FLEXIBLE SOLUTION FOR FIRESTOP PIPE PENETRATIONS

ArmaProtect
EFC1 and EFC2
Endless firestop collar

Endless firestop collar for fire seals in walls and floors

// Combustible pipes Ø ≤ 160 mm (with and without sound insulation)
// Combustible pipes Ø ≤ 110 mm (with combustible insulation)
// Non-combustible pipes Ø ≤ 108 mm (with combustible insulation)
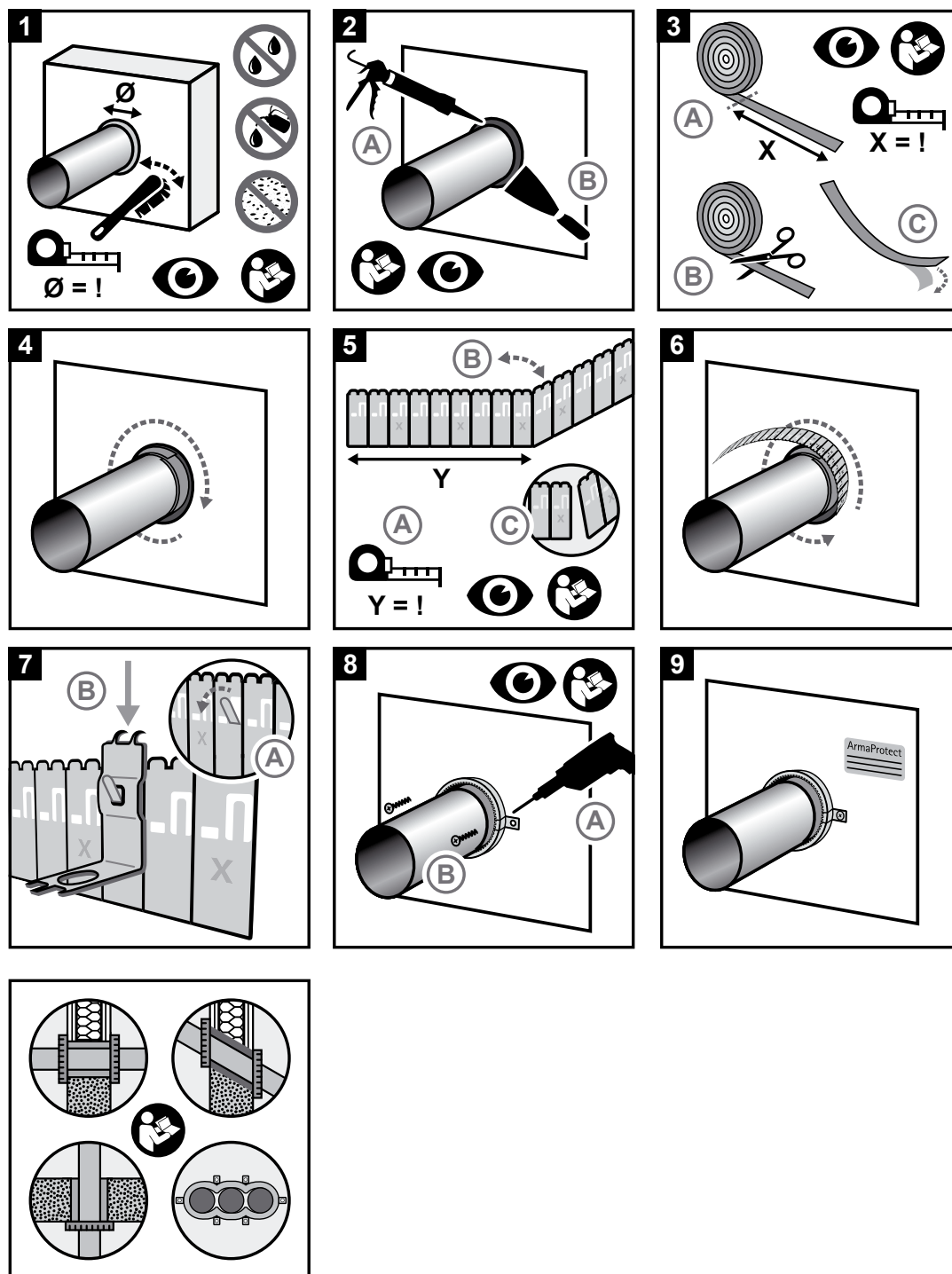// Multi-layer composite pipes Ø ≤ 110 mm

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INSTRUCTIONS FOR USE

Ensure that surfaces are dry and free of dust and grease.

