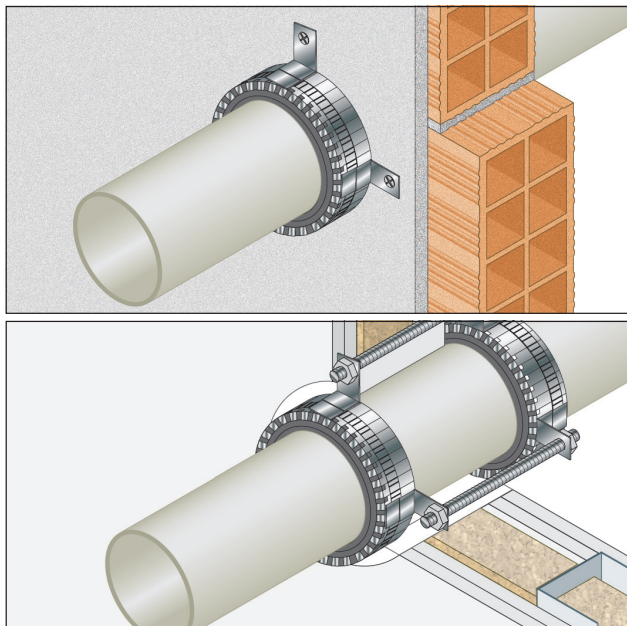


ATTRaversAMENTI DI TUBI COMBUSTIBILI
COLLARE UNIVERSALE "GLOBAL COLLAR"

DESCRIZIONE DI CAPITOLATO

Fornitura e posa in opera di COLLARI UNIVERSALI "GLOBAL COLLAR" con resistenza al fuoco EI 90/120 U/C U/U certificata su pareti in muratura o cartongesso, costituiti da una banda metallica di larghezza 45 mm contenente un nastro intumescente in conformità al rapporto di classificazione ETA 13/0640 e MPA NRW 210006105-2. È necessario misurare il diametro della tubazione da proteggere ed avvolgere il nastro intumescente attorno alla tubazione nel numero di strati previsto (vedi tabella).

Contare il numero di segmenti della banda metallica previsto e procedere alla sua rottura. Inserire le apposite staffe sulla banda metallica in numero

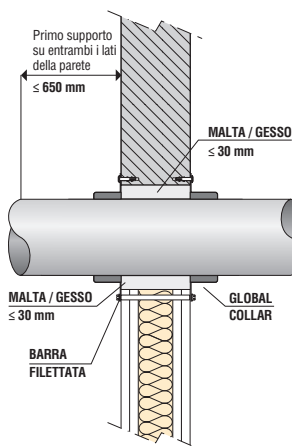
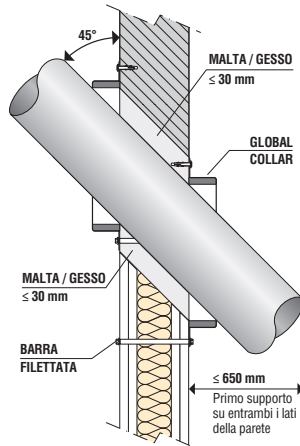
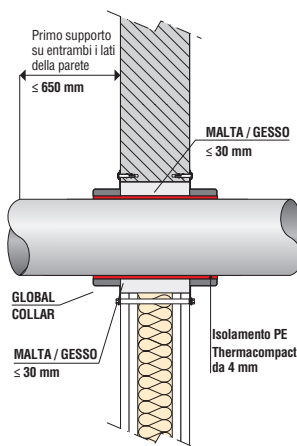
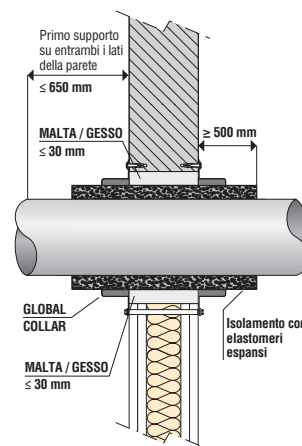
RES. AL FUOCO: EI 90/120 U/C e U/U

