

CHART OF THE INQUA ENVIRONMENTAL SEISMIC INTENSITY SCALE 2007 - ESI 07

by The Spanish Working Group (modified from Silva et al., 2008)

ESI 2007		PRIMARY EFFECTS		SECONDARY EFFECTS WITH GEOLOGICAL AND GEOMORPHOLOGICAL RECORD				OTHER SECONDARY EFFECTS WITH MINOR GEOLOGICAL RECORD		AFFECTED AREA AND TYPE OF RECORD	
		SURFACE RUPTURES	TECTONIC UPLIFT/SUBSID	GROUND CRACKS	SLOPE MOVEMENTS	LIQUEFACTION PROCESSES	ANOMALOUS WAVES AND TSUNAMIS	HYDROGEOLOGICAL ANOMALIES	TREE SHAKING	Affected AREA	Type of RECORD
	I-III	Offset	Length	Width	Length	ENVIRONMENTAL EFFECTS ARE VERY RARE AND CANNOT BE USED AS DIAGNOSTIC					
OBSERVED	IV	ABSENT		Rare and local	Rare and local	Only dewatered levels (seismites)	cm	Temporary level changes		Rare and local	Geological frequent and exceptionally geomorphological
		ABSENT		mm	mm	1 cm	dm	Temporary sea-level changes	Temporary turbidity changes	Local within epicentral zone	
DAMAGING	VII	Rare and local	Permanent ground dislocations (< 10 cm)	cm	mm	50 cm	Waves < 1 m	Temporary F+Q changes	10 km ²	Geological and geomorphological characteristic and frequently geomorphological	
		cm	< 1 m	dm	cm	1 m	1-2 m	Temp. temperature changes	100 km ²		
DESTRUCTIVE	VIII	hm	< 10 m	m	dm	1 m	3-5 m	Temp. spring drying H ₂ O	1,000 km ²	Geological and geomorphological characteristic and frequently geomorphological	
		dm	< 10 m	m	dm	0.5 m	> 10 m	Permanent river changes	5,000 km ²		
DESTRUCTIVE	X	km	> 10 m	> 1 m	m	> 5 m	Tsunamites		10,000 km ²	Geological and geomorphological characteristic and frequently geomorphological	
		metric	> 10 m	m	m	0.5 m	Giant waves		50,000 km ²		
VERY DESTRUCTIVE	XI	10-100 km	> 10 m	> 5 m	m	> 5 m	Giant waves		50,000 km ²	Geological and geomorphological characteristic and frequently geomorphological	
		> 100 km	> 10 m	> 5 m	m	> 5 m	Giant waves		50,000 km ²		
DEVASTATING	XII	> 100 km	> 10 m	> 5 m	m	> 5 m	Giant waves		50,000 km ²	Geological and geomorphological characteristic and frequently geomorphological	
		> 100 km	> 10 m	> 5 m	m	> 5 m	Giant waves		50,000 km ²		
		Dip and strike-slip offset of coseismic ruptures	Permanent ground dislocation	Width and length of cracks and fractures in soils and rocks	Bulk volume of mobilised material	Dimension of liquified levels and sand boils	Transitory sea-level changes, standing waves and Tsunamis	Base-level changes in springs, rivers, aquifers			

Michetti et al., 2007. Environmental Seismic Intensity scale - ESI 2007. Memorie Descrittive della Carta Geologica d'Italia, 74, Servizio Geologico d'Italia, APAT, Rome, Italy
 Silva et al., 2008. Catalogue of the geological and environmental effects of earthquakes in Spain in the ESI-2007 Macroseismic scale. Cong. Geol. Esp. Gran Canaria, Spain