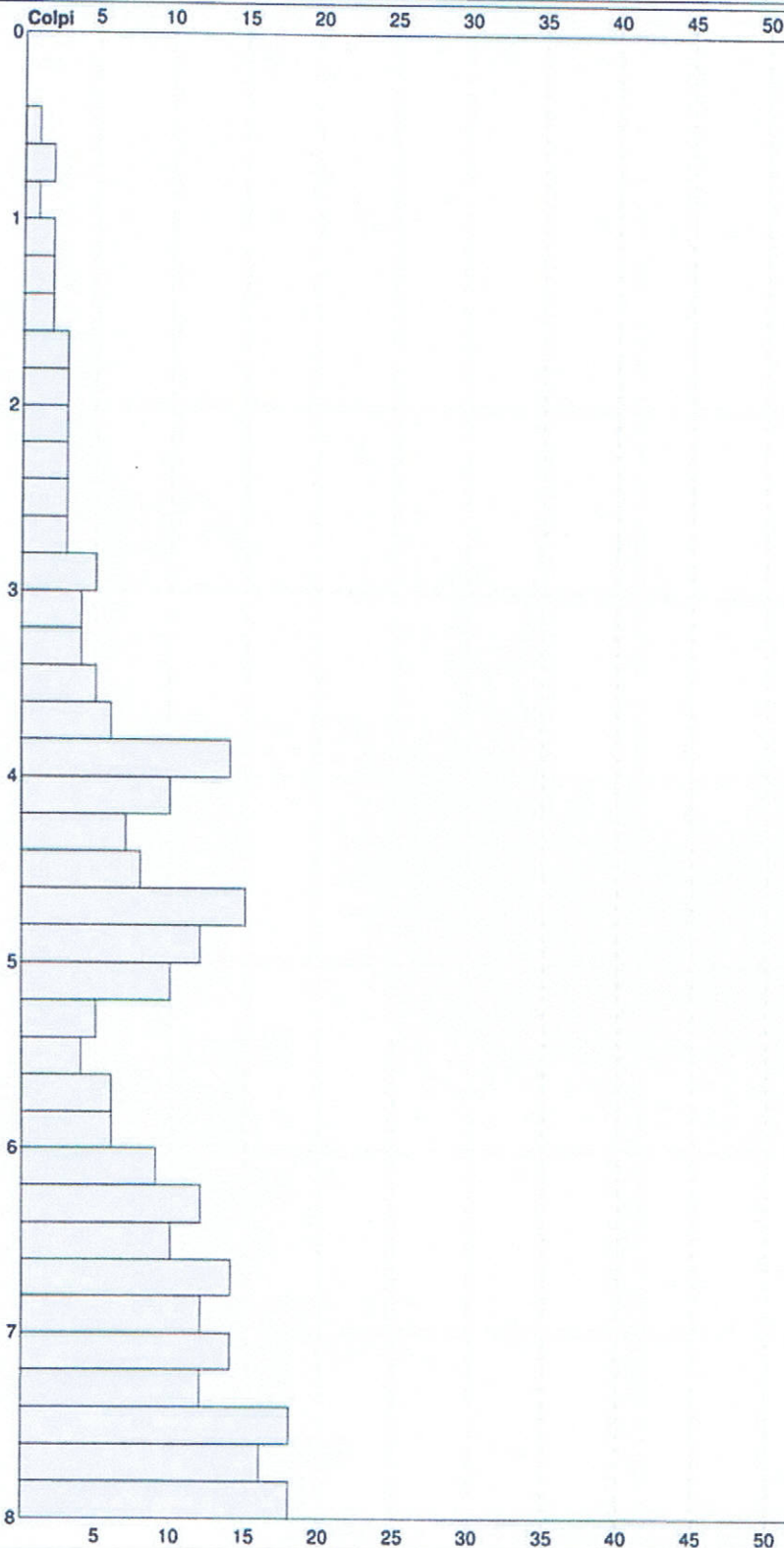
Committente: **Studio Viel**

Cantiere:

Località: **Montevoglio (BO)**

037043P70DP77

U.M.:	kg/cm <sup>2</sup>	Data eseg.:	28/02/2008
Scala:	1:40	Data certificato:	25/03/2008
Pagina:	1	Preforo: m	
Elaborato:		Falda:	

Penetrometro: **DPSH (S. Heavy)**Massa battente: **63,50 m**Altezza caduta: **0,75 m**Avanzamento: **0,20 m**Responsabile: **R. Sacchetti**Assistente: **M. Rinaldo**

Quota ass.:

Corr. astine: **kg/ml**Cod. ISTAT: **0**

FON007

Sperimentatore \_\_\_\_\_

Direttore \_\_\_\_\_

pag.



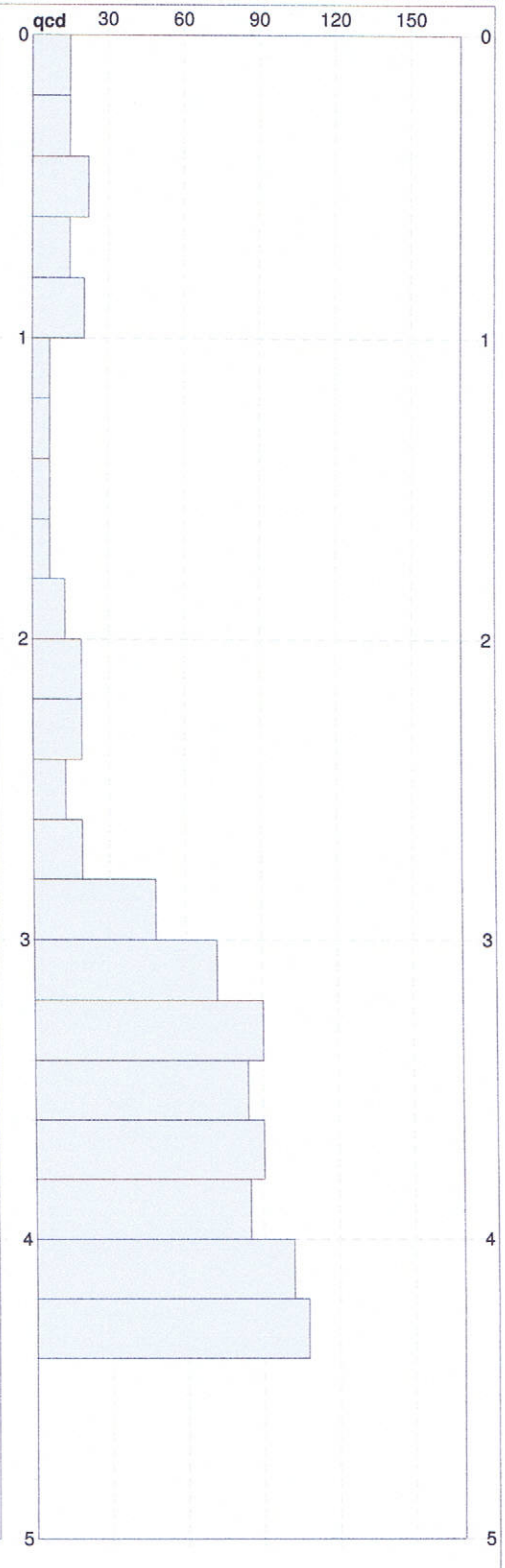
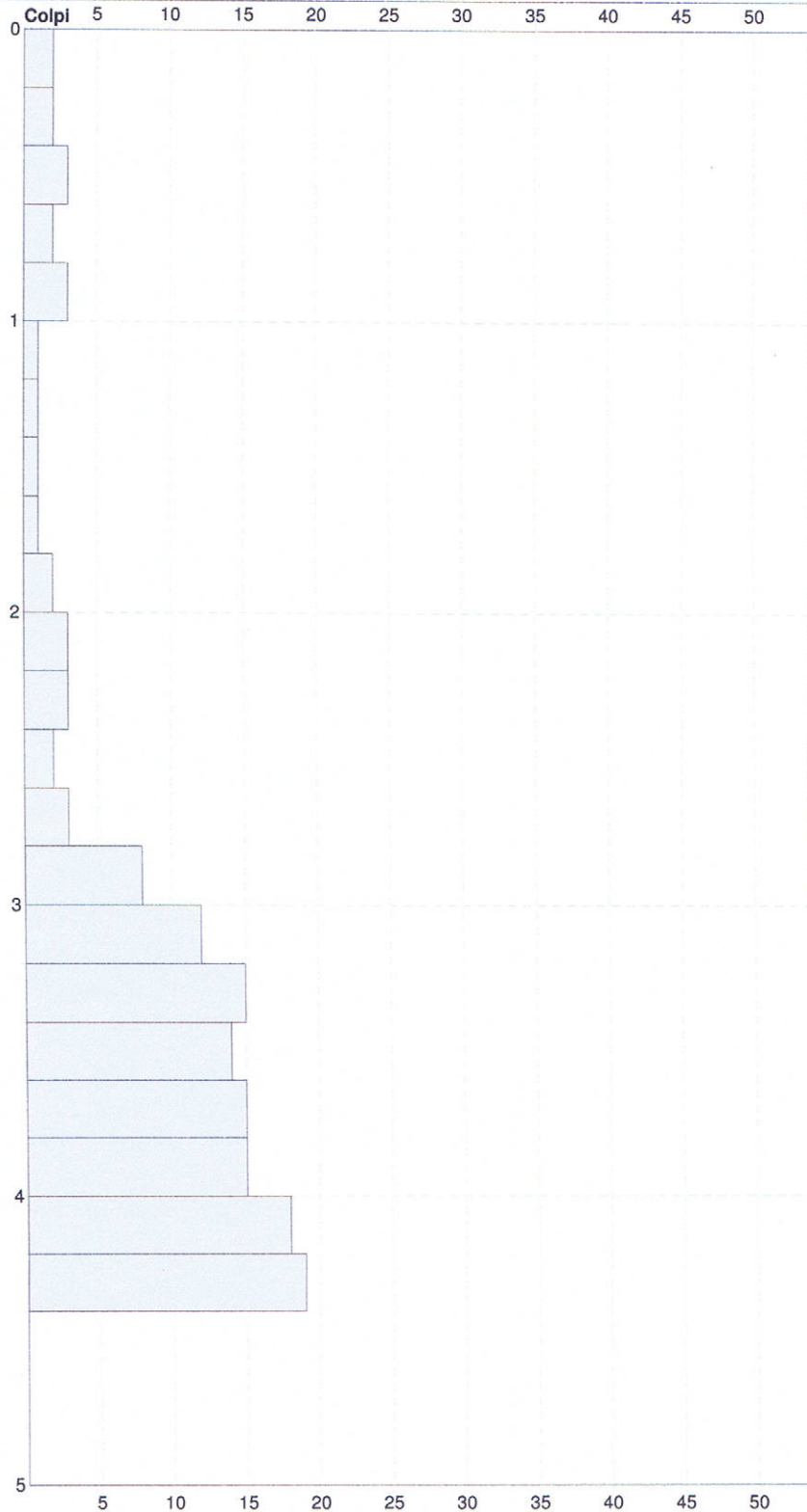
**PROVA PENETROMETRICA DINAMICA  
DIAGRAMMI COLPI / RESISTENZA**

n°	<b>3</b>
referimento	002-08
certificato n°	
n° verb. accett.	

Committente: **Studio Viel**  
Cantiere:  
Località: **Montevoglio (BO)**

037043726 DP78

U.M.: **kg/cm²** Data eseg.: 28/02/2008  
Scala: 1:25 Data certificato: 25/03/2008  
Pagina: 1 Preforo: m  
Elaborato: Falda:



**Penetrometro:** DPSH (S. Heavy)  
Massa battente: 63,50 m  
Altezza caduta: 0,75 m  
Avanzamento: 0,20 m

Responsabile: R. Sacchetti  
Assistente: M. Rinaldo

Quota ass.:  
Corr.astine: kg/ml  
Cod.ISTAT: 0

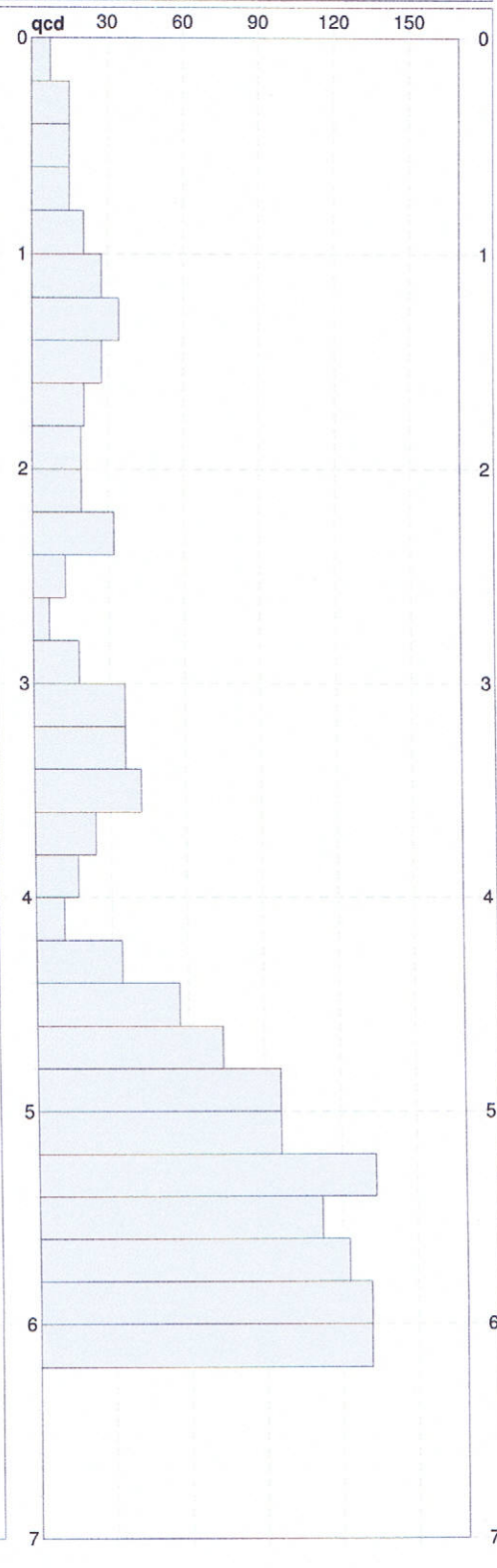
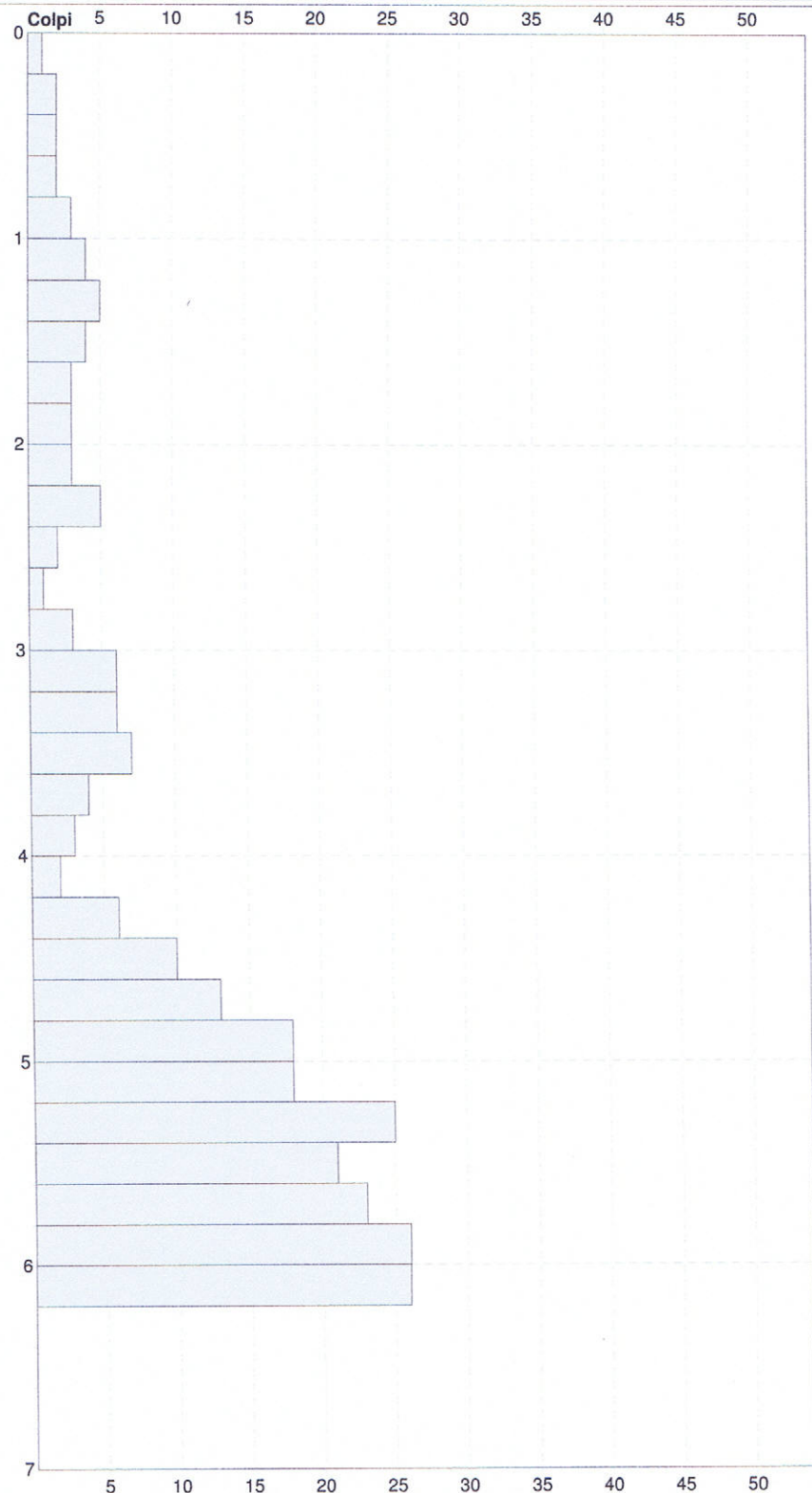
**PROVA PENETROMETRICA DINAMICA  
DIAGRAMMI COLPI / RESISTENZA**