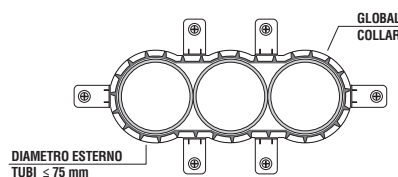
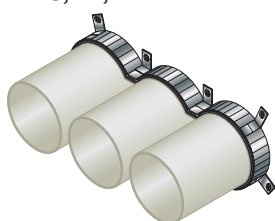
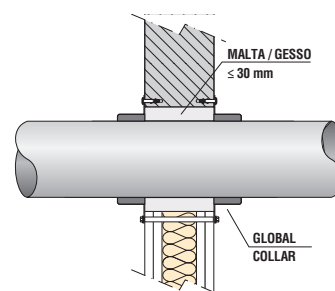
- **Diametri:** da 32 a 160 mm
- **Tipo di supporto:** parete in muratura spessore ≥ 100 mm o parete in cartongesso spessore ≥ 100 mm
- **Tipo di tubazione:** PVC, PE, PP, e compositi multistrato
- **Prodotto da applicare:** COLLARE UNIVERSALE "GLOBAL COLLAR"
- **Fissaggio:** meccanico con tasselli su muratura o con barre filettate su pareti in cartongesso
- **Finitura:** non prevista

Rapporto di classificazione: ETA 13/0640
MPA NRW 210006105-2

Norma di prova: EN 1366-3

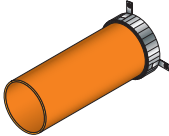
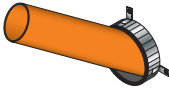
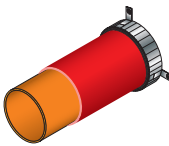
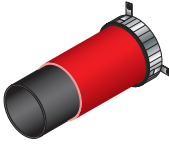
dipendente dal diametro della tubazione e avvolgere la banda metallica attorno alla tubazione serrando le due estremità con le apposite linguette. Fissare il collare alla parete su entrambi i lati con tasselli ad espansione metallici $\varnothing 6$ o 8 mm. Con pareti in cartongesso utilizzare barre filettate passanti per il fissaggio dei due collari. Prima dell'installazione del collare i vuoti/giunti restanti tra la parete ed il tubo andranno riempiti con materiale incombustibile dimensionalmente stabile (calcestruzzo, malta cementizia o gesso) per tutto lo spessore dell'elemento costruttivo.

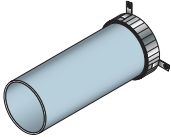
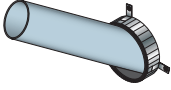
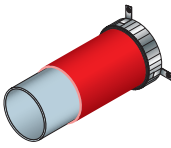
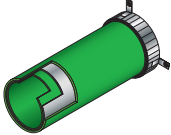
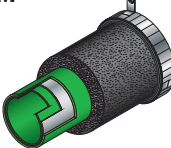
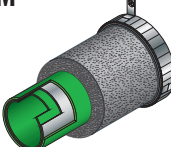
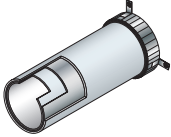
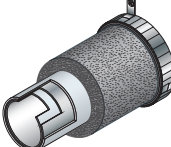
PARETI in CALCESTRUZZO, CEMENTO POROSO, MURATURA o CARTONGESSO
TUBI: PVC. PP. PE e COMPOSITI MULTISTRATO

TUBO SENZA ISOLAMENTO

TUBO SENZA ISOLAMENTO
inclinazione massima 45°

TUBO CON ISOLAMENTO PE
(polietilene flessibile rosso)

TUBO CON ISOLAMENTO
con elastomeri espansi

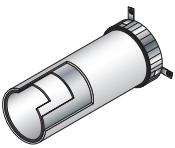
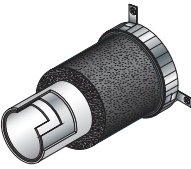
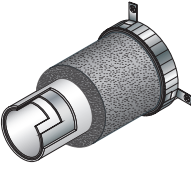
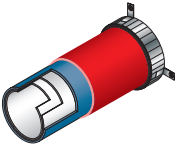
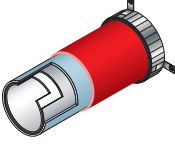
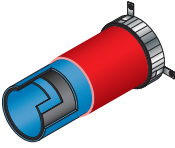
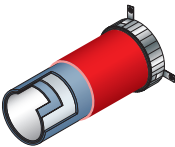
TUBI: PVC, PP, PE

