



Fire protection systems

Penetration seals for pipes and cables

AIR FIRE TECH System RORCOL



RORCOL V30



RORCOL V60



RORCOL AV60



www.airfiretech.at

Good reasons for AIR FIRE TECH

Made in Austria

- *Own research and development team*
- *Practical solutions from planning to execution
- developed with and for the customer*
- *Legally secure solutions – for you and your customers*
- *Knowledge shared in targeted training sessions
- customisable training programme for your personal benefit*



Content

BASICS

Standards and guidelines	4
Installation diagram	7

PRODUCT DETAILS








AIR FIRE TECH SYSTEM RORCOL

Functional principle	14
Product description	15
Installation steps	16
Selection charts	21
Working clearances	22



APPLICATION TABLE

Applications of the AIR FIRE TECH System RORCOL	24
Omega-application	26
U-application	26
Solutions for specific requirements	28
Applications of TIROTECH fire protective mortar	30
Applications of Prottelith installation block	32
Penetration seals for electrics and air conditioning	32



SEPARATING ELEMENTS

Shaft walls \geq EI90	 34
Shaft walls \geq EI60	 42
Rigid walls	 44
Flexible walls	 50
Cross-laminated timber walls	 56
Rigid floors	 58
Cross-laminated timber floors	 64

PRACTICAL SOLUTIONS

Omega-application	 66
Solutions for specific requirements	 72

COMBINED PENETRATION SEALS

TIROTECH fire protective mortar	 82
Prottelith installation block	 90

ELECTRICS AND AIR CONDITIONING

Penetration seals for electrics and air conditioning	 94
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REFERENCES

Further AIR FIRE TECH documents	98
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BASICS

Construction Products Regulation

Labelling and approval of construction products – No. 305/2011 – March 2011

The Construction Products Regulation requires manufacturers of construction products to draw up a **Declaration of Performance (DoP)** for each product for which a **harmonised standard (hEN)** has been announced in the Official Journal of the European Union and for which the coexistence period stated in this announcement has expired. The same applies to construction products for which a **European Technical Assessment (ETA)** has been issued.

Regulated construction products

The EU Construction Products Regulation governs the marketing of construction products in the European single market. Construction products with harmonised standards (hEN) generally require the CE marking. EU member states can continue to maintain national labelling and approval systems for construction products for which no harmonised standard yet exists and for which no European Technical Assessment (ETA) has been issued.

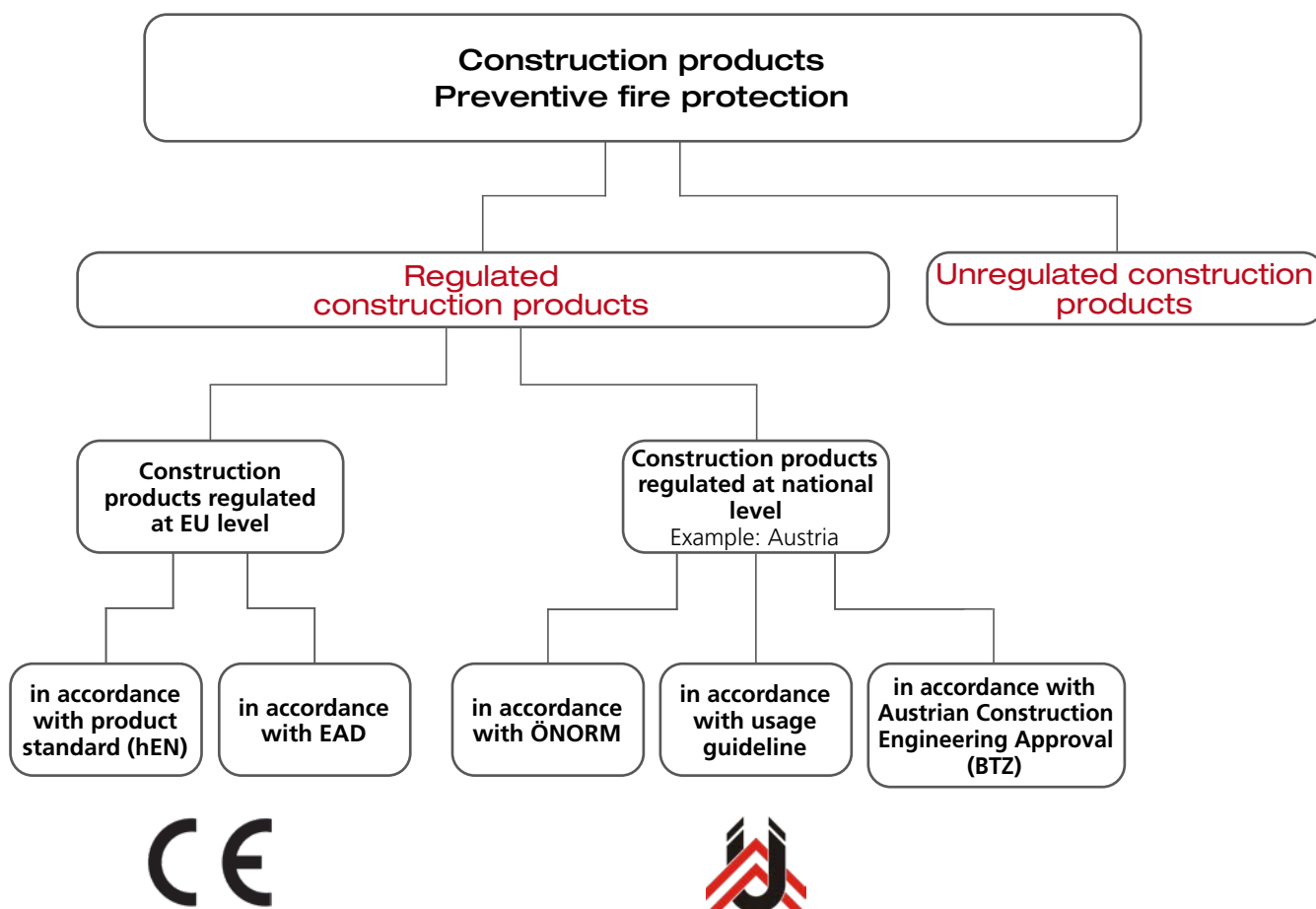
Unregulated construction products

Rather than encompassing all construction products, the national labelling and approval systems only include those for which rules of use are deemed necessary. No explicit rules of use apply to all other construction products, although the relevant national provisions of building law must be complied with.

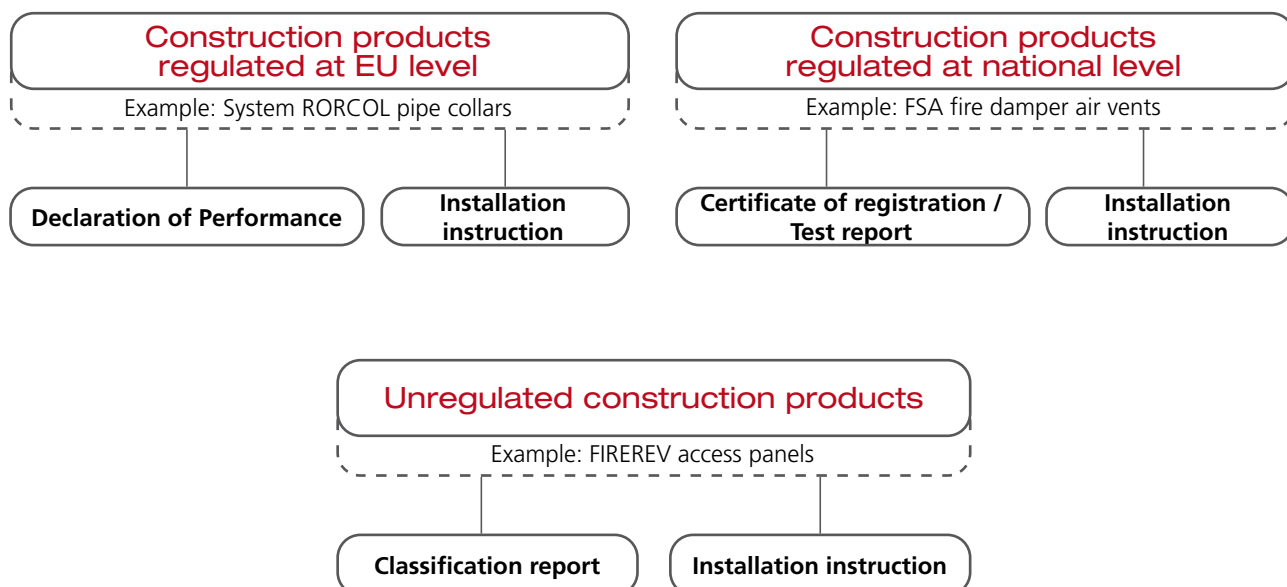




Labelling

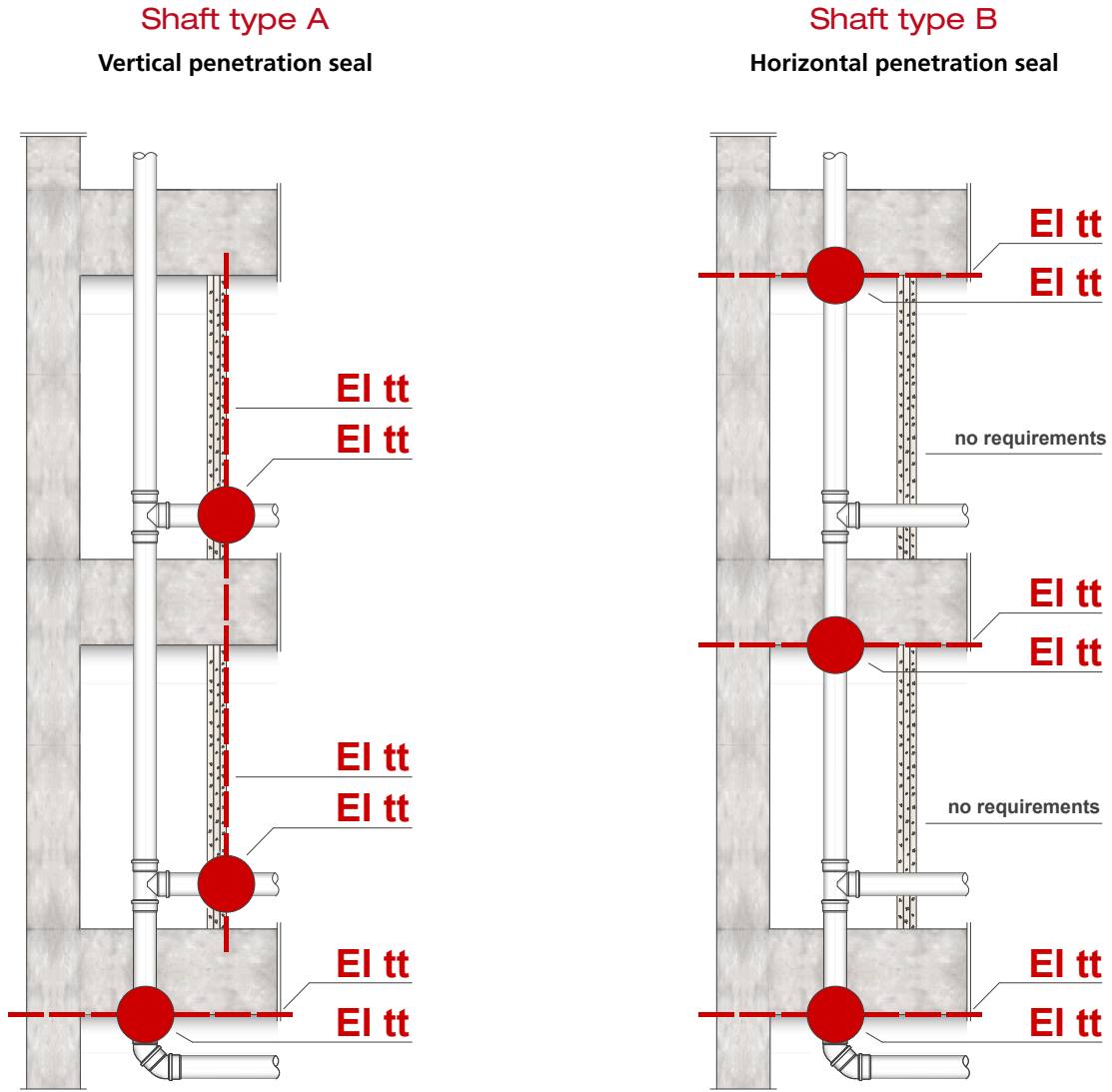


Evidence required from the manufacturer



Types of penetration seals

When sealing off installation shafts, one of two types of penetration seal will be used depending on which separating element is subject to the technical fire protection requirements:



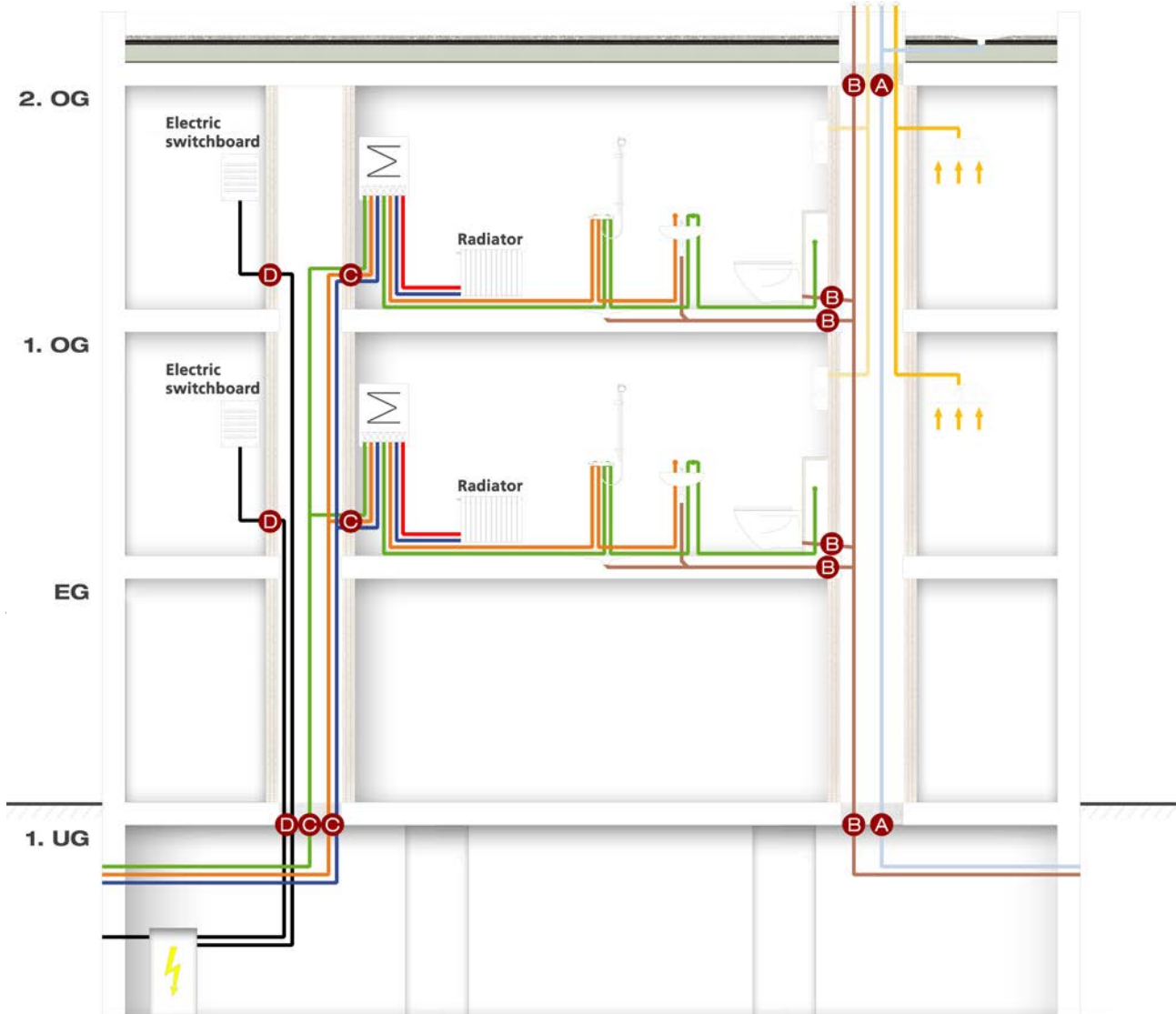
- The vertical shaft is contained along its entire length using fire-resistant dividing walls.
- The penetration seals must guarantee at least the same fire resistance time as the shaft wall.
- The openings in and around the storey floors must be sealed off in accordance with the fire resistance time guaranteed by the adjacent floor.
- May only be used if only one flat or operating unit is being supplied on each storey.








The national building regulations applicable locally must be complied with.