n°	<b>5</b>
referimento	002-08
certificato n°	
n° verb. accett.	

Committente: **Studio Viel**  
 Cantiere:  
 Località: **Montevoglio (BO)**

*037043P31DP79*

U.M.: **kg/cm²**    Data esec.: 28/02/2008  
 Scala: 1:35    Data certificato: 25/03/2008  
 Pagina: 1    Preforo: m  
 Elaborato:



**Penetrometro:** DPSH (S. Heavy)  
 Massa battente: 63,50 m  
 Altezza caduta: 0,75 m  
 Avanzamento: 0,20 m

Responsabile: R. Sacchetti  
 Assistente: M. Rinaldo

Quota ass.:  
 Corr.astine: kg/ml  
 Cod.ISTAT: 0



**MONTEVEGLIO, TORRE GAZZONE MNTV 1**

Instrument: TRE-0008/01-07

Start recording: 28/02/08 10:18:05 End recording: 28/02/08 10:30:06

Channel labels: NORTH SOUTH; EAST WEST; UP DOWN

Trace length: 0h12'00". Analyzed 92% trace (manual window selection)

Sampling rate: 128 Hz

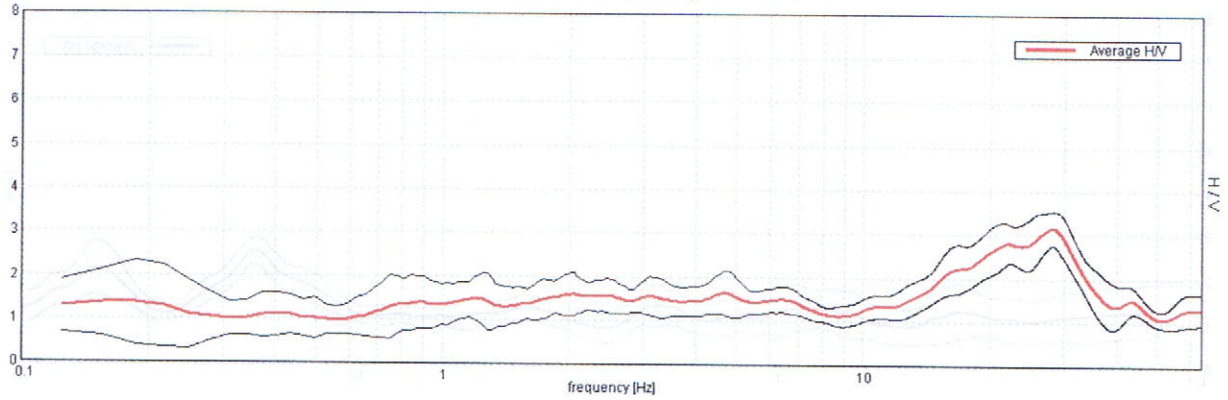
Window size: 20 s

Smoothing type: Triangular window

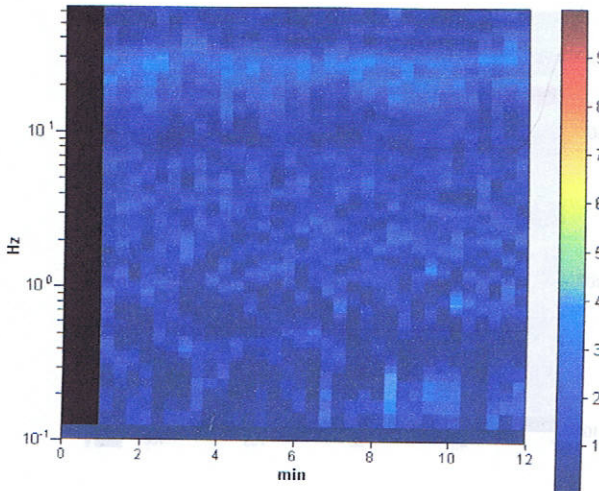
Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

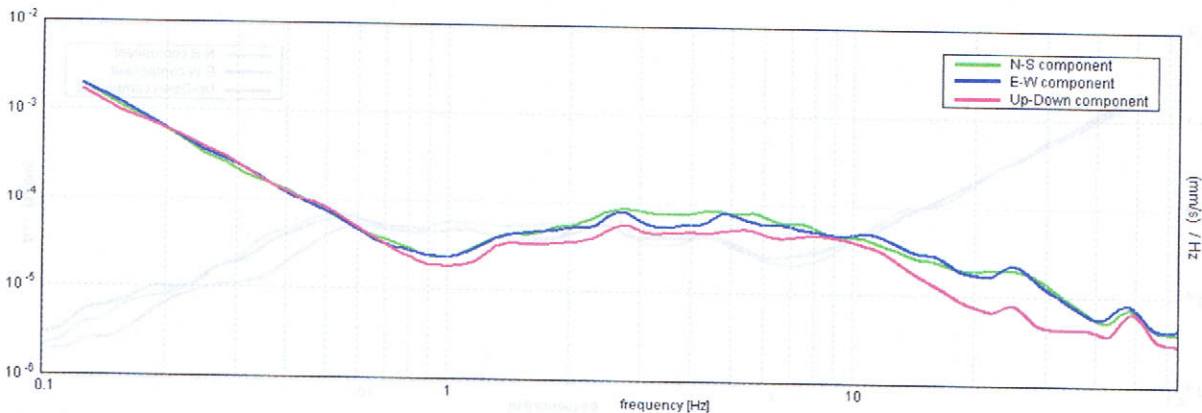
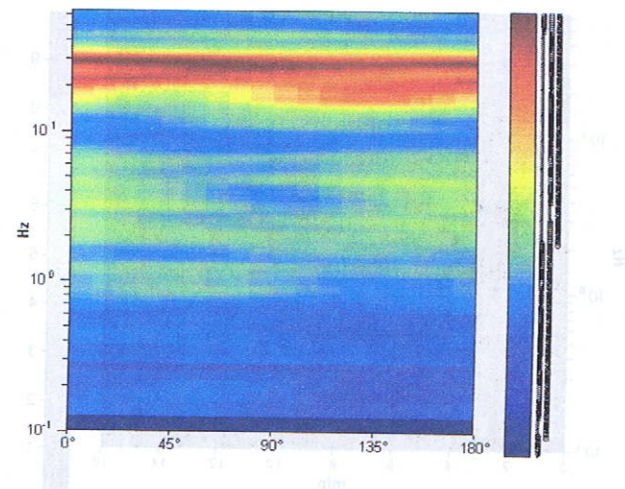
Max. HV at 28.13 ± 0.85 Hz. (In the range 0.0 - 64.0 Hz)



**HV TIME HISTORY**



**DIRECTIONAL HV**



### MONTEVEGLIO, TORRE GAZZONE MNTV 2

Instrument: TRE-0008/01-07

Start recording: 28/02/08 10:44:24 End recording: 28/02/08 11:00:25

Channel labels: NORTH SOUTH; EAST WEST; UP DOWN

Trace length: 0h16'00". Analyzed 92% trace (manual window selection)

Sampling rate: 128 Hz

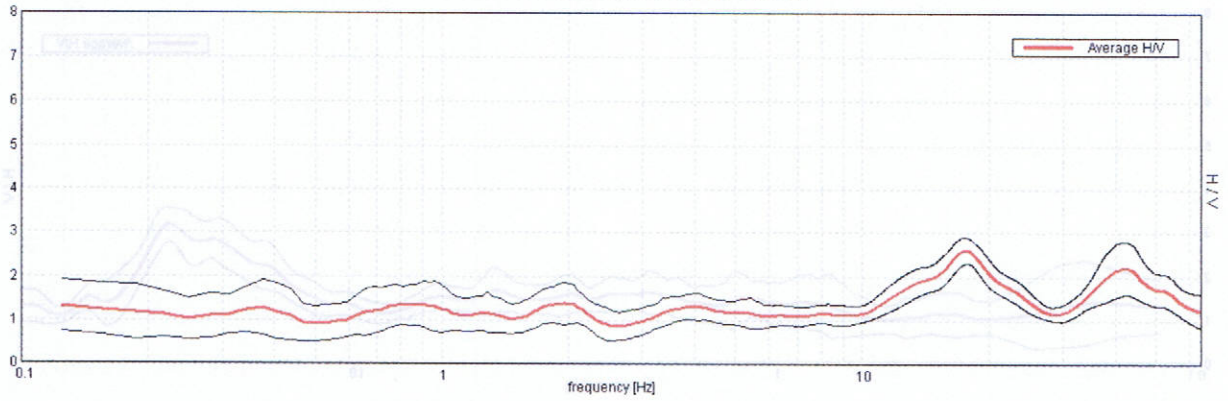
Window size: 20 s

Smoothing type: Triangular window

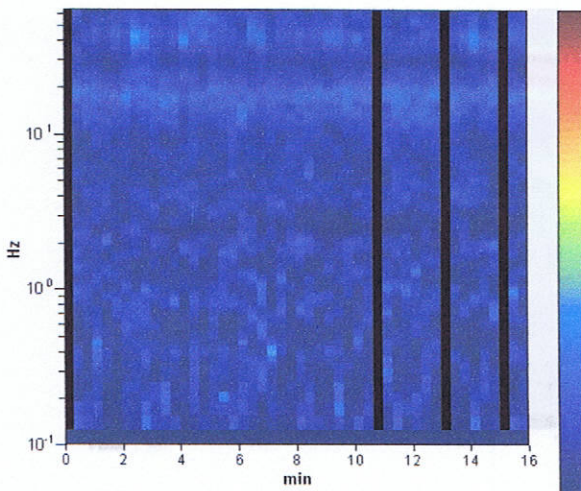
Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

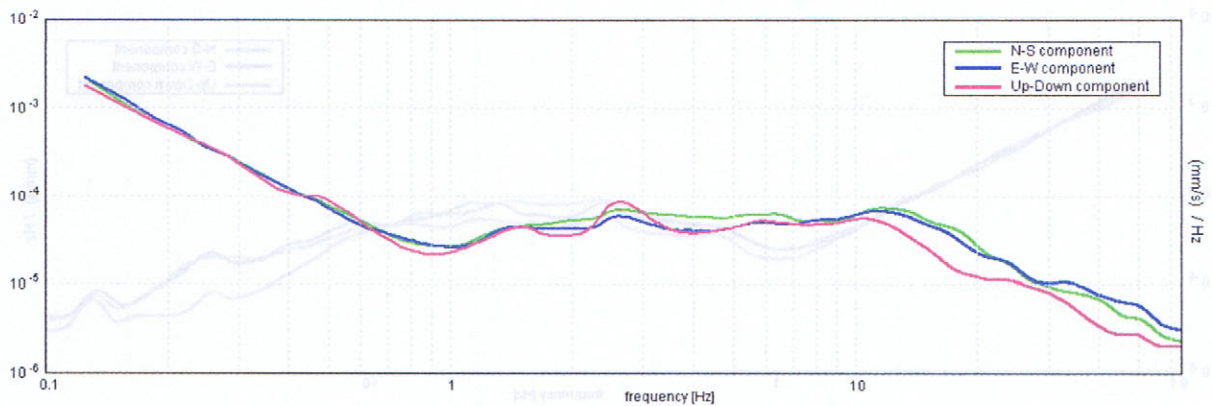
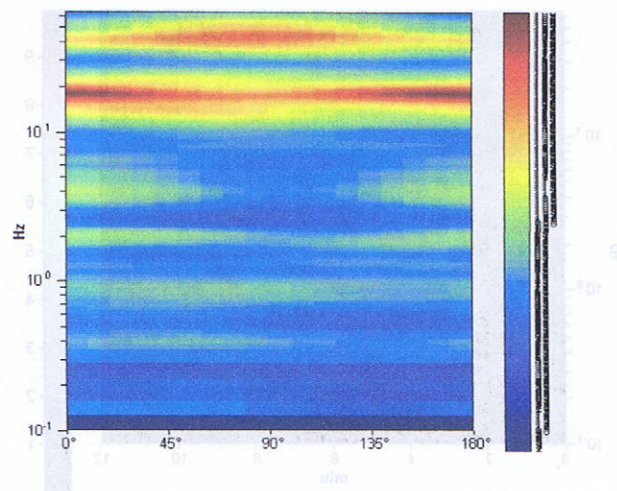
Max. H/V at  $17.59 \pm 0.06$  Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V