// Consumption guide

Check usage of stainless steel strap and firestop inlay of ArmaProtect EFC1 or EFC2 system on the diameter of the pipe with the required number of layers. Before cutting, consider the number of required layers and potential need of firestop wrap overlap according to third party published listings or national approvals / assessments.

Exemplary estimation based on pipe diameter

Pipe Ø [mm]	32	32	40	40	50	50	63	63	75	75
Insulation thickness [mm]	-	4	-	4	-	4	-	4	-	4
Number of layers	2	2	2	2	2	2	3	3	3	3
Required length for inlay	250	320	320	360	375	440	685	780	800	895
Number of steel strap elements	12	14	14	15	16	17	18	20	21	23
Number of hooks	2	2	2	2	2	2	3	3	3	3

Pipe Ø [mm]	90	90	110	110	125	125	140	140	160	160
Insulation thickness [mm]	-	4	-	4	-	4	-	4	-	4
Number of layers	4	4	4	4	5	5	6	6	6	6
Required length for inlay	1290	1400	1545	1660	2190	2425	2860	3050	3365	3530
Number of steel strap elements	25	27	29	31	32	34	36	38	40	42
Number of hooks	3	3	3	3	4	4	4	4	4	4

Take note of potential material loss during application at the job site.

MAIN APPLICATIONS ACC. ETA-22/0061

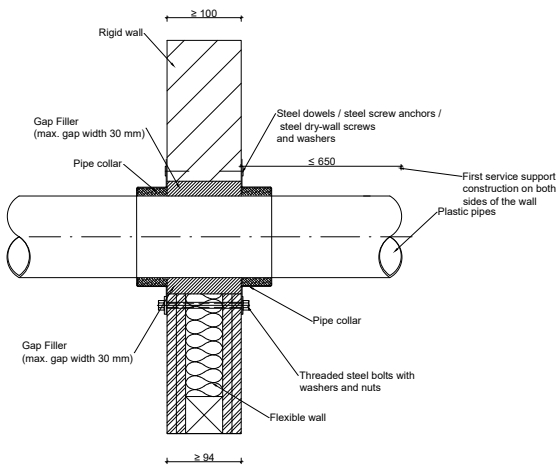**In drywalls, solid walls and concrete floors[1]**

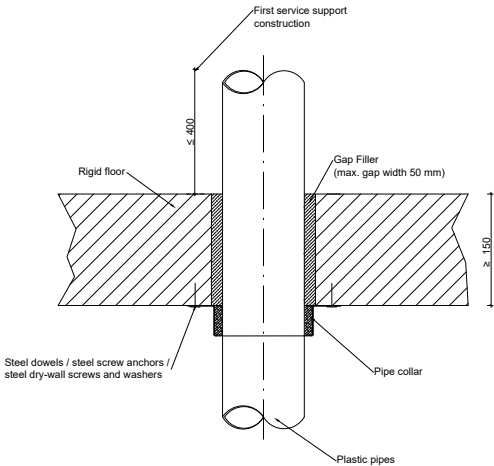|	
Base material	Drywall, concrete wall, aerated concrete wall, masonry wall, shaft wall, concrete floor
Base material thickness	≥ 100 mm (wall) ≥ 40 mm (shaft wall) ≥ 150 mm (floor)
Seal thickness	≥ 100 mm (wall) ≥ 40 mm (shaft wall) ≥ 150 mm (floor)
Penetrants • Combustible pipes Ø ≤ 160 mm (with & without sound insulation)[1] • Combustible pipes Ø ≤ 110 mm (with combustible insulation)[1] • Non-combustible pipes Ø ≤ 108 mm (with combustible insulation)[1] • Multi-layer composite pipes Ø ≤ 110 mm[1]	up to EI 120 U/C resp. EI 120 U/U[1]

[1] Further applications tested also tested up to EI-240-U/C. See ETA 22/0061 for further installation details.