Installation diagram



Example installation diagram for plumbing, heating and electrics



	Intended application		Pipe end configuration	Insulation type	Collar type required
A	Rainwater pipe		U/U	CS	RORCOL V30 or RORCOL V60
B	Sewage pipe		U/U	LS	RORCOL V30 or RORCOL V60
C	Cold water pipe		U/C	CS	RORCOL AV60 or RORCOL V60
	Hot water pipe				
	Heating feed pipe				
	Heating return pipe				
D	Electric cable		-	-	RORCOL AV60

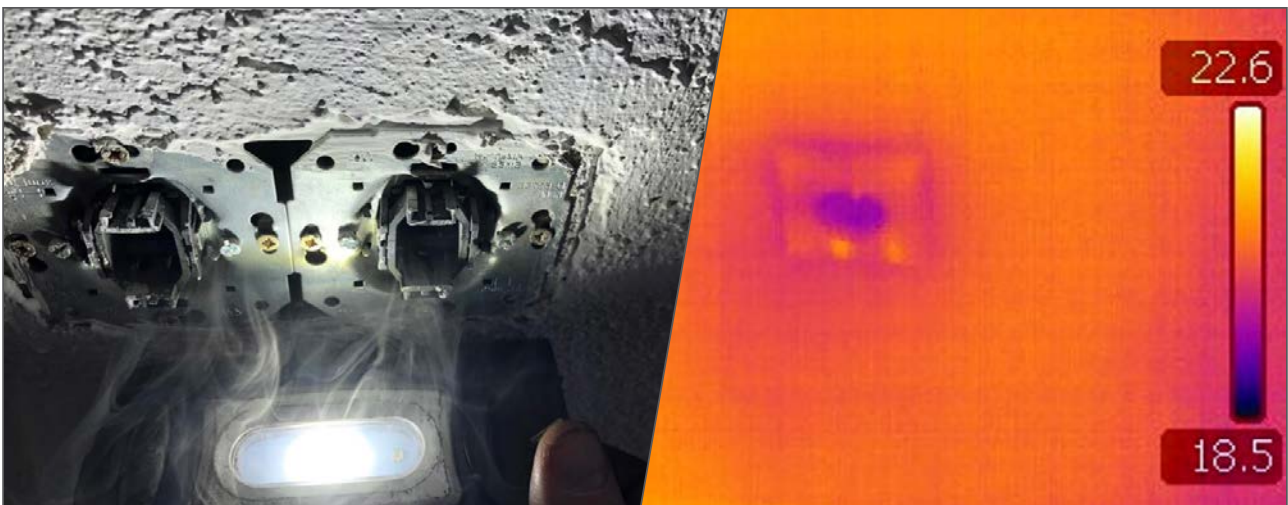
Energy efficiency of building envelopes

Air- and wind-tightness

The terms “air-tightness” and “wind-tightness” must not be mixed up as they mean two fundamentally different things:

- A wind-tight building will protect the building elements from the effects of airflow inside the heat insulation. In other words, it is about preventing air from flowing into the insulation from outside, through the insulation and then out again elsewhere, which would impair the insulating effect.
- Air-tightness, by contrast, means preventing air from flowing through the building envelope from inside to outside and vice versa. In the winter, warm air from inside can escape and cold air from outside can flow in.

Both of these can reduce energy consumption if they are not addressed.



The existence of any national requirements governing air- and wind-tightness must be checked.

In Austria, for example:

The **envelope on new buildings must be designed to be air- and wind-tight**, with a maximum air exchange rate n_{50} of 3 h^{-1} (air is replaced 3 times in an hour) in buildings without a ventilation system or 1.5 h^{-1} (air is replaced 1.5 times in an hour) in buildings with a ventilation system.

Measurements are taken by means of a **blower door test**, for example.

- **Residential buildings**

In the case of residential buildings with one or two units (e.g. single-family, two-family, semi-detached or terraced houses), this value must be complied with for each house.

In the case of residential buildings with three or more units (e.g. multi-family houses or blocks of flats), this value must be complied with for each flat or accommodation unit.

The value must also be complied with for stairwells inside the air-conditioned building envelope, including the flats connected to them.

- **Non-residential buildings**

In the case of non-residential buildings (e.g. office blocks, educational establishments or hospitality venues), the requirement applies to each fire section.

n_{50} = air exchange rate at a differential pressure of 50 Pa

NOTE

The blower door test also calculates the smoke-tightness of residential and non-residential buildings.

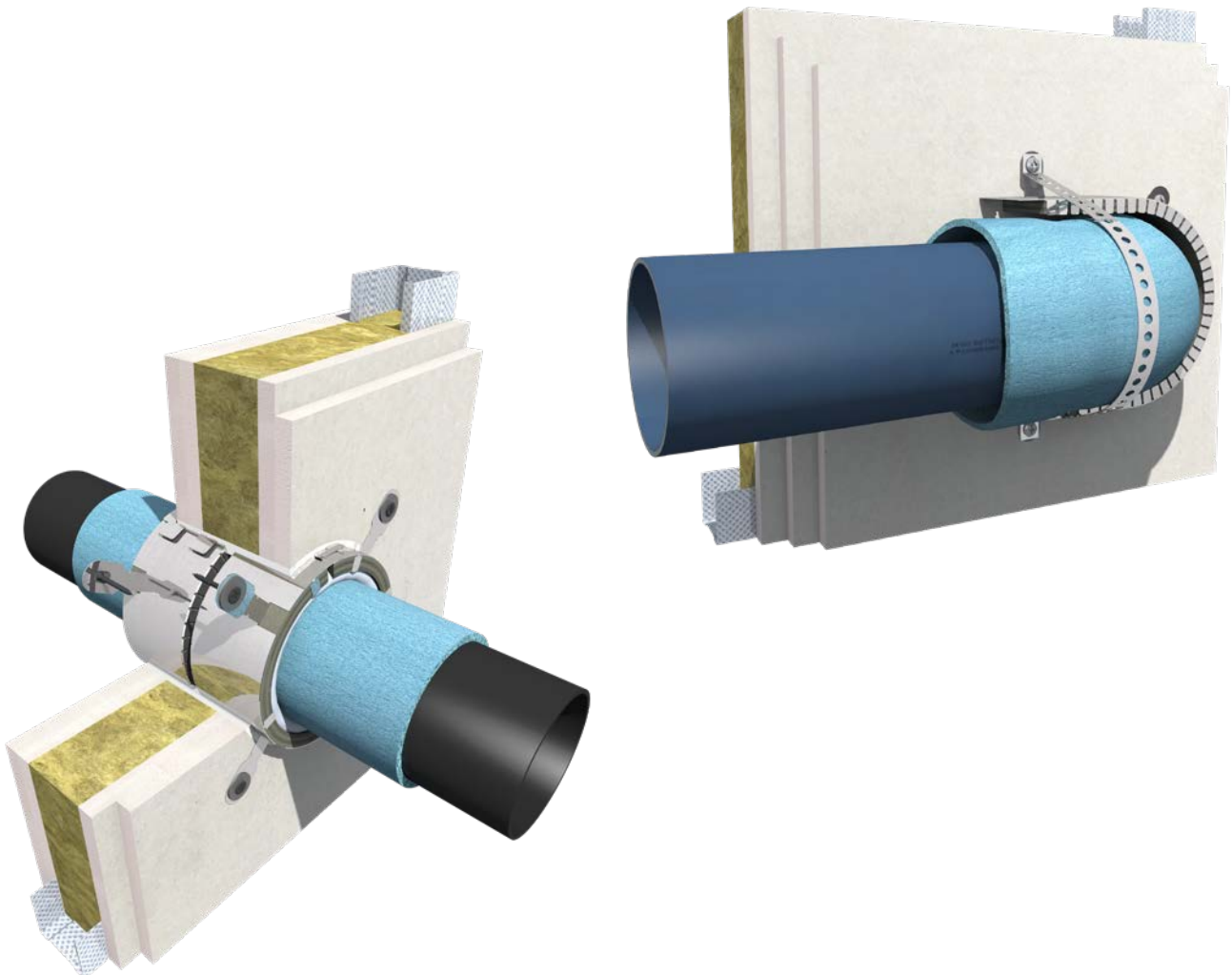


Fire protection requirements

Drywall construction systems, including their components and materials as well as individual parts, must have the following fire protection properties:

- **Fire behaviour**
The fire behaviour class of construction materials/products is to be demonstrated by relevant product standards, by a reference to CWFT (Classified Without Further Testing) decisions by the European Commission or by classification reports in accordance with EN 13501-1.
- **Fire resistance**
The systems used must comply with any applicable fire protection requirements. The fire resistance of drywall construction systems is to be demonstrated by a classification report in accordance with EN 13501-2.
- **Connections, installations, feedthroughs**
The planned fire sections include connections to adjacent building elements as well as fire penetration seals on installations, fire dampers on ventilation systems, access panels, movement joints and the like. These must be in an appropriate fire resistance class for the building element in which they are installed and be classified for the same use.

Building elements adjacent to drywall construction systems that form fire sections must be in at least the same fire resistance class unless the fire protection provisions of building law permit a lower class.



Not all plasterboard is the same

As fire protection seals have generally not been tested and approved for installation in all types of plasterboard, attention must be paid to which board is being used to manufacture the drywall construction system:

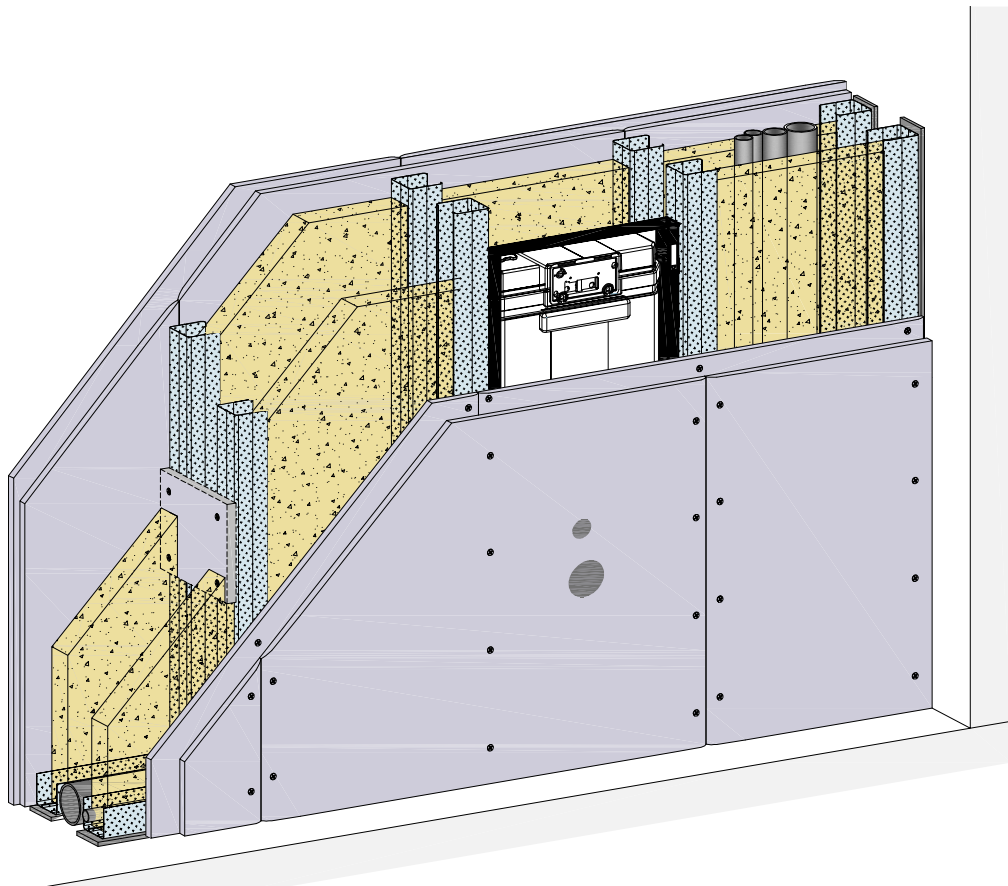
- **Plasterboard in accordance with EN 520**
Plasterboard covered with paperboard on both sides, e.g. fire-resistant plasterboard (DF/DFR)
- **Fleece-reinforced plasterboard in accordance with EN 15283-1**
Plasterboard with embedded glass-fibre mesh, e.g. GM-FH2 Glasroc F Ridurit
- **Plasterboard in accordance with EN 15283-2**
Plasterboard comprising a gypsum core reinforced with cellulose fibres, e.g. GF-C1-I-W2 Rigidur H

NOTE

**The following applies to shaft walls:
penetration seals that are only approved for installation in plasterboard in accordance with EN 15283-1 (fleece-reinforced plasterboard) may not be used in conjunction with plasterboard in accordance with EN 520 (drywall boards) without further investigation. – cf. test standard EN 1366-3.**

The types of plasterboard permitted are indicated in the relevant European Technical Assessment (ETA) and Declaration of Performance (DoP).

The national building regulations applicable locally must be complied with.





Stud partition walls and wall structures

Sanitary supporting structures must be selected and supply and waste pipes laid so as not to impair the structural stability of the relevant drywall construction system:

- **Running installations inside building elements**

Building elements inside which installations are to be run (e.g. shaft walls, walls between flats) should ideally have a single installation level. However, the installation cavity can also be dimensioned in line with the planned pipe cross-sections. Single stud partition walls made from CW-50 profiles are only suitable for running installations in to a limited extent.

- **Additional cut-outs in tie bars**

Cut-outs in tie bars must be made using a hole saw, spherical cutter or punching tool without cutting through the profile along its flanges.

The size of any additional cut-outs required in a tie bar is limited by the bar's height:

- CW-75 profiles may have an additional opening with a diameter of **no more than 70 mm**.
- CW-100 profiles may have an additional opening with a diameter of **no more than 90 mm**.
- In all other cases, the manufacturer's guidelines must be followed.

- In the case of pipes and cables that are to be run from the existing bare floor into stud partition walls, for example, the additional openings in the connecting profile (U-shaped wall profile) made subsequently cannot be allowed to exceed the following maximum sizes:

- U-shaped wall profile 50 max. 40 mm x 350 mm
- U-shaped wall profile 75 max. 70 mm x 350 mm
- U-shaped wall profile 100 max. 90 mm x 350 mm

The processing guidelines issued by the relevant drywall construction system manufacturer must be followed.



PDF download:
Planning and Constructing Shaft Walls



You can find more information and installation details in accordance with the processing guidelines in the current brochures published by Saint-Gobain Rigips Austria GmbH.

Test standard – EN 1366-3

Fire resistance tests for service installations Part 3: Penetration seals – published May 2009

This part of the EN 1366 series specifies a method of test and criteria for the evaluation (including field of direct application rules) of the ability of a penetration seal to maintain the fire resistance of a separating element at the position at which it has been penetrated by a service or services. Penetration seals used to seal gaps around chimneys, air ventilation systems, fire rated ventilation ducts, fire rated service ducts, shafts and smoke extraction ducts as well as combined penetration seals are excluded from this part of the EN 1366 series.

NOTE

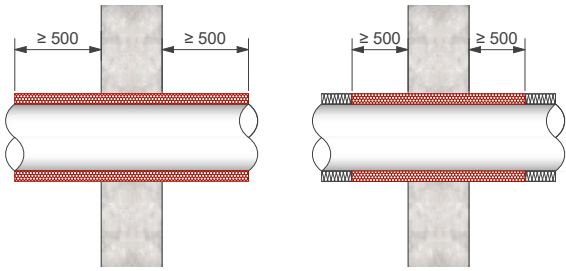
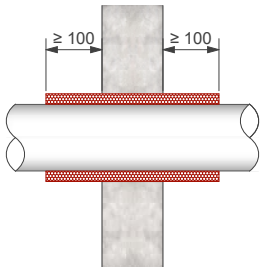
This test cannot be used to assess the risk of fire spreading downwards caused by a burning material dripping down through a pipe into the storey below.

Design of pipe ends

Pipe end configuration of pipes depending on use (cf. the installation chart on page 7):

Intended pipe use	Condition of pipe ends		Abbreviation
	Inside test furnace	Outside test furnace	
Rainwater pipe	open	open	U/U
Sewage pipe, ventilated	open	open	U/U
Sewage pipe, unventilated	open	closed	U/C
Gas, drinking water, heating pipe	open	closed	U/C

Definition of pipe insulation

CS	Insulated continuously along the length of the pipe, running through the separating element	LS	Locally insulated, running through the separating element
			

Continuous insulation running through the separating element must be at least 500 mm long in both directions measured from the surface of the separating element.

Local insulation running through the separating element must be at least 100 mm long in both directions measured from the surface of the separating element.

Standard pipe support

All pipes must be fixed by means of non-combustible suspension systems **max. 50 cm – or 25 cm for AFT System RORCOL pipe collars** – on both sides of the wall or on the top side of the floor. The fixing must be selected so that the pipe clamp encloses the pipe as tightly as possible and ensures rigid suspension. Simply placing or laying the pipe in the pipe clamp is not permitted.



Supporting Construction

The supporting construction may be either a standard supporting construction or a specific supporting construction.