**MONTEVEGLIO, TORRE GAZZONE MNTV 3**

Instrument: TRE-0008/01-07

Start recording: 28/02/08 11:04:22 End recording: 28/02/08 11:20:23

Channel labels: NORTH SOUTH; EAST WEST; UP DOWN

Trace length: 0h16'00". Analyzed 94% trace (manual window selection)

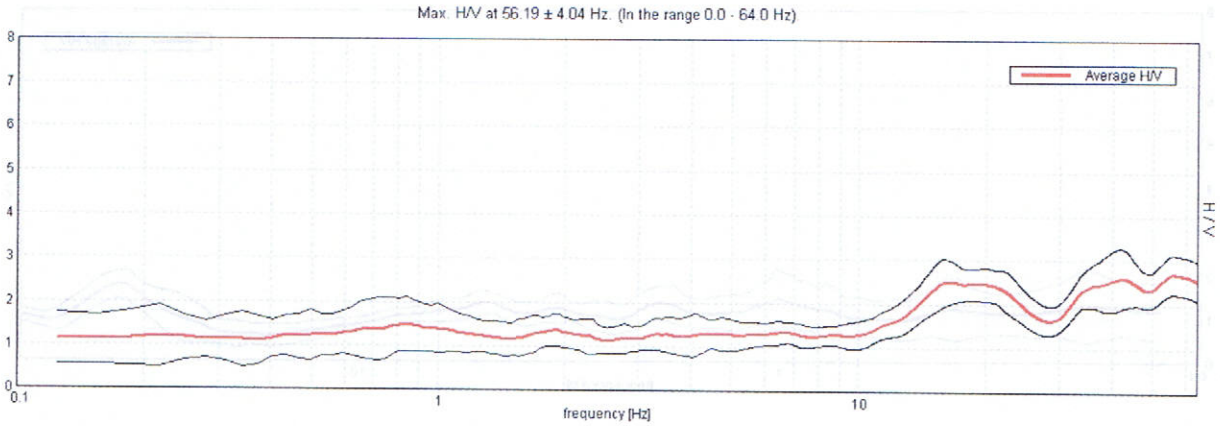
Sampling rate: 128 Hz

Window size: 20 s

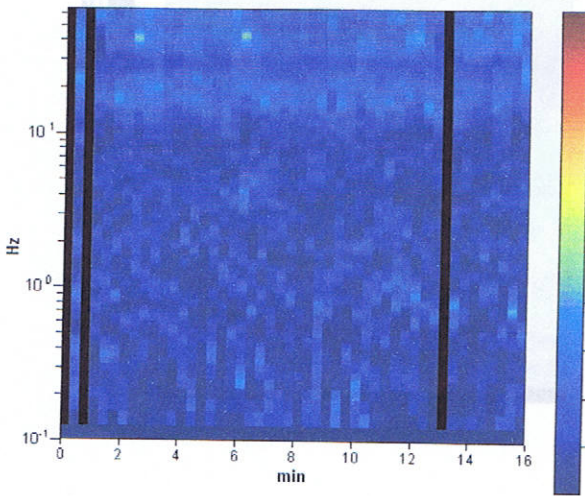
Smoothing type: Triangular window

Smoothing: 12%

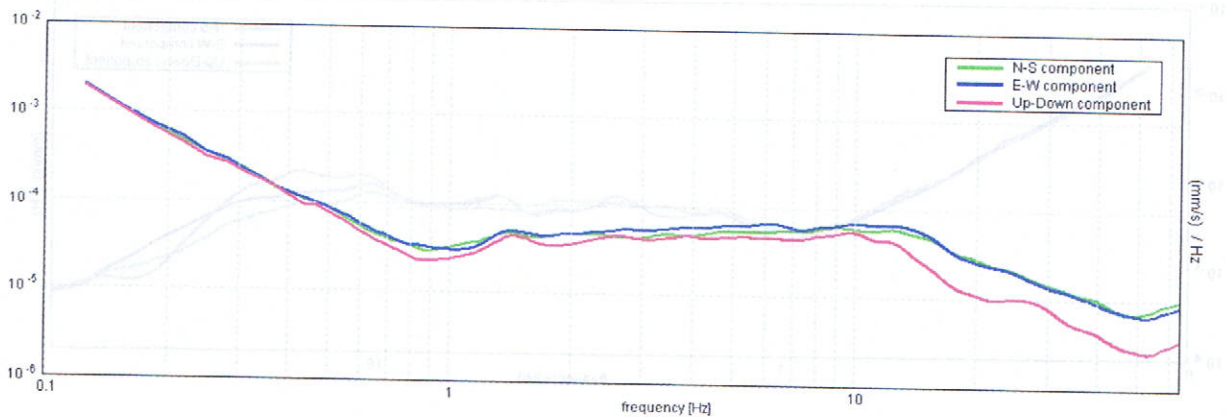
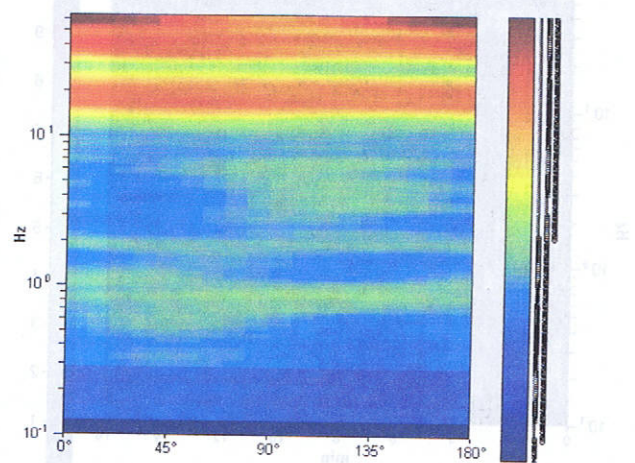
**HORIZONTAL TO VERTICAL SPECTRAL RATIO**



**HV TIME HISTORY**



**DIRECTIONAL HV**





### MONTEVEGLIO, TORRE GAZZONE MNTV 4

Instrument: TRE-0008/01-07

Start recording: 28/02/08 15:25:37 End recording: 28/02/08 15:41:38

Trace length: 0h16'00". Analyzed 94% trace (manual window selection)

Sampling frequency: 128 Hz

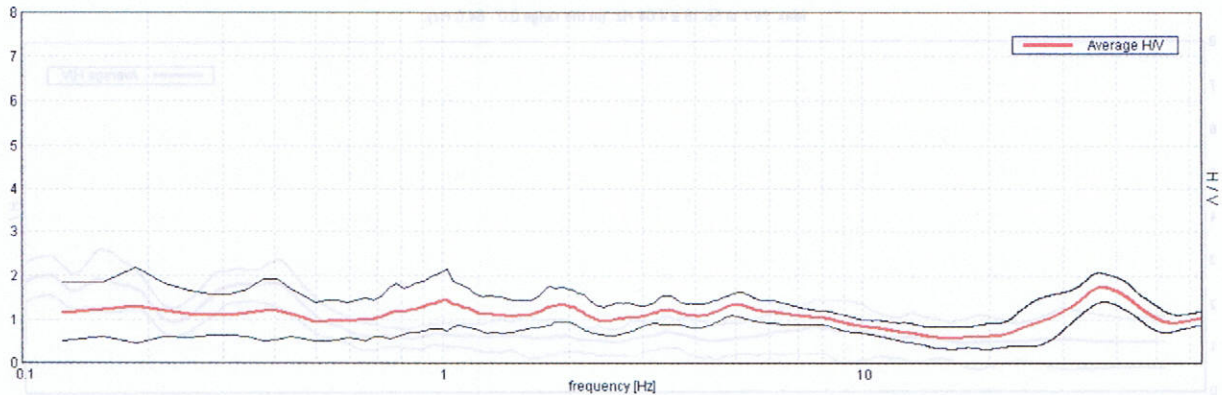
Window size: 20 s

Smoothing type: Triangular window

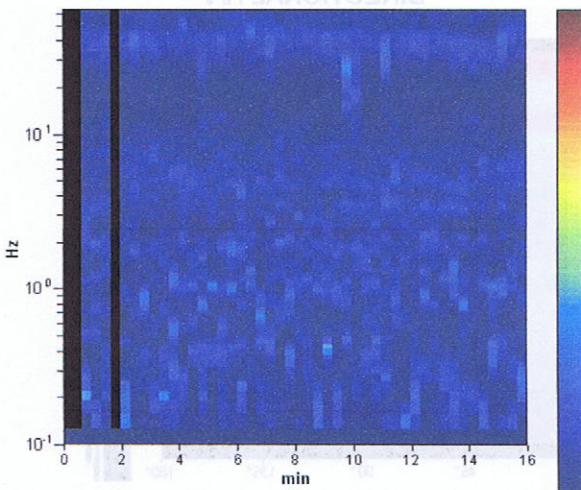
Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

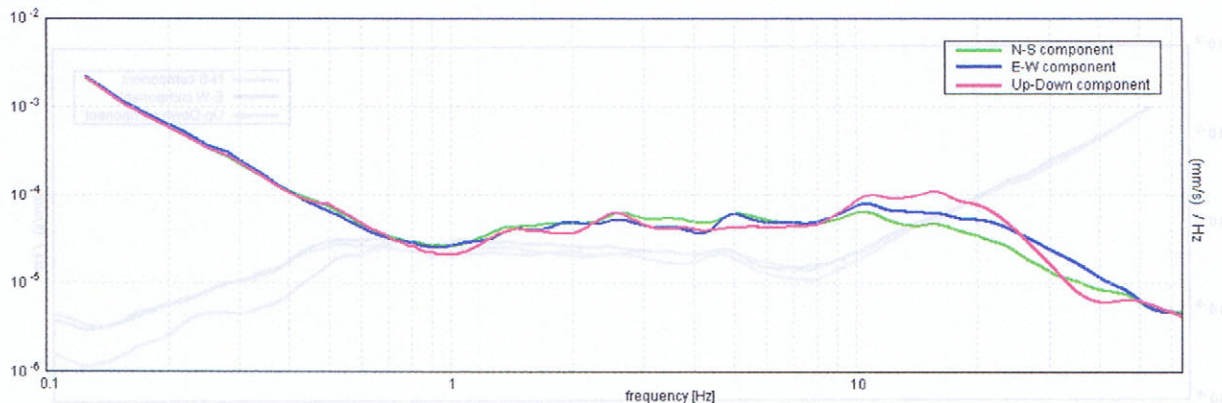
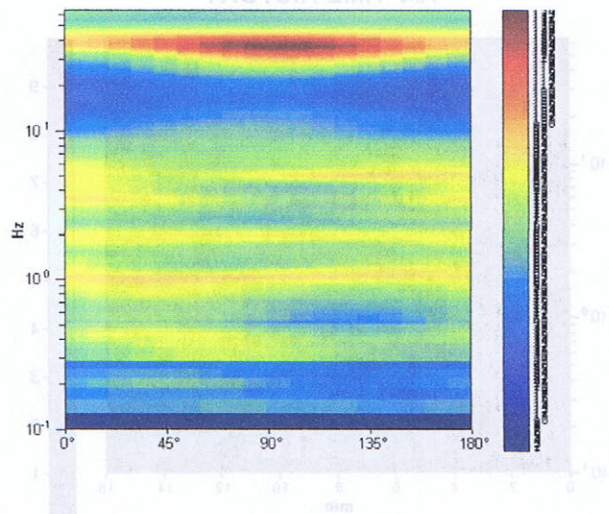
Max. H/V at  $36.97 \pm 5.77$  Hz. (In the range 0.0 - 64.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V



### MONTEVEGLIO, TORRE GAZZONE MNTV 5

Instrument: TRE-0008/01-07

Start recording: 28/02/08 15:54:17 End recording: 28/02/08 16:10:18

Trace length: 0h16'00". Analyzed 81% trace (manual window selection)

Sampling frequency: 256 Hz

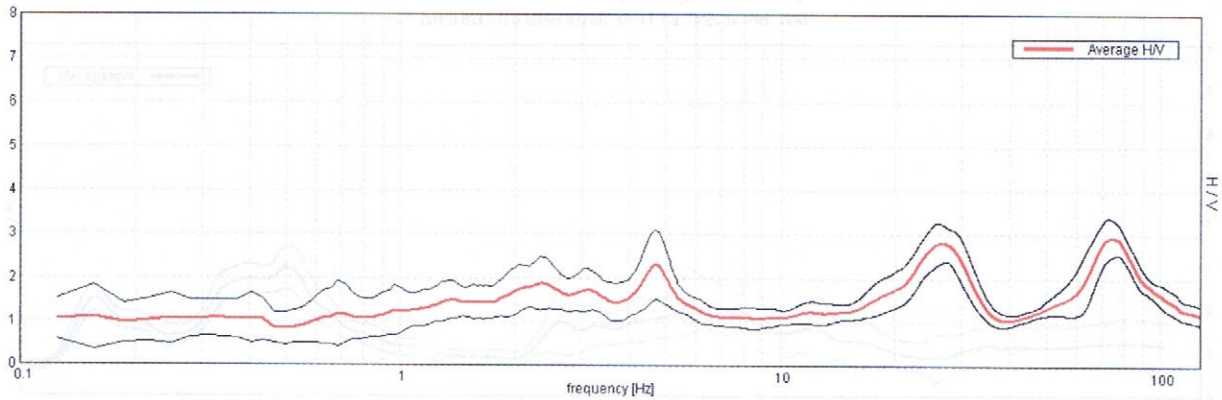
Window size: 20 s

Smoothing type: Triangular window

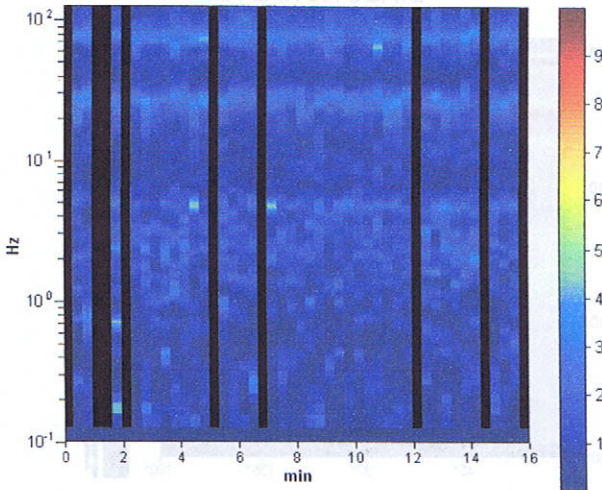
Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

