

Normative



UNI EN 1264-4

Criteri per la scelta dei pannelli

Isolamento negli impianti a pavimento

MANUALE TECNICO

PREMESSA

Quanto di seguito riportato riguarda esplicitamente i parametri riportati dalla norma UNI EN 1264-4 la quale suggerisce i valori di resistenza termica minimi da rispettare in funzione delle condizioni termiche sottostanti all'ambiente che viene riscaldato a pavimento; si ricorda altresì che una norma non va confusa con una legge (nazionale o locale che sia) quindi non vi è l'obbligo del rispetto a meno che non venga richiamata all'interno di una legge stessa.

STRATI DI ISOLAMENTO

Tabella 1: Strati di Isolamento

	Ambiente sottostante riscaldato	Ambiente sottostante non riscaldato o riscaldato in modo non continuativo o direttamente sul suolo *	Temperatura dell'aria esterna sottostante		
			Temperatura esterna di progetto $T_d \geq 0^\circ\text{C}$	Temperatura esterna di progetto $0 > T_d \geq -5^\circ\text{C}$	Temperatura esterna di progetto $-5^\circ\text{C} > T_d \geq -15^\circ\text{C}$
Resistenza Termica $R_{\lambda,ins}$ ($\text{m}^2\text{K} / \text{W}$)	0.75 "A"	1.25 "B"	1.25	1.50 "C"	2.00 "D"
(*) Con un livello di acque freatiche $\leq 5\text{m}$. il valore dovrebbe essere aumentato.					

CARATTERISTICHE DEI PANNELLI

Nella tabella sottostante sono riportati a seconda della tipologia di pannello: lo spessore nominale del pannello (ingombro verticale massimo), lo spessore equivalente del pannello (media geometrica) ed in fine il valore di resistenza termica del pannello secondo i criteri dettati dalla UNI EN 1264-4.

Nelle pagine seguenti vengono suggerite le combinazioni di uno o più pannelli al fine del rispetto della norma nelle svariate situazioni di utilizzo.

La norma precisa altresì che nel caso di più strati di isolamento questi devono venire sfalsati al fine di evitare la coincidente sovrapposizione dei giunti di due strati contigui.

Tabella 2: Pannelli Bugnati

Tipo pannello	Spessore nominale del pannello S [mm]	Spessore equivalente* del pannello S_{EQ} [mm]	Resistenza termica secondo UNI EN 1264 $R_{\lambda,ins}$ [$\text{m}^2\text{K} / \text{W}$]
ACOUSTIC PLUS 20	48	39,5	0,80
ACOUSTIC PLUS 30	58	40,5	1,05
BASIC 20	48	28	0,75
BASIC 30	58	38	1,05
COVER 20	48	29	0,80
COVER 30	58	39	1,10
COVER 40	68	48,9	1,35
COVER 50	78	58,7	1,65
COVER 60	89,5	70,1	2,00
COVER HP 20	48	29	0,90
COVER HP 30	58	39	1,25
COVER HP 38	66	46,9	1,50
COVER HP 54	82	62,6	2,00
NEW PLUS	33	18	0,50
QUOTA ZERO	28	12,5	0,35
(*) Lo spessore equivalente del pannello (S_{EQ}) viene inteso come spessore medio geometrico			

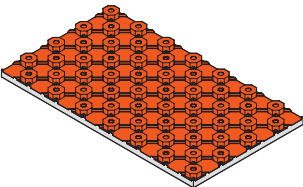
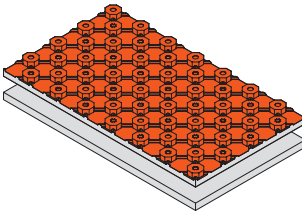
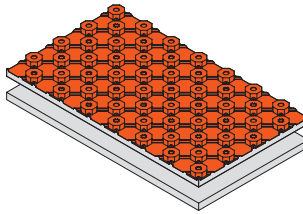
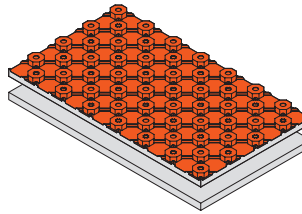
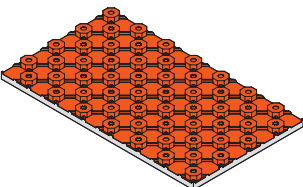
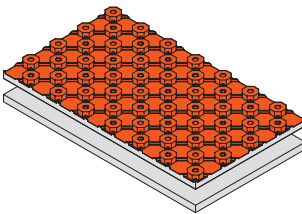
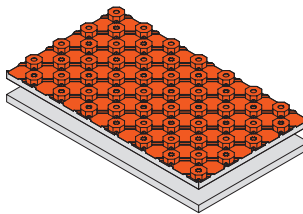
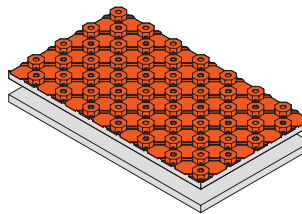
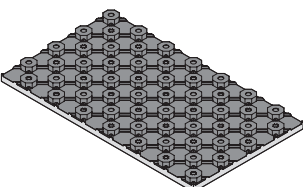
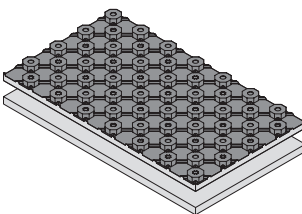
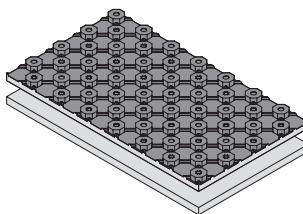
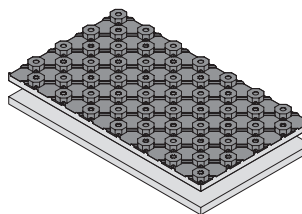
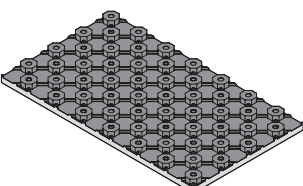
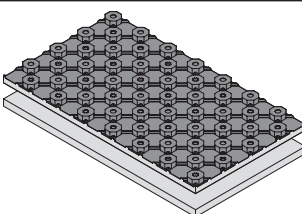
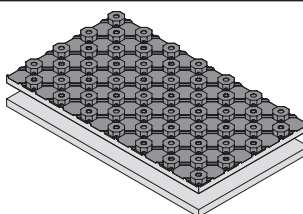
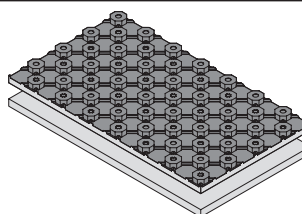
Tabella 3: Pannelli Lisci

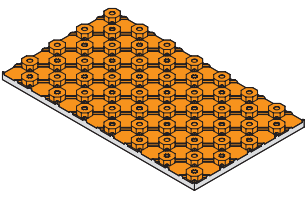
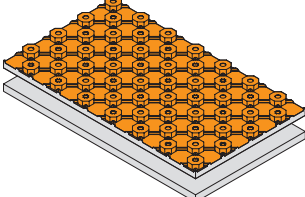
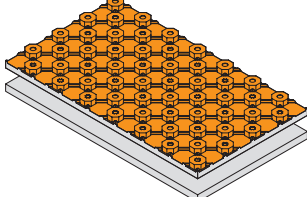
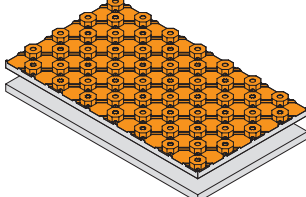
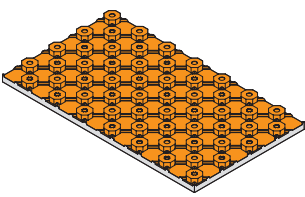
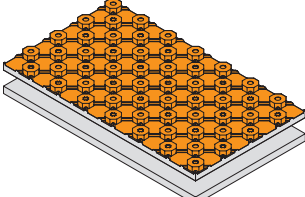
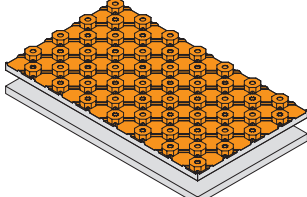
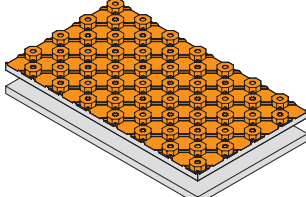
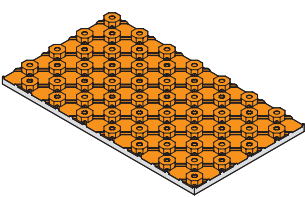
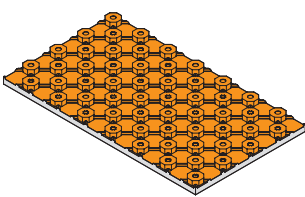
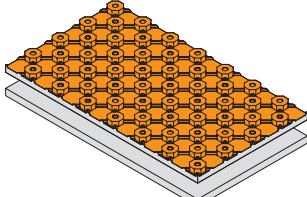
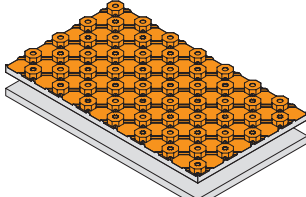
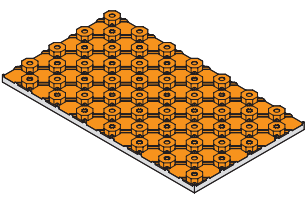
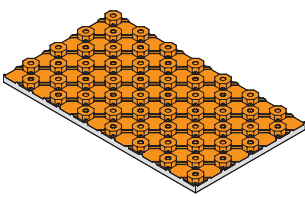
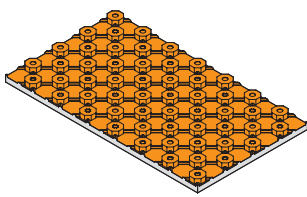
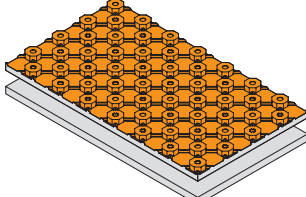
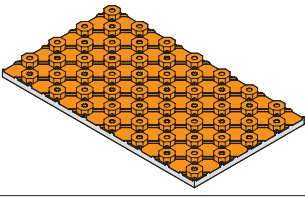
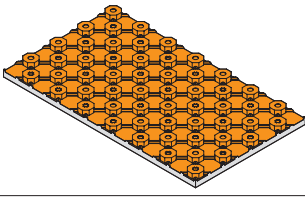
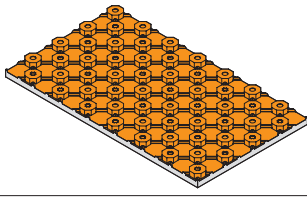
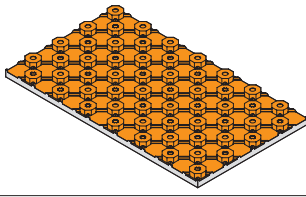
Tipo pannello	Spessore nominale del pannello S [mm]	Spessore equivalente* del pannello S_{EQ} [mm]	Resistenza termica secondo UNI EN 1264 R_{Λ,INS} [m²K / W]
COVER HP LISCIO 20	20	20	0,60
COVER HP LISCIO 30	30	30	0,95
COVER HP LISCIO 38	38	38	1,20
COVER HP LISCIO 54	54	54	1,70
MATERASSINO ACOUSTIC	10	10	0,25
LISCIO ESTRUSO 20	20	20	0,60
LISCIO ESTRUSO 30	30	30	0,90
LISCIO ESTRUSO 40	40	40	1,20
LISCIO ESTRUSO 50	50	50	1,45
LISCIO ESTRUSO 60	60	60	1,75
PL20	20	20	0,80
PL30	30	30	1,25
PL40	40	40	1,65
PL50	50	50	2,05
PANNELLO NATURALE	20	20	0,40