DIAMETRO ESTERNO
TUBI ≤ 75 mm

ATTRaversAMENTI MULTIPLI A PARETE (numero tubi: 2 o 3 con diametro ≤ 75 mm)

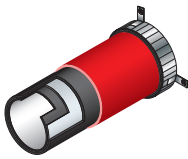
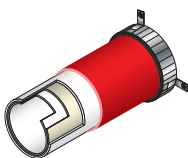
SCHEMA DI APPLICAZIONE in relazione al diametro del tubo

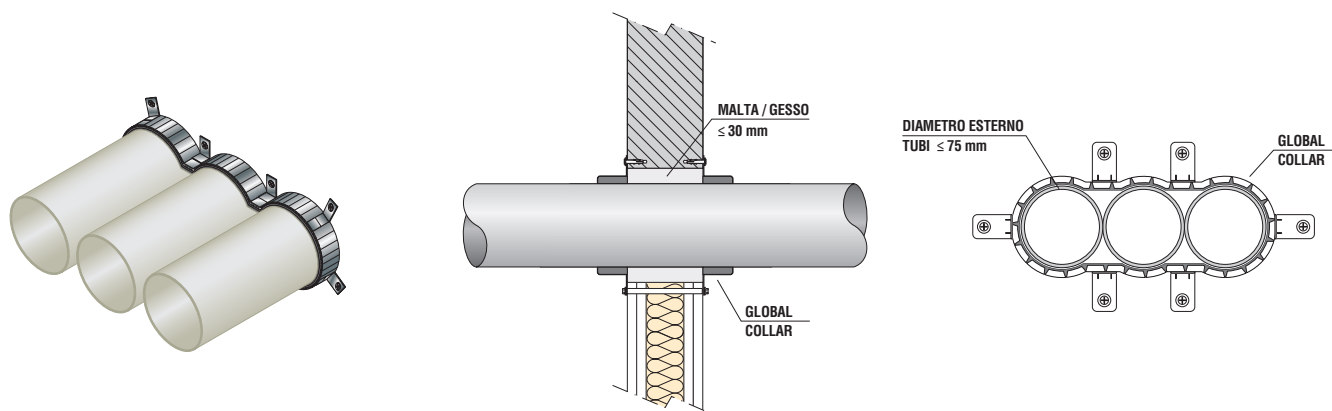
Ø ESTERNO TUBO MM	32	32	40	40	50	50	63	63	75	75	90	90	110	110	125	125	140	140	160	160
SPESS. ISOLAMENTO MM	—	4	—	4	—	4	—	4	—	4	—	4	—	4	—	4	—	4	—	4
NUMERO GIRI NASTRO	2	2	2	2	2	2	4	4	4	4	4	4	4	4	6	6	6	6	6	6
LUNGHEZZA NASTRO MM	250	320	320	360	375	440	960	1090	1110	1235	1290	1400	1545	1660	2670	2860	2860	3050	3365	3530
N. SEGMENTI METALLICI	12	14	14	15	16	17	20	22	23	25	25	27	29	31	34	36	36	38	41	43
N. STAFFE DI FISSAGGIO	2	2	2	2	2	2	3	3	3	3	3	3	3	3	4	4	4	4	4	4