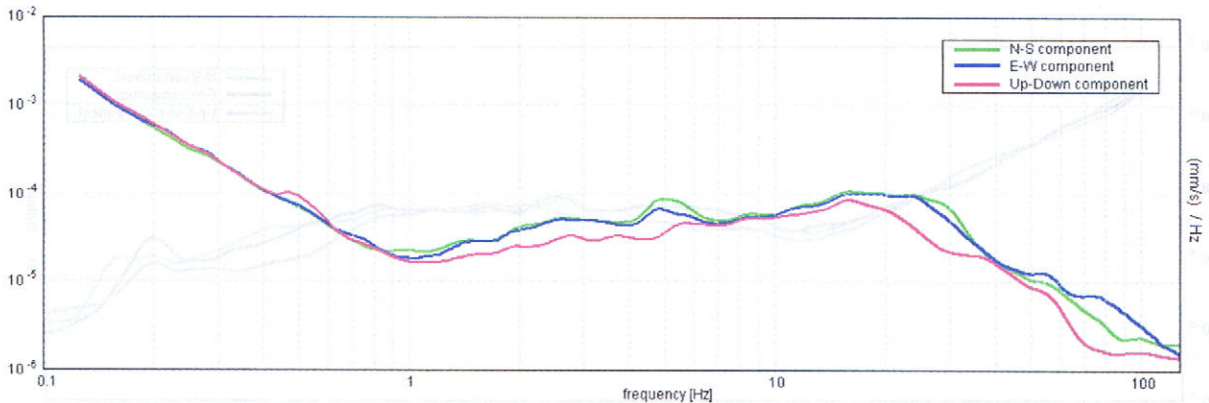
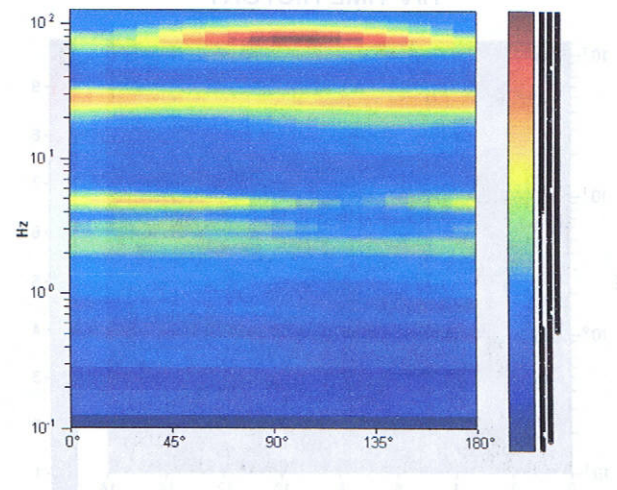
Max. H/V at  $74.22 \pm 5.57$  Hz. (In the range 0.0 - 128.0 Hz).



### H/V TIME HISTORY



### DIRECTIONAL H/V





**MONTEVEGLIO, TORRE GAZZONE MNTV 6**

Instrument: TRE-0008/01-07

Start recording: 28/02/08 16:16:51 End recording: 28/02/08 16:32:52

Channel labels: NORTH SOUTH; EAST WEST; UP DOWN

Trace length: 0h16'00". Analyzed 96% trace (manual window selection)

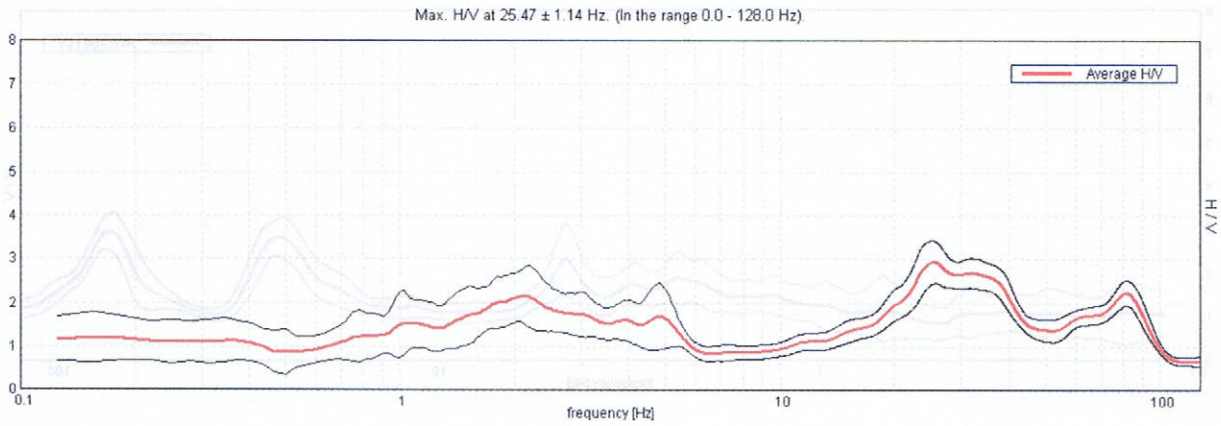
Sampling rate: 256 Hz

Window size: 20 s

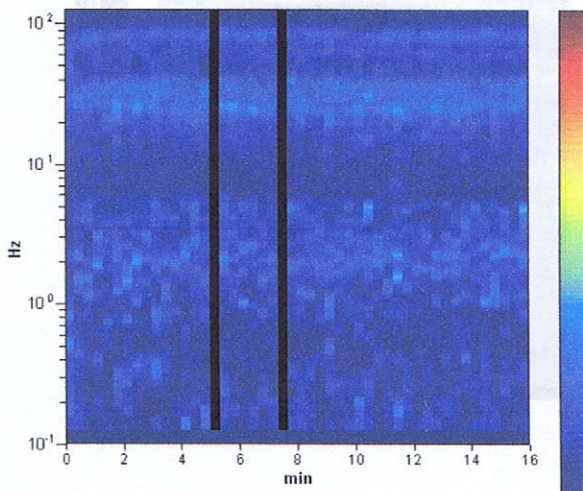
Smoothing type: Triangular window

Smoothing: 12%

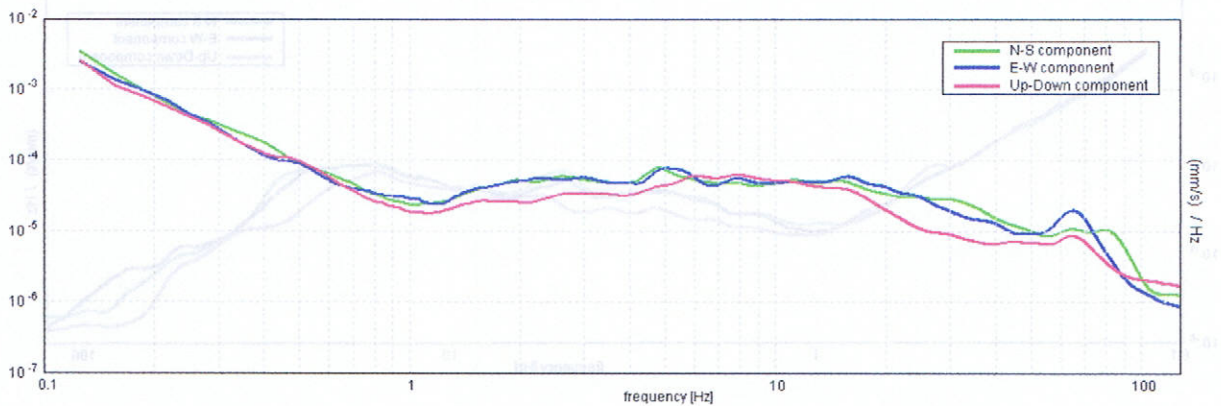
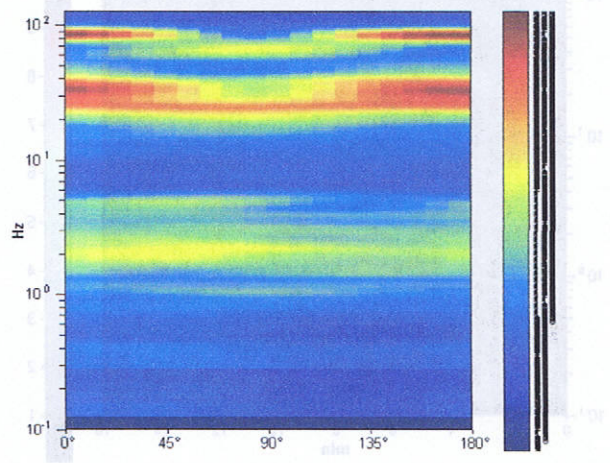
**HORIZONTAL TO VERTICAL SPECTRAL RATIO**



**H/V TIME HISTORY**



**DIRECTIONAL H/V**





037043P76 HVSR 86

### MONTEVEGLIO, TORRE GAZZONE MNTV 7

Instrument: TRE-0008/01-07

Start recording: 28/02/08 16:41:48 End recording: 28/02/08 16:57:49

Channel labels: NORTH SOUTH; EAST WEST; UP DOWN

Trace length: 0h16'00". Analyzed 96% trace (manual window selection)

Sampling rate: 256 Hz

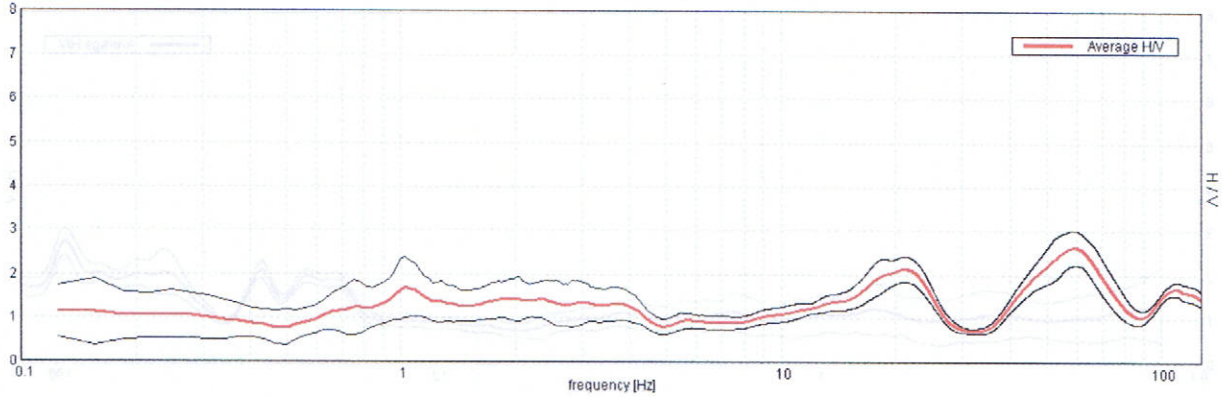
Window size: 20 s

Smoothing type: Triangular window

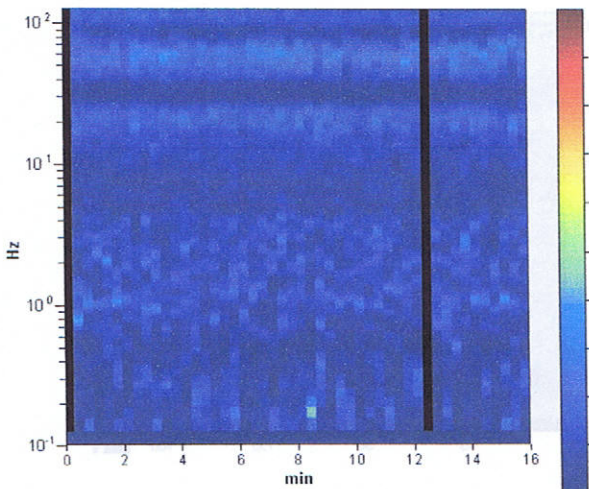
Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

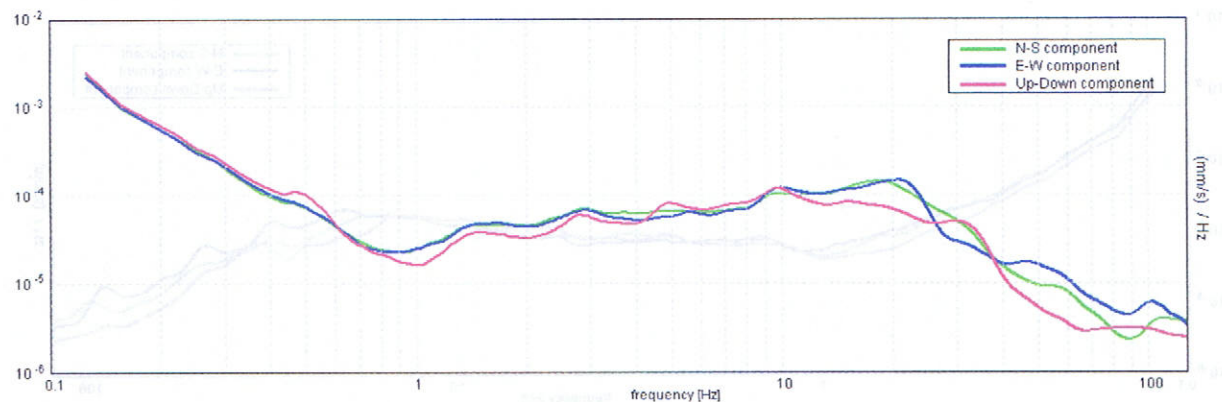
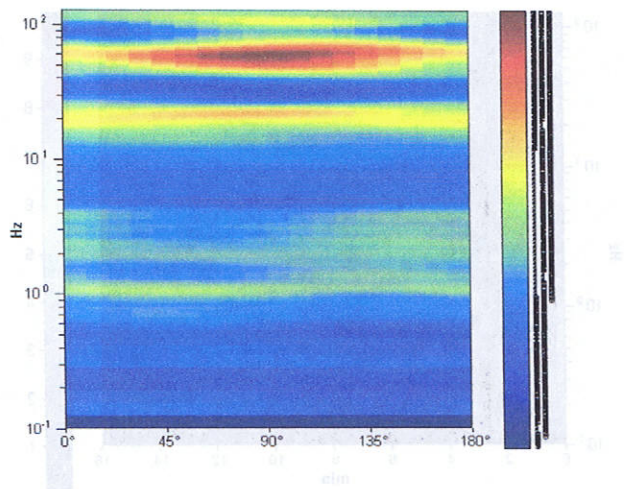
Max. H/V at  $59.38 \pm 2.65$  Hz. (In the range 0.0 - 128.0 Hz)



### H/V TIME HISTORY



### DIRECTIONAL H/V



**MONTEVEGLIO, ZONA INDUSTRIALE MNTV 8**

Instrument: TRE-0008/01-07

Start recording: 28/02/08 17:21:43 End recording: 28/02/08 17:37:44

Channel labels: NORTH SOUTH; EAST WEST; UP DOWN

Trace length: 0h16'00". Analyzed 98% trace (manual window selection)