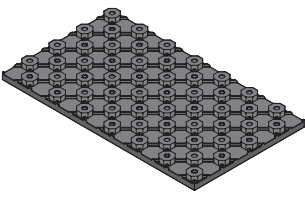
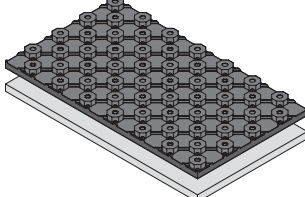
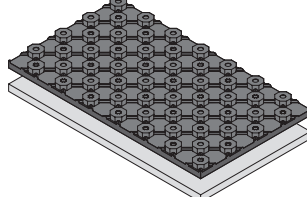
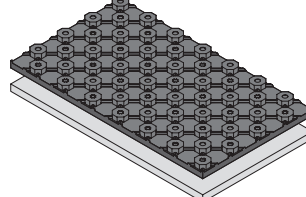
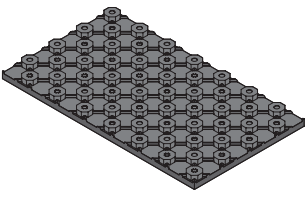
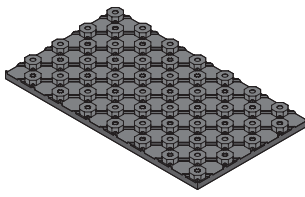
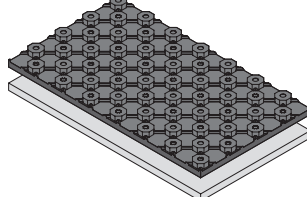
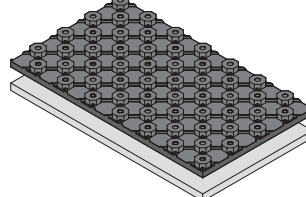
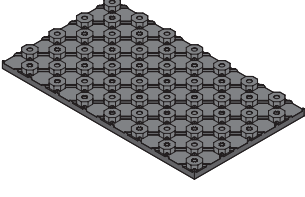
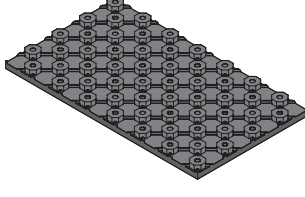
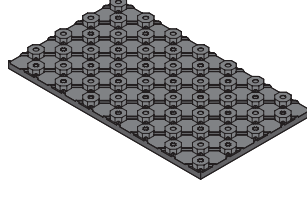
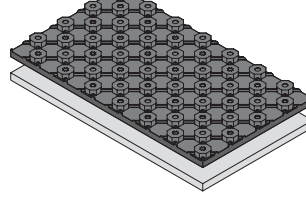
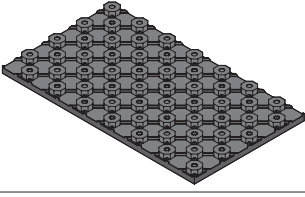
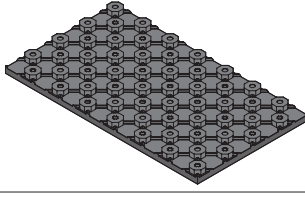
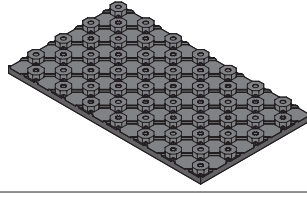
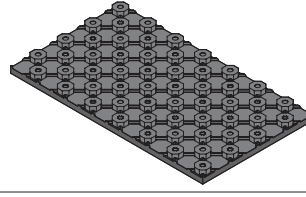
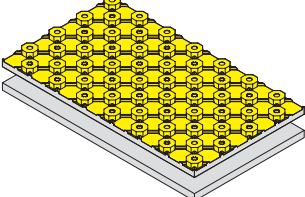
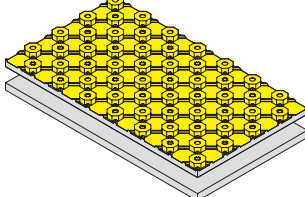
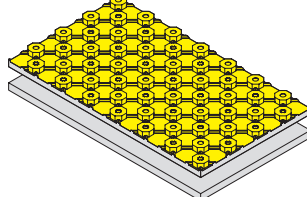
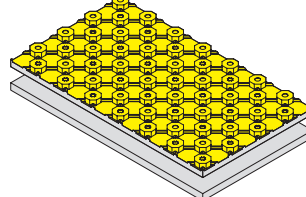
APPLICAZIONE PANNELLI ALLE VARIE FASCE DELLA NORMA

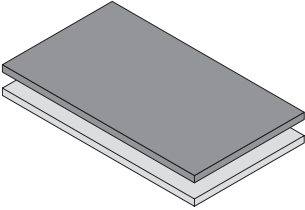
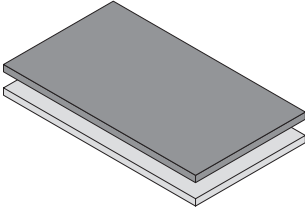
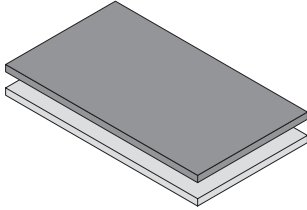
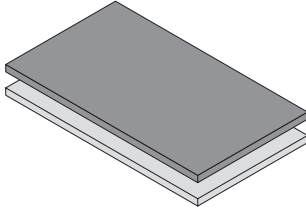
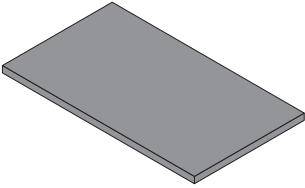
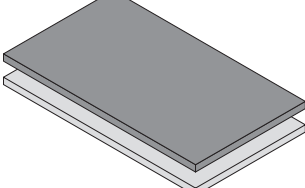
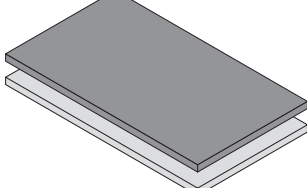
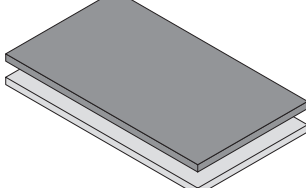
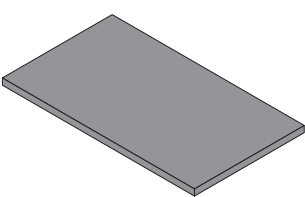
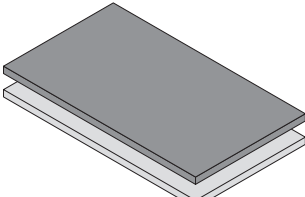
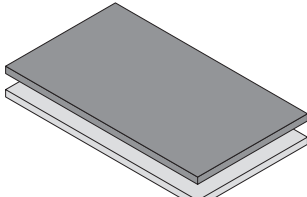
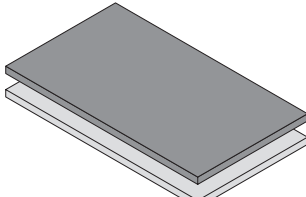
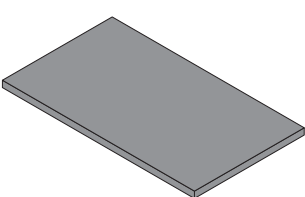
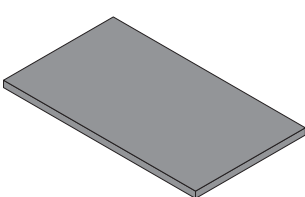
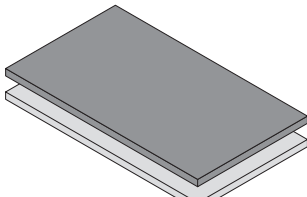
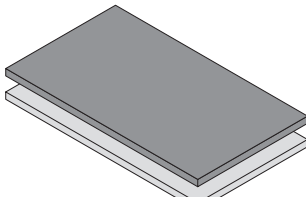
CON PANNELLI LISCI ESTRUSI