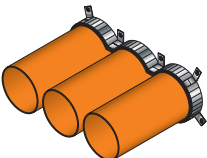
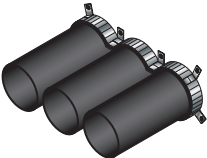
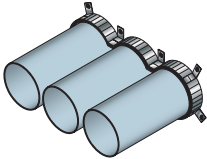
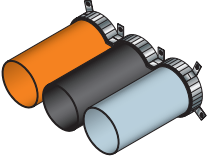
Tipo di tubo	Diametro tubo (mm)	Spessore tubo (mm)	Parete muratura	Parete cartongesso	N. strati nastro intum.	Isolamento (mm)	Classe di resistenza al fuoco	Certificato
PVC-U 	≤ 50	1,8–5,6	≥ 100 mm	≥ 100 mm	2	senza	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	>50 – ≤ 75	1,8–8,4	≥ 100 mm	≥ 100 mm	3	senza	EI 120 U/C	
	>75 – ≤ 110	1,8–12,3	≥ 100 mm	≥ 100 mm	4	senza	EI 120 U/C	
	>110 – ≤ 125	2,2–12,2	≥ 100 mm	≥ 100 mm	5	senza	EI 120 U/C	
	>125 – ≤ 160	3,2–11,9	≥ 100 mm	≥ 100 mm	6	senza	EI 120 U/C	
PVC-U inclinato 	≤ 50	1,8–5,6	≥ 100 mm	≥ 100 mm	2	senza	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	>50 – ≤ 75	1,8–8,4	≥ 100 mm	≥ 100 mm	3	senza	EI 120 U/C	
	>75 – ≤ 110	1,8–12,3	≥ 100 mm	≥ 100 mm	4	senza	EI 120 U/C	
	>110 – ≤ 125	2,2–12,2	≥ 100 mm	≥ 100 mm	6	senza	EI 120 U/C	
	>125 – ≤ 160	3,2–11,9	≥ 100 mm	≥ 100 mm	8	senza	EI 90 U/C	
PVC-U + PE 	≤ 50	1,8	≥ 100 mm	≥ 100 mm	4	≤ 4	EI 90 U/C	ETA 13/0640 MPA NRW 210006105-2
	>50 – ≤ 75	1,8	≥ 100 mm	≥ 100 mm	5	≤ 4	EI 90 U/C	
	>75 – ≤ 110	1,8	≥ 100 mm	≥ 100 mm	4	≤ 4	EI 90 U/C	
	>110 – ≤ 125	1,8–2,2	≥ 100 mm	≥ 100 mm	6	≤ 4	EI 90 U/C	
	≤ 50	1,8–5,6	≥ 100 mm	≥ 100 mm	2	≤ 4	EI 120 U/U	ETA 13/0640 MPA NRW 210006105-2
	>50 – ≤ 75	1,8–8,4	≥ 100 mm	≥ 100 mm	3	≤ 4	EI 90 U/U	
	>75 – ≤ 110	1,8–11,9	≥ 100 mm	≥ 100 mm	4	≤ 4	EI 90 U/U	
	>110 – ≤ 125	3,2–11,9	≥ 100 mm	≥ 100 mm	5	≤ 4	EI 90 U/U	
	>125 – ≤ 160	3,2–11,9	≥ 100 mm	≥ 100 mm	6	≤ 4	EI 120 U/U	
	≤ 50	1,8–4,6	≥ 100 mm	≥ 100 mm	2	senza	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	>50 – ≤ 75	1,8–8,4	≥ 100 mm	≥ 100 mm	3	senza	EI 120 U/C	
	>75 – ≤ 110	2,7–10,0	≥ 100 mm	≥ 100 mm	4	senza	EI 120 U/C	
	>110 – ≤ 160	4,0	≥ 100 mm	≥ 100 mm	8	senza	EI 120 U/C	
	>110 – ≤ 160	4,0–14,6	≥ 100 mm	≥ 100 mm	8	senza	EI 60 U/C	
PE-HD 	≤ 50	1,8	≥ 100 mm	≥ 100 mm	2	senza	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	>50 – ≤ 75	1,8	≥ 100 mm	≥ 100 mm	4	senza	EI 90 U/C	
	>75 – ≤ 110	2,7	≥ 100 mm	≥ 100 mm	5	senza	EI 90 U/C	
	>110 – ≤ 125	3,2	≥ 100 mm	≥ 100 mm	7	senza	EI 90 U/C	
	>110 – ≤ 160	4,0	≥ 100 mm	≥ 100 mm	8	senza	EI 90 U/C	
PE-HD + PE 	≤ 50	1,8–5,6	≥ 100 mm	≥ 100 mm	2	≤ 4	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	>50 – ≤ 75	1,8–6,8	≥ 100 mm	≥ 100 mm	3	≤ 4	EI 120 U/C	
	>75 – ≤ 110	1,8–10,0	≥ 100 mm	≥ 100 mm	4	≤ 4	EI 120 U/C	
	>110 – ≤ 160	4,0	≥ 100 mm	≥ 100 mm	6	≤ 4	EI 120 U/C	
	>110 – ≤ 160	4,0–14,6	≥ 100 mm	≥ 100 mm	6	≤ 4	EI 90 U/C	
	≤ 50	1,8–4,6	≥ 100 mm	≥ 100 mm	2	≤ 4	EI 120 U/U	ETA 13/0640 MPA NRW 210006105-2
	>50 – ≤ 75	2,7	≥ 100 mm	≥ 100 mm	3	≤ 4	EI 120 U/U	
	>75 – ≤ 110	2,7	≥ 100 mm	≥ 100 mm	4	≤ 4	EI 120 U/U	
	≤ 50	1,8–4,6	≥ 100 mm	≥ 100 mm	2	senza	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	>50 – ≤ 75	2,7	≥ 100 mm	≥ 100 mm	3	senza	EI 120 U/C	