Sampling rate: 256 Hz

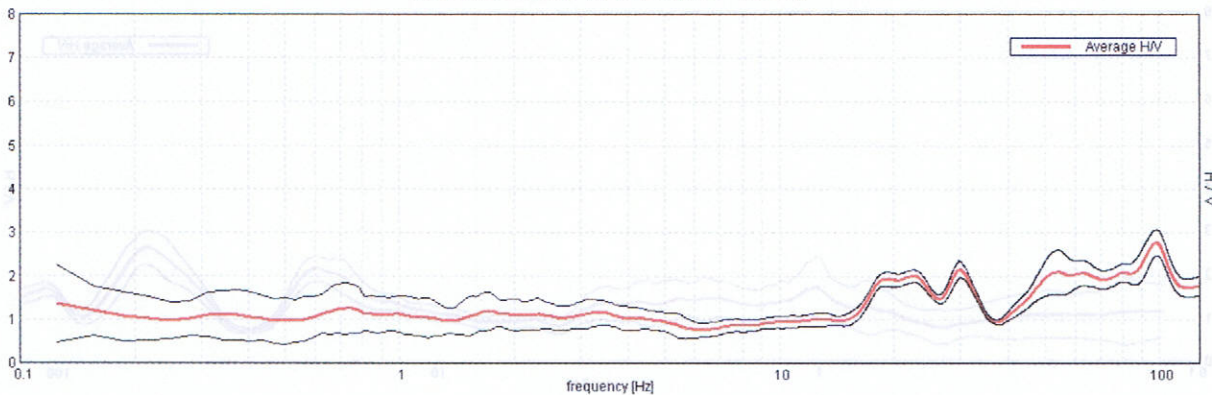
Window size: 20 s

Smoothing type: Triangular window

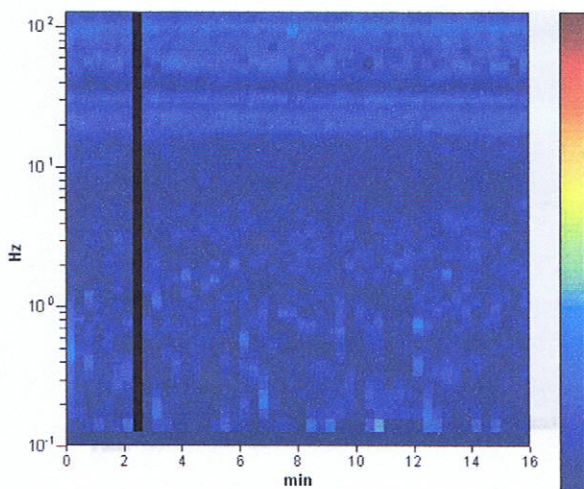
Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

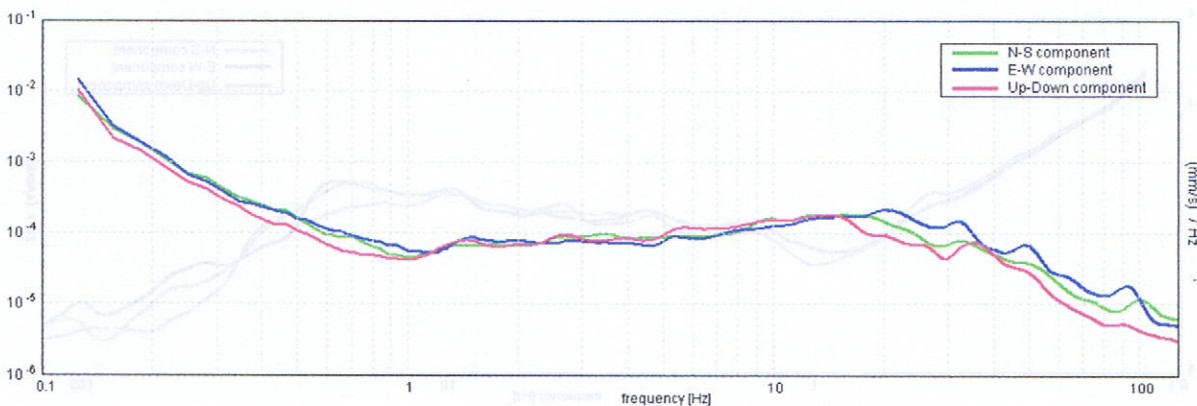
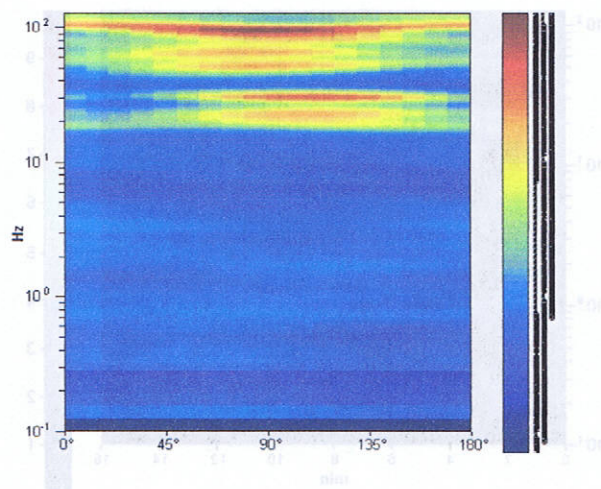
Max. H/V at  $98.44 \pm 4.27$  Hz. (In the range 0.0 - 128.0 Hz)



**H/V TIME HISTORY**



**DIRECTIONAL H/V**





037043 P784VSR88

### MONTEVEGLIO-CIMIT-ZIRIBEGA, CIMITERO CIM 10

Instrument: TRE-0008/01-07

Start recording: 13/03/08 10:16:58 End recording: 13/03/08 10:32:59

Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN

Trace length: 0h16'00". Analysis performed on the entire trace.

Sampling rate: 256 Hz

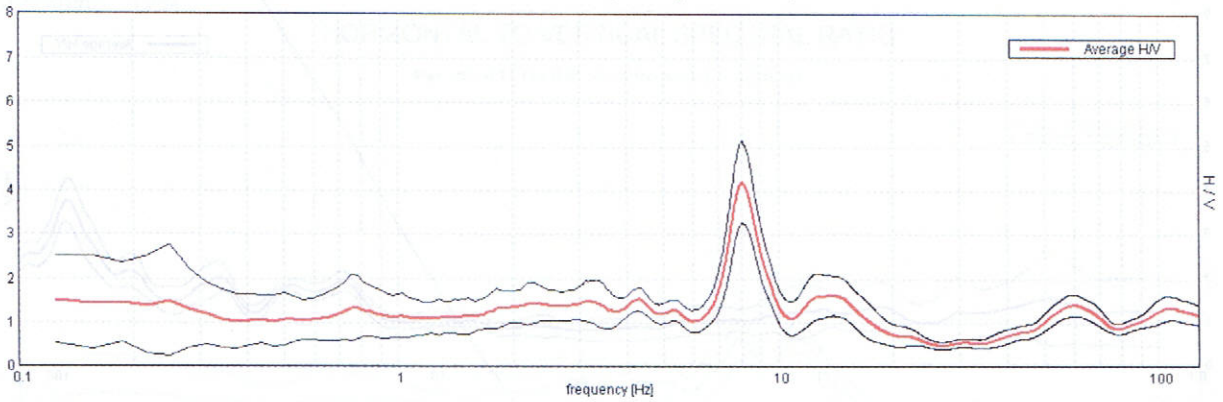
Window size: 20 s

Smoothing type: Triangular window

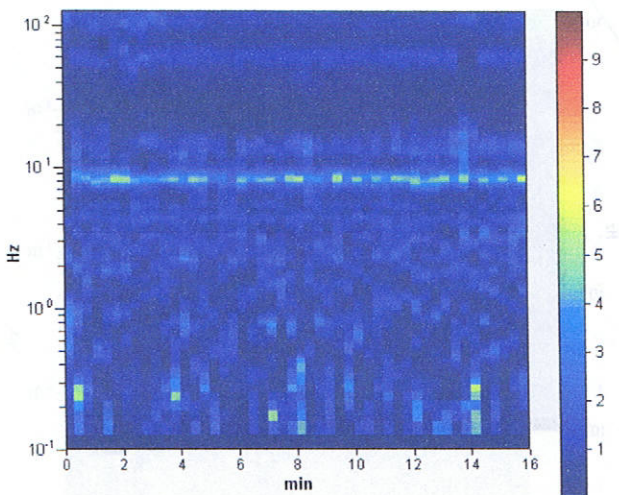
Smoothing: 12%

### HORIZONTAL TO VERTICAL SPECTRAL RATIO

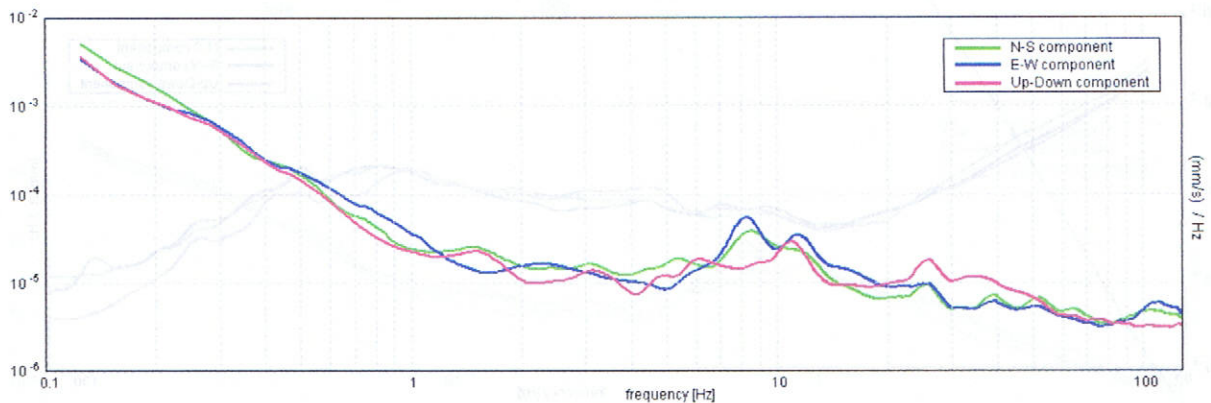
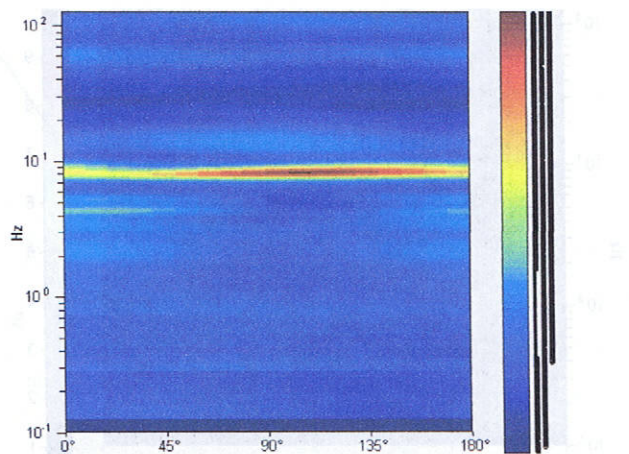
Max HV at  $8.06 \pm 0.56$  Hz. (In the range 0.0 - 128.0 Hz)



### HV TIME HISTORY



### DIRECTIONAL HV





**MONTEVEGLIO-CIMIT-ZIRIBEGA, CIMITERO CIM 11**

Instrument: TRE-0008/01-07

Start recording: 13/03/08 10:36:09 End recording: 13/03/08 10:52:10

Channel labels: NORTH SOUTH; EAST WEST ; UP DOWN

Trace length: 0h16'00". Analyzed 90% trace (manual window selection)

Sampling rate: 256 Hz

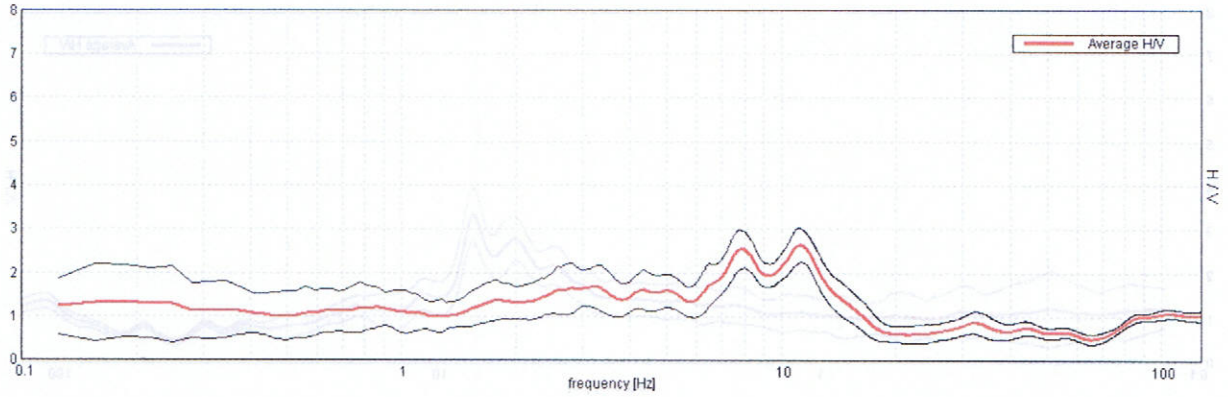
Window size: 20 s

Smoothing type: Triangular window

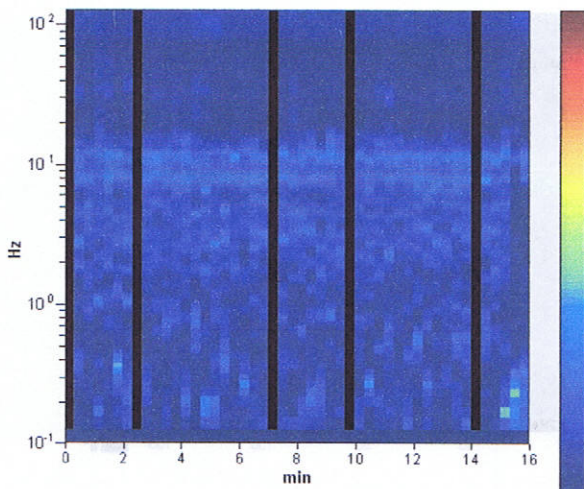
Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

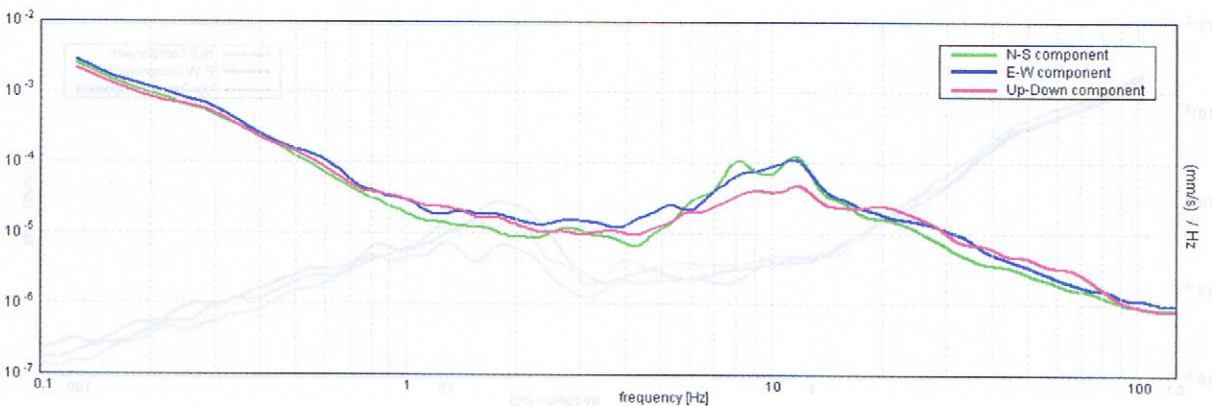
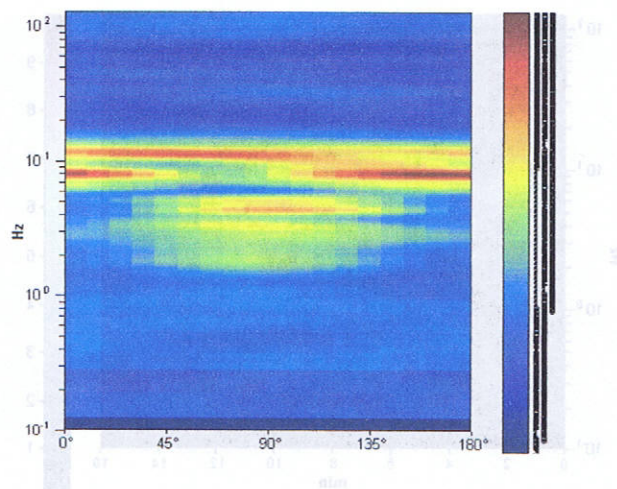
Max. H/V at 11.19 ± 0.86 Hz. (In the range 0.0 - 128.0 Hz).