Tabella 4: Abbinamenti sistemi con pannello liscio estruso

	"A" $R_{\lambda,ins} = 0.75$ [m ² K/W]	"B" $R_{\lambda,ins} = 1.25$ [m ² K/W]	"C" $R_{\lambda,ins} = 1.50$ [m ² K/W]	"D" $R_{\lambda,ins} = 2.00$ [m ² K/W]
ACOUSTIC PLUS 20				
	Acoustic Plus 20	Acoustic Plus 20 + Liscio Estruso 20	Acoustic Plus 20 + Liscio Estruso 30	Acoustic Plus 20 + Liscio Estruso 40
	S/Sb = 48/20 [mm] Seq = 30.5 [mm] $R_{\lambda,ins} = 0.80$ [m ² K/W]	S/Sb = 68/40 [mm] Seq = 50.5 [mm] $R_{\lambda,ins} = 1.40$ [m ² K/W]	S/Sb = 78/50 [mm] Seq = 60.5 [mm] $R_{\lambda,ins} = 1.70$ [m ² K/W]	S/Sb = 88/60 [mm] Seq = 70.5 [mm] $R_{\lambda,ins} = 2.00$ [m ² K/W]
ACOUSTIC PLUS 30				
	Acoustic Plus 30	Acoustic Plus 30 + Liscio Estruso 20	Acoustic Plus 30 + Liscio Estruso 20	Acoustic Plus 30 + Liscio Estruso 30
	S/Sb = 58/30 [mm] Seq = 40.5 [mm] $R_{\lambda,ins} = 1.05$ [m ² K/W]	S/Sb = 78/50 [mm] Seq = 60.5 [mm] $R_{\lambda,ins} = 1.70$ [m ² K/W]	S/Sb = 78/50 [mm] Seq = 60.5 [mm] $R_{\lambda,ins} = 1.70$ [m ² K/W]	S/Sb = 88/60 [mm] Seq = 70.5 [mm] $R_{\lambda,ins} = 2.00$ [m ² K/W]
BASIC 20				
	Basic 20	Basic 20 + Liscio Estruso 20	Basic 20 + Liscio Estruso 30	Basic 20 + Liscio Estruso 50
	S/Sb = 48/20 [mm] Seq = 28 [mm] $R_{\lambda,ins} = 0.75$ [m ² K/W]	S/Sb = 68/40 [mm] Seq = 48 [mm] $R_{\lambda,ins} = 1.40$ [m ² K/W]	S/Sb = 78/50 [mm] Seq = 58 [mm] $R_{\lambda,ins} = 1.65$ [m ² K/W]	S/Sb = 98/70 [mm] Seq = 78 [mm] $R_{\lambda,ins} = 2.20$ [m ² K/W]
BASIC 30				
	Basic 30	Basic 30 + Liscio Estruso 20	Basic 30 + Liscio Estruso 20	Basic 30 + Liscio Estruso 40
	S/Sb = 58/30 [mm] Seq = 38 [mm] $R_{\lambda,ins} = 1.05$ [m ² K/W]	S/Sb = 78/50 [mm] Seq = 58 [mm] $R_{\lambda,ins} = 1.65$ [m ² K/W]	S/Sb = 78/50 [mm] Seq = 58 [mm] $R_{\lambda,ins} = 1.65$ [m ² K/W]	S/Sb = 98/70 [mm] Seq = 78 [mm] $R_{\lambda,ins} = 2.25$ [m ² K/W]

	"A" $R_{\lambda,ins} = 0.75$ $[m^2 K/W]$	"B" $R_{\lambda,ins} = 1.25$ $[m^2 K/W]$	"C" $R_{\lambda,ins} = 1.50$ $[m^2 K/W]$	"D" $R_{\lambda,ins} = 2.00$ $[m^2 K/W]$
COVER 20				
	Cover 20	Cover 20 + Liscio estruso 20	Cover 20 + Liscio estruso 30	Cover 20 + Liscio estruso 40
	S/Sb = 48/20 [mm] Seq = 29 [mm] $R_{\lambda,ins} = 0.80 [m^2 K/W]$	S/Sb = 68/40 [mm] Seq = 49 [mm] $R_{\lambda,ins} = 1.45 [m^2 K/W]$	S/Sb = 78/50 [mm] Seq = 59 [mm] $R_{\lambda,ins} = 1.70 [m^2 K/W]$	S/Sb = 88/60 [mm] Seq = 69 [mm] $R_{\lambda,ins} = 2.00 [m^2 K/W]$
COVER 30				
	Cover 30	Cover 30 + Liscio estruso 20	Cover 30 + Liscio estruso 20	Cover 30 + Liscio estruso 30
	S/Sb = 58/30 [mm] Seq = 39 [mm] $R_{\lambda,ins} = 1.10 [m^2 K/W]$	S/Sb = 78/50 [mm] Seq = 59 [mm] $R_{\lambda,ins} = 1.70 [m^2 K/W]$	S/Sb = 78/50 [mm] Seq = 59 [mm] $R_{\lambda,ins} = 1.70 [m^2 K/W]$	S/Sb = 88/60 [mm] Seq = 69 [mm] $R_{\lambda,ins} = 2.00 [m^2 K/W]$
COVER 40				
	Cover 40	Cover 40	Cover 40 + Liscio estruso 20	Cover 40 + Liscio estruso 20
	S/Sb = 68/40 [mm] Seq = 48.9 [mm] $R_{\lambda,ins} = 1.35 [m^2 K/W]$	S/Sb = 68/40 [mm] Seq = 48.9 [mm] $R_{\lambda,ins} = 1.35 [m^2 K/W]$	S/Sb = 88/60 [mm] Seq = 68.9 [mm] $R_{\lambda,ins} = 2.00 [m^2 K/W]$	S/Sb = 88/60 [mm] Seq = 68.9 [mm] $R_{\lambda,ins} = 2.00 [m^2 K/W]$
COVER 50				
	Cover 50	Cover 50	Cover 50	Cover 50 + Liscio estruso 20
	S/Sb = 78/50 [mm] Seq = 58.7 [mm] $R_{\lambda,ins} = 1.65 [m^2 K/W]$	S/Sb = 78/50 [mm] Seq = 58.7 [mm] $R_{\lambda,ins} = 1.65 [m^2 K/W]$	S/Sb = 78/50 [mm] Seq = 58.7 [mm] $R_{\lambda,ins} = 1.65 [m^2 K/W]$	S/Sb = 98/70 [mm] Seq = 78.7 [mm] $R_{\lambda,ins} = 2.30 [m^2 K/W]$
COVER 60				
	Cover 60	Cover 60	Cover 60	Cover 60
	S/Sb = 89.5/61.5 [mm] Seq = 70.1 [mm] $R_{\lambda,ins} = 2.00 [m^2 K/W]$	S/Sb = 89.5/61.5 [mm] Seq = 70.1 [mm] $R_{\lambda,ins} = 2.00 [m^2 K/W]$	S/Sb = 89.5/61.5 [mm] Seq = 70.1 [mm] $R_{\lambda,ins} = 2.00 [m^2 K/W]$	S/Sb = 89.5/61.5 [mm] Seq = 70.1 [mm] $R_{\lambda,ins} = 2.00 [m^2 K/W]$