Standard supporting construction

These include:

- Rigid wall structures
- Flexible wall structures
- Rigid floor structures

Specific supporting construction

These include:

- Shaft walls
- Metal double stud partition walls
- Cross-laminated timber floors

NOTE

The relevant European Technical Assessment (ETA) and Declaration of Performance (DoP) indicate for which supporting construction penetration seals are permitted.

Classification standard – EN 13501-2

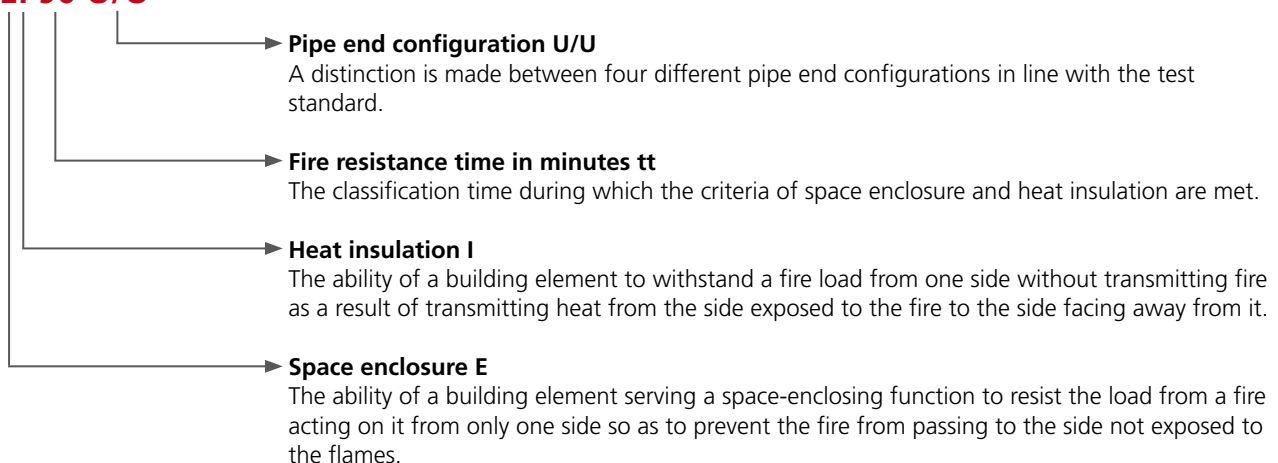
Fire classification of construction products and building elements

Part 2: Classification using data from fire resistance tests, excluding ventilation services – published November 2016

The classification standard EN 13501-2 specifies the procedure for maintaining the classification of construction products and building elements based on the results of fire resistance tests.

Example of a classification required for rainwater and sewage pipes:

EI 90 U/U



PRODUCT DETAILS

AIR FIRE TECH SYSTEM RORCOL

RORCOL V30



- Installation depth: 31 mm
- For sewage pipes up to Ø135 mm

RORCOL V60



- Installation depth: 61 mm
- For sewage pipes and thick-walled plastic pipes up to Ø250 mm
- Extended field of application

RORCOL AV60



- Installation depth: 61 mm
- For multi-layer composite pipes up to Ø63 mm
- For metal pipes up to Ø76 mm
- For electrical conduits up to Ø50 mm with or without cables up to Ø21 mm

Functional principle

RORCOL V30 and V60 pipe collars

The intumescent material inside the stainless steel housing begins to expand at temperatures over 150°C, while plastic pipes soften and melt away as they are exposed to the fire. The cross-section thus exposed is safely sealed up by the pipe collar and heat transfer to the side facing away from the flames is restricted.

RORCOL AV60 pipe collars

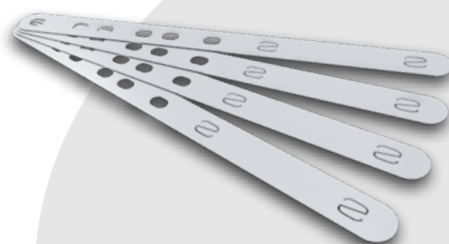
The intumescent material begins to expand at temperatures over 190°C, restricting heat transfer to the side facing away from the flames in the case of multi-layer composite pipes, metal pipes and cables.

BFM/K310 firestop sealant



- For sealing the annular and residual gap between pipe and separating element

MH/RORCOL mounting tool



- Acts as an extension to the mounting lugs
- For installation in hard-to-access places

Product description

RORCOL pipe collars are used to seal off plastic pipes, multi-layer composite pipes, metal pipes, electrical conduits and cables. They consist of a stainless steel housing containing an intumescent material. The housings on the RORCOL V30/V60 and RORCOL AV60 are serrated in a different way, allowing them to be distinguished from each other and used in the appropriate field of application. The mounting lugs, which can be twisted up to 45° if space is tight, are used to fix the pipe collar in place. They can be extended by 15 mm using the integrated mounting lug extension. RORCOL pipe collars are closed using a closure system, which is also used to fix them in place if they are installed as Omega-application. When formwork is being used in floors, the RORCOL V60 and RORCOL AV60 pipe collars are made easier to position by folding out the integrated positioning aids.



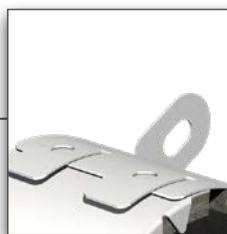
Twistable mounting lugs

- For fitting into tight spaces



Integrated mounting lug extension

- Optional 15 mm extension of the mounting lugs to bridge larger annular gaps



Omega fastening

Perforated flaps for installation as Omega-application:

- RORCOL V60 – up to DN110
- RORCOL AV60 – up to DN80



Distinguishing feature

- Different serrations on V30/V60 and AV60 pipe collars
- Makes it easier to tell the difference even after installation



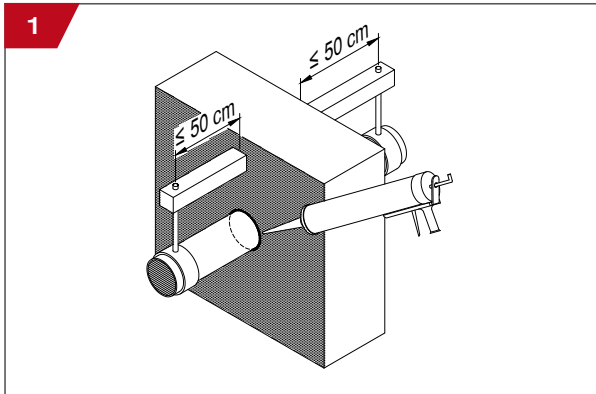
Integrated positioning aid

- Makes it easier to insert the fire protection collar into formwork

CE 1139
Air Fire Tech Brandschutzsysteme GmbH Hanuschgasse 1 / Top 4A 2540 Bad Vöslau, AUSTRIA
13
1139-CPR-0523/13
ETA-13/0758
EAD 350454-00-1104
DOP 2020/RORCOL
Pipe penetration seal "Air Fire Tech System RORCOL" Use category Y ₁
For other relevant characteristics, see ETA-13/0758

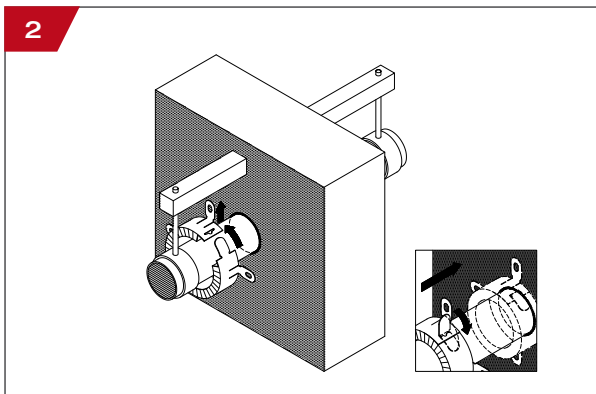
Installation steps

In the closure system, the RORCOL pipe collars are opened, positioned around the pipeline and fastened to the separating element of the penetrating element.

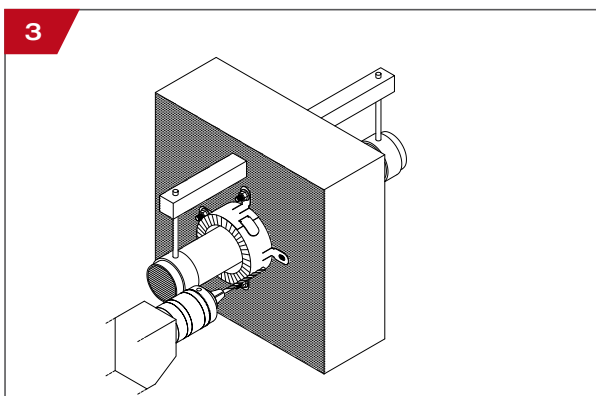


Seal annular gap ≤ 10 mm with fire protective gap filler BFM/K310 or acc. to the installation details.

Non-combustible service support construction max. 50 cm (max. 25 cm for plastic conduits and cables) on both sides of the wall or on the top side of the floor.



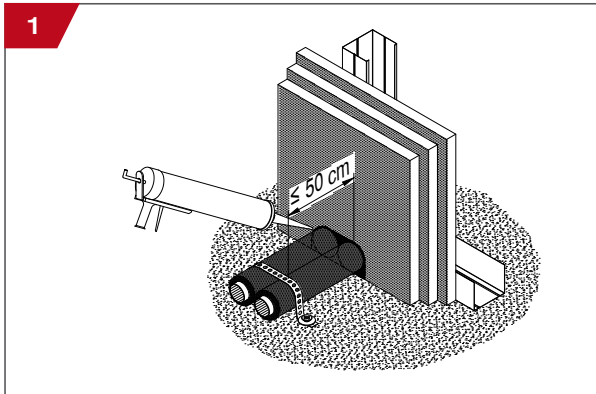
Open the pipe collar and position it around the pipe or insulated pipe.



Mount the pipe collar acc. to the separating element and installation details.

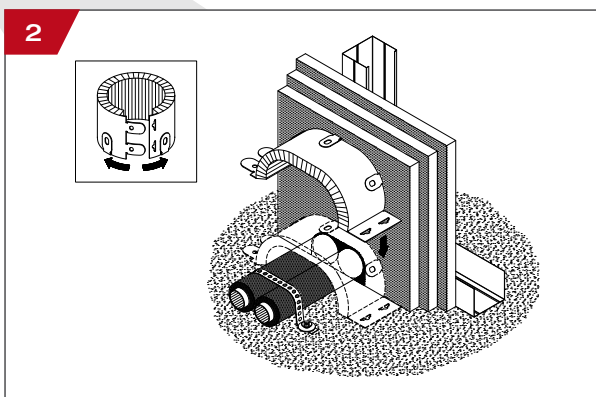
Installation steps for Omega-application

The pipe collars RORCOL V60 and AV60, used as Omega-application, are opened via the closure system and positioned around the pipe(s) at the separating element of the penetration element. They are fixed to the adjacent building element (wall, ceiling or floor).

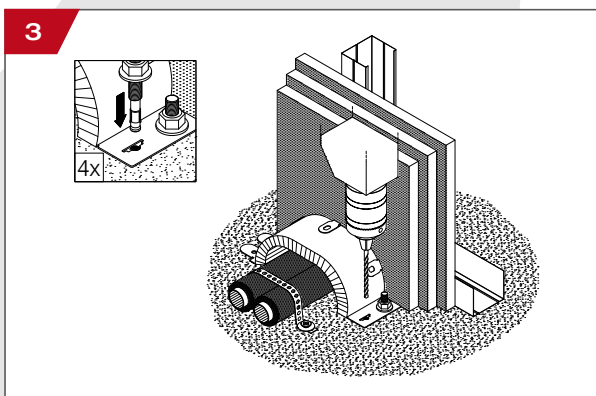


Seal annular gap and residual gap with fire protective gap filler BFM/K310 or acc. to the installation details.

Non-combustible service support construction max. 50 cm on both sides of the wall or on the top side of the floor.



Open the pipe collar and position it around the pipe(s) or insulated pipe(s).



Mount the pipe collar with four screws acc. to the separating element and installation details.

You can find details of how to install RORCOL pipe collars and a list of tested pipe brands in our "Installation Instructions and Declaration of Performance for AIR FIRE TECH System RORCOL" in accordance with European Technical Assessment ETA-13/0758.



PDF download:
RORCOL Installation Instructions

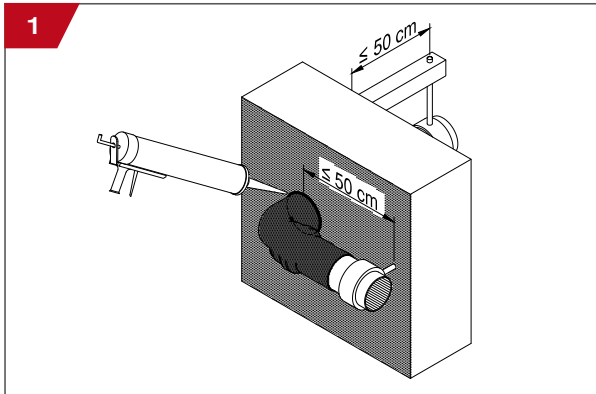


Installation steps for U-application

The RORCOL V60 pipe collar, used as a U-application, is opened at the closure system, positioned around the sewage elbow and mounted on the wall of the penetrating element.

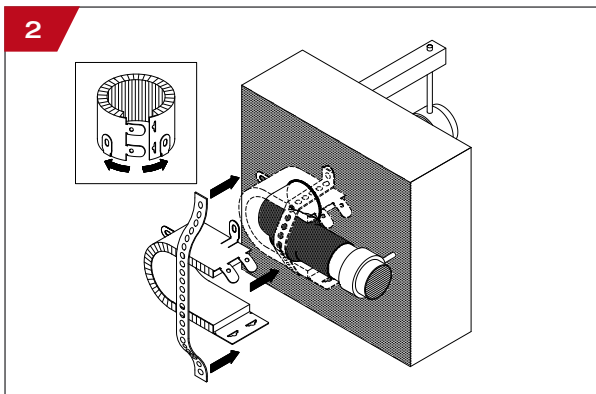
NOTE

The size of the pipe collar must be one dimension larger than that of the sewage pipe!



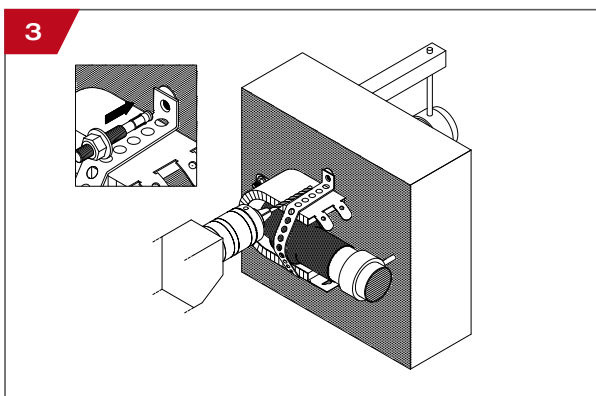
Seal annular gap and residual gap with fire protective gap filler BFM/K310 or acc. to the installation details.

Non-combustible service support construction max. 50 cm on both sides of the wall.



Open the pipe collar and position it around the insulated pipe elbow on the wall.

Position the perforated tape (provided by the customer) as tightly as possible over the pipe and the mounting lugs at the closure system of the pipe collar.



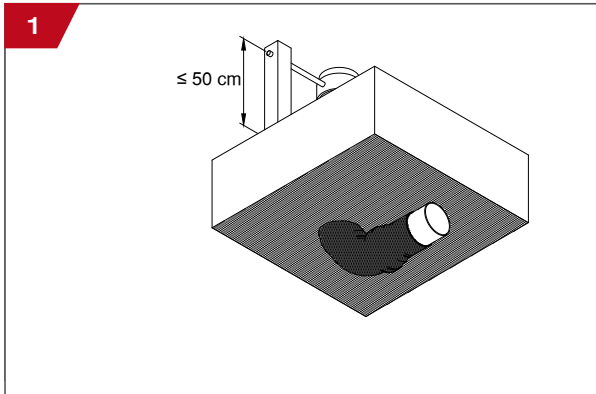
Mount the pipe collar and the perforated tape acc. to the separating element and installation details.

Installation steps for U-application floor

The RORCOL V60 pipe collar, used as a U-application, is opened at the closure system, positioned around the sewage elbow and mounted on the bottom side of the floor of the penetrating element.

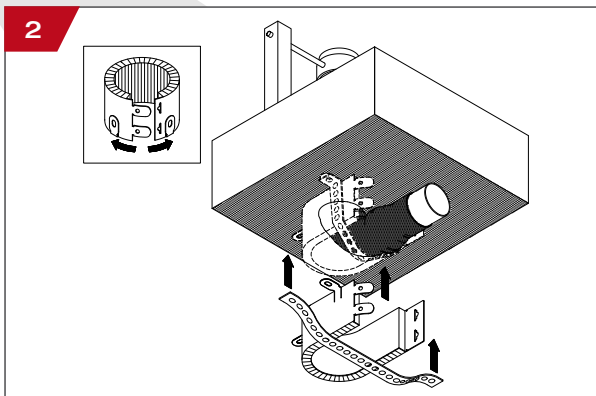
NOTE

The size of the pipe collar must be one dimension larger than that of the sewage pipe!