Tipo di tubo	Diametro tubo (mm)	Spessore tubo (mm)	Parete muratura	Parete cartongesso	N. strati nastro intum.	Isolamento (mm)	Classe di resistenza al fuoco	Certificato
PP 	≤ 50	1,8 – 4,6	≥ 100 mm	≥ 100 mm	2	senza	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	>50 – ≤ 75	1,8 – 8,4	≥ 100 mm	≥ 100 mm	3	senza	EI 120 U/C	
	>75 – ≤ 110	2,7 – 10,0	≥ 100 mm	≥ 100 mm	4	senza	EI 120 U/C	
	>110 – ≤ 160	4,0	≥ 100 mm	≥ 100 mm	8	senza	EI 90 U/C	
	>110 – ≤ 160	4,0 – 14,6	≥ 100 mm	≥ 100 mm	6	senza	EI 90 U/C	
PP inclinato 	≤ 50	1,8	≥ 100 mm	≥ 100 mm	2	senza	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	>50 – ≤ 75	1,8	≥ 100 mm	≥ 100 mm	3	senza	EI 120 U/C	
	>75 – ≤ 110	2,7	≥ 100 mm	≥ 100 mm	4	senza	EI 120 U/C	
PP + PE 	≤ 50	1,8 – 4,6	≥ 100 mm	≥ 100 mm	2	≤ 4	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	>50 – ≤ 75	1,8 – 2,7	≥ 100 mm	≥ 100 mm	3	≤ 4	EI 120 U/C	
	>75 – ≤ 110	2,7	≥ 100 mm	≥ 100 mm	4	≤ 4	EI 120 U/C	
FUSIOTHERM 	≤ 16	2,2	≥ 100 mm	≥ 100 mm	2	senza	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	≤ 50	6,9	≥ 100 mm	≥ 100 mm	2	senza	EI 120 U/C	
	≤ 75	6,9	≥ 100 mm	≥ 100 mm	3	senza	EI 120 U/C	
	≤ 110	15,2	≥ 100 mm	≥ 100 mm	4	senza	EI 120 U/C	
FUSIOTHERM + elastomeri espansi 	≤ 110	15,2	≥ 100 mm	≥ 100 mm	6	31,0	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
FUSIOTHERM + elastomeri espansi 	≤ 16	2,2	≥ 100 mm	≥ 100 mm	3	9,0	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	≤ 50	6,9	≥ 100 mm	≥ 100 mm	3	10,0	EI 120 U/C	
UPONOR UNIPIPE 	≤ 16	2,0	≥ 100 mm	≥ 100 mm	2	senza	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
UPONOR UNIPIPE + elastomeri espansi 	≤ 50	4,5	≥ 100 mm	≥ 100 mm	4	27,5	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	≤ 110	10,0	≥ 100 mm	≥ 100 mm	6	9,5	EI 120 U/C	
	≤ 110	10,0	≥ 100 mm	≥ 100 mm	6	19,0	EI 90 U/C	
	≤ 110	10,0	≥ 100 mm	≥ 100 mm	6	30,0	EI 120 U/C	
UPONOR UNIPIPE + elastomeri espansi 	≤ 16	2,0	≥ 100 mm	≥ 100 mm	2	9,0	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	≤ 50	4,5	≥ 100 mm	≥ 100 mm	3	10,0	EI 60 U/C	
	≤ 110	10,0	≥ 100 mm	≥ 100 mm	6	9,0	EI 120 U/C	
	≤ 110	10,0	≥ 100 mm	≥ 100 mm	6	>9,0 – 20,0	EI 90 U/C	