	"A" $R_{\lambda,ins} = 0.75$ [m ² K/W]	"B" $R_{\lambda,ins} = 1.25$ [m ² K/W]	"C" $R_{\lambda,ins} = 1.50$ [m ² K/W]	"D" $R_{\lambda,ins} = 2.00$ [m ² K/W]
COVER HP 20				
	Cover HP 20	Cover HP 20 + Liscio estruso 20	Cover HP 20 + Liscio estruso 20	Cover HP 20 + Liscio estruso 40
	S/Sb = 48/20 [mm] Seq = 29 [mm] $R_{\lambda,ins} = 0.90$ [m ² K / W]	S/Sb = 68/40 [mm] Seq = 49 [mm] $R_{\lambda,ins} = 1.55$ [m ² K / W]	S/Sb = 68/40 [mm] Seq = 49 [mm] $R_{\lambda,ins} = 1.55$ [m ² K / W]	S/Sb = 88/60 [mm] Seq = 69 [mm] $R_{\lambda,ins} = 2.10$ [m ² K / W]
COVER HP 30				
	Cover HP 30	Cover HP 30	Cover HP 30 + Liscio estruso 20	Cover HP 30 + Liscio estruso 30
	S/Sb = 58/30 [mm] Seq = 39 [mm] $R_{\lambda,ins} = 1.25$ [m ² K / W]	S/Sb = 58/30 [mm] Seq = 39 [mm] $R_{\lambda,ins} = 1.25$ [m ² K / W]	S/Sb = 78/50 [mm] Seq = 59 [mm] $R_{\lambda,ins} = 1.85$ [m ² K / W]	S/Sb = 88/60 [mm] Seq = 69 [mm] $R_{\lambda,ins} = 2.15$ [m ² K / W]
COVER HP 38				
	Cover HP 38	Cover HP 38	Cover HP 38	Cover HP 38 + Liscio estruso 20
	S/Sb = 66/38 [mm] Seq = 46.9 [mm] $R_{\lambda,ins} = 1.50$ [m ² K / W]	S/Sb = 66/38 [mm] Seq = 46.9 [mm] $R_{\lambda,ins} = 1.50$ [m ² K / W]	S/Sb = 66/38 [mm] Seq = 46.9 [mm] $R_{\lambda,ins} = 1.50$ [m ² K / W]	S/Sb = 86/58 [mm] Seq = 66.9 [mm] $R_{\lambda,ins} = 2.10$ [m ² K / W]
COVER HP 38				
	Cover HP 54	Cover HP 54	Cover HP 54	Cover HP 54
	S/Sb = 82/54 [mm] Seq = 62.6 [mm] $R_{\lambda,ins} = 2.00$ [m ² K / W]	S/Sb = 82/54 [mm] Seq = 62.6 [mm] $R_{\lambda,ins} = 2.00$ [m ² K / W]	S/Sb = 82/54 [mm] Seq = 62.6 [mm] $R_{\lambda,ins} = 2.00$ [m ² K / W]	S/Sb = 82/54 [mm] Seq = 62.6 [mm] $R_{\lambda,ins} = 2.00$ [m ² K / W]
NEW PLUS				
	New Plus + Liscio estruso 20	New Plus + Liscio Estruso 30	New Plus + Liscio Estruso 40	New Plus + Liscio Estruso 50
	S/Sb = 53/32.5 [mm] Seq = 38 [mm] $R_{\lambda,ins} = 1.15$ [m ² K / W]	S/Sb = 63/42.5 [mm] Seq = 48 [mm] $R_{\lambda,ins} = 1.45$ [m ² K / W]	S/Sb = 73/52.5 [mm] Seq = 58 [mm] $R_{\lambda,ins} = 1.75$ [m ² K / W]	S/Sb = 83/62.5 [mm] Seq = 68 [mm] $R_{\lambda,ins} = 2.00$ [m ² K / W]

	"A" $R_{\lambda.ins} = 0.75$ [m ² K/W]	"B" $R_{\lambda.ins} = 1.25$ [m ² K/W]	"C" $R_{\lambda.ins} = 1.50$ [m ² K/W]	"D" $R_{\lambda.ins} = 2.00$ [m ² K/W]
COVER HP LISCIO 20				
	Cover HP liscio 20 + Liscio estruso 20 S=Sb=Seq=40 [mm] $R_{\lambda.ins} = 1.25$ [m ² K/W]	Cover HP liscio 20 + Liscio estruso 20 S=Sb=Seq=40 [mm] $R_{\lambda.ins} = 1.25$ [m ² K/W]	Cover HP liscio 20 + Liscio estruso 30 S=Sb=Seq=50 [mm] $R_{\lambda.ins} = 1.55$ [m ² K/W]	Cover HP liscio 20 + Liscio estruso 50 S=Sb=Seq=70 [mm] $R_{\lambda.ins} = 2.10$ [m ² K/W]
COVER HP LISCIO 30				
	Cover HP liscio 30 S=Sb=Seq=30 [mm] $R_{\lambda.ins} = 0.95$ [m ² K/W]	Cover HP liscio 30 + Liscio estruso 20 S=Sb=Seq=50 [mm] $R_{\lambda.ins} = 1.55$ [m ² K/W]	Cover HP liscio 30 + Liscio estruso 20 S=Sb=Seq=50 [mm] $R_{\lambda.ins} = 1.55$ [m ² K/W]	Cover HP liscio 30 + Liscio estruso 40 S=Sb=Seq=70 [mm] $R_{\lambda.ins} = 2.15$ [m ² K/W]
COVER HP LISCIO 38				
	Cover HP liscio 38 S=Sb=Seq=38 [mm] $R_{\lambda.ins} = 1.28$ [m ² K/W]	Cover HP liscio 38 + Liscio estruso 20 S=Sb=Seq=58 [mm] $R_{\lambda.ins} = 1.85$ [m ² K/W]	Cover HP liscio 38 + Liscio estruso 20 S=Sb=Seq=58 [mm] $R_{\lambda.ins} = 1.85$ [m ² K/W]	Cover HP liscio 38 + Liscio estruso 30 S=Sb=Seq=68 [mm] $R_{\lambda.ins} = 2.10$ [m ² K/W]
COVER HP LISCIO 54				
	Cover HP liscio 54 S=Sb=Seq=54 [mm] $R_{\lambda.ins} = 1.70$ [m ² K/W]	Cover HP liscio 54 S=Sb=Seq=54 [mm] $R_{\lambda.ins} = 1.70$ [m ² K/W]	Cover HP liscio 54 + Liscio estruso 20 S=Sb=Seq=74 [mm] $R_{\lambda.ins} = 2.35$ [m ² K/W]	Cover HP liscio 54 + Liscio estruso 20 S=Sb=Seq=74 [mm] $R_{\lambda.ins} = 2.35$ [m ² K/W]