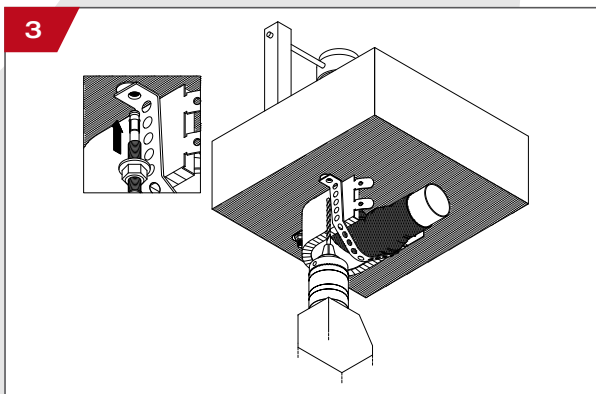
Seal annular gap and residual gap with fire protective gap filler BFM/K310 or acc. to the installation details.

Non-combustible service support construction max. 50 cm on the top side of the floor.



Open the pipe collar and position it around the insulated pipe elbows on the bottom side of the floor.

Position the perforated tape (provided by the customer) as tightly as possible over the pipe and the mounting lugs at the closure system of the pipe collar.



Mount the pipe collar and the perforated tape acc. to the separating element and installation details.

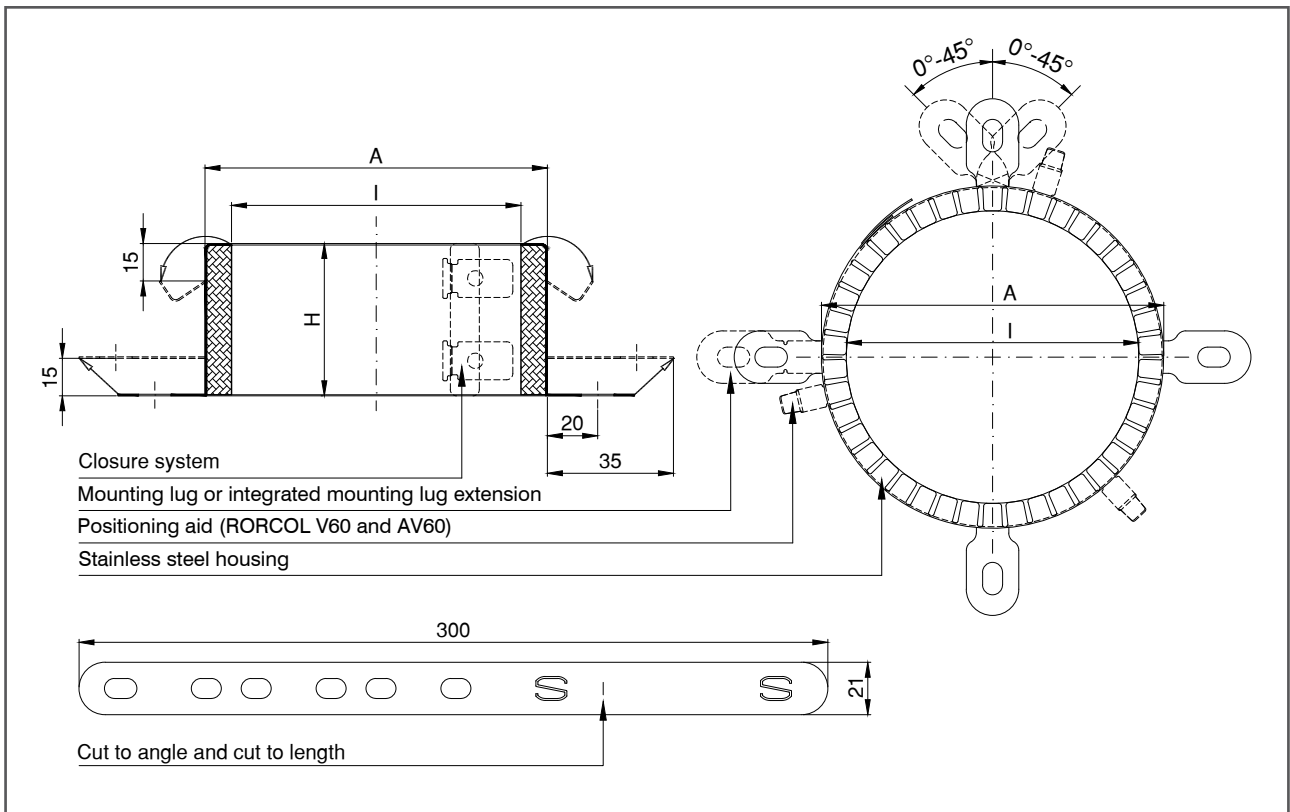
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PDF download:
RORCOL Installation Instructions



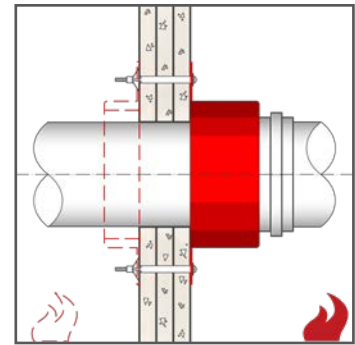
Construction drawing



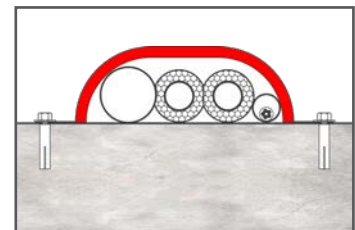
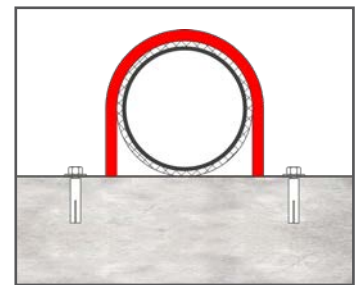
Type	Field of application	Item no.	Size	Depth [H] [mm]	Outer Ø [A] [mm]	Inner Ø [I] [mm]	Number of mounting lugs
V30	For plastic pipes	9504040	DN40	31	57	46	3
		9504056	DN56		74	62	
		9504063	DN63		86	70	
		9504080	DN80		103	86	
		9504100	DN100		127	105	4
		9504110	DN110		142	119	
		9504125	DN125		161	133	
		9504140	DN140		178	146	
V60	For plastic pipes, extended field of application	9503056	DN56	61	74	62	3
		9503063	DN63		86	70	4
		9503080	DN80		103	86	
		9503110	DN110		142	119	
		9503125	DN125		161	133	
		9503140	DN140		178	146	
		9503160	DN160		201	168	6
		9503180	DN180		219	187	
		9503200	DN200		246	209	8
		9503250	DN250		303	261	
AV60	For multi-layer composite pipes, cables and metal pipes	9505040	DN40	61	58	45	3
		9505056	DN56		74	60	
		9505063	DN63		86	73	
		9505080	DN80		103	85	
		9505110	DN110		138	120	4
		9505125	DN125		158	135	
		9505140	DN140		177	150	
		9505160	DN160		197	171	

Selection charts

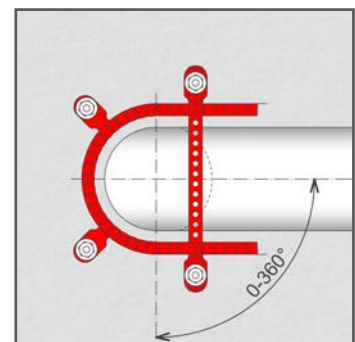
Sealing off plug-in sleeves Required collar sizes			
Type	Pipe material	Outer pipe diameter [mm]	Required collar size
RORCOL V60	PP	Ø32	DN56
		Ø50	DN63
		Ø75	DN110
		Ø90	DN110
		Ø110	DN125
		Ø125	DN140
		Ø135	DN160



Omega-application Required collar sizes (if no spacing between pipes)				
Type	Pipe material	Outer pipe diameter [mm]	Required collar size	
RORCOL V60	PP	Ø50	DN50	
		Ø75	DN80	
		Ø90	DN110	
		Ø110	DN110	
RORCOL AV60	max. 2 x Al-PE	≤ Ø26	DN40	DN56
	max. 1 x PP	≤ Ø50		
	max. 2 x Al-PE	≤ Ø26	DN63	DN80
	max. 1 x PP	≤ Ø75		
	max. 1 x electrical conduit	≤ Ø25		

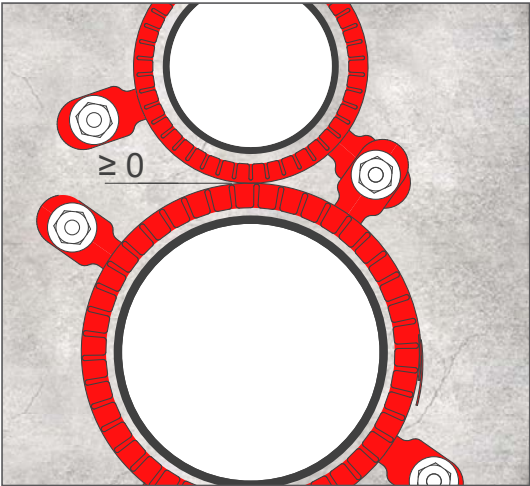


U-application Required collar sizes			
Type	Pipe material	Outer pipe diameter [mm]	Required collar size
RORCOL V60	PP	Ø50	DN63
		Ø75	DN110
		Ø90	DN110
		Ø110	DN125
		Ø125	DN140
		Ø135	DN160

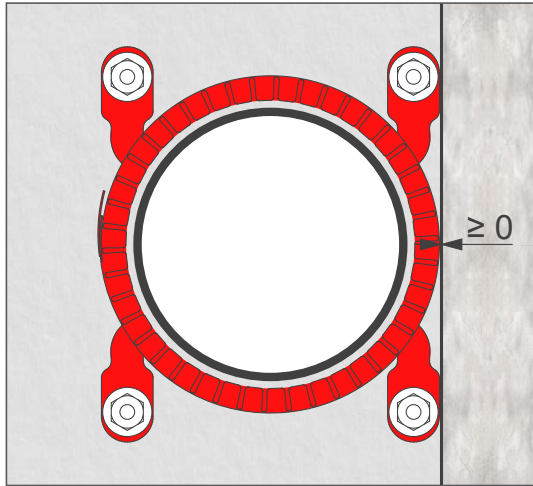


Working clearances

Pipe collars

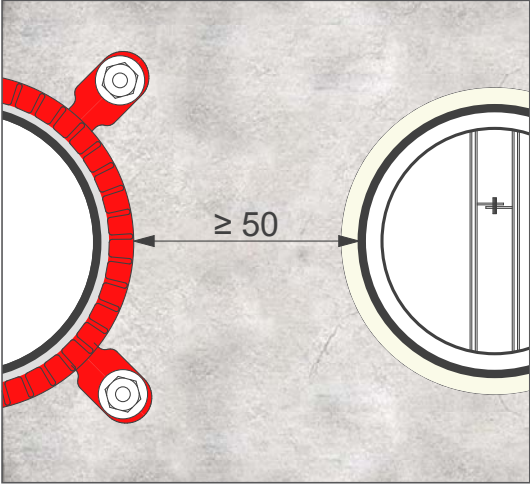


Concerted screw fastening of up to four pipe collars

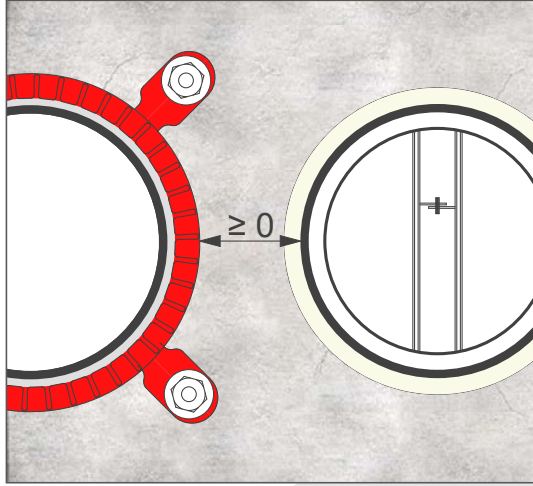


Distance to adjacent separating element
- Twisted mounting lugs

EI90 fire dampers and FLI-VE90 fire damper air vents

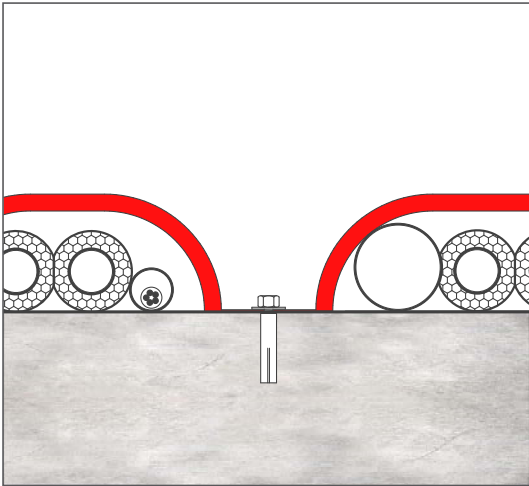


Distance to AIR FIRE TECH fire dampers (1139-CPR-1046/12) or AIR FIRE TECH fire damper air vents (R-14.3.3-18-7925) ≥ 50 mm

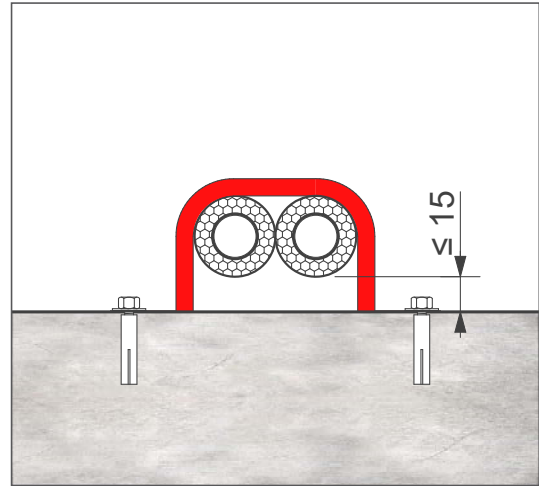


Distance to AIR FIRE TECH fire damper air vents (R-14.3.3-18-7925) in rigid floors ≥ 0 mm

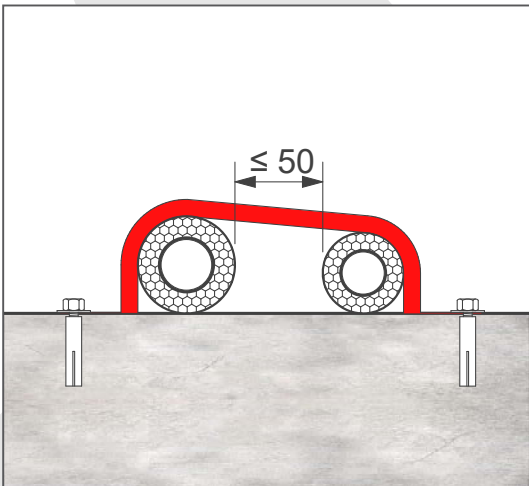
Omega-application



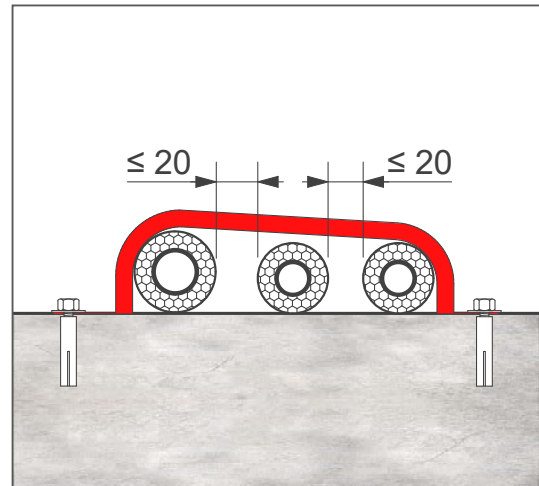
Concerted screw fastening



Distance between adjacent rigid building element and pipe(s)



Distance between two pipes



Distance between pipes for multiple feedthroughs

AIR FIRE TECH System RORCOL

in accordance with ETA-13/0758 – AIR FIRE TECH Brandschutzsysteme GmbH

Separating element

Shaft walls ≥ EI90

Plasterboard stud partition walls lined on one face

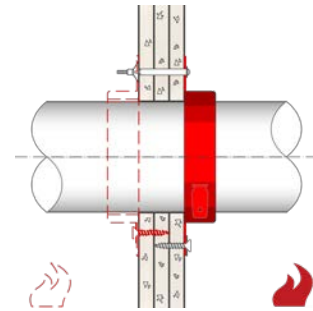
With or without mineral wool

Minimum width of steel profiles (CW profiles): 50 mm

- 2 x 20 mm fire-resistant plasterboard
- 3 x 15 mm fire-resistant plasterboard
- 2 x 25 mm fire-resistant plasterboard