// Typical ETA approved systems[1]
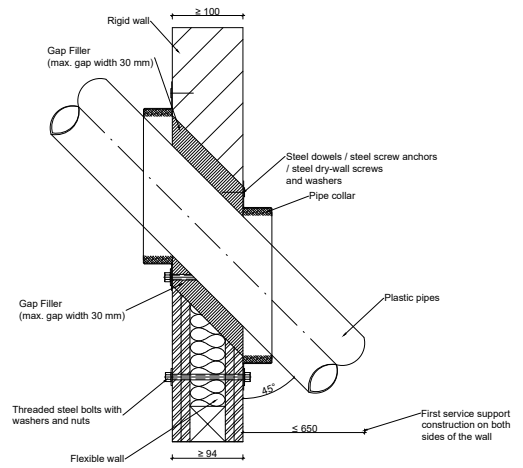
Application in flexible and rigid wall
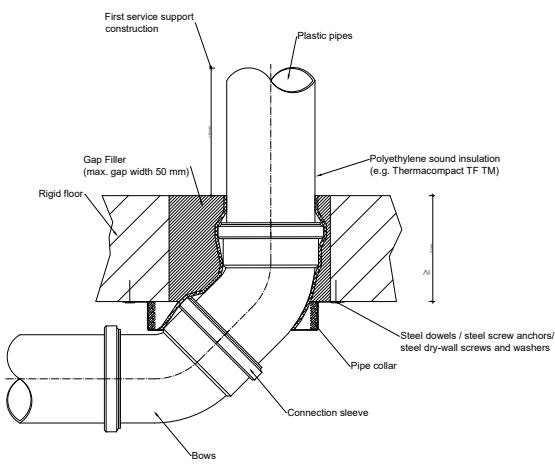

Application in concrete floor
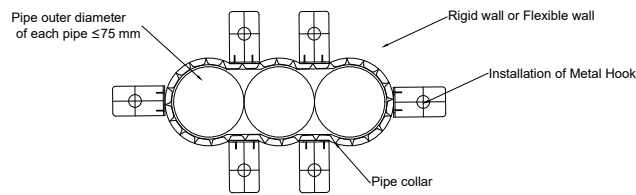

[1] See ETA 22/0061 for further installation details.

Application in flexible and rigid wall with angle between 45° and 90°

Rigid wall
≥ 100
Gap Filler
(max. gap width 30 mm)
Steel dowels / steel screw anchors
/ steel dry-wall screws
and washers
Pipe collar
Gap Filler
(max. gap width 30 mm)
Plastic pipes
Threaded steel bolts with
washers and nuts
45°
First service support
construction on both
sides of the wall
Flexible wall
≥ 94
≤ 650

Application with pipe with bow on the bottom side of the floor and connection sleeve within the floor

First service support
construction
Plastic pipes
Gap Filler
(max. gap width 50 mm)
Polyethylene sound insulation
(e.g. Thermacompact TF TM)
Rigid floor
Steel dowels / steel screw anchors/
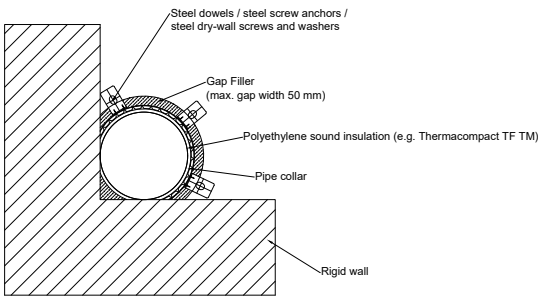steel dry-wall screws and washers
Pipe collar
Connection sleeve
Bows