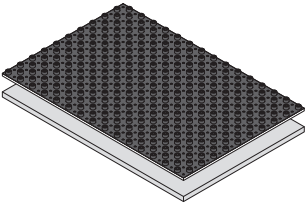
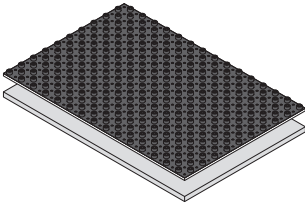
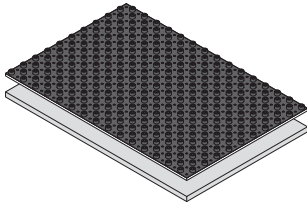
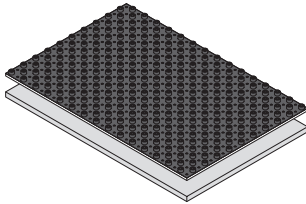
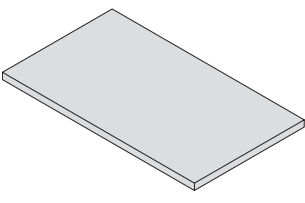
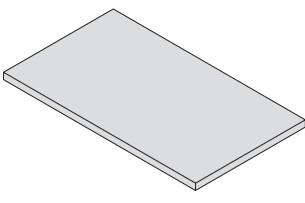
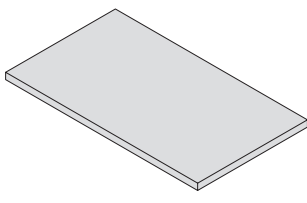
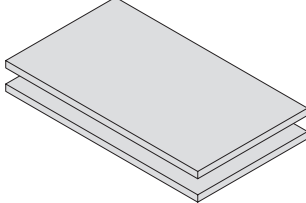
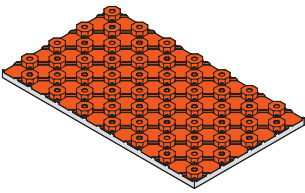
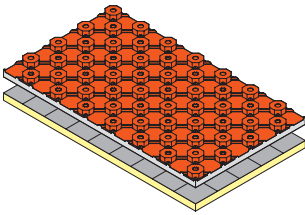
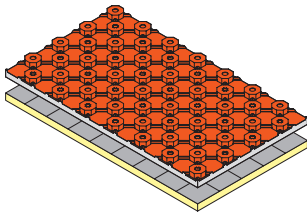
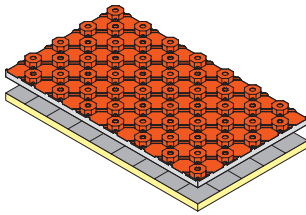
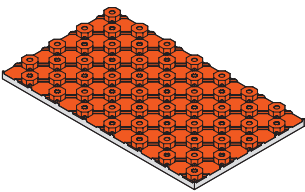
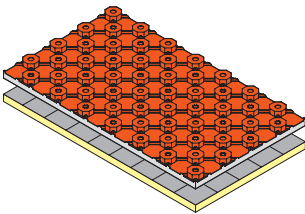
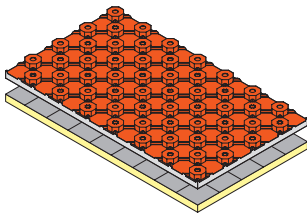
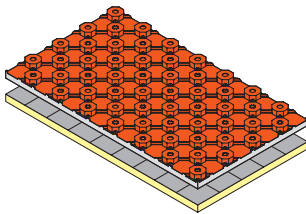
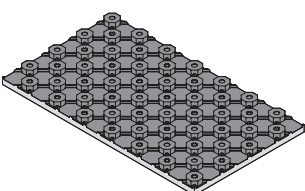
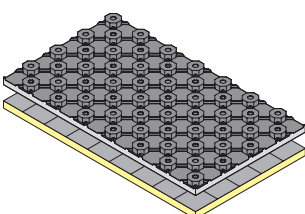
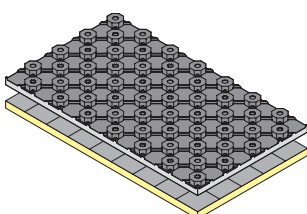
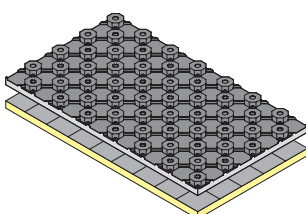
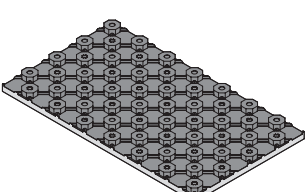
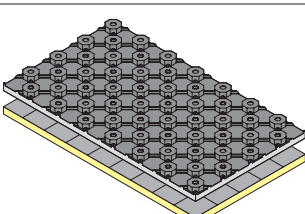
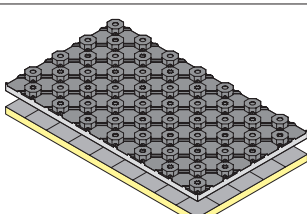
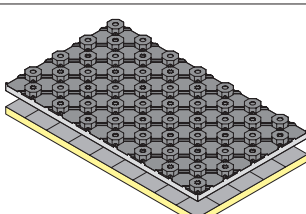
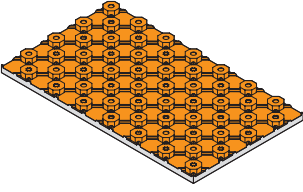
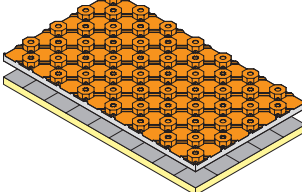
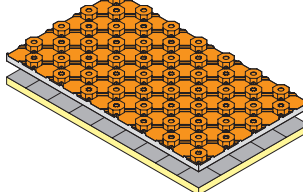
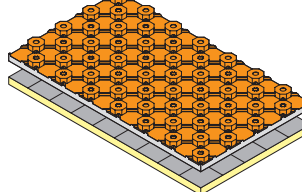
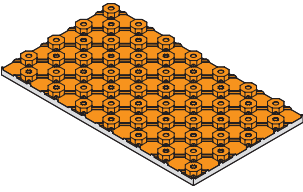
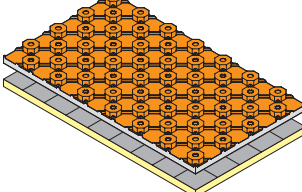
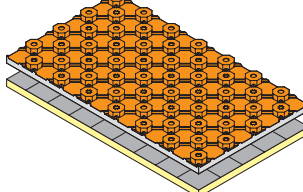
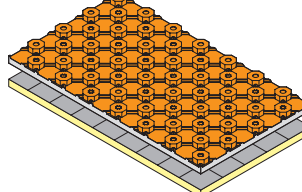
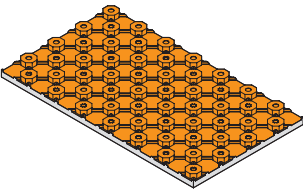
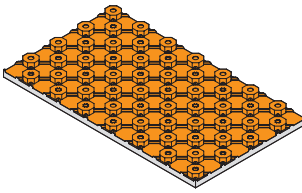
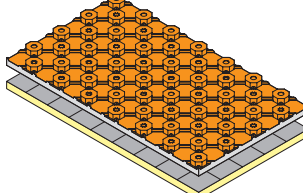
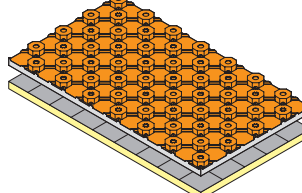
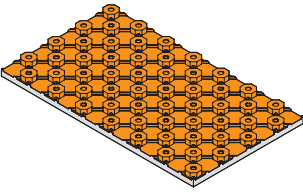
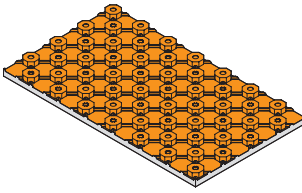
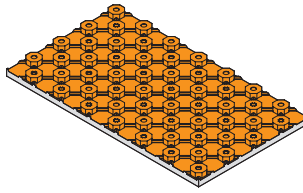
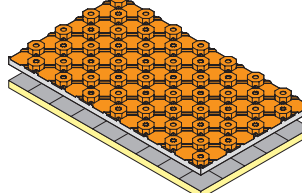
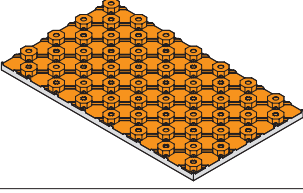
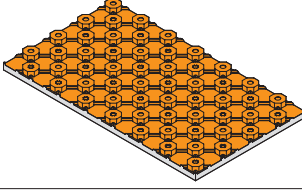
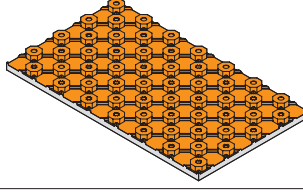
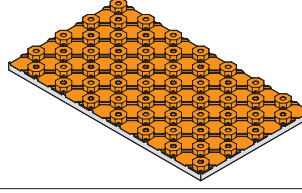
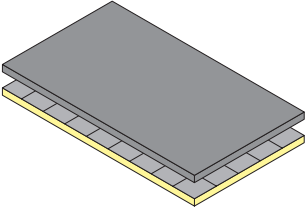
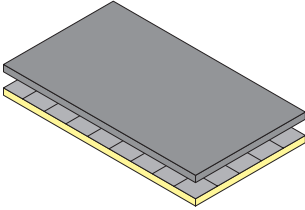
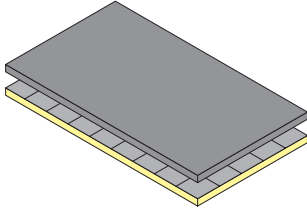
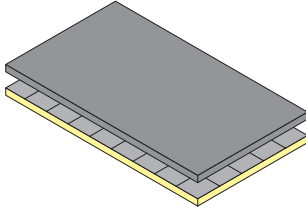
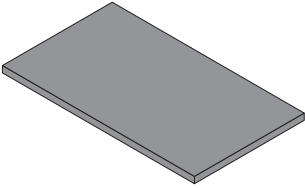
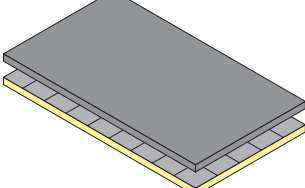
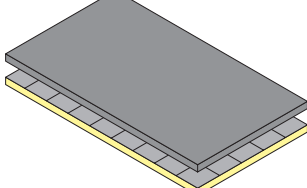
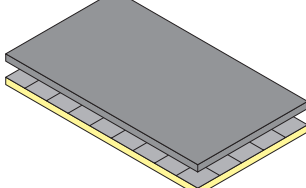
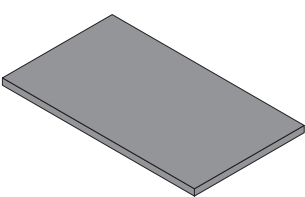
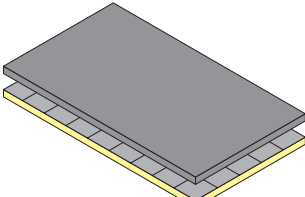
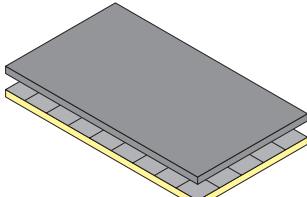
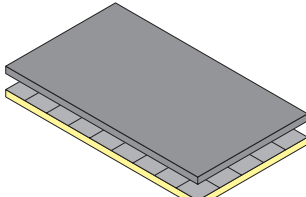
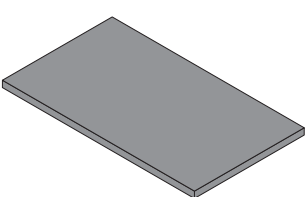
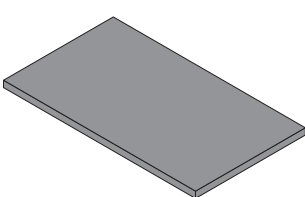
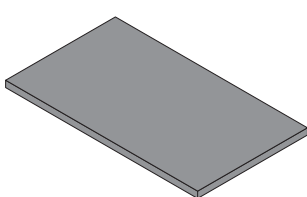
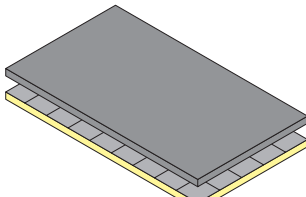
	"A" $R_{\lambda.ins} = 0.75$ [m ² K/W]	"B" $R_{\lambda.ins} = 1.25$ [m ² K/W]	"C" $R_{\lambda.ins} = 1.50$ [m ² K/W]	"D" $R_{\lambda.ins} = 2.00$ [m ² K/W]
QUOTA ZERO				
	Quota zero + Liscio estruso 20	Quota zero + Liscio Estruso 30	Quota zero + Liscio Estruso 40	Quota zero + Liscio Estruso 60
	S/Sb = 48/30 [mm] Seq = 32.5 [mm] $R_{\lambda.ins} = 0.95$ [m ² K / W]	S/Sb = 58/40 [mm] Seq = 42.5 [mm] $R_{\lambda.ins} = 1.25$ [m ² K / W]	S/Sb = 68/50 [mm] Seq = 52.5 [mm] $R_{\lambda.ins} = 1.55$ [m ² K / W]	S/Sb = 88/60 [mm] Seq = 72.5 [mm] $R_{\lambda.ins} = 2.10$ [m ² K / W]
LISCIO ESTRUSO				
	Liscio estruso 30	Liscio estruso 50	Liscio estruso 60	Liscio estruso 50 + Liscio estruso 20
	S=Sb = Seq = 30 [mm] $R_{\lambda.ins} = 0.90$ [m ² K / W]	S = Sb = Seq =50 [mm] $R_{\lambda.ins} = 1.45$ [m ² K / W]	S=Sb = Seq = 60 [mm] $R_{\lambda.ins} = 1.75$ [m ² K / W]	S = Sb = Seq = 70 [mm] $R_{\lambda.ins} = 2.05$ [m ² K / W]

