Microzonazione sismica area “Hatù”

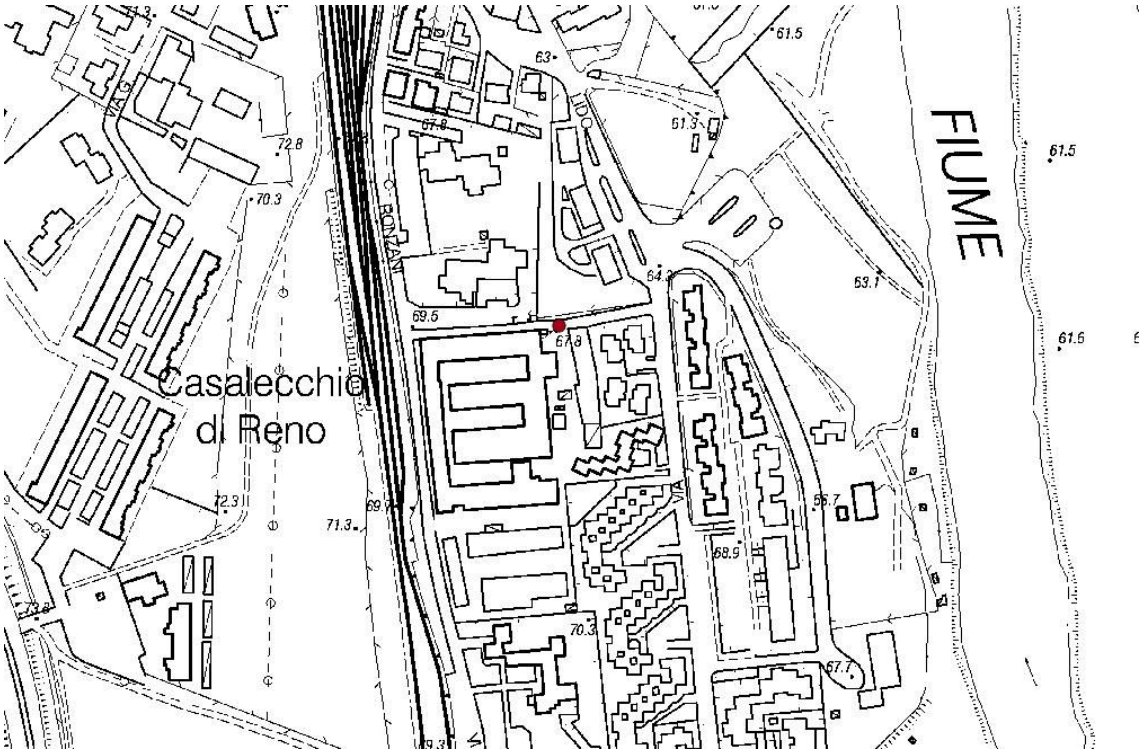


Figura 1 - Ubicazione prova area “Hatù” (CTR 1:2.000)

Figura 2 - Immagine da Google Earth area "Hatù" con ubicazione prova

Informazioni stratigrafiche

In quest'area è stata effettuata una prova di zonazione sismica e le informazioni sulla struttura litologica del profilo sono analoghe a quelle registrate nell'area "Bastia", "Andrea Costa" e "Clementi".

Stazione "Hatù": certificato prova n° 25

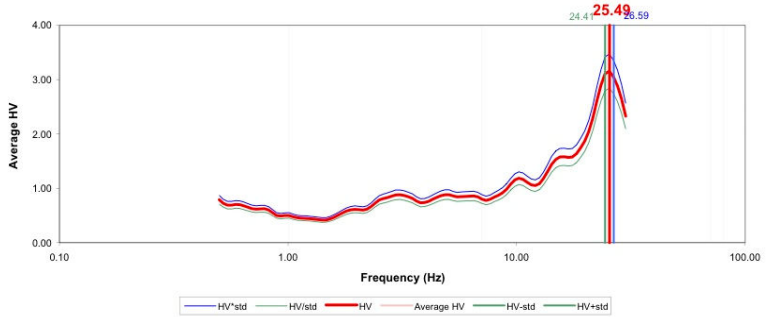
COMMITTENTE	**Comune di Casalecchio di Reno (Bo)**
CODICE LAVORO	**1012**
N° PROVA	**025**
LOCALITA'	**Casalecchio di Reno (Bo)**
DATA	**01/09/2010**

Start recording	15.33.00
End recording	16.03.00
Trace lenght	30 m
Sampling frequency	200 Hz

PROCESSING DATA	
Windows lenght (sec)	20
Overlap	5%
Smoothing windows	Konno & Ohmachi
Costante	40
Taper	0.50%
Low Pass	15 Hz
Numero di finestre	21

Max HVSR 25.49 ± 1.09 Hz.