**H/V TIME HISTORY**



**DIRECTIONAL H/V**





**MONTEVEGLIO-CIMIT-ZIRIBEGA, CIMITERO 12**

Instrument: TRE-0008/01-07

Start recording: 13/03/08 10:55:02 End recording: 13/03/08 11:11:03

Channel labels: NORTH SOUTH; EAST WEST; UP DOWN

Trace length: 0h16'00". Analyzed 85% trace (manual window selection)

Sampling rate: 256 Hz

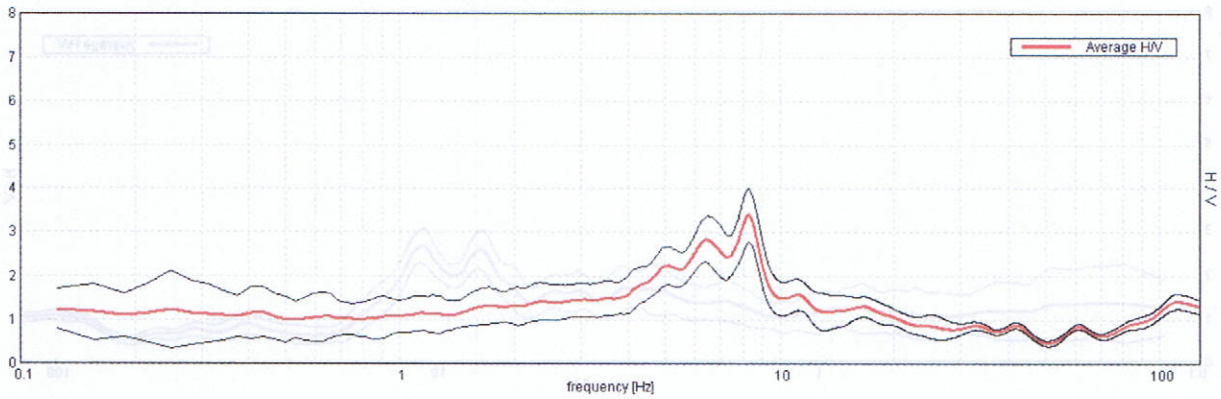
Window size: 20 s

Smoothing type: Triangular window

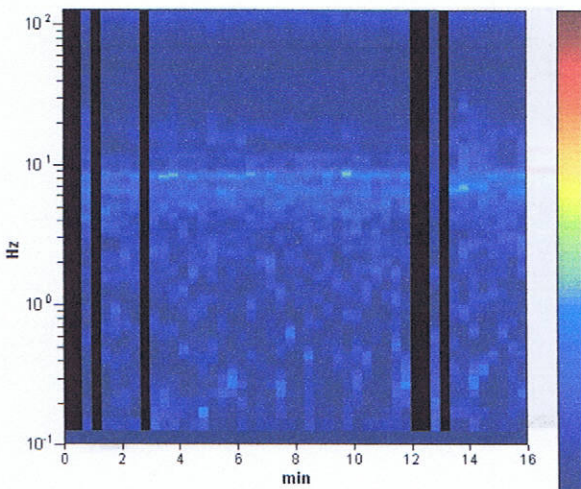
Smoothing: 12%

**HORIZONTAL TO VERTICAL SPECTRAL RATIO**

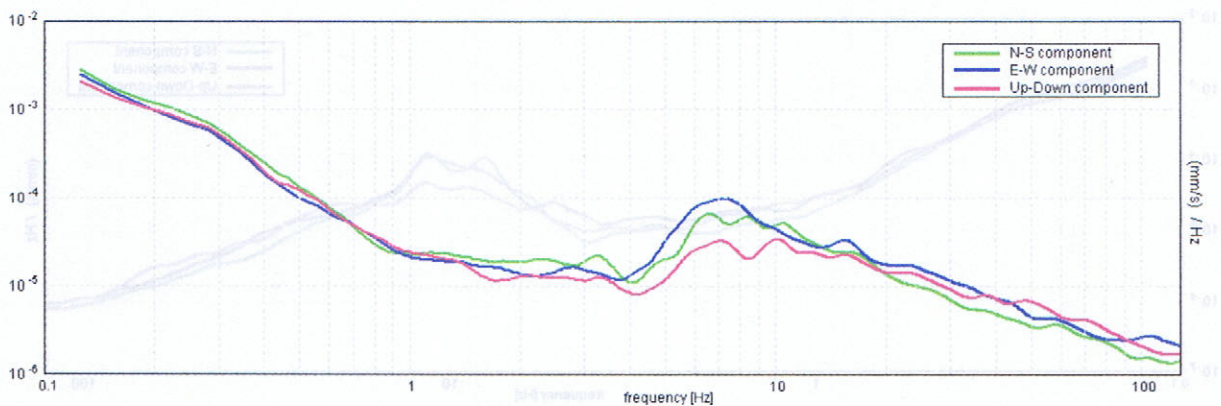
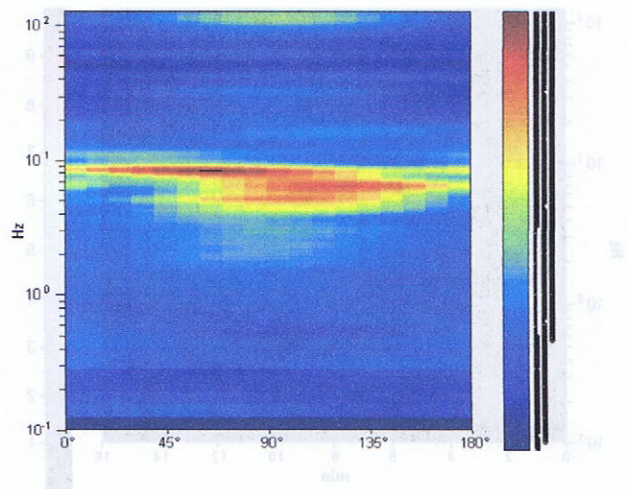
Max. H/V at 8.31 ± 0.25 Hz. (In the range 0.0 - 128.0 Hz)



**H/V TIME HISTORY**



**DIRECTIONAL H/V**



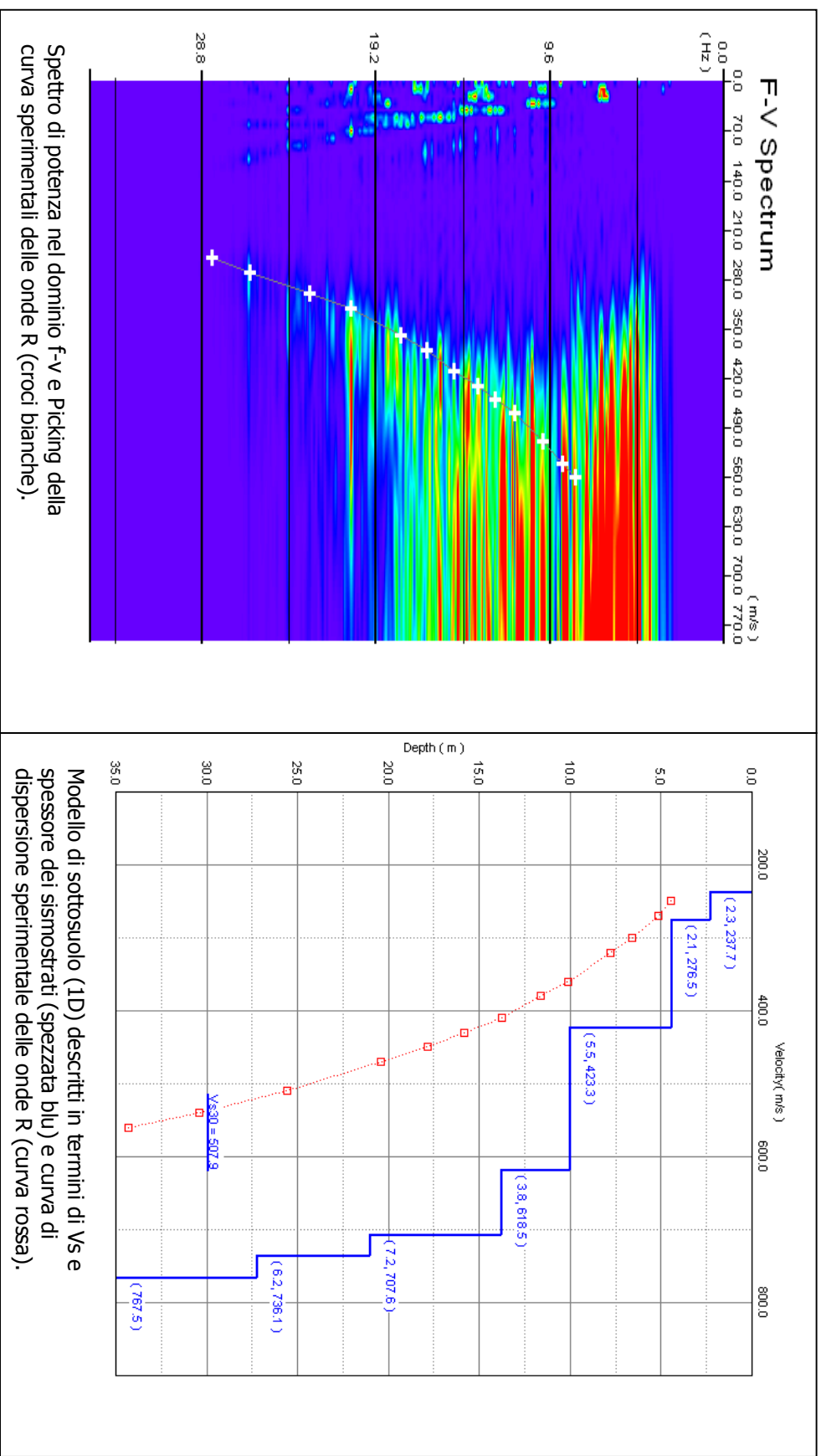
# PROSPERZIONE SISMICA DI SUPERFICIE CON METODOLOGIA RE.MI.

prova n. 037043L1REM11

Sito di indagine: Comune di Montevoglio

n. tracce	$\Delta x$ (m)	$\Delta t$ (ms)	T (s)	L tot (m)
25	3	2	32,0	69

$\Delta x$ : interdistanza geofonica;  $\Delta t$ : passo di campionamento; T: durata registrazione; L tot: lunghezza profilo.



Spettro di potenza nel dominio f-v e Picking della curva sperimentali delle onde R (croci bianche).

Modello di sottosuolo (1D) descritti in termini di Vs e spessore dei sismostrati (spezzata blu) e curva di dispersione sperimentale delle onde R (curva rossa).



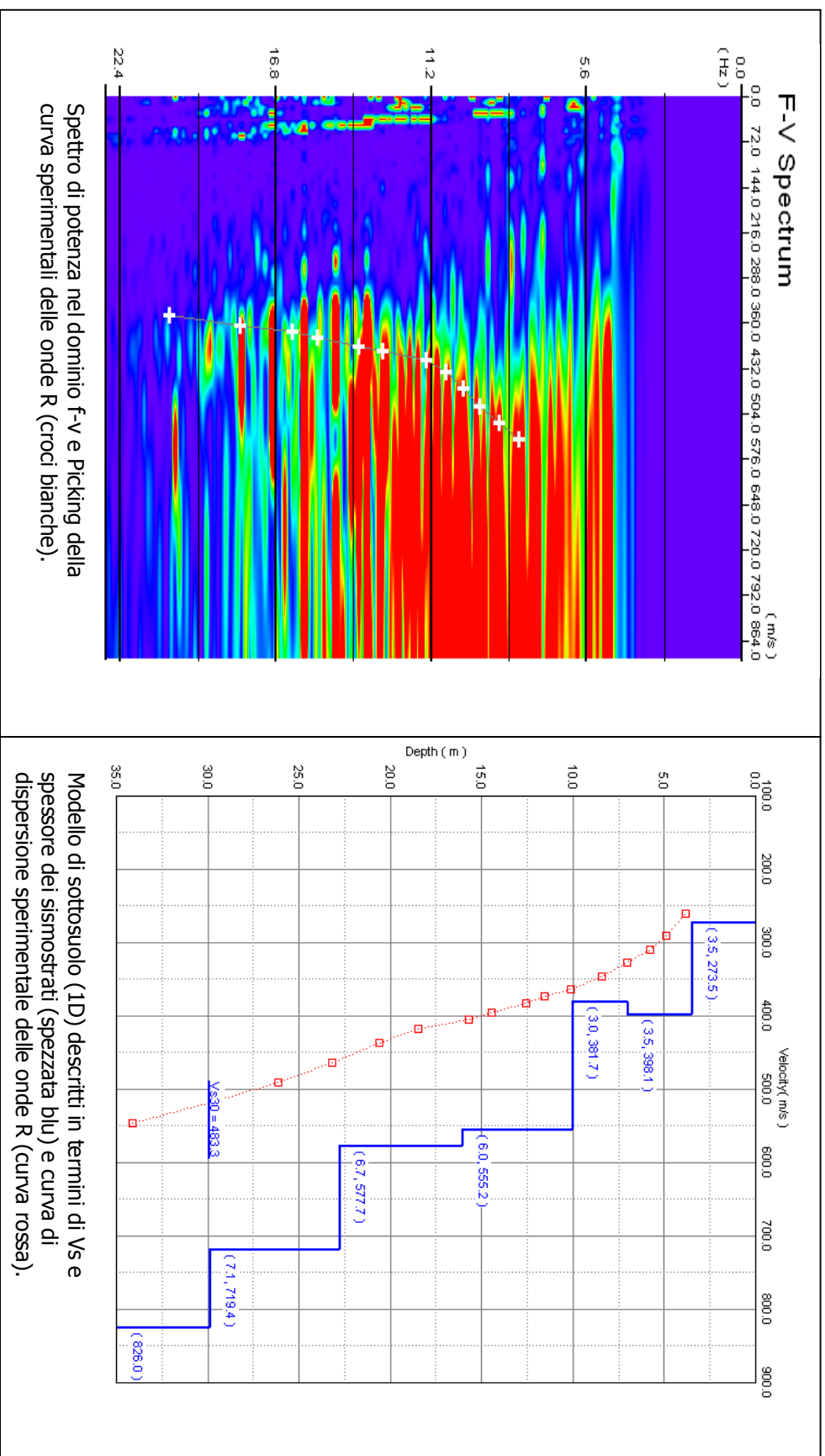
# PROSPERZIONE SISMICA DI SUPERFICIE CON METODOLOGIA RE.MI.

prova n. 037043L2REM12

Sito di indagine: Comune di Montevoglio

n. tracce	$\Delta x$ (m)	$\Delta t$ (ms)	T (s)	L tot (m)
25	3	2	32,0	69

$\Delta x$ : interdistanza geofonica;  $\Delta t$ : passo di campionamento; T: durata registrazione; L tot: lunghezza profilo.