Tabella 5: Abbinamenti sistemi con pannello PL

	"A" $R_{\lambda,ins} = 0.75$ [m ² K/W]	"B" $R_{\lambda,ins} = 1.25$ [m ² K/W]	"C" $R_{\lambda,ins} = 1.50$ [m ² K/W]	"D" $R_{\lambda,ins} = 2.00$ [m ² K/W]
ACOUSTIC PLUS 20				
	Acoustic Plus 20	Acoustic Plus 20 + PL 20	Acoustic Plus 20 + PL 20	Acoustic Plus 20 + PL 30
	S/Sb = 48/20 [mm] Seq = 30.5 [mm] $R_{\lambda,ins} = 0.80$ [m ² K/W]	S/Sb = 68/40 [mm] Seq = 50.5 [mm] $R_{\lambda,ins} = 1.65$ [m ² K/W]	S/Sb = 68/40 [mm] Seq = 50.5 [mm] $R_{\lambda,ins} = 1.65$ [m ² K/W]	S/Sb = 78/50 [mm] Seq = 60.5 [mm] $R_{\lambda,ins} = 2.05$ [m ² K/W]
ACOUSTIC PLUS 30				
	Acoustic Plus 30	Acoustic Plus 30 + PL 20	Acoustic Plus + PL 20	Acoustic Plus 30 + PL 30
	S/Sb = 58/30 [mm] Seq = 40.5 [mm] $R_{\lambda,ins} = 1.05$ [m ² K/W]	S/Sb = 78/50 [mm] Seq = 60.5 [mm] $R_{\lambda,ins} = 1.90$ [m ² K/W]	S/Sb = 78/50 [mm] Seq = 60.5 [mm] $R_{\lambda,ins} = 1.90$ [m ² K/W]	S/Sb = 88/60 [mm] Seq = 70.5 [mm] $R_{\lambda,ins} = 2.30$ [m ² K/W]
BASIC 20				
	Basic 20	Basic 20 + PL 20	Basic 20 + PL 20	Basic 20 + PL 30
	S/Sb = 48/20 [mm] Seq = 28 [mm] $R_{\lambda,ins} = 0.75$ [m ² K/W]	S/Sb = 68/40 [mm] Seq = 48 [mm] $R_{\lambda,ins} = 1.60$ [m ² K/W]	S/Sb = 68/40 [mm] Seq = 48 [mm] $R_{\lambda,ins} = 1.60$ [m ² K/W]	S/Sb = 78/50 [mm] Seq = 58 [mm] $R_{\lambda,ins} = 2.00$ [m ² K/W]
BASIC 30				
	Basic 30	Basic 30 + PL 20	Basic 30 + PL 20	Basic 30 + PL 30
	S/Sb = 58/30 [mm] Seq = 38 [mm] $R_{\lambda,ins} = 1.05$ [m ² K/W]	S/Sb = 78/40 [mm] Seq = 58 [mm] $R_{\lambda,ins} = 1.85$ [m ² K/W]	S/Sb = 78/40 [mm] Seq = 58 [mm] $R_{\lambda,ins} = 1.85$ [m ² K/W]	S/Sb = 88/50 [mm] Seq = 68 [mm] $R_{\lambda,ins} = 2.30$ [m ² K/W]

	"A" $R_{\lambda,ins} = 0.75$ $[m^2 K/W]$	"B" $R_{\lambda,ins} = 1.25$ $[m^2 K/W]$	"C" $R_{\lambda,ins} = 1.50$ $[m^2 K/W]$	"D" $R_{\lambda,ins} = 2.00$ $[m^2 K/W]$
COVER 20				
	Cover 20	Cover 20 + PL 20	Cover 20 + PL 20	Cover 20 + PL 30
	S/Sb = 48/20 [mm] Seq = 29 [mm] $R_{\lambda,ins} = 0.80 [m^2 K/W]$	S/Sb = 68/40 [mm] Seq = 49 [mm] $R_{\lambda,ins} = 1.65 [m^2 K/W]$	S/Sb = 68/40 [mm] Seq = 49 [mm] $R_{\lambda,ins} = 1.65 [m^2 K/W]$	S/Sb = 78/50 [mm] Seq = 59 [mm] $R_{\lambda,ins} = 2.05 [m^2 K/W]$
COVER 30				
	Cover 30	Cover 30 + PL 20	Cover 30 + PL 20	Cover 30 + PL 30
	S/Sb = 58/30 [mm] Seq = 39 [mm] $R_{\lambda,ins} = 1.10 [m^2 K/W]$	S/Sb = 78/50 [mm] Seq = 59 [mm] $R_{\lambda,ins} = 1.90 [m^2 K/W]$	S/Sb = 78/50 [mm] Seq = 59 [mm] $R_{\lambda,ins} = 1.90 [m^2 K/W]$	S/Sb = 88/60 [mm] Seq = 69 [mm] $R_{\lambda,ins} = 2.35 [m^2 K/W]$
COVER 40				
	Cover 40	Cover 40	Cover 40 + PL 20	Cover 40 + PL 20
	S/Sb = 68/40 [mm] Seq = 48.9 [mm] $R_{\lambda,ins} = 1.35 [m^2 K/W]$	S/Sb = 68/40 [mm] Seq = 48.9 [mm] $R_{\lambda,ins} = 1.35 [m^2 K/W]$	S/Sb = 88/60 [mm] Seq = 68.9 [mm] $R_{\lambda,ins} = 2.20 [m^2 K/W]$	S/Sb = 88/60 [mm] Seq = 68.9 [mm] $R_{\lambda,ins} = 2.20 [m^2 K/W]$
COVER 50				
	Cover 50	Cover 50	Cover 50	Cover 50 + PL 20
	S/Sb = 78/50 [mm] Seq = 58.7 [mm] $R_{\lambda,ins} = 1.65 [m^2 K/W]$	S/Sb = 78/50 [mm] Seq = 58.7 [mm] $R_{\lambda,ins} = 1.65 [m^2 K/W]$	S/Sb = 78/50 [mm] Seq = 58.7 [mm] $R_{\lambda,ins} = 1.65 [m^2 K/W]$	S/Sb = 98/70 [mm] Seq = 78.7 [mm] $R_{\lambda,ins} = 2.50 [m^2 K/W]$
COVER 60				
	Cover 60	Cover 60	Cover 60	Cover 60
	S/Sb = 89.5/61.5 [mm] Seq = 70.1 [mm] $R_{\lambda,ins} = 2.00 [m^2 K/W]$	S/Sb = 89.5/61.5 [mm] Seq = 70.1 [mm] $R_{\lambda,ins} = 2.00 [m^2 K/W]$	S/Sb = 89.5/61.5 [mm] Seq = 70.1 [mm] $R_{\lambda,ins} = 2.00 [m^2 K/W]$	S/Sb = 89.5/61.5 [mm] Seq = 70.1 [mm] $R_{\lambda,ins} = 2.00 [m^2 K/W]$

	"A" $R_{\lambda,ins} = 0.75$ [m ² K/W]	"B" $R_{\lambda,ins} = 1.25$ [m ² K/W]	"C" $R_{\lambda,ins} = 1.50$ [m ² K/W]	"D" $R_{\lambda,ins} = 2.00$ [m ² K/W]
COVER HP 20				
	Cover HP 20	Cover HP 20 + PL 20	Cover HP 20 + PL 20	Cover HP 20 + PL 30
	S/Sb = 48/20 [mm] Seq = 29 [mm] $R_{\lambda,ins} = 0.90$ [m ² K/W]	S/Sb = 68/40 [mm] Seq = 49 [mm] $R_{\lambda,ins} = 1.75$ [m ² K/W]	S/Sb = 68/40 [mm] Seq = 49 [mm] $R_{\lambda,ins} = 1.75$ [m ² K/W]	S/Sb = 78/50 [mm] Seq = 59 [mm] $R_{\lambda,ins} = 2.15$ [m ² K/W]
COVER HP 30				
	Cover HP 30	Cover HP 30	Cover HP 30 + PL 20	Cover HP 30 + PL 20
	S/Sb = 58/30 [mm] Seq = 39 [mm] $R_{\lambda,ins} = 1.25$ [m ² K/W]	S/Sb = 58/30 [mm] Seq = 39 [mm] $R_{\lambda,ins} = 1.25$ [m ² K/W]	S/Sb = 78/50 [mm] Seq = 59 [mm] $R_{\lambda,ins} = 2.05$ [m ² K/W]	S/Sb = 78/50 [mm] Seq = 59 [mm] $R_{\lambda,ins} = 2.05$ [m ² K/W]
COVER HP 38				
	Cover HP 38	Cover HP 38	Cover HP 38	Cover HP 38 + PL 20
	S/Sb = 66/38 [mm] Seq = 46.9 [mm] $R_{\lambda,ins} = 1.50$ [m ² K/W]	S/Sb = 66/38 [mm] Seq = 46.9 [mm] $R_{\lambda,ins} = 1.50$ [m ² K/W]	S/Sb = 66/38 [mm] Seq = 46.9 [mm] $R_{\lambda,ins} = 1.50$ [m ² K/W]	S/Sb = 86/58 [mm] Seq = 66.9 [mm] $R_{\lambda,ins} = 2.30$ [m ² K/W]
COVER HP 38				
	Cover HP 54	Cover HP 54	Cover HP 54	Cover HP 54
	S/Sb = 82/54 [mm] Seq = 62.6 [mm] $R_{\lambda,ins} = 2.00$ [m ² K/W]	S/Sb = 82/54 [mm] Seq = 62.6 [mm] $R_{\lambda,ins} = 2.00$ [m ² K/W]	S/Sb = 82/54 [mm] Seq = 62.6 [mm] $R_{\lambda,ins} = 2.00$ [m ² K/W]	S/Sb = 82/54 [mm] Seq = 62.6 [mm] $R_{\lambda,ins} = 2.00$ [m ² K/W]
NEW PLUS				
	New Plus + PL 20	New Plus + PL 20	New Plus + PL 30	New Plus + PL 40
	S/Sb = 53/32.5 [mm] Seq = 38 [mm] $R_{\lambda,ins} = 1.35$ [m ² K/W]	S/Sb = 53/32.5 [mm] Seq = 38 [mm] $R_{\lambda,ins} = 1.35$ [m ² K/W]	S/Sb = 63/42.5 [mm] Seq = 48 [mm] $R_{\lambda,ins} = 1.75$ [m ² K/W]	S/Sb = 73/52.5 [mm] Seq = 58 [mm] $R_{\lambda,ins} = 2.20$ [m ² K/W]