HVSR SPECTRAL RATIO

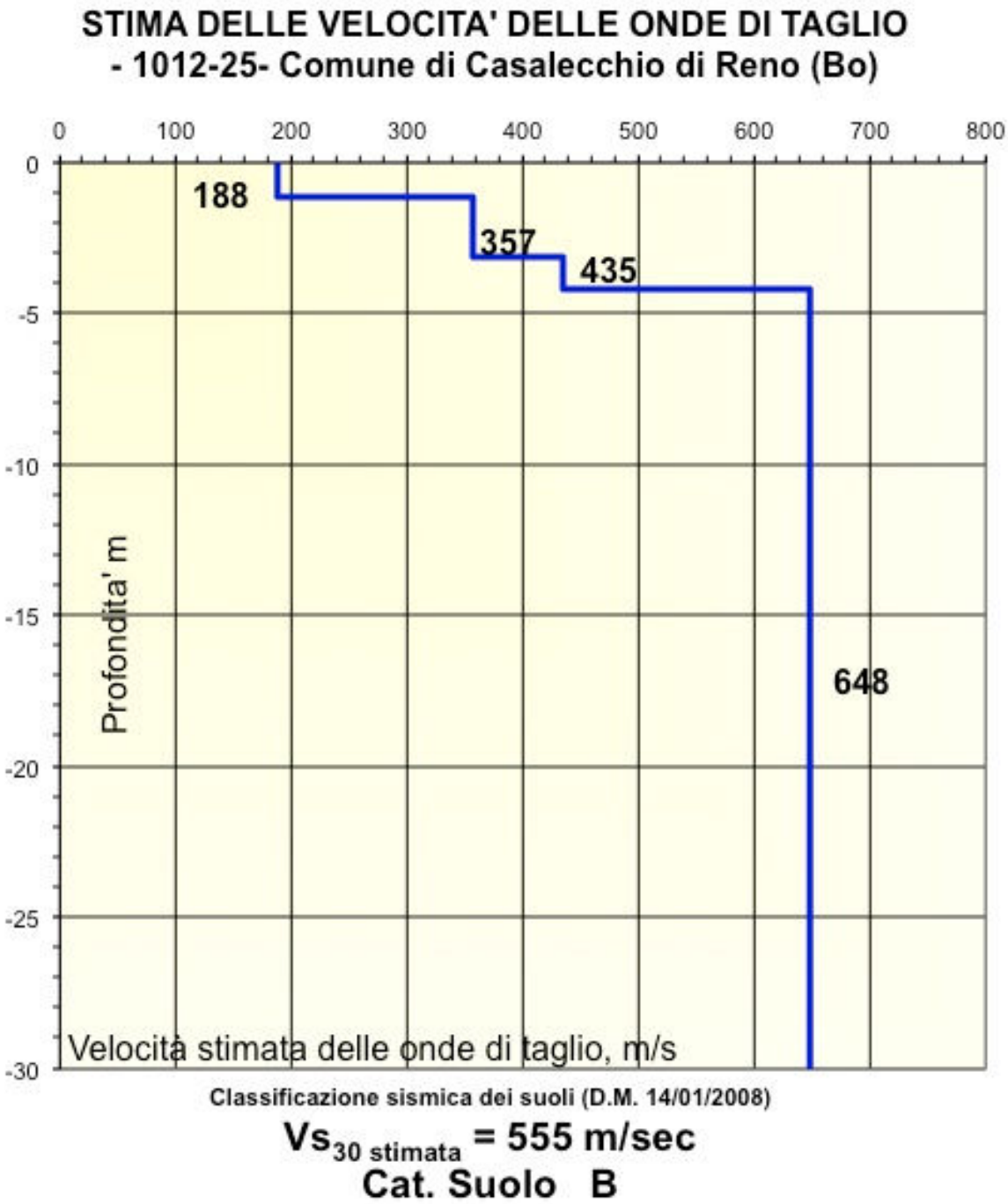


Criteria for a reliable HVSR curve [All 3 should be fullfilled]			
f0	25.49		
Lw	20		
nw	71		
f0 > 10 / Lw	25.49 > 10/20	☑	
nc (f0) > 200	36195.8 > 200	☑	
σA(f) < 2 for 0.5 f0 < f < 2 f0 if f0 > 0.5 Hz	Exceeded 0 out of 100 times	☑	
σA(f) < 3 for 0.5 f0 < f < 2 f0 if f0 < 0.5 Hz			

Criteria for a clear HVSR peak [At least 5 out of 6 should be fullfilled]			
Exists f⁻ in [f0/4, f0] | AH/V(f⁻) < A0/2	17.52 Hz	☑	
Exists f⁺ in [4f0, f0] | AH/V(f⁺) < A0/2	0 Hz		☒
A0 > 2	3.15 > 2	☑	
fpeak [AH/V(f) ± σA(f)] = f0 ± 5%	-0.0640999999999998 <	☑	
σf < ε(f0)	1.0905 < 1.2745	☑	
σA(f0) < θ(f0)	1.121195 < 1.58	☑	

Lw	Window lenght
nW	Number of windows used in the analysis
nc = Lw nW f0	Number of significant cycles
f	Current frequency
f0	H/V peak frequency
σf	Standard deviation of H/V peak frequency
ε(f0)	Threshold value for the stability condition σf < ε(f0)
A0	H/V peak amplitude at frequency f0
AH/V(f)	H/V curve amplitude at frequency f
f⁻	Frequency between f0/4 and f0 for which AH/V(f-) < A0/2
f⁺	Frequency between f0 and 4f0 for which AH/V(f+) < A0/2
σA(f)	Standard deviation of AH/V(f), σA(f) is the factor by which the mean AH/V(f) curve should be multiplier or divided
σlogH/V(f)	Standard deviation of log AH/V(f) curve
θ(f0)	Threshold value for the stability condition σA(f) < θ(f0)

Thresold value for σ_f and $\sigma_A(f_0)$					
Freq. Range [Hz]	< 0.2	0.2 - 0.5	0.5 - 1.0	1.0 - 2.0	> 2.0
$\varepsilon(f_0)$ (Hz)	0.25 f_0	0.20 f_0	0.15 f_0	0.10 f_0	0.05 f_0
$\theta(f_0)$ for $\sigma_A(f_0)$	3.00	2.50	2.00	1.78	1.58
Log $\theta(f_0)$ for $\sigma_{logH/V}(f_0)$	0.48	0.40	0.30	0.25	0.20

In accordo con SESAME Guidelines 2005

Stima del profilo verticale di velocità delle onde di taglio (V_s30) stazione "Hatù"