Plasterboard according to EN 520 DF, DFR (fire-resistant plasterboard/ impregnated fire-resistant plasterboard)

Plasterboard according to EN 15283-1 GM-FH2 (fleece-reinforced plasterboard), e.g. Glasroc F Ridurit, Fireboard



Shaft walls ≥ EI60

Plasterboard stud partition walls lined on one face

With or without mineral wool

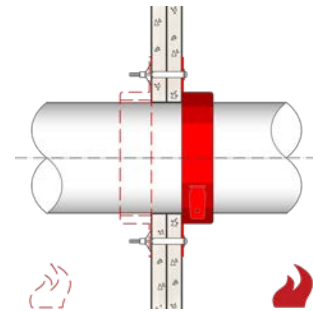
Minimum width of steel profiles (CW profiles): 50 mm

- 2 x 15 mm fire-resistant plasterboard

Plasterboard according to EN 520 DF (fire-resistant plasterboard/impregnated fire-resistant plasterboard)

Plasterboard according to EN 15283-1 GM-FH2

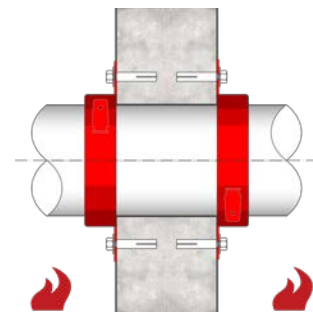
(fleece-reinforced plasterboard), e.g. Glasroc F Ridurit, Fireboard



Rigid walls

Thickness ≥ 100 mm, density ≥ 500 kg/m³

- Aerated concrete walls
- Brick walls
- Concrete walls



Flexible walls

Thickness ≥ 100 mm

Steel or timber studs*

Lined on both sides with at least 2 x 12.5 mm and at least two layers

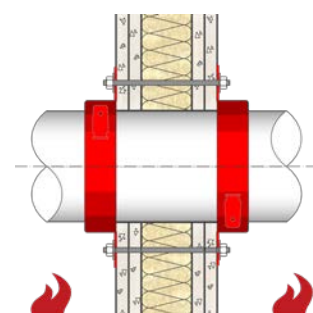
Board classified as A2-s1, d0 or A1 according to EN 13501-1

e.g. Plasterboard according to EN 520

Fleece-reinforced plasterboard according to EN 15283-1

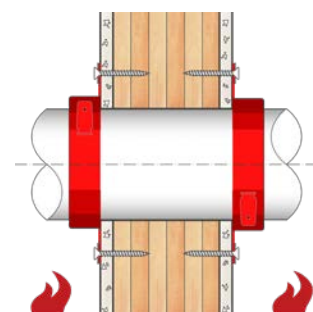
Plasterboard according to EN 15283-2

*Minimum distance between timber studs and penetration seals 100 mm, gap filled with mineral wool (melting point ≥ 1000°C)



Cross-laminated timber walls

- ETA-06/0138 – 150 mm cross-laminated timber
 - ETA-06/0138 – 100 mm cross-laminated timber + 15 mm fire-resistant plasterboard on both sides
- Plasterboard according to EN 520 DF (fire-resistant plasterboard/ impregnated fire-resistant plasterboard)



-  – Omega-application permitted
-  – Fire load on one or both sides
-  – U-application permitted
-  – Fire load on both sides

Pipe collar	Pipe collar fixing	Page
<p>For plastic sewage and pressurised water pipes:</p> <ul style="list-style-type: none"> • RORCOL V30/DN40-DN125 • RORCOL V60/DN56-DN125 <p>For plug-in sleeves:</p> <ul style="list-style-type: none"> • RORCOL V60/DN56-DN125 <p>For multi-layer composite pipes and metal pipes:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN80 <p>For electrical conduits and cables:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN110 	<ul style="list-style-type: none"> • Drywall screws $\geq \text{Ø}3.5 \text{ mm} \times 45 \text{ mm}$ with $\text{Ø}20 \text{ mm}$ washers (3 x 15, 2 x 25 mm) • Chipboard screws $\geq \text{Ø}6.0 \text{ mm} \times 40 \text{ mm}$ (3 x 15, 2 x 25 mm) • Cavity dowel $\geq \text{M}6$ with $\text{Ø}20 \text{ mm}$ washers • Symmetrical flush mounted 	25
<p>For plastic sewage and pressurised water pipes:</p> <ul style="list-style-type: none"> • RORCOL V30/DN40-DN110 • RORCOL V60/DN56-DN110 <p>For plug-in sleeves:</p> <ul style="list-style-type: none"> • RORCOL V60/DN56-DN110 <p>For multi-layer composite pipes, metal pipes and cables:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN63 	<ul style="list-style-type: none"> • Cavity dowel $\geq \text{M}6$ with $\text{Ø}20 \text{ mm}$ washers 	25
<p>For plastic sewage and pressurised water pipes:</p> <ul style="list-style-type: none"> • RORCOL V30/DN40-DN140 • RORCOL V60/DN56-DN250 <p>For plug-in sleeves:</p> <ul style="list-style-type: none"> • RORCOL V60/DN56-DN180 <p>For multi-layer composite pipes and metal pipes:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN160 <p>For electrical conduits and cables:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN110 	<ul style="list-style-type: none"> • Metal anchor or metal dowel with screws $\geq \text{M}6$ with $\text{Ø}20 \text{ mm}$ washers • Chipboard screws $\geq \text{Ø}6.0 \text{ mm} \times 55 \text{ mm}$ (aerated concrete) • Flush mounted 	25
<p>For plastic sewage and pressurised water pipes:</p> <ul style="list-style-type: none"> • RORCOL V30/DN40-DN140 • RORCOL V60/DN56-DN200 <p>For plug-in sleeves:</p> <ul style="list-style-type: none"> • RORCOL V60/DN56-DN180 <p>For multi-layer composite pipes and metal pipes:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN160 <p>For electrical conduits and cables:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN110 	<ul style="list-style-type: none"> • Threaded bars $\geq \text{M}6$ with $\text{Ø}20 \text{ mm}$ washers and nuts (when surface mounted) • Drywall screws $\geq \text{Ø}3.5 \text{ mm} \times 35 \text{ mm}$ with $\text{Ø}20 \text{ mm}$ washers (when flush mounted) 	25
<p>For plastic sewage and pressurised water pipes:</p> <ul style="list-style-type: none"> • RORCOL V30/DN40-DN140 • RORCOL V60/DN56-DN160 <p>For multi-layer composite pipes, metal pipes and cables:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN140 	<ul style="list-style-type: none"> • Chipboard screws $\geq \text{Ø}6.0 \text{ mm} \times 120 \text{ mm}$ 	25

AIR FIRE TECH System RORCOL

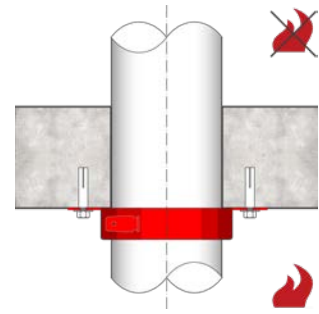
in accordance with ETA-13/0758 – AIR FIRE TECH Brandschutzsysteme GmbH

Separating element

Rigid floor

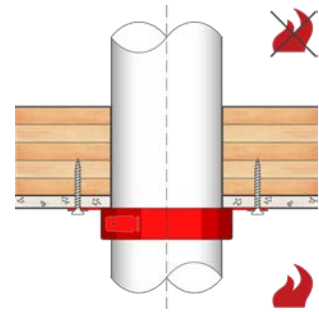
Thickness ≥ 150 mm, density ≥ 500 kg/m³

- Aerated concrete floor
- Concrete floor



Cross-laminated timber floors

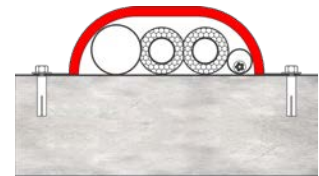
- ETA-06/0009 – 200 mm cross-laminated timber
- ETA-06/0138 – 140 mm cross-laminated timber + 12.5 mm fire-resistant plasterboard
Plasterboard in accordance with EN 520 DF (fire-resistant plasterboard/impregnated fire-resistant plasterboard)
- ETA-06/0138 – 90 mm cross-laminated timber + 2 x 15 mm fire-resistant plasterboard
Plasterboard in accordance with EN 520 DF (fire-resistant plasterboard/impregnated fire-resistant plasterboard)



Application

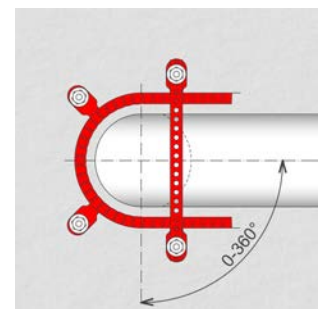
Omega-application

- Top side of the floor
- Wall
- Bottom side of the floor



U-application

- Walls
- Floors



 – Omega-application permitted

 – U-application permitted



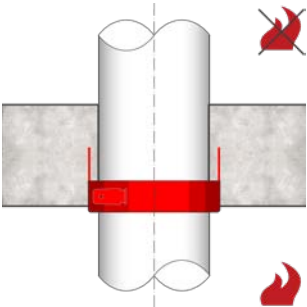
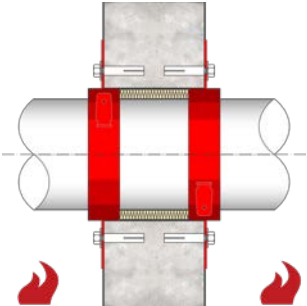
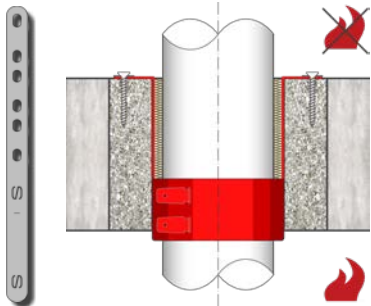
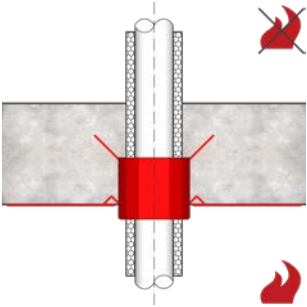
– Fire load not permitted
from the top surface of the floor

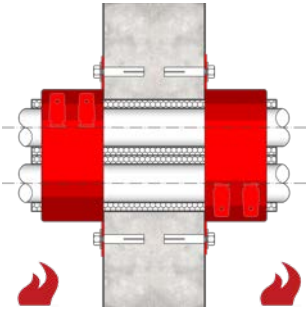
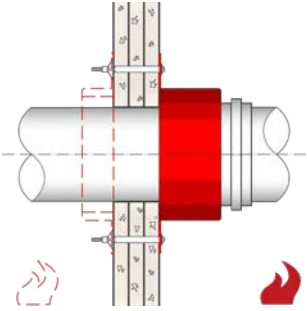
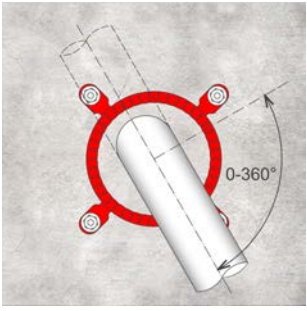
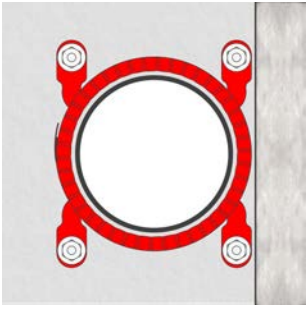
Pipe collar	Pipe collar fixing	Page
<p>For plastic sewage and pressurised water pipes:</p> <ul style="list-style-type: none"> • RORCOL V30/DN40-DN140 • RORCOL V60/DN56-DN200 <p>For plug-in sleeve and electrofusion sleeve couplings:</p> <ul style="list-style-type: none"> • RORCOL V60/DN56-DN140 <p>For multi-layer composite pipes and metal pipes:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN160 <p>For electrical conduits and cables:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN125 	<ul style="list-style-type: none"> • Metal anchor or metal dowel with screws \geq M6 with \varnothing20 mm washers • Chipboard screws \geq \varnothing6.0 mm x 55 mm (aerated concrete) • Flush mounted 	27
<p>For plastic sewage and pressurised water pipes:</p> <ul style="list-style-type: none"> • RORCOL V30/DN40-DN125 • RORCOL V60/DN56-DN125 <p>For multi-layer composite pipes, metal pipes and cables:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN110 	<ul style="list-style-type: none"> • Chipboard screws \geq \varnothing6.0 mm x 90 mm with \varnothing20 mm washers 	27

Pipe collar	Pipe collar fixing	Page
<p>For plastic sewage pipes:</p> <ul style="list-style-type: none"> • RORCOL V60/DN56-DN110 <p>For multi-layer composite pipes and metal pipes:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN80 <p>For cables:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN80 	Depending on separating element	27
<p>For plastic sewage elbows:</p> <ul style="list-style-type: none"> • RORCOL V60/DN56-DN110 	Depending on separating element	

Solutions for specific requirements

in accordance with ETA-13/0758 – AIR FIRE TECH Brandschutzsysteme GmbH

Installation method	Page
<p>Flush mounted</p> <ul style="list-style-type: none"> • Rigid walls • Rigid floors <p>For plastic sewage and pressurised water pipes:</p> <ul style="list-style-type: none"> • RORCOL V30/DN40-DN140 • RORCOL V60/DN56-DN160 <p>For multi-layer composite pipes and metal pipes:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN160 	<p style="text-align: right;">29</p> 
<p>Flush mounted with integrated mounting lug extension</p> <ul style="list-style-type: none"> • Shaft walls • Rigid walls • Rigid floors • Flexible walls <p>For plastic sewage and pressurised water pipes:</p> <ul style="list-style-type: none"> • RORCOL V30/DN40-DN140 • RORCOL V60/DN56-DN160 <p>For multi-layer composite pipes and metal pipes:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN160 	<p style="text-align: right;">29</p> 
<p>Flush mounted with MH/RORCOL mounting tool</p> <ul style="list-style-type: none"> • Prottelith installation block • Rigid walls • Rigid floors <p>For plastic sewage and pressurised water pipes:</p> <ul style="list-style-type: none"> • RORCOL V30/DN40-DN140 • RORCOL V60/DN56-DN200 <p>For multi-layer composite pipes and metal pipes:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN160 	<p style="text-align: right;">29</p> 
<p>Flush mounted with formwork (with integrated positioning aid)</p> <ul style="list-style-type: none"> • Rigid floors <p>For plastic sewage pipes:</p> <ul style="list-style-type: none"> • RORCOL V30/DN40-DN140 • RORCOL V60/DN40-DN200 <p>For multi-layer composite pipes and metal pipes:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN160 	<p style="text-align: right;">76</p> 

Installation method	Page
<p>Multiple penetration</p> <ul style="list-style-type: none"> • Rigid walls • Flexible walls • Rigid floors <p>For multi-layer composite pipes and metal pipes:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN110 	<p>29</p> 
<p>Plug-in sleeve and electrofusion sleeve couplings</p> <ul style="list-style-type: none"> • At 90° to the separating element • Shaft walls: plug-in sleeves $\leq \text{Ø}110$ mm, uninsulated • Rigid walls: plug-in sleeves $\leq \text{Ø}160$ mm • Rigid floors: plug-in sleeves $\leq \text{Ø}160$ mm Electrofusion sleeve couplings $\leq \text{Ø}110$ mm <p>For plug-in sleeve and electrofusion sleeve couplings:</p> <ul style="list-style-type: none"> • RORCOL V60/DN56-DN180 	<p>29</p> 
<p>Slanted penetrating element</p> <ul style="list-style-type: none"> • Penetrating elements at between 90° and 45° to the separating element • Shaft walls, surface mounted: plastic pipes $\leq \text{Ø}75$ mm • Rigid walls, surface mounted: plastic pipes $\leq \text{Ø}110$ mm • Rigid walls, flush mounted: plastic pipes $\leq \text{Ø}160$ mm • Rigid floors: plastic pipes $\leq \text{Ø}125$ mm <p>For plastic sewage pipes:</p> <ul style="list-style-type: none"> • RORCOL V30/DN40-DN140 • RORCOL V60/DN56-DN250 	<p>29</p> 
<p>Twistable mounting lugs</p> <ul style="list-style-type: none"> • For tight spaces • Walls • Floors 	<p>29</p> 

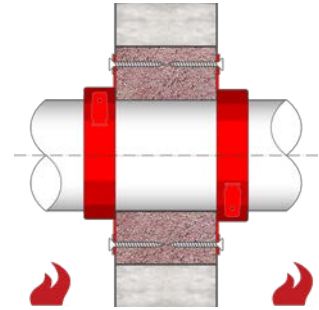
TIROTECH® protective mortar

in accordance with ETA-17/0586 – Goidinger Bau- und Leichtbeton GmbH

Sealing

TIROTECH® protective mortar for rigid walls

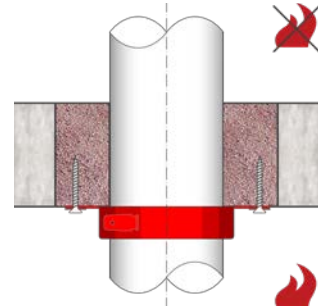
Thickness of the penetration seal ≥ 100 mm



TIROTECH® protective mortar for floors

Thickness of the penetration seal ≥ 150 mm

- Rigid floors
- Timber floors*



* Not currently covered in ETA-17/0586; required for use in Austria in accordance with building material list.