	"A" $R_{\lambda.ins} = 0.75$ [m ² K/W]	"B" $R_{\lambda.ins} = 1.25$ [m ² K/W]	"C" $R_{\lambda.ins} = 1.50$ [m ² K/W]	"D" $R_{\lambda.ins} = 2.00$ [m ² K/W]
COVER HP LISCIO 20				
	Cover HP liscio 20 + PL 20	Cover HP liscio 20 + PL 20	Cover HP liscio 20 + PL 30	Cover HP liscio 20 + PL 40
	S=Sb=Seq=40 [mm] $R_{\lambda.ins} = 1.45$ [m ² K/W]	S=Sb=Seq=40 [mm] $R_{\lambda.ins} = 1.45$ [m ² K/W]	S=Sb=Seq=50 [mm] $R_{\lambda.ins} = 1.85$ [m ² K/W]	S=Sb=Seq=60 [mm] $R_{\lambda.ins} = 2.30$ [m ² K/W]
COVER HP LISCIO 30				
	Cover HP liscio 30	Cover HP liscio 30 + PL 20	Cover HP liscio 30 + PL 20	Cover HP liscio 30 + PL 30
	S=Sb=Seq=30 [mm] $R_{\lambda.ins} = 0.95$ [m ² K/W]	S=Sb=Seq=50 [mm] $R_{\lambda.ins} = 1.80$ [m ² K/W]	S=Sb=Seq=50 [mm] $R_{\lambda.ins} = 1.80$ [m ² K/W]	S=Sb=Seq=60 [mm] $R_{\lambda.ins} = 2.20$ [m ² K/W]
COVER HP LISCIO 38				
	Cover HP liscio 38	Cover HP liscio 38 + PL 20	Cover HP liscio 38 + PL 20	Cover HP liscio 38 + PL 20
	S=Sb=Seq=38 [mm] $R_{\lambda.ins} = 1.20$ [m ² K/W]	S=Sb=Seq=58 [mm] $R_{\lambda.ins} = 2.05$ [m ² K/W]	S=Sb=Seq=58 [mm] $R_{\lambda.ins} = 2.05$ [m ² K/W]	S=Sb=Seq=58 [mm] $R_{\lambda.ins} = 2.05$ [m ² K/W]
COVER HP LISCIO 54				
	Cover HP liscio 54	Cover HP liscio 54	Cover HP liscio 54	Cover HP liscio 54 + PL 20
	S=Sb=Seq=54 [mm] $R_{\lambda.ins} = 1.70$ [m ² K/W]	S=Sb=Seq=54 [mm] $R_{\lambda.ins} = 1.70$ [m ² K/W]	S=Sb=Seq=54 [mm] $R_{\lambda.ins} = 1.70$ [m ² K/W]	S=Sb=Seq=74 [mm] $R_{\lambda.ins} = 2.55$ [m ² K/W]

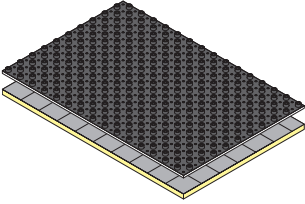
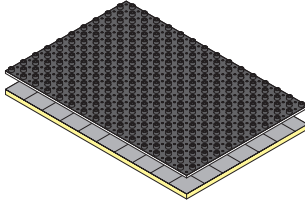
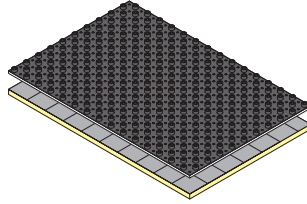
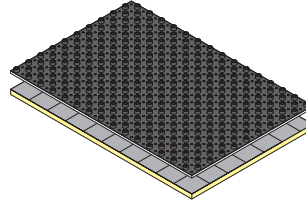
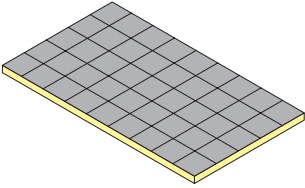
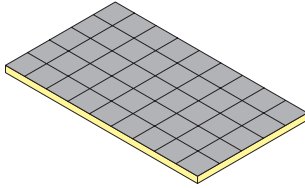
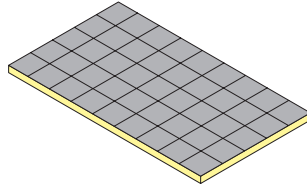
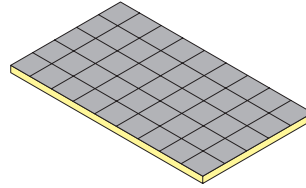
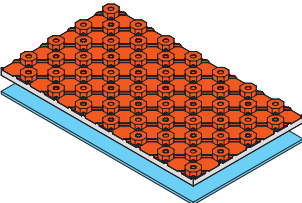
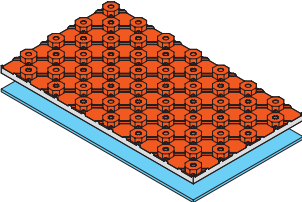
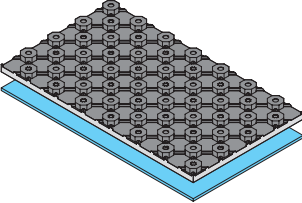
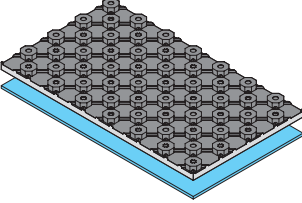
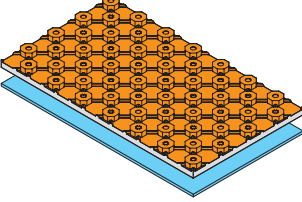
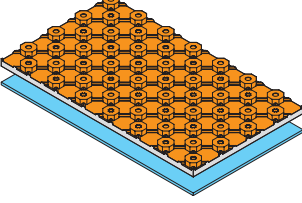
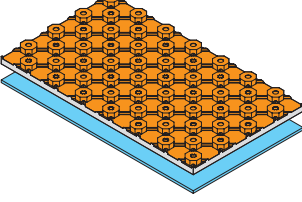
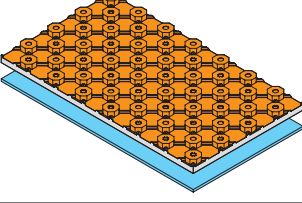
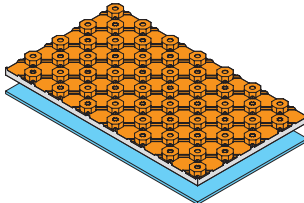
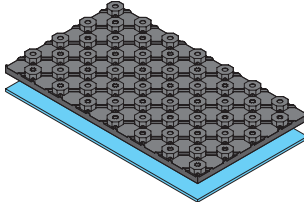
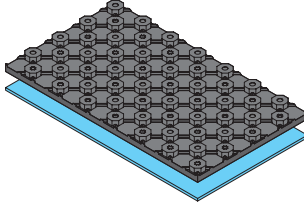
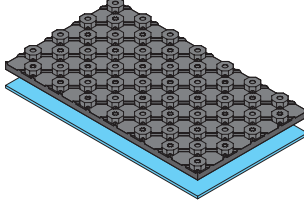
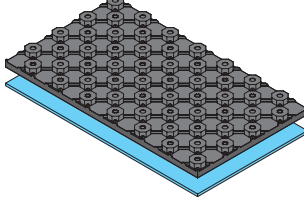
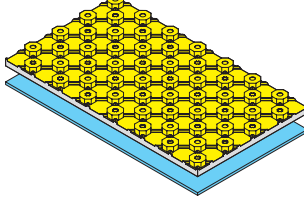
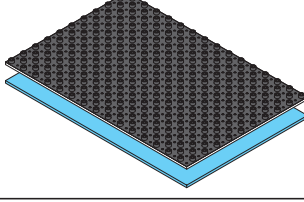
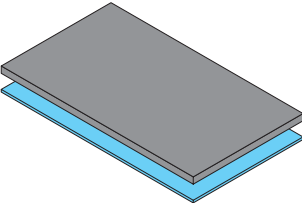
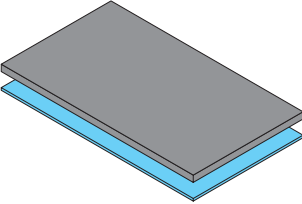
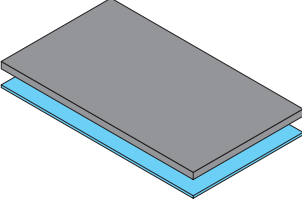
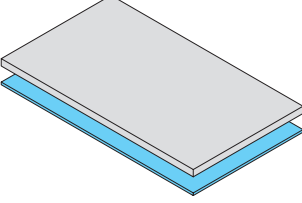
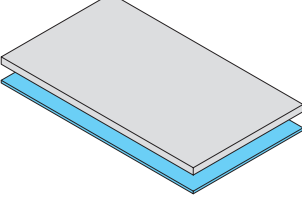
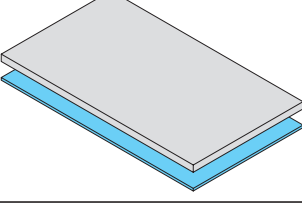
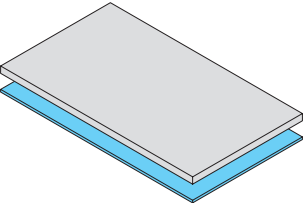
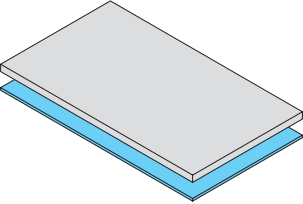
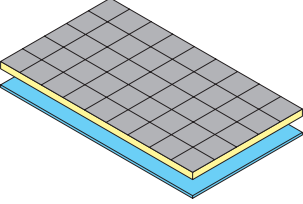
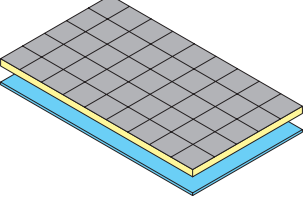
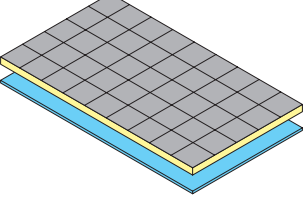
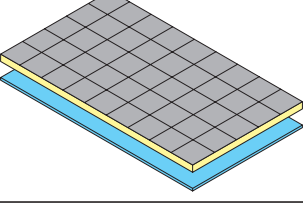
	"A" $R_{\lambda.ins} = 0.75$ [m ² K/W]	"B" $R_{\lambda.ins} = 1.25$ [m ² K/W]	"C" $R_{\lambda.ins} = 1.50$ [m ² K/W]	"D" $R_{\lambda.ins} = 2.00$ [m ² K/W]
QUOTA ZERO				
	Quota zero + PL 20	Quota zero + PL 30	Quota zero + PL 30	Quota zero + PL 40
	S/Sb = 48/30 [mm] Seq = 32.5 [mm] $R_{\lambda.ins} = 1.20$ [m ² K / W]	S/Sb = 58/40 [mm] Seq = 42.5 [mm] $R_{\lambda.ins} = 1.60$ [m ² K / W]	S/Sb = 58/40 [mm] Seq = 42.5 [mm] $R_{\lambda.ins} = 1.60$ [m ² K / W]	S/Sb = 68/50 [mm] Seq = 52.5 [mm] $R_{\lambda.ins} = 2.00$ [m ² K / W]
PL				
	PL 20	PL 30	PL 40	PL 50
	S=Sb = Seq = 20 [mm] $R_{\lambda.ins} = 0.80$ [m ² K / W]	S = Sb = Seq = 30 [mm] $R_{\lambda.ins} = 1.25$ [m ² K / W]	S=Sb = Seq = 40 [mm] $R_{\lambda.ins} = 1.65$ [m ² K / W]	S = Sb = Seq = 50 [mm] $R_{\lambda.ins} = 2.05$ [m ² K / W]