Spettro di potenza nel dominio f-v e Picking della curva sperimentali delle onde R (croci bianche).

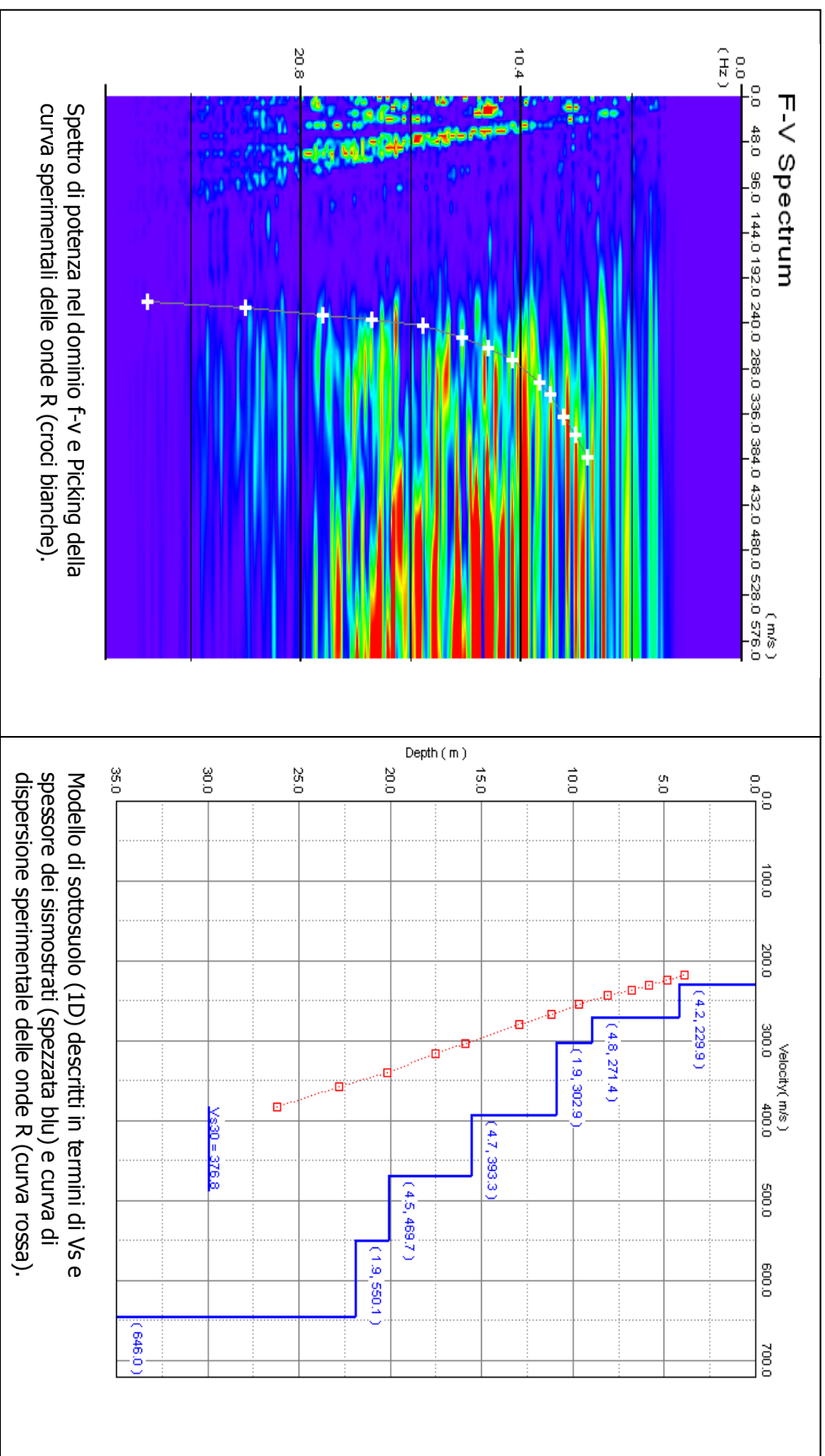
# PROSPERZIONE SISMICA DI SUPERFICIE CON METODOLOGIA RE.MI.

prova n. 037043L3REM13

Sito di indagine: Comune di Montevoglio

n. tracce	$\Delta x$ (m)	$\Delta t$ (ms)	T (s)	L tot (m)
25	3	2	32,0	69

$\Delta x$ : interdistanza geofonica;  $\Delta t$ : passo di campionamento; T: durata registrazione; L tot: lunghezza profilo.



Spettro di potenza nel dominio f-v e Picking della curva sperimentali delle onde R (croci bianche).

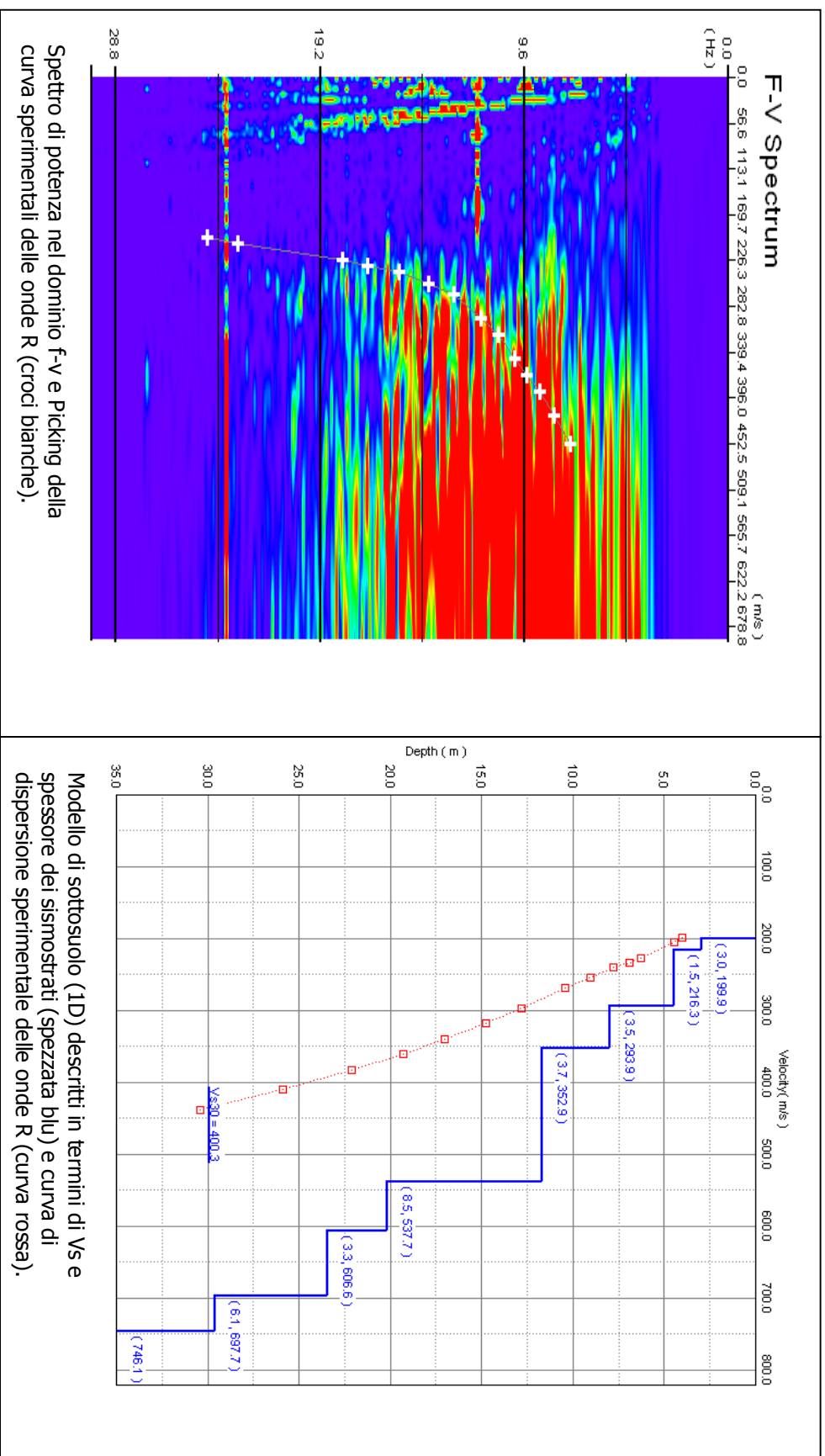
# PROSPERZIONE SISMICA DI SUPERFICIE CON METODOLOGIA RE.MI.

prova n. 037043L4REM14

Sito di indagine: Comune di Montevoglio

n. tracce	$\Delta x$ (m)	$\Delta t$ (ms)	T (s)	L tot (m)
25	3	2	32,0	69

$\Delta x$ : interdistanza geofonica;  $\Delta t$ : passo di campionamento; T: durata registrazione; L tot: lunghezza profilo.



Spettro di potenza nel dominio f-v e Picking della curva sperimentali delle onde R (croci bianche).

Modello di sottosuolo (1D) descritti in termini di Vs e spessore dei sismostrati (spezzata blu) e curva di dispersione sperimentale delle onde R (curva rossa).



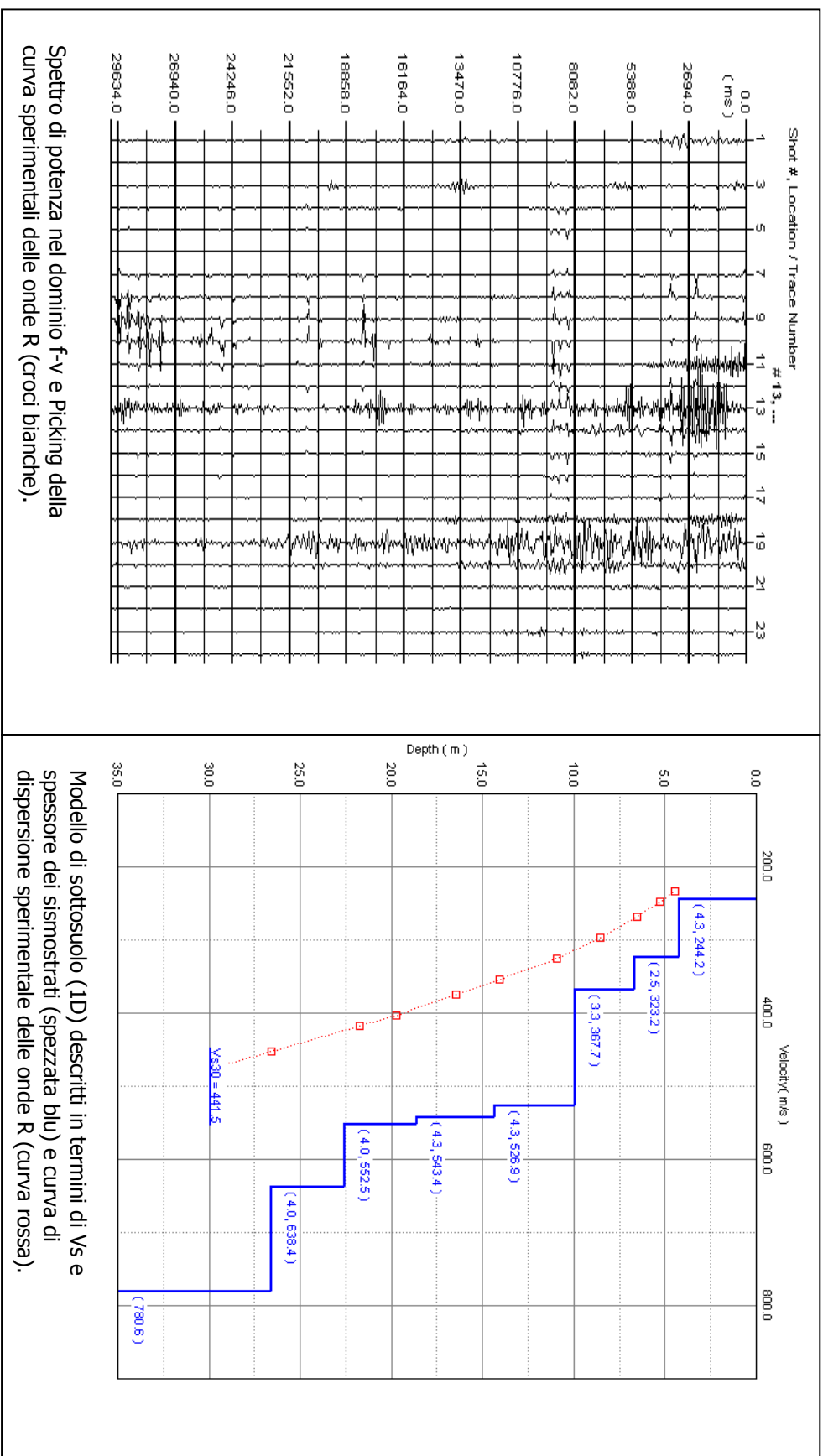
# PROSPEZIONE SISMICA DI SUPERFICIE CON METODOLOGIA RE.MI.

prova n. 037043L5REMI5

Sito di indagine: Comune di Montevoglio

n. tracce	$\Delta x$ (m)	$\Delta t$ (ms)	T (s)	L tot (m)
25	3	2	32,0	69

$\Delta x$ : interdistanza geofonica;  $\Delta t$ : passo di campionamento; T: durata registrazione; L tot: lunghezza profilo.



Spettro di potenza nel dominio f-v e Picking della curva sperimentali delle onde R (croci bianche).