TIROTECH® BRANDSCHUTZMÖRTEL

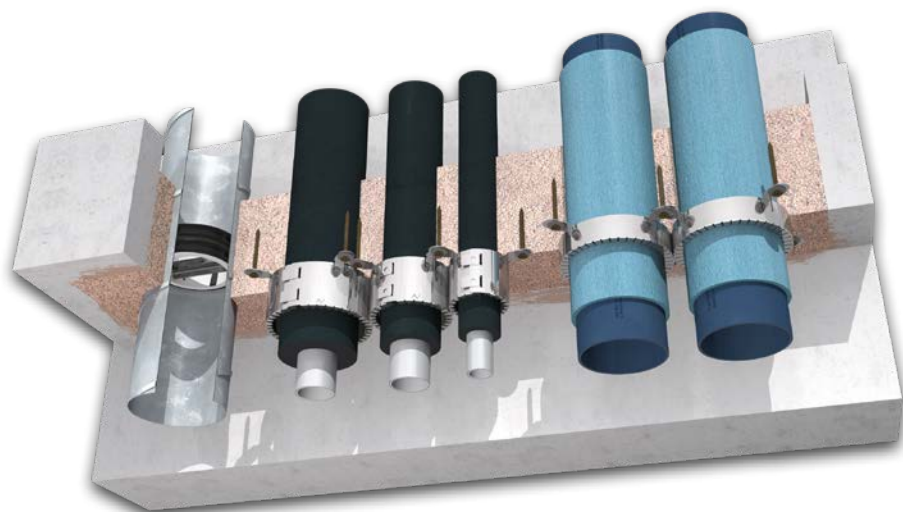


GÖIDINGER :E

BAU+LEICHTBETON GESELLSCHAFT MBH

A-6112 Wattens, Tel.++43(0)5224/52 9 40, Fax ++43(0)5224/57 4 62
info@goidinger.com, www.goidinger.com

Fire protection sealing	Pipe collar fixing	Page
<p>For plastic sewage and pressurised water pipes:</p> <ul style="list-style-type: none"> • RORCOL V30/DN40-DN140 • RORCOL V60/DN56-DN160 <p>For multi-layer composite pipes and metal pipes:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN160 <p>For electrical conduits and cables:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN125 <p>For ventilation ducts:</p> <ul style="list-style-type: none"> • INLAP fire damper DN100-DN250 • FSAeco fire damper air vent DN100-DN160 	<ul style="list-style-type: none"> • Chipboard screws $\geq \text{Ø}6.0 \text{ mm} \times 70 \text{ mm}$ with $\text{Ø}20 \text{ mm}$ washers 	<p>31</p>
<p>For plastic sewage and pressurised water pipes:</p> <ul style="list-style-type: none"> • RORCOL V30/DN40-DN140 • RORCOL V60/DN56-DN160 <p>For multi-layer composite pipes and metal pipes:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN160 <p>For electrical conduits and cables:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN125 <p>For ventilation ducts:</p> <ul style="list-style-type: none"> • INLAP fire damper DN100-DN250 • FSAeco fire damper air vent DN100-DN160 • PRODEC-R fire damper air vent DN100-DN160 • PRODEC-R KST fire damper air vent DN100-DN160 	<ul style="list-style-type: none"> • Chipboard screws $\geq \text{Ø}6.0 \text{ mm} \times 70 \text{ mm}$ with $\text{Ø}20 \text{ mm}$ washers • Flush mounted 	<p>31</p>



You can find information on the manufacture of the TIROTECH® penetration seal and a list of tested pipe brands in the "Installation Instructions and Declaration of Performance for TIROTECH®" in accordance with European Technical Assessment ETA-17/0586.



PDF download:
TIROTECH® Installation Instructions

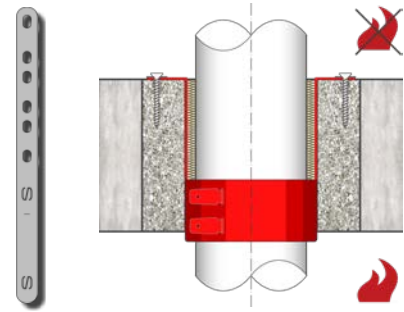
Prottelith installation block

in accordance with classification report – Prottelith Produktionsgesellschaft mbH

Sealing

Prottelith installation block

Thickness ≥ 200 mm



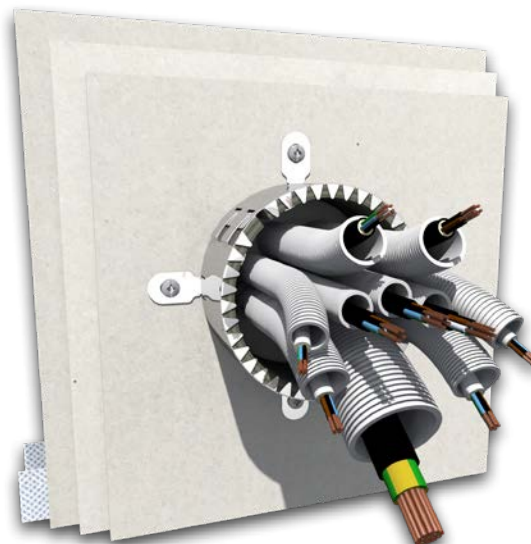
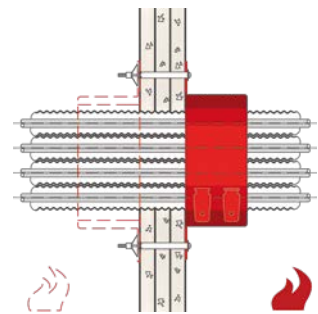
AIR FIRE TECH System RORCOL

in accordance with ETA-13/0758 – AIR FIRE TECH Brandschutzsysteme GmbH

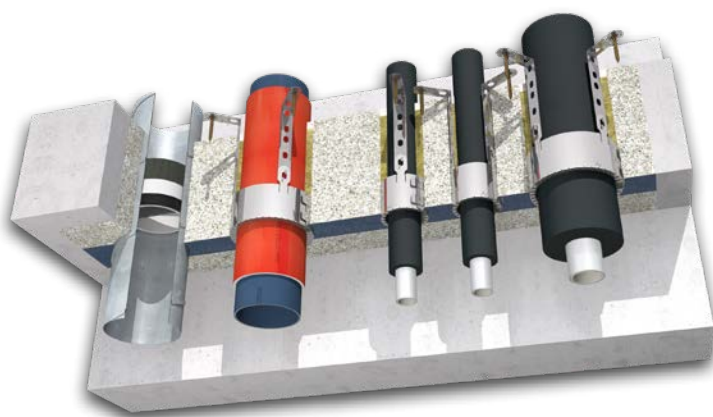
Sealing

Penetration seals for electrics and air conditioning

- Walls
- Floors



Fire protection sealing	Pipe collar fixing	Page
<p>For plastic sewage and pressurised water pipes:</p> <ul style="list-style-type: none"> • RORCOL V60/DN56-DN160 <p>For multi-layer composite pipes and metal pipes:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN160 <p>For electrical conduits and cables:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN110 <p>For ventilation ducts:</p> <ul style="list-style-type: none"> • FSA fire damper air vent • INLAP fire damper • PRODEC-O fire damper air vent 	<ul style="list-style-type: none"> • MH/RORCOL mounting tool and chipboard screws $\geq \text{Ø}6.0 \text{ mm} \times 55 \text{ mm}$ 	33



Prottelith

installation block

Pipe collar	Pipe collar fixing	Page
<p>For electrical conduits and cables:</p> <ul style="list-style-type: none"> • RORCOL AV60/DN40-DN125 	<p>Depending on separating element</p>	33



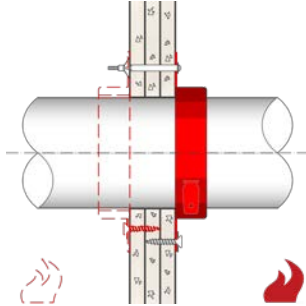
Shaft walls \geq EI90

2 x 20 mm, 3 x 15 mm, 2 x 25 mm; with or without mineral wool

Plasterboard in accordance with EN 520 DF, DFR

(fire-resistant plasterboard/impregnated fire-resistant plasterboard)

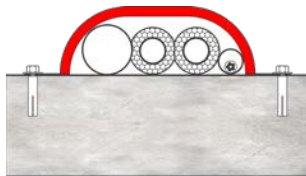
Plasterboard in accordance with EN 15283-1 GM-FH2 (fleece-reinforced plasterboard)



Surface mounted

Type of pipe collar:

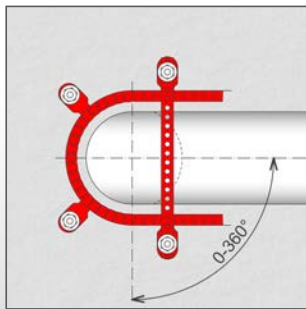
- RORCOL V30/DN40 – DN125
- RORCOL V60/DN56 – DN125
- RORCOL AV60/DN40 – DN80



Omega-application

Type of pipe collar:

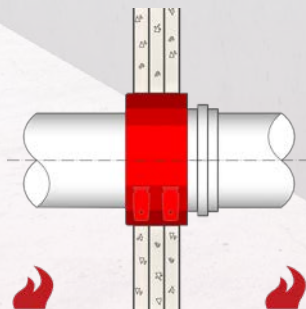
- RORCOL V60/DN56 – DN110
- RORCOL AV60/DN40 – DN80



U-application

Type of pipe collar:

- RORCOL V60/DN63 – DN125



Symmetrical inserted

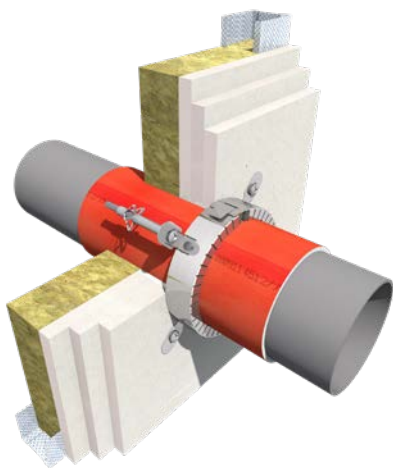
Type of pipe collar:

- V60/DN56 – DN125

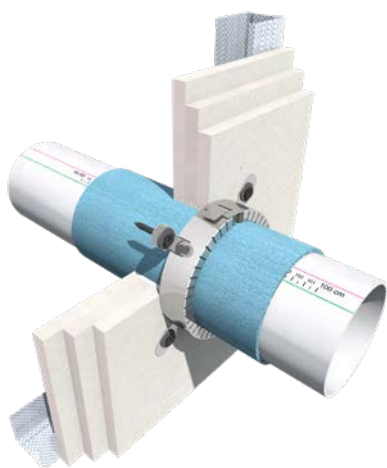


RORCOL V30 For plastic sewage pipes**Shaft walls \geq EI90 lined on one side**

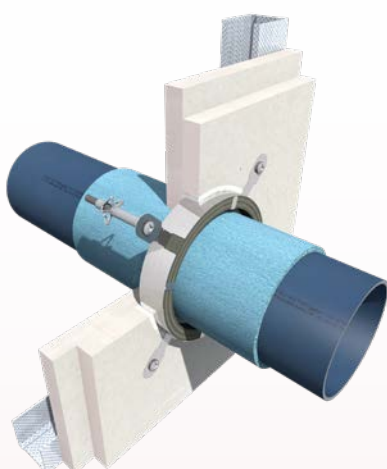
2 x 20 mm, 3 x 15 mm, 2 x 25 mm; with or without mineral wool



RORCOL V30 surface mounted



RORCOL V30 surface mounted

RORCOL V30 flush mounted
with integrated mounting lug extension**Application areas****RORCOL Dimension**

- DN40, DN56, DN63, DN80, DN100, DN110, DN125

Pipe end configuration¹

- U/U; U/C; C/U; C/C

Pipe material / Outer pipe diameter

- PE, PP \leq \varnothing 110 mm
- PVC-U \leq \varnothing 125 mm
- PP multilayer pipes \leq \varnothing 110 mm
e.g. POLO-KAL NG, XS, 3S; RAUPIANO PLUS, etc.

Insulating material / Insulation thickness (LS, CS)²

- PE 5 mm

Fixing

- Cavity dowel \geq M6 with \varnothing 20 mm washers
- Chipboard screws \geq \varnothing 6.0 mm x 40 mm (3 x 15, 2 x 25 mm)
- Drywall screws \geq \varnothing 3.5 mm x 45 mm with \varnothing 20 mm washers (3 x 15, 2 x 25 mm)

Installation method

- Surface mounted on one side³
- Symmetrical inserted on one side³ with integrated mounting lug extension – see page 35
- Surface mounted on both sides

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

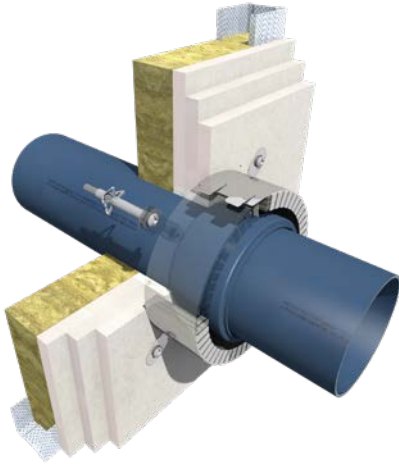
² With local or continuous insulation in accordance with EN 1366-3 – see page 12

³ Observe national building regulations applicable locally

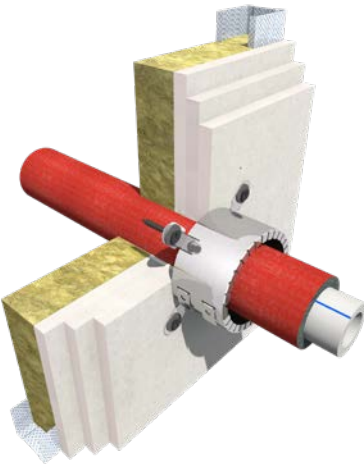
RORCOL V60 For plastic sewage and pressurised water pipes

Shaft walls \geq EI90 lined on one side

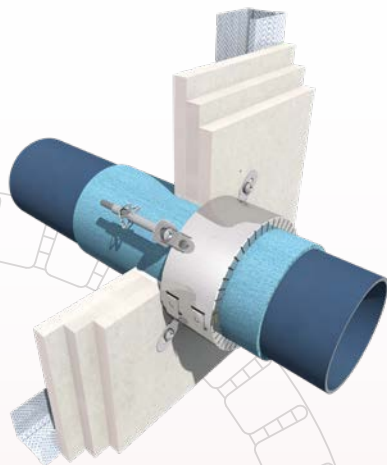
2 x 20 mm, 3 x 15 mm, 2 x 25 mm; with or without mineral wool



RORCOL V60 surface mounted Plug-in sleeve



RORCOL V60 surface mounted



RORCOL V60 surface mounted

Application areas

RORCOL dimension

- DN56, DN63, DN80, DN110, DN125

Pipe end configuration¹

- U/U; U/C; C/U; C/C

Pipe material / Outer pipe diameter

- PE, PP \leq \varnothing 110 mm
- PP-R \leq \varnothing 50 mm
- PVC-U \leq \varnothing 125 mm
- PP multilayer pipes \leq \varnothing 110 mm
- POLO-KAL NG, XS, 3S; RAUPIANO PLUS, etc.