Tabella 6: Abbinamenti sistemi con materassino acustico

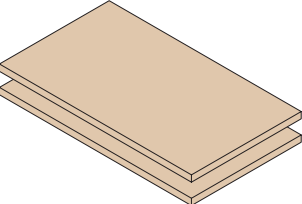
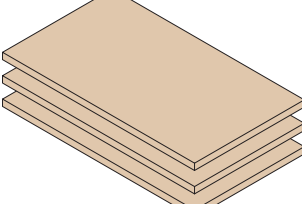
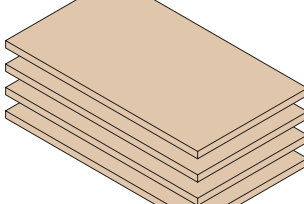
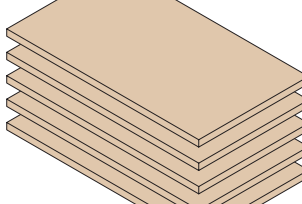
Pannello	Dati	Classe
	ACOUSTIC PLUS 20 + Materassino acustico S/Sb = 58/30 [mm] Seq = 40.5 [mm] $R_{\lambda,ins} = 1.05 [m^2 K / W]$	"A"
	ACOUSTIC PLUS 30 + Materassino acustico S/Sb = 68/40 [mm] Seq = 50.5 [mm] $R_{\lambda,ins} = 1.35 [m^2 K / W]$	"B"
	BASIC 20 + Materassino acustico S/Sb = 58/30 [mm] Seq = 38 [mm] $R_{\lambda,ins} = 1.00 [m^2 K / W]$	"A"
	BASIC 30 + Materassino acustico S/Sb = 68/40 [mm] Seq = 48 [mm] $R_{\lambda,ins} = 1.30 [m^2 K / W]$	"B"
	COVER 20 + Materassino acustico S/Sb = 58/30 [mm] Seq = 39 [mm] $R_{\lambda,ins} = 1.05 [m^2 K / W]$	"A"
	COVER 30 + Materassino acustico S/Sb = 68/40 [mm] Seq = 49 [mm] $R_{\lambda,ins} = 1.35 [m^2 K / W]$	"B"
	COVER 40 + Materassino acustico S/Sb = 78/50 [mm] Seq = 58.9 [mm] $R_{\lambda,ins} = 1.65 [m^2 K / W]$	"C"
	COVER 50 + Materassino acustico S/Sb = 88/60 [mm] Seq = 68.7 [mm] $R_{\lambda,ins} = 1.90 [m^2 K / W]$	"C"

Pannello	Dati	Classe
	COVER 60 + Materassino acustico S/Sb = 99.5/71.5 [mm] Seq = 80.1 [mm] $R_{\lambda,ins} = 2.25 [m^2 K / W]$	"D"
	COVER HP 20 + Materassino acustico S/Sb = 58/30 [mm] Seq = 39 [mm] $R_{\lambda,ins} = 1.15 [m^2 K / W]$	"A"
	COVER HP 30 + Materassino acustico S/Sb = 68/40 [mm] Seq = 49 [mm] $R_{\lambda,ins} = 1.50 [m^2 K / W]$	"C"
	COVER HP 38 + Materassino acustico S/Sb = 76/48 [mm] Seq = 56.9 [mm] $R_{\lambda,ins} = 1.75 [m^2 K / W]$	"C"
	COVER HP 54 + Materassino acustico S/Sb = 92/64 [mm] Seq = 72.6 [mm] $R_{\lambda,ins} = 2.25 [m^2 K / W]$	"D"
	NEW PLUS + Materassino acustico S/Sb = 43/22.5 [mm] Seq = 28 [mm] $R_{\lambda,ins} = 0.80 [m^2 K / W]$	"A"
	QUOTA ZERO + Materassino acustico S/Sb = 38/20 [mm] Seq = 22.5 [mm] $R_{\lambda,ins} = 0.60 [m^2 K / W]$	-

Pannello	Dati	Classe
	COVER HP LISCIO 20 + Materassino acustico $S=S_b=Seq=30$ [mm] $R_{\lambda,ins}=0.90$ [m ² K / W]	"A"
	COVER HP LISCIO 30 + Materassino acustico $S=S_b=Seq=40$ [mm] $R_{\lambda,ins}=1.20$ [m ² K / W]	"A"
	COVER HP LISCIO 38 + Materassino acustico $S=S_b=Seq=48$ [mm] $R_{\lambda,ins}=1.45$ [m ² K / W]	"B"
	LISCIO ESTRUSO 20 + Materassino acustico $S=S_b=Seq=30$ [mm] $R_{\lambda,ins}=0.85$ [m ² K / W]	"A"
	LISCIO ESTRUSO 30 + Materassino acustico $S=S_b=Seq=40$ [mm] $R_{\lambda,ins}=1.15$ [m ² K / W]	"A"
	LISCIO ESTRUSO 40 + Materassino acustico $S=S_b=Seq=50$ [mm] $R_{\lambda,ins}=1.45$ [m ² K / W]	"B"

Pannello	Dati	Classe
	LISCIO ESTRUSO 50 + Materassino acustico $S=S_b=Seq=60$ [mm] $R_{\lambda,ins}=1.70$ [m ² K / W]	"C"
	LISCIO ESTRUSO 60 + Materassino acustico $S=S_b=Seq=70$ [mm] $R_{\lambda,ins}=2.00$ [m ² K / W]	"D"
	PL 20 + Materassino acustico $S=S_b=Seq=30$ [mm] $R_{\lambda,ins}=1.05$ [m ² K / W]	"A"
	PL 30 + Materassino acustico $S=S_b=Seq=40$ [mm] $R_{\lambda,ins}=1.50$ [m ² K / W]	"C"
	PL 40 + Materassino acustico $S=S_b=Seq=50$ [mm] $R_{\lambda,ins}=1.9$ [m ² K / W]	"C"
	PL 50 + Materassino acustico $S=S_b=Seq=60$ [mm] $R_{\lambda,ins}=2.30$ [m ² K / W]	"D"

PANNELLO NATURALE

	"A" $R_{\lambda,ins}=0.75$ [m ² K/W]	"B" $R_{\lambda,ins}=1.25$ [m ² K/W]	"C" $R_{\lambda,ins}=1.50$ [m ² K/W]	"D" $R_{\lambda,ins}=2.00$ [m ² K/W]
PANNELLO NATURALE				
	Pannello naturale x2	Pannello naturale x3	Pannello naturale x4	Pannello naturale x5
	$S=S_b=Seq=40$ [mm] $R_{\lambda,ins}=0.85$ [m ² K / W]	$S=S_b=Seq=60$ [mm] $R_{\lambda,ins}=1.30$ [m ² K / W]	$S=S_b=Seq=80$ [mm] $R_{\lambda,ins}=1.70$ [m ² K / W]	$S=S_b=Seq=100$ [mm] $R_{\lambda,ins}=2.15$ [m ² K / W]

ANNOTAZIONI

[illegible]

ANNOTAZIONI

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