Application with multiple pipe penetration in flexible and rigid wall (also possible for concrete floor application)

Pipe outer diameter
of each pipe ≤75 mm
Rigid wall or Flexible wall
Installation of Metal Hook
Pipe collar

dimensions in mm

Application with pipe positioned directly in the corner of the wall

Steel dowels / steel screw anchors /
steel dry-wall screws and washers
Gap Filler
(max. gap width 50 mm)
Polyethylene sound insulation (e.g. Thermacompact TF TM)
Pipe collar
Rigid wall

TECHNICAL DATA - ARMAPROTECT EFC1 AND EFC2

Brief description	ArmaProtect EFC1 and EFC2 are endless firestop collars as solution for covering various pipe diameters and design variants.
Material type	Stainless steel strap with self-adhesive flexible intumescent strip on blowing graphite technology.
Product colour range	Stainless steel (strap) and anthrazite (intumescent strip).
Special features	Easy visual inspection.
Product range	Self-adhesive firestop wrap: 10 m x 40 mm x 2 mm, stainless steel strap: 3 m (including 18 hooks).
Applications	Endless Firestop collar for fire seals in walls and floors for combustible pipes (with and without insulation) and non-combustible pipes (with combustible insulation).
Installation	For professional use only. Refer to third party published listings, national approvals / assessments and Armacell's product literature for specific application details as well as before handling this product.
Declaration of Performance (DoP)	ArmaProtect EFC1 and ArmaProtect EFC2

Approvals and compliance

Specification compliance	• ETA 22/0061 acc. EN 1366-3

Property	Value/Assessment		Standard/Test method
Temperature range			
Operating temperature	-40°C to 70°C (40°F to 158°F)		
Application temperature	5°C to 25°C (41°F to 77°F)		
Storage and transportation temperature	5°C to 30°C (41°F to 77°F)		
Thermal conductivity			
Declared thermal conductivity	θm	0°C	
	λd [W/(m·K)]	0.403	
Mechanical properties			
Density	1200 ± 10 kg/m^3		
Start of intumescent reaction	> 190°C		
Expansion ratio	18 to 34 fold		
Blowing pressure	> 0.8 N/mm^2		
Fire performance			
Reaction to fire	Class A1 (stainless steel collar) / Class E (intumescent strip)		EN 13501-1
Resistance to fire	See Annex		
Health and environment			
Emission of dangerous substances	No dangerous substances.		ETA 22/0061
Other technical features			
Durability and serviceability	Use category type $\acute{Y}_1$		EOTA TR 024
Safety information	Please refer to the safety data sheet available on our website.		
Shelf life	No shelf life.		
Storage	Store in a cool and dry place with an ambient temperature of 5 °C to 25 °C and protect from frost and sunlight.		

Endless firestop collar

Item	Description	Content
PRO-EFC1-10m	ArmaProtect EFC1 Endless Firestop collar comprised of 10m firestop wrap and 3m stainless steel strap	1 set(s)
PRO-EFC2-10m	ArmaProtect EFC2 Endless Firestop collar comprised of 10m firestop wrap and 3m stainless steel strap	1 set(s)

Firestop identification plate.

Item	Description	Content
PRO-ID-SET	ArmaProtect ID identification plate set	5 pieces

00577 | ArmaProtect EFC1 and EFC2 | ArmaProtect | PDS | 022022 | en-WW

ABOUT ARMACELL

As the inventors of flexible foam for equipment insulation and a leading provider of engineered foams, Armacell develops innovative and safe thermal, acoustic and mechanical solutions that create sustainable value for its customers. Armacell's products significantly contribute to global energy efficiency making a difference around the world every day. With more than 3,000 employees and 24 production plants in 16 countries, the company operates two main businesses, Advanced Insulation and Engineered Foams. Armacell focuses on insulation materials for technical equipment, high-performance foams for high-tech and lightweight applications and next generation aerogel blanket technology.

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