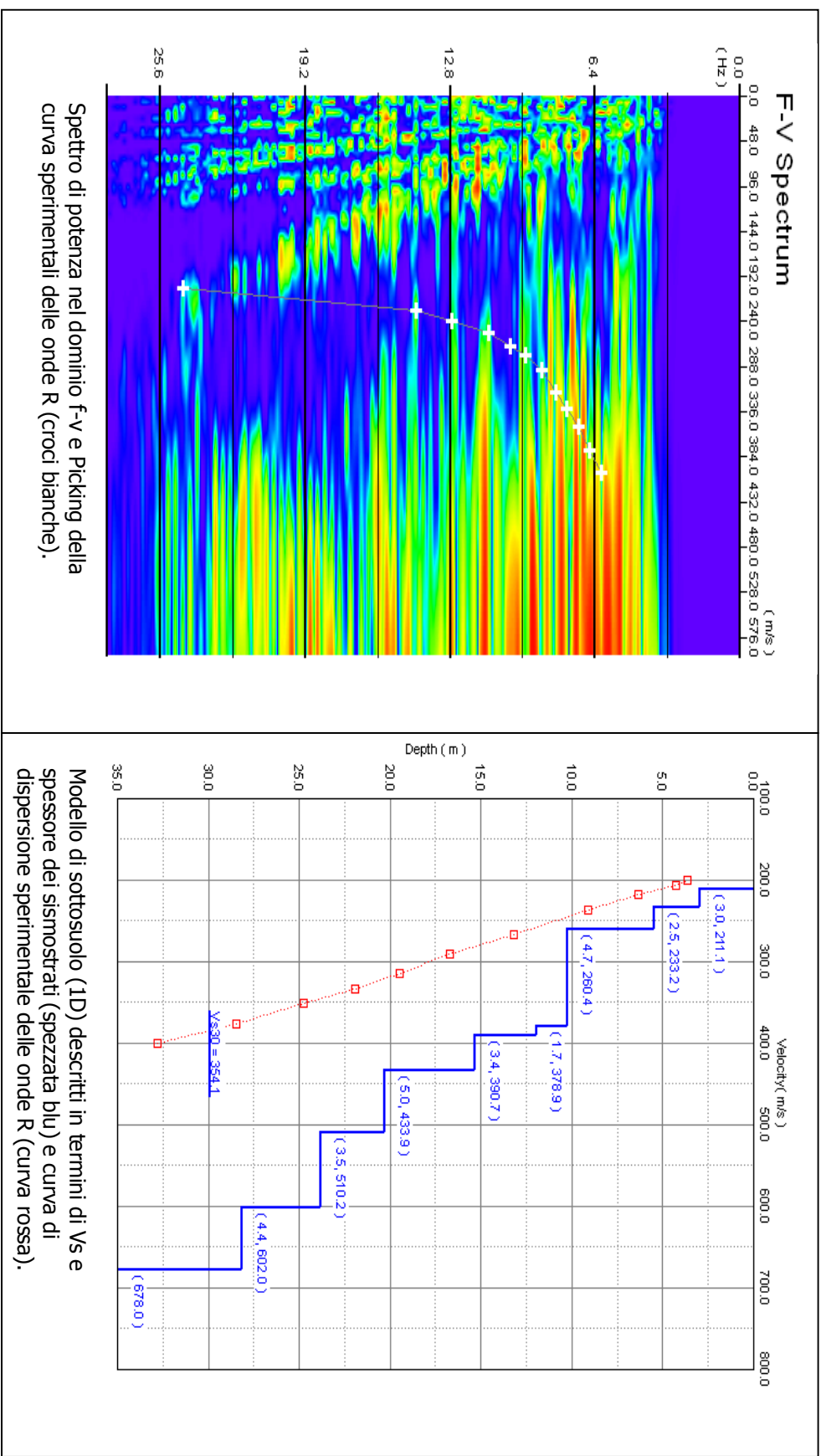
# PROSPERZIONE SISMICA DI SUPERFICIE CON METODOLOGIA RE.MI.

prova n. 037043L6REMI6

Sito di indagine: Comune di Montevoglio

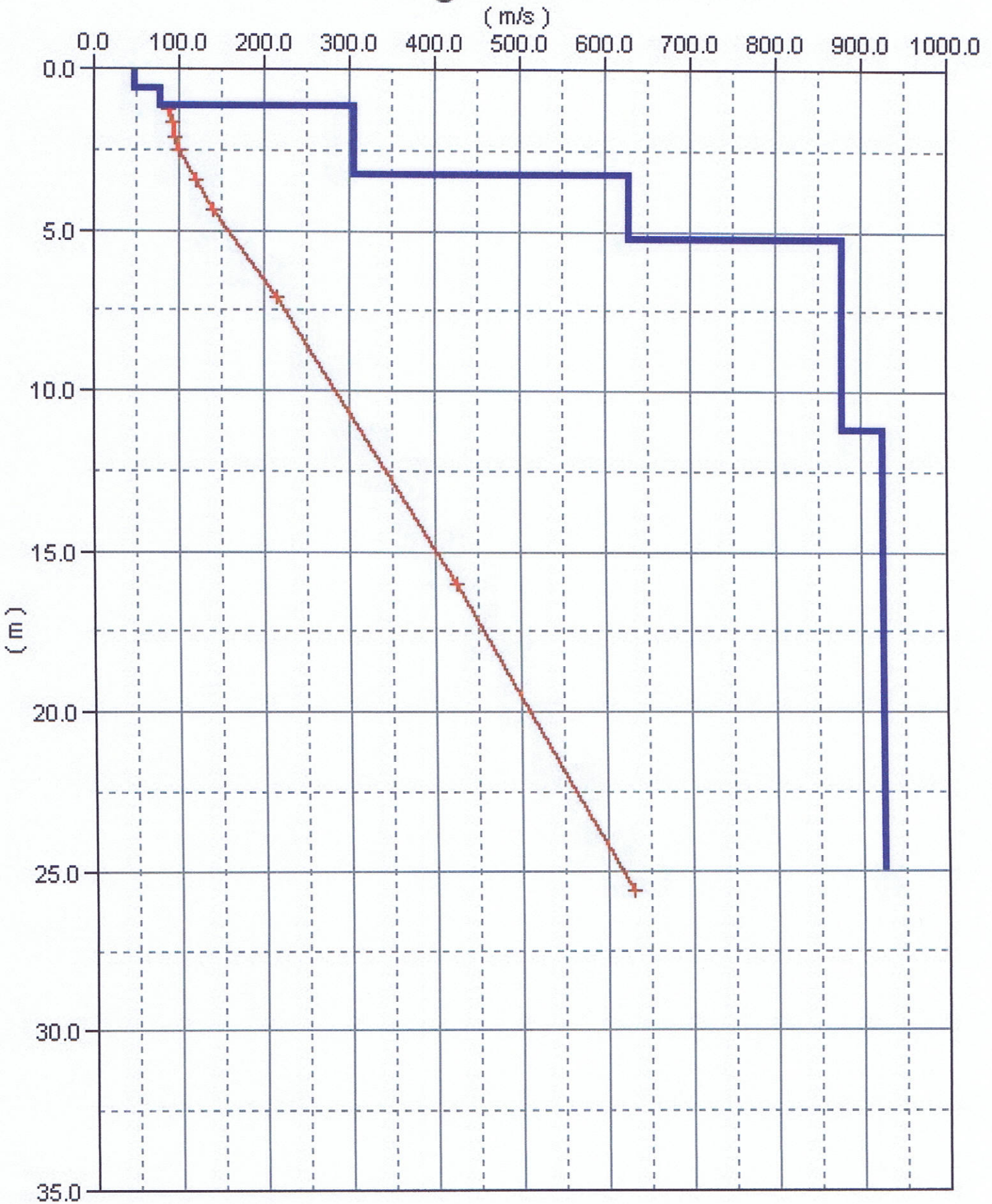
n. tracce	$\Delta x$ (m)	$\Delta t$ (ms)	T (s)	L tot (m)
25	3	2	32,0	69

$\Delta x$ : interdistanza geofonica;  $\Delta t$ : passo di campionamento; T: durata registrazione; L tot: lunghezza profilo.



037043L7 MASW7

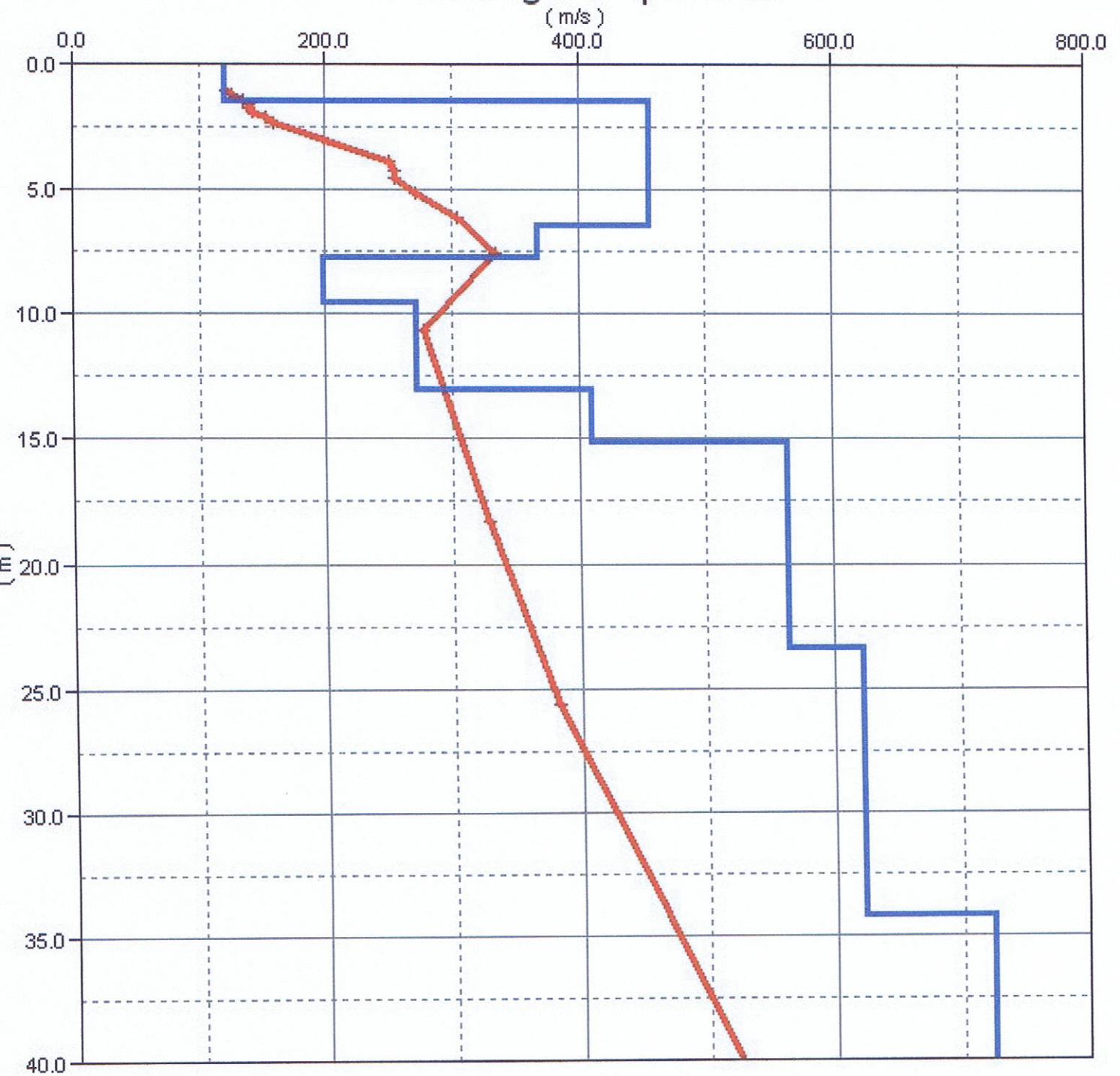
# Monteveglia cimitero 25m



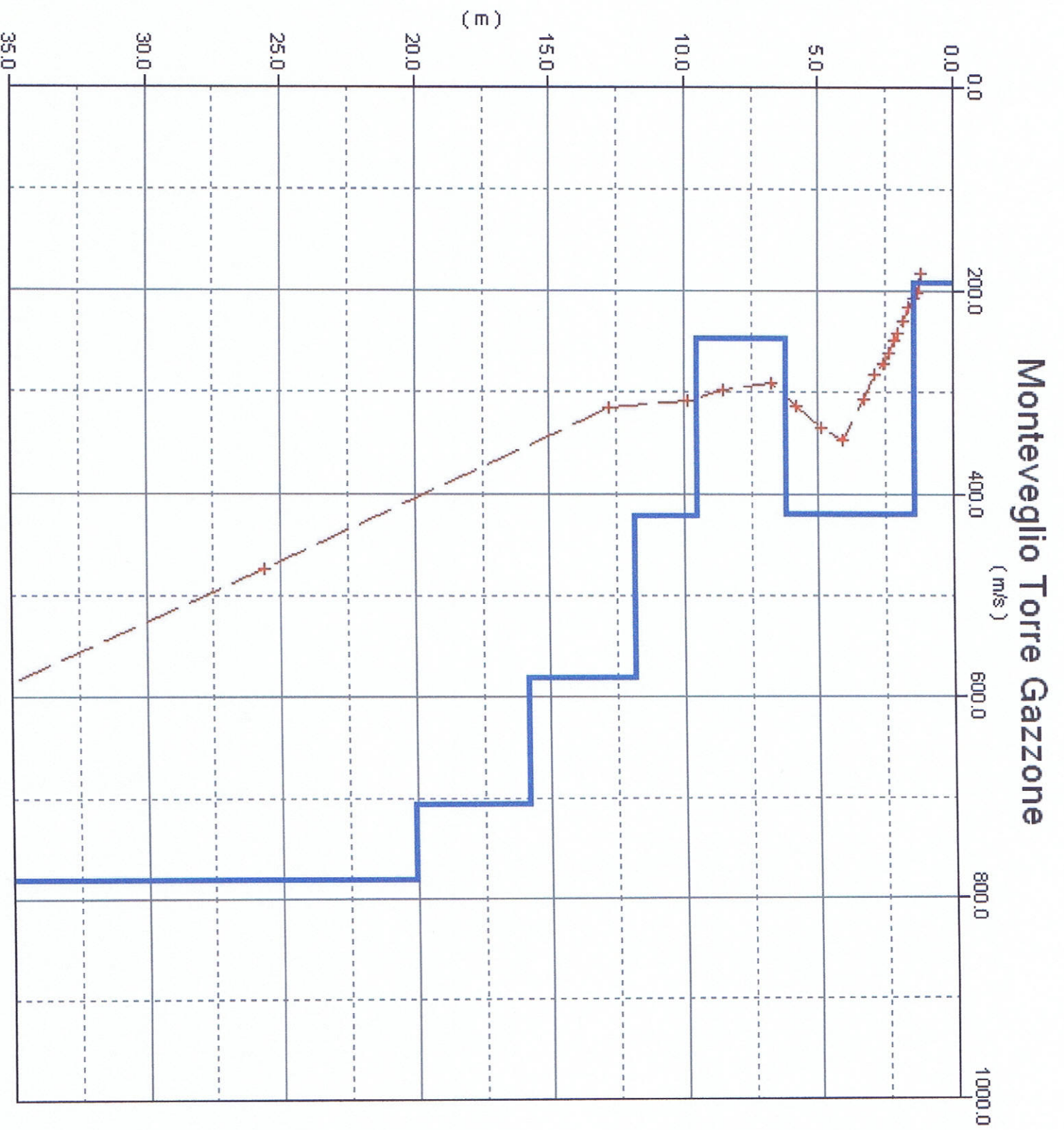


037043L8MASW8

### Monteveglia capannoni



037043L9MASW9



037043L10MASW10

### Monteveglio Zona industriale