Tipo di tubo	Diametro tubo (mm)	Spessore tubo (mm)	Parete muratura	Parete cartongesso	N. strati nastro intum.	Isolamento (mm)	Classe di resistenza al fuoco	Certificato
ALPEX DUO 	≤ 16	2,0	≥ 100 mm	≥ 100 mm	2	senza	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
ALPEX DUO + elastomeri espansi 	≤ 75	5,0	≥ 100 mm	≥ 100 mm	4	9,5	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	≤ 75	5,0	≥ 100 mm	≥ 100 mm	5	>9,5 – 20,0	EI 120 U/C	
	≤ 75	5,0	≥ 100 mm	≥ 100 mm	6	>20,0 – 30,0	EI 90 U/C	
ALPEX DUO + elastomeri espansi 	≤ 16	2,0	≥ 100 mm	≥ 100 mm	2	9,0	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	≤ 50	4,0	≥ 100 mm	≥ 100 mm	3	10,0	EI 60 U/C	
	≤ 75	5,0	≥ 100 mm	≥ 100 mm	4	9,0	EI 90 U/C	
	≤ 75	5,0	≥ 100 mm	≥ 100 mm	5	>9,0 – 20,0	EI 90 U/C	
	≤ 75	5,0	≥ 100 mm	≥ 100 mm	6	>20,0 – 30,0	EI 90 U/C	
	≤ 75	5,0	≥ 100 mm	≥ 100 mm	6	>30,0 – 44,0	EI 90 U/C	
BLUE POWER + PE 	≤ 50	1,8	≥ 100 mm	≥ 100 mm	2	≤ 4	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	≤ 75	2,5	≥ 100 mm	≥ 100 mm	3	≤ 4	EI 120 U/C	
	≤ 110	3,4	≥ 100 mm	≥ 100 mm	4	≤ 4	EI 120 U/C	
WAVIN SiTech + PE 	≤ 50	2,0	≥ 100 mm	≥ 100 mm	2	≤ 4	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	≤ 110	3,6	≥ 100 mm	≥ 100 mm	4	≤ 4	EI 90 U/C	
	≤ 110	3,6	≥ 100 mm	≥ 100 mm	5	≤ 4	EI 120 U/C	
	≤ 160	5,3	≥ 100 mm	≥ 100 mm	8	≤ 4	EI 120 U/C	
	≤ 50	2,0	≥ 100 mm	≥ 100 mm	2	≤ 4	EI 120 U/U	ETA 13/0640 MPA NRW 210006105-2
	≤ 75	2,6	≥ 100 mm	≥ 100 mm	3	≤ 4	EI 120 U/U	
	≤ 110	3,6	≥ 100 mm	≥ 100 mm	4	≤ 4	EI 120 U/U	
TRIPLUS + PE 	≤ 40	1,8	≥ 100 mm	≥ 100 mm	2	≤ 4	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	≤ 75	2,5	≥ 100 mm	≥ 100 mm	3	≤ 4	EI 120 U/C	
	≤ 90	3,1	≥ 100 mm	≥ 100 mm	4	≤ 4	EI 120 U/C	
	≤ 110	3,4	≥ 100 mm	≥ 100 mm	5	≤ 4	EI 120 U/C	
	≤ 125	3,9	≥ 100 mm	≥ 100 mm	6	≤ 4	EI 120 U/C	
	≤ 160	4,9	≥ 100 mm	≥ 100 mm	8	≤ 4	EI 120 U/C	
POLO-KAL NG + PE 	≤ 50	2,0	≥ 100 mm	≥ 100 mm	2	≤ 4	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	≤ 75	2,6	≥ 100 mm	≥ 100 mm	3	≤ 4	EI 90 U/C	
	≤ 110	3,4	≥ 100 mm	≥ 100 mm	4	≤ 4	EI 90 U/C	
	≤ 110	3,4	≥ 100 mm	≥ 100 mm	5	≤ 4	EI 120 U/C	
	≤ 125	3,9	≥ 100 mm	≥ 100 mm	5	≤ 4	EI 120 U/C	
	≤ 160	4,9	≥ 100 mm	≥ 100 mm	6	≤ 4	EI 120 U/C	
	≤ 50	2,0	≥ 100 mm	≥ 100 mm	2	≤ 4	EI 120 U/U	ETA 13/0640 MPA NRW 210006105-2
	≤ 75	2,6	≥ 100 mm	≥ 100 mm	3	≤ 4	EI 120 U/U	
	≤ 110	3,4	≥ 100 mm	≥ 100 mm	4	≤ 4	EI 120 U/U	
	≤ 125	3,9	≥ 100 mm	≥ 100 mm	5	≤ 4	EI 120 U/U	
	≤ 160	4,9	≥ 100 mm	≥ 100 mm	6	≤ 4	EI 120 U/U	

