















TIPO DI ROCCIA	Lito Macro-gruppo	Autore	Met usato	Litologia di dettaglio EN	CONDUCIBILITÀ (λ) [W/mK]												HEAT CAPACITY (Cp) [J/kgK]				DIFFUSIVITÀ (α) [m²/s]			DENSITÀ (ρ) [g/cm³]				POROSITÀ [%]				RESISTIVITÀ ELETTRICA (ρ)													
					NO INFO				DRY				WET				8.64E+04				Min			Max			Media			No info			RSD %			Min			Max			Media			No info
Sedimentary	shale	BEACH et al 1987		shale	0.42	1.38			1.3	3.1			1.3	3.2																								4.5							
Sedimentary	sandstone	BEACH et al 1987		sandstone 3																																			7.3						
Sedimentary	siltstone	BEACH et al 1987		siltstone 3																																			4						
Sedimentary	marlstone	BEACH et al 1987		marlstone 4																																			3.1						
Sedimentary	chert	BEACH et al 1987		chert 6																																			3.1						
Sedimentary	coal	BEACH et al 1987		coal 7																																			3.1						
Sedimentary	conglomerate	BEACH et al 1987		conglomerate 3																																			10						
Sedimentary	rock salt	BEACH et al 1987		rock salt 1																																									
Sedimentary	glacial till	BEACH et al 1987		glacial till 2																																									
Mmagmatic	monzonite	SCARLY and RYBACH 2001		monzonite																																			743						
Mmagmatic	peridotite	SCARLY and RYBACH 2001		peridotite																																			855						
Mmagmatic	amphibolite	SCARLY and RYBACH 2001		amphibolite																																			709						
Sedimentary	mudstone	SCARLY and RYBACH 2001		silty mudstone																																			827						
Sedimentary	sandstone	SCARLY and RYBACH 2001		middle-sandstone																																			755						
Sedimentary	sandstone	SCARLY and RYBACH 2001	Method of mixtures-calorimetric Institute of Geophysics, ETH Zurich	fine-sandstone																																			821						
Sedimentary	sandstone	SCARLY and RYBACH 2001		fine-sandstone																																			750						
Sedimentary	mudstone	RYBACH 2001		silty mudstone																																		831							
Sedimentary	mudstone	RYBACH 2001		silty mudstone																																		847							
Sedimentary	sandstone	RYBACH 2001		middle-sandstone																																		814							
Sedimentary	monzonite	RYBACH 2001		monzonite																																		718							
Sedimentary	peridotite	RYBACH 2001		peridotite																																		844							
Mmagmatic	amphibolite	RYBACH 2001		amphibolite																																		722							
Sedimentary	sandstone	RYBACH 2001		fine-sandstone																																		863							
Sedimentary	sandstone	RYBACH 2001		fine-sandstone																																		829							
Sedimentary	mudstone	RYBACH 2001		silty mudstone																																		868							
Sedimentary	mudstone	RYBACH 2001		silty mudstone																																		916							
Sedimentary	serpenitite	RYBACH 2001		serpentinite																																		827							
Mmagmatic	talcstone	RYBACH 2001		talcstone																																		804							
Mmagmatic	marble	RYBACH 2001		marble																																		915							
Mmagmatic	serpentinite	RYBACH 2001		serpentinite																																		757							
Mmagmatic	amphibolite	RYBACH 2001		amphibolite																																		742							
Mmagmatic	monzonite	RYBACH 2001		monzonite																																		743							
Mmagmatic	monzonite	RYBACH 2001		monzonite																																		855							
Mmagmatic	peridotite	RYBACH 2001		peridotite																																		752							
Mmagmatic	granodiorite	RYBACH 2001		granodiorite																																		775							
Mmagmatic	diorite	RYBACH 2001		diorite																																		720							
Mmagmatic	granite	RYBACH 2001		granite																																		742							
Mmagmatic	hornblende	RYBACH 2001		hornblende																																		764							
Sedimentary	conglomerate	RYBACH 2001		conglomerate																																		778							
Sedimentary	conglomerate	RYBACH 2001		conglomerate																																									