Tipo di tubo	Diametro tubo (mm)	Spessore tubo (mm)	Parete muratura	Parete cartongesso	N. strati nastro intum.	Isolamento (mm)	Classe di resistenza al fuoco	Certificato
GEBERIT SILENT-PP + PE 	≤ 50	2,0	≥ 100 mm	≥ 100 mm	2	≤ 4	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	≤ 75	2,6	≥ 100 mm	≥ 100 mm	3	≤ 4	EI 90 U/C	
	≤ 75	2,6	≥ 100 mm	≥ 100 mm	4	≤ 4	EI 120 U/C	
	≤ 110	3,6	≥ 100 mm	≥ 100 mm	4	≤ 4	EI 90 U/C	
	≤ 110	3,6	≥ 100 mm	≥ 100 mm	5	≤ 4	EI 120 U/C	
	≤ 125	4,2	≥ 100 mm	≥ 100 mm	6	≤ 4	EI 120 U/C	
	≤ 160	5,2	≥ 100 mm	≥ 100 mm	8	≤ 4	EI 120 U/C	
	≤ 50	2,0	≥ 100 mm	≥ 100 mm	2	≤ 4	EI 120 U/U	ETA 13/0640 MPA NRW 210006105-2
	≤ 75	2,6	≥ 100 mm	≥ 100 mm	3	≤ 4	EI 120 U/U	
	≤ 110	3,6	≥ 100 mm	≥ 100 mm	4	≤ 4	EI 120 U/U	
	≤ 125	4,2	≥ 100 mm	≥ 100 mm	5	≤ 4	EI 120 U/U	
	≤ 160	5,2	≥ 100 mm	≥ 100 mm	6	≤ 4	EI 120 U/U	
RAUPIANO-PLUS + PE 	≤ 50	1,8	≥ 100 mm	≥ 100 mm	2	≤ 4	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
	≤ 75	1,9	≥ 100 mm	≥ 100 mm	3	≤ 4	EI 120 U/C	
	≤ 110	2,7	≥ 100 mm	≥ 100 mm	4	≤ 4	EI 120 U/C	
	≤ 125	3,1	≥ 100 mm	≥ 100 mm	5	≤ 4	EI 120 U/C	
	≤ 160	3,6	≥ 100 mm	≥ 100 mm	6	≤ 4	EI 120 U/C	
	≤ 50	1,8	≥ 100 mm	≥ 100 mm	2	≤ 4	EI 120 U/U	ETA 13/0640 MPA NRW 210006105-2
	≤ 75	1,9	≥ 100 mm	≥ 100 mm	3	≤ 4	EI 120 U/U	
	≤ 110	2,7	≥ 100 mm	≥ 100 mm	4	≤ 4	EI 120 U/U	

ATTRAVERSAMENTI MULTIPLI A PARETE (numero tubi: 2 o 3 con diametro ≤ 75 mm)

Tipo di tubo	Diametro tubo (mm)	Spessore tubo (mm)	Parete muratura	Parete cartongesso	N. strati nastro intum.	Isolamento (mm)	Classe di resistenza al fuoco	Certificato
PVC-U 	≤ 75	1,8–8,4	≥ 100 mm	≥ 100 mm	4	senza	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
PE-HD 	≤ 75	1,8–8,4	≥ 100 mm	≥ 100 mm	4	senza	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
PP 	≤ 75	1,8–8,4	≥ 100 mm	≥ 100 mm	4	senza	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2
PVC-U PE-HD PP 	≤ 75	1,8–8,4	≥ 100 mm	≥ 100 mm	4	senza	EI 120 U/C	ETA 13/0640 MPA NRW 210006105-2