ALLEGATO 3







## ALLEGATO 4

Valori di conducibilità termnica wet e dry , porosità e densità misurati presso il laboratorio IGG di Padova (resistività elettrica determinata a Aachen e Oslo)

sample	lithology	Geologic Era	laboratory	EC of water open porosity (mScm <sup>-1</sup> )	density (gcm <sup>-3</sup> )	res (Ohm <sup>-1</sup> m)	EC (S/m)	$\lambda_{dry}$ (Wm <sup>-1</sup> K <sup>-1</sup> )	$\lambda_{wet}$ (Wm <sup>-1</sup> K <sup>-1</sup> )	measured value	$\sigma$ or bibliographic range	measured value	$\sigma$ or bibliographic range
PA06	calcareous	Carnico (Upper Trias)	Aachen	500	0.90	2.69	18218	5.49E-05	2.38 ±	2.10E-02	3.25 ±	8.00E-03	
MO6	limestone	Lower Jurassic (Lias)	NGI	800	1.89	2.61	6186	1.62E-04	2.45 ±	1.60E-02	2.8*	20.3-9**	
PA02	dolomite	Lower Lias	Aachen	500	1.94	2.78	5106	1.98E-04	4.86 ±	4.40E-02	5.58 ±	2.0E-02	
PA01.2	limestone	Upper Lias: Upper Cretaceous	Aachen	500	0.55	2.69	3490	2.87E-04	3.59 ±	2.70E-02	3.44 ±	1.0E+00	
PA01	limestone	Upper Lias: Upper Cretaceous	Aachen	500	1.60	2.67	2473	4.04E-04	2.60 ±	1.60E-02	3.39 ±	1.20E-02	
PA15	limestone	Upper Lias: Upper Cretaceous	Aachen	500	0.95	2.68	2176	4.60E-04	3.49 ±	1.40E-02	3.33 ±	8.00E-03	
PA26.2	travertine	Oligocene	Aachen	500	7.84	2.38	1919	5.21E-04	2.09 ±	1.60E-02	2.70 ±	9.00E-03	
PA13	limestone	Middle-Upper Eocene	Aachen	500	1.34	2.66	470	2.13E-03	2.83 ±	1.20E-02	3.66 ±	1.20E-02	
TE1	marly limestone	Oligocene	NGI	800	1.19	2.68	454	2.20E-03	2.17 ±	1.70E-02	2.4*	13.8-9**	
PA22	calcareous	Lower Pleistocene	Aachen	500	20.53	2.03	376	2.68E-03	1.28 ±	1.10E-02	2.43 ±	5.00E-03	
MO9	limestone	Lower Miocene	NGI	800	24.32	2.04	364	2.75E-03	1.57 ±	1.00E-03	2.0*	20.3-9**	
MO4	limestone	Cenomaniano - Eocene	NGI	800	15.67	2.27	342	2.92E-03	2.08 ±	1.00E-02	2.8*	20.3-9**	
TE4	sandstone	Miocene	NGI	800	14.93	2.25	176	5.68E-03	3.08 ±	9.00E-02	2.7*	13.9-6**	
TE5	sandstone	Miocene	NGI	800	11.12	2.34	167	5.99E-03	3.20 ±	9.00E-02	2.7*	13.9-6**	
PA19	sandstone	Mesinian (Miocene)	Aachen	500	16.90	2.25	151	6.62E-03	2.21 ±	4.30E-02	1.72 ±	7.00E-03	
MO2	limestone	Lower Pleistocene	NGI	800	28.79	1.94	144	6.94E-03	1.69 ±	7.00E-03	2.0*	20.3-9**	
PA17	sandstone	Lower Miocene	NGI	800	10.47	2.33	94	1.06E-02	2.34 ±	2.20E-02	3.02 ±	2.00E-02	
AG35.1	marly limestone	Lower Pliocene (Zancleano)	Aachen	500	35.75	1.74	89	1.13E-02	1.07 ±	6.00E-03	2.4*	13.8-9**	
PA21	sandstone	Lower Miocene	NGI	800	6.67	2.50	80	1.25E-02	2.08 ±	6.70E-02	3.42 ±	1.30E-02	
AG35	marly limestone	Lower Pliocene (Zancleano)	Aachen	500	25.12	1.95	65	1.54E-02	2.00 ±	2.10E-02	2.4*	13.8-9**	

\* = bibliographic data selected, \*\* = from VD/2010