Insulating material / Insulation thickness (LS, CS)²

- Uninsulated
- PE \leq 5 mm
- PE \leq 10 mm for PP-R pipes

Fixing

- Cavity dowel \geq M6 with \varnothing 20 mm washers
- Chipboard screws \geq \varnothing 6.0 mm x 40 mm (3 x 15, 2 x 25 mm)
- Drywall screws \geq \varnothing 3.5 mm x 45 mm with \varnothing 20 mm washers (3 x 15, 2 x 25 mm)

Installation method

- Surface mounted on one side³
- Surface mounted on both sides
- Symmetrical inserted

Other applications

- Omega-application
- U-application
- Plug-in sleeves up to pipe \varnothing 110 mm – see page 36 (collar one size larger than the pipe diameter)

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

³ Observe national building regulations applicable locally

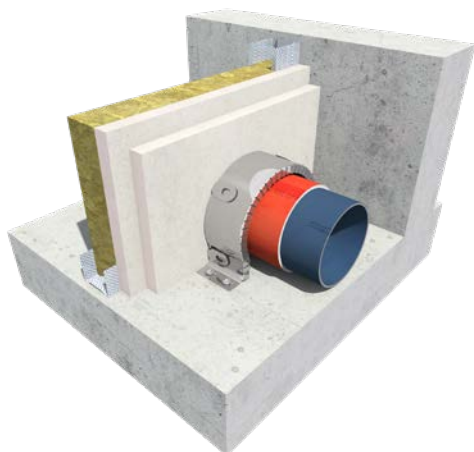
RORCOL V60 – Omega-application For plastic sewage pipes

Shaft walls lined on one side ≥ EI90

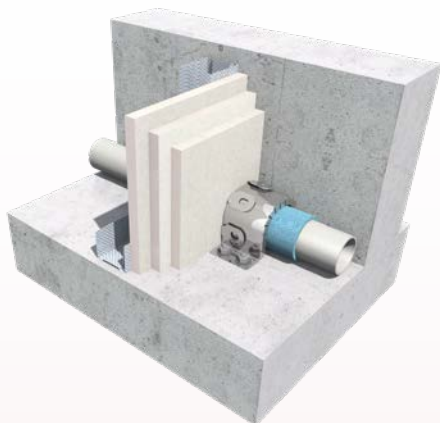
2 × 20 mm, 3 × 15 mm, 2 × 25 mm; with or without mineral wool



RORCOL V60 mounted as Omega-application, on the wall



RORCOL V60 mounted as Omega-application, on the top side of the floor



RORCOL V60 mounted as Omega-application, fixed in the corner

Application areas

RORCOL dimension

Omega-application Required collar sizes			
Type	Pipe material	Outer pipe diameter [mm]	Collar size required
RORCOL V60	PP	Ø50	DN50
		Ø75	DN80
		Ø90	DN80
		Ø110	DN110

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material / Outer pipe diameter

- PE, PP ≤ Ø110 mm
- PP multilayer pipes ≤ Ø110 mm
 - POLO-KAL NG, RAUPIANO PLUS, etc.

Insulating material / Insulation thickness (LS, CS)²

- Uninsulated
- PE ≤ 5 mm

Fixing

- Metal anchor, metal dowel with screws
- Chipboard screws (aerated concrete)

Installation method

- Surface mounted, mounted on the top side of the floor
- Surface mounted, mounted on the wall
- Surface mounted, fixed in the corner

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

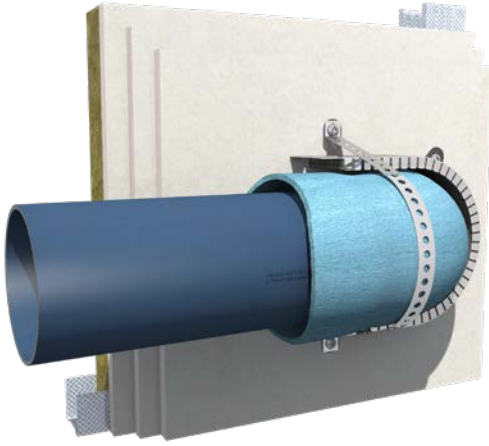
² With local or continuous insulation in accordance with EN 1366-3 – see page 12

³ Observe national building regulations applicable locally

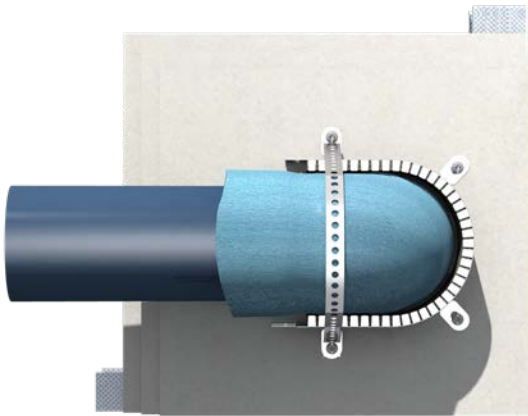
RORCOL V60 - U-application For plastic sewage elbows

Shaft walls lined on one side \geq EI90

2 x 20 mm, 3 x 15 mm, 2 x 25 mm; with or without mineral wool



RORCOL V60 mounted as U-application



RORCOL V60 mounted as U-application



RORCOL V60 mounted as U-application

Application areas

RORCOL dimension

U-application Required collar sizes			
Type	Pipe material	Outer pipe diameter [mm]	Collar size required
RORCOL V60	PP	Ø50	DN63
		Ø75	DN110
		Ø90	DN110
		Ø110	DN125

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material / Outer pipe diameter

- PP \leq Ø110 mm
- PP multilayer pipes \leq Ø110 mm
- POLO-KAL NG, RAUPIANO PLUS, etc.

Insulating material / Insulation thickness (LS, CS)²

- PE 5 mm

Fixing

Stainless steel perforated tape with/without plastic coating and

- Cavity dowel \geq M6 with Ø20 mm washers
- Chipboard screws \geq Ø6.0 mm x 40 mm (3 x 15, 2 x 25 mm)
- Drywall screws \geq Ø3.5 mm x 45 mm with Ø20 mm washers (3 x 15, 2 x 25 mm)

Installation method

- Surface mounted on one side³
- Surface mounted on both sides

■ Changes of direction can be made right after the separating element

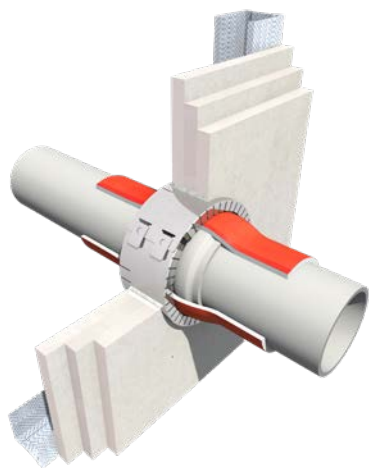
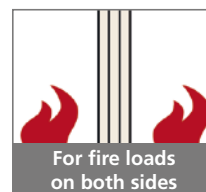
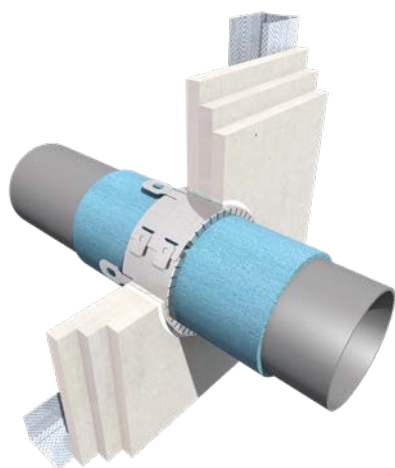
¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

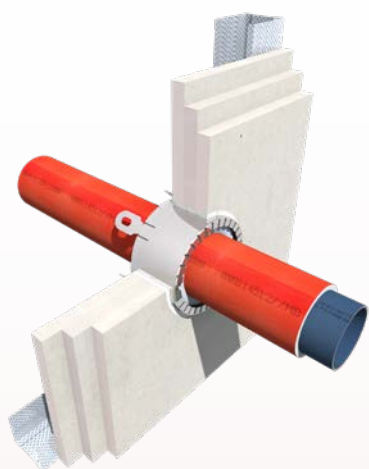
³ Observe national building regulations applicable locally

RORCOL V60 – Symmetrical inserted For plastic sewage pipes**Shaft walls lined on one side \geq EI90**

2 x 20 mm, 3 x 15 mm, 2 x 25 mm; without mineral wool

RORCOL V60 symmetrical inserted
Plug-in sleeve

RORCOL V60 symmetrical inserted



RORCOL V60 symmetrical inserted

Application areas**RORCOL dimension**

- DN56, DN63, DN80, DN110, DN125

Pipe end configuration¹

- U/U; U/C; C/U; C/C

Pipe material / Outer pipe diameter

- PP \leq \varnothing 110 mm
- PP multilayer pipes \leq \varnothing 110 mm
 - POLO-KAL NG, XS, 3S; RAUPIANO PLUS, etc.

Insulating material / Insulation thickness (LS, CS)²

- PE 5 mm

Fixing

- BFM/K310 firestop sealant or non-combustible material

Installation method

- Symmetrical inserted

- Suitable for fire loads on both sides
- Changes of direction can be made right after the separating element

NOTE

If it is to be installed in shaft walls together with mineral wool, this must be removed within at least 100 mm of the RORCOL V60 pipe collar.

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

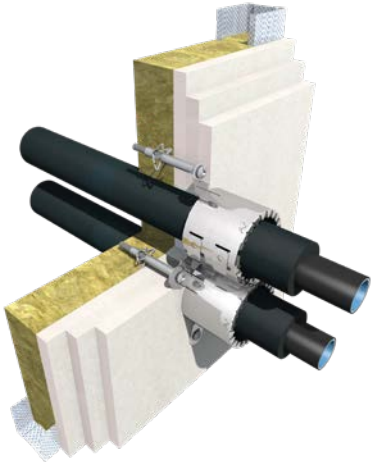
² With local or continuous insulation in accordance with EN 1366-3 – see page 12

³ Observe national building regulations applicable locally

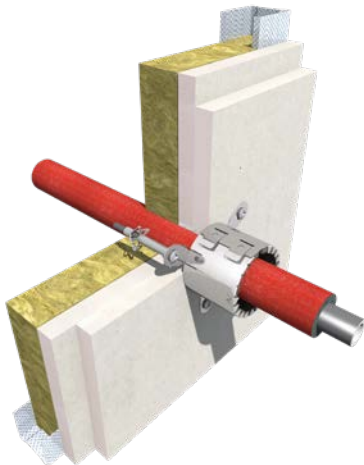
RORCOL AV60 For multi-layer composite pipes, metal pipes and cables

Shaft walls ≥ EI90 lined on one side

2 x 20 mm, 3 x 15 mm, 2 x 25 mm; with or without mineral wool



RORCOL AV60 surface mounted



RORCOL AV60 surface mounted



RORCOL AV60 surface mounted

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80

Pipe end configuration¹

- U/C; C/C

Pipe material / Outer pipe diameter

- Multi-layer composite pipes ≤ Ø33 mm
 - TECEflex, Geberit Mepla, etc.
- Metal pipes ≤ Ø28 mm

Insulating material / Insulation thickness (CS)²

For multi-layer composite pipes:

- PE 9-10 mm
- Elastomer 9-25 mm

For metal pipes:

- Elastomer ≥ 9 mm
- Mineral wool with aluminium laminate ≥ 30 mm

Fixing

- Cavity dowel ≥ M6 with Ø20 mm washers
- Chipboard screws ≥ Ø6.0 mm x 40 mm (3 x 15, 2 x 25 mm)
- Drywall screws ≥ Ø3.5 mm x 45 mm with Ø20 mm washers (3 x 15, 2 x 25 mm)

Installation method

- Surface mounted on one side³
- Surface mounted on both sides

Other applications

- Omega-application
- Penetration seals for electrics and air conditioning – see page 40

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

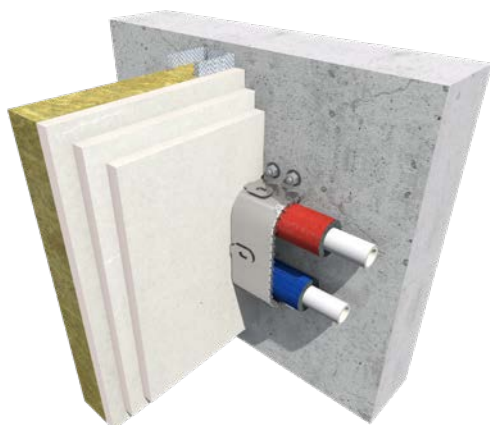
³ Observe national building regulations applicable locally

RORCOL AV60 – Omega-application

For multi-layer composite pipes, metal pipes and cables

Shaft walls lined on one side \geq EI90

2 x 20 mm, 3 x 15 mm, 2 x 25 mm; with or without mineral wool



RORCOL AV60 mounted as Omega-application, on the wall



RORCOL AV60 mounted as Omega-application, on the wall



RORCOL AV60 mounted as Omega-application, on the top side of the floor

Application areas**RORCOL dimension**

Omega-application Required collar sizes (if no spacing between pipes)			
Type	Pipe material	Outer pipe diameter [mm]	Collar size required
RORCOL AV60	max. 2 x Al-PE	$\leq \varnothing 26$	DN40
	max. 1 x PP	$\leq \varnothing 50$	DN56
	max. 2 x Al-PE	$\leq \varnothing 26$	DN63
	max. 1 x PP	$\leq \varnothing 75$	
	max. 1 x electrical conduit	$\leq \varnothing 25$	DN80

Pipe end configuration¹**For sewage pipes:**

- U/U, U/C, C/U, C/C

For multi-layer composite pipes:

- U/C, C/C

Pipe material / Outer pipe diameter**Maximum penetration:**

- Max. 1 x multi-layer composite pipe $\leq \varnothing 25$ mm
- Max. 1 x multi-layer composite pipe $\leq \varnothing 20$ mm
- Max. 1 x PP pipe $\leq \varnothing 75$ mm
- Max. 1 x electrical conduit $\leq \varnothing 25$ mm
- With 1 pc. cable $\leq 5 \times 6.0$ mm²
- Max. 1 x copper pipe $\leq \varnothing 22$ mm
- Max. 1 x copper pipe $\leq \varnothing 18$ mm
- Max. 1 x PVC U-shaped pipe $\leq \varnothing 32$ mm
- Max. 1 x electrical conduit $\leq \varnothing 32$ mm
- With 1 pc. cable $\leq 5 \times 10.0$ mm²
- Max. 3 x multi-layer composite pipe $\leq \varnothing 25$ mm
- Max. 2 x copper pipe $\leq \varnothing 28$ mm

Insulating material / Insulation thickness (LS, CS)²

- PE 9-10 mm
- Elastomer 9-13 mm

Fixing

- Depending on adjacent separating element

Installation method

- Surface mounted, mounted on the top side of the floor
- Surface mounted, mounted on the wall
- Surface mounted, mounted on the bottom side of the floor

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

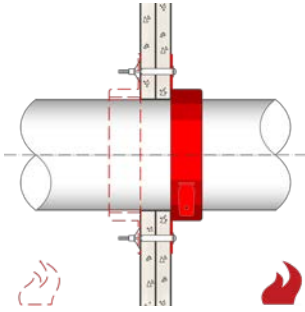
Shaft walls ≥ EI60

2 x15 mm; with or without mineral wool

Plasterboard in accordance with EN 520 DF

(fire-resistant plasterboard/impregnated fire-resistant plasterboard)

Plasterboard in accordance with EN 15283-1 GM-FH2 (fleece-reinforced plasterboard)



Surface mounted

Type of pipe collar:

- RORCOL V30/DN40 – DN110
- RORCOL V60/DN56 – DN110
- RORCOL AV60/DN40 – DN63

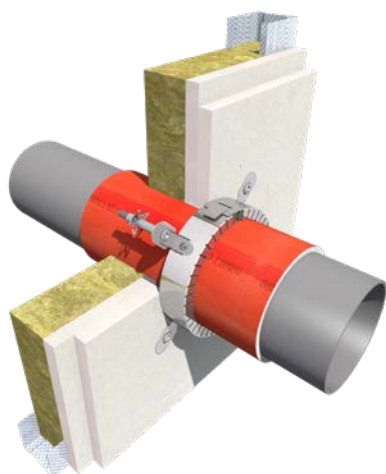


RORCOL V30 / RORCOL V60 / RORCOL AV60

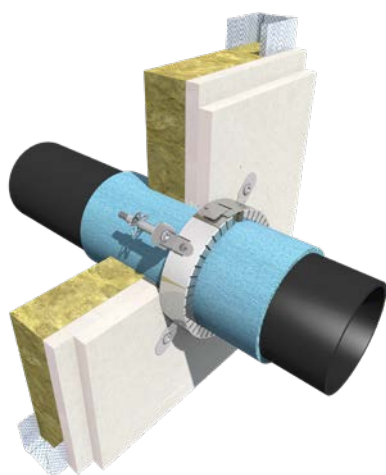
For plastic pipes or multi-layer composite pipes, metal pipes and cables

Shaft walls lined on one side \geq EI60

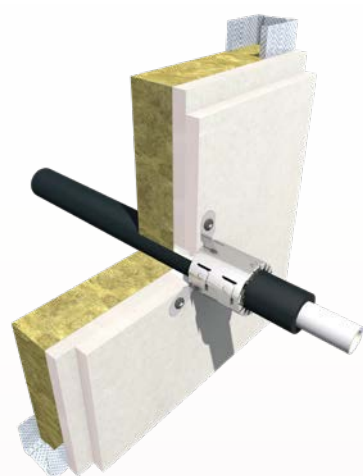
2 x15 mm; with or without mineral wool



RORCOL V30 surface mounted



RORCOL V30 surface mounted



RORCOL AV60 surface mounted

Application areas**RORCOL dimension**

- DN40, DN56, DN63, DN80, DN100, DN110

Pipe end configuration¹**For sewage pipes:**

- U/U, U/C, C/U, C/C

For multi-layer composite pipes:

- U/C, C/C

Pipe material / Outer pipe diameter

- PE, PP \leq \varnothing 110 mm
- Multi-layer composite pipes \leq \varnothing 26 mm
- TECEflex, Geberit Mepla, etc.
- Metal pipes \leq \varnothing 28 mm

Insulating material / Insulation thickness (LS, CS)²**For sewage and pressurised water pipes:**

- Uninsulated
- PE \leq 5 mm

For multi-layer composite pipes:

- PE 10 mm
- Elastomer 9-13 mm

For metal pipes:

- Mineral wool with aluminium laminate \geq 30 mm

Fixing

- Cavity dowel

Installation method

- Surface mounted on one side³
- Surface mounted on both sides

Other applications

- Plug-in sleeves up to pipe \varnothing 90 mm – see page 43
(collar one size larger than the pipe diameter)

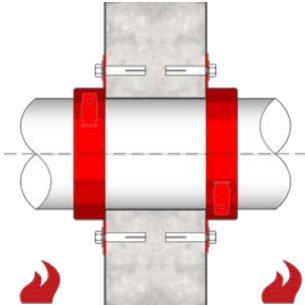
¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

³ Observe national building regulations applicable locally

Rigid walls

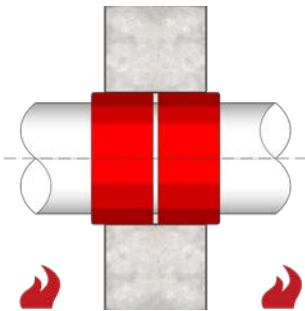
Thickness ≥ 100 mm, density ≥ 500 kg/m³
 Aerated concrete walls, brick walls, concrete walls



Surface mounted

Type of pipe collar:

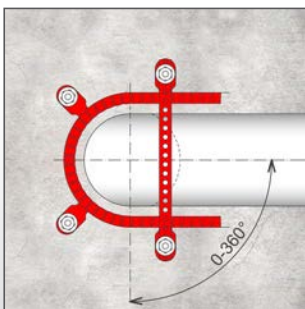
- RORCOL V30/DN40 – DN140
- RORCOL V60/DN56 – DN250
- RORCOL AV60/DN40 – DN160



Flush mounted

Type of pipe collar:

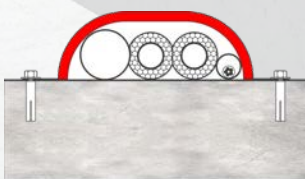
- RORCOL V30/DN40 – DN140
- RORCOL V60/DN56 – DN160
- RORCOL AV60/DN40 – DN160



U-application

Type of pipe collar:

- RORCOL V60/DN56 – DN125



Omega-application

Type of pipe collar:

- RORCOL AV60/DN40 – DN63



RORCOL V30 For plastic sewage pipes

Rigid walls, thickness ≥ 100 mm, density ≥ 500 kg/m³

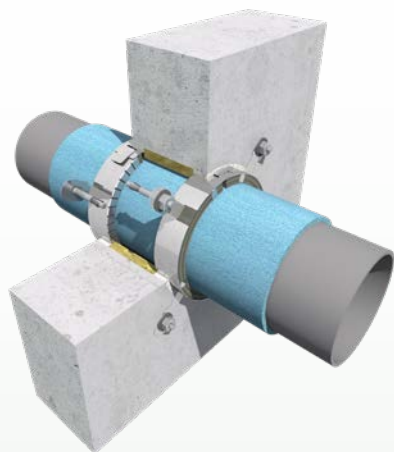
Aerated concrete walls, brick walls, concrete walls



RORCOL V30 surface mounted



RORCOL V30 flush mounted



RORCOL V30 flush mounted
with integrated mounting lug extension

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN110, DN125, DN140

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material / Outer pipe diameter

- PE, PP $\leq \varnothing 135$ mm
- PVC-U $\leq \varnothing 125$ mm
- PP multilayer pipes $\leq \varnothing 125$ mm
 - POLO-KAL NG, XS, 3S; RAUPIANO PLUS, etc.

Insulating material / Insulation thickness (LS, CS)²

- Uninsulated
- PE ≤ 5 mm

Fixing

- Metal anchor, metal dowel with screws
- Chipboard screws (aerated concrete)

Installation method

- Surface mounted
- Flush mounted – see page 45
- Flush mounted with integrated mounting lug extension – see page 45

Other applications

- Diagonally surface mounted up to pipe $\varnothing 110$ mm and 45° – see page 45

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

RORCOL V60 For plastic sewage and pressurised water pipes

Rigid walls, thickness ≥ 100 mm, density ≥ 500 kg/m³

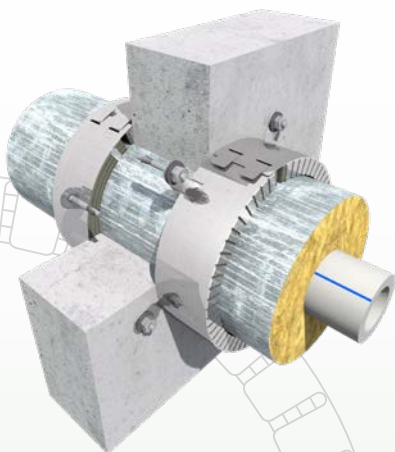
Aerated concrete walls, brick walls, concrete walls



RORCOL V60 surface mounted Plug-in sleeve



RORCOL V60 flush mounted slanted penetrating element



RORCOL V60 surface mounted

Application areas

RORCOL dimension

- DN56, DN63, DN80, DN110, DN125, DN140, DN160, DN180, DN200, DN250

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material / Outer pipe diameter

- PE $\leq \varnothing 200$ mm
- PP $\leq \varnothing 160$ mm
- PP-R $\leq \varnothing 110$ mm
- PVC-U $\leq \varnothing 250$ mm
- PP multilayer pipes $\leq \varnothing 160$ mm
 - POLO-KAL NG ($\leq \varnothing 200$), XS, 3S; RAUPIANO PLUS, etc.
- Pellet pipes (PVC, PVC/PU) $\varnothing 58$ mm

Insulating material / Insulation thickness (LS, CS)²

- Uninsulated
- PE ≤ 5 mm
- PE ≤ 20 mm for PP-R pipes
- Elastomer ≤ 25 mm
- Elastomer ≤ 43 mm for PP-R pipes
- Mineral wool with aluminium laminate ≤ 50 mm for PP-R pipes
- Sound insulation
 - Astrophon sound insulation mat type ST GK 070, Geberit Isol

Fixing

- Metal anchor, metal dowel with screws
- Chipboard screws (aerated concrete)
- MH/RORCOL mounting tool

Installation method

- Surface mounted
- Flush mounted – see page 46
- Surface mounted on one side, flush mounted on one side
- Flush mounted with integrated mounting lug extension – see page 46
- Flush mounted using MH/RORCOL mounting tool – see page 46

Other applications

- Omega-application
- U-application
- Plug-in sleeves up to pipe $\varnothing 160$ mm – see page 46 (collar one size larger than the pipe diameter)
- Diagonally surface mounted up to pipe $\varnothing 160$ mm and 45° – see page 46

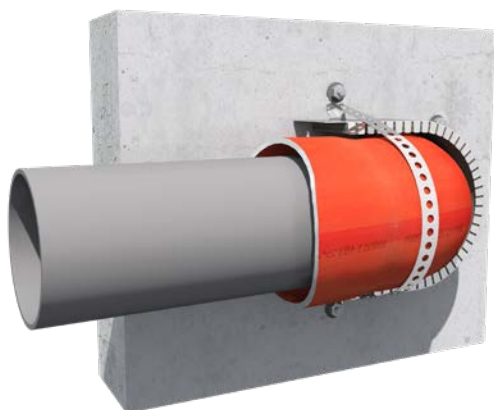
¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

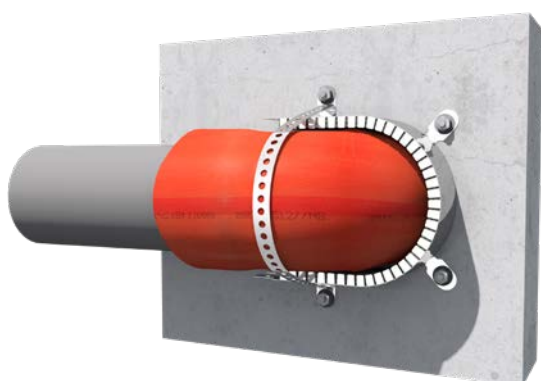
RORCOL V60 – U-application For plastic sewage elbows

Rigid walls, thickness ≥ 100 mm, density ≥ 500 kg/m³

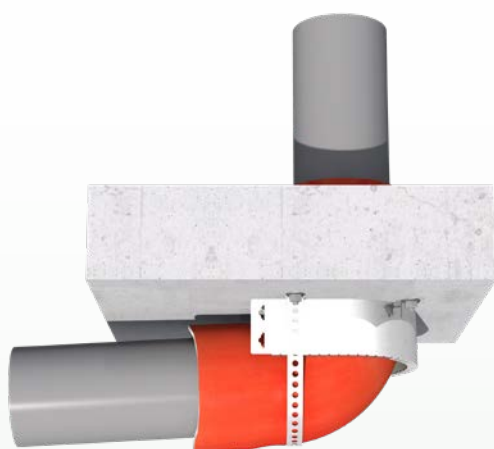
Aerated concrete walls, brick walls, concrete walls



RORCOL V60 mounted as U-application



RORCOL V60 mounted as U-application



RORCOL V60 mounted as U-application

Application areas

RORCOL dimension

U-application Required collar sizes			
Type	Pipe material	Outer pipe diameter [mm]	Collar size required
RORCOL V60	PP	Ø50	DN63
		Ø75	DN110
		Ø90	DN110
		Ø110	DN125

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material / Outer pipe diameter

- PP $\leq \text{Ø}110$ mm
- PP multilayer pipes $\leq \text{Ø}110$ mm
 - POLO-KAL NG, RAUPIANO PLUS, etc.

Insulating material / Insulation thickness (LS, CS)²

- PE 5 mm

Fixing

Stainless steel perforated tape with/without plastic coating and

- Metal anchor, metal dowel with screws
- Chipboard screws (aerated concrete)

Installation method

- Surface mounted

- Changes of direction can be made right after the separating element

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

RORCOL AV60 For multi-layer composite pipes, metal pipes and cables

Rigid walls, thickness ≥ 100 mm, density ≥ 500 kg/m³

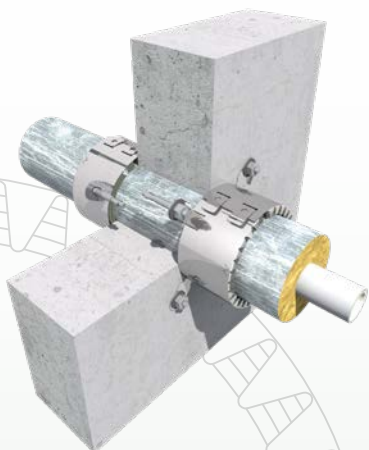
Aerated concrete walls, brick walls, concrete walls



RORCOL AV60 surface mounted



RORCOL AV60 surface mounted
Multiple penetration



RORCOL AV60 surface mounted

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN110, DN125, DN140, DN160

Pipe end configuration¹

- U/C, C/C

Pipe material / Outer pipe diameter

- Multi-layer composite pipes $\leq \varnothing 63$ mm
 - TECEflex, KELOX[®] ($\leq \varnothing 75$ mm), etc.
- Metal pipes: Carbon steel $\leq \varnothing 76$ mm
Copper $\leq \varnothing 22$ mm

Insulating material / Insulation thickness (CS)²

For multi-layer composite pipes:

- PE protective pipe
- PE 9-10 mm
- Elastomer 9-43 mm
- Mineral wool with aluminium laminate ≤ 50 mm

For metal pipes:

- PE ≥ 10 mm
- Elastomer ≥ 6 mm
- Mineral wool with aluminium laminate ≥ 30 mm

Fixing

- Metal anchor, metal dowel with screws
- Chipboard screws (aerated concrete)

Installation method

- Surface mounted
- Flush mounted

Other applications

- Omega-application
- Multiple penetration – see page 48
- Penetration seals for electrics and air conditioning – see page 48

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

RORCOL AV60 – Omega-application

For multi-layer composite pipes, metal pipes and cables

Rigid walls, thickness ≥ 100 mm, density ≥ 500 kg/m³

Aerated concrete walls, brick walls, concrete walls



RORCOL AV60 mounted as Omega-application, on the wall



RORCOL AV60 mounted as Omega-application, on the top side of the floor



RORCOL AV60 mounted as Omega-application, on the top side of the floor

Application areas

RORCOL dimension

Omega-application Required collar sizes (if no spacing between pipes)				
Type	Pipe material	Outer pipe diameter [mm]	Collar size required	
RORCOL AV60	max. 2 x Al-PE	$\leq \text{Ø}26$	DN40	DN56
	max. 1 x PP	$\leq \text{Ø}50$		
	max. 2 x Al-PE	$\leq \text{Ø}26$	DN63	DN80
	max. 1 x PP	$\leq \text{Ø}75$		
	max. 1 x electrical conduit	$\leq \text{Ø}25$		

Pipe end configuration¹

For sewage pipes:

- U/U, U/C, C/U, C/C

For multi-layer composite pipes:

- U/C, C/C

Pipe material / Outer pipe diameter

Maximum penetration:

- Max. 2 x multi-layer composite pipe $\leq \text{Ø}26$ mm
Max. 1 x PP pipe $\leq \text{Ø}75$ mm
- Max. 2 x copper pipe $\text{Ø}16$ mm
Max. 1 x PP pipe $\leq \text{Ø}32$ mm
Max. 1 x electrical conduit $\leq \text{Ø}32$ mm
Each with 1 pc. cable max. 5 x 2.5 mm²

Insulating material / Insulation thickness (LS, CS)²

For multi-layer composite pipes:

- PE 9-10 mm
- Elastomer 9-13 mm

For metal pipes:

- PE ≥ 10 mm
- Elastomer ≥ 9 mm

Fixing

- Depending on adjacent separating element

Installation method

- Surface mounted, mounted on the top side of the floor
- Surface mounted, mounted on the wall
- Surface mounted, mounted on the bottom side of the floor

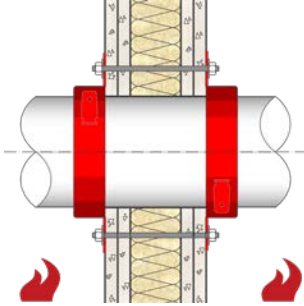
¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

Flexible walls

Thickness ≥ 100 mm

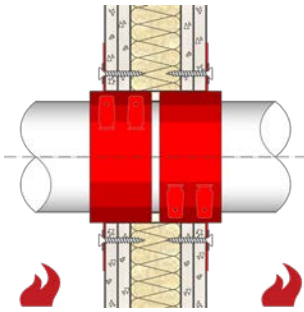
Steel studs (CW profiles) or timber studs* lined on both sides with at least 2 x 12.5 mm and at least two layers



Surface mounted

Type of pipe collar:

- RORCOL V30/DN40 – DN140
- RORCOL V60/DN56 – DN200
- RORCOL AV60/DN40 – DN160



Flush mounted

Type of pipe collar:

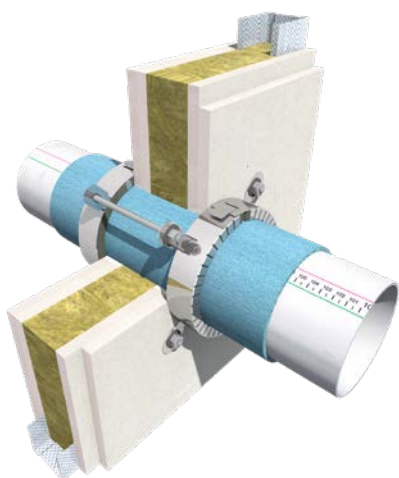
- RORCOL V60/DN160
- RORCOL AV60/DN160

*In the case of flexible walls with timber studs, no part of the penetration seal can be within 100 mm of a stud. The gap between seal and stud is sealed and filled with at least 100 mm of class A1 or A2 insulation in accordance with EN 13501-1.

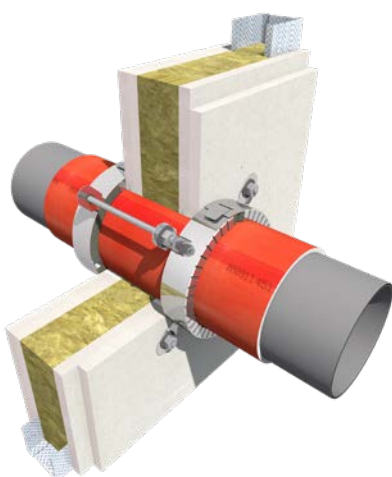
RORCOL V30 For plastic sewage pipes

Flexible walls, thickness ≥ 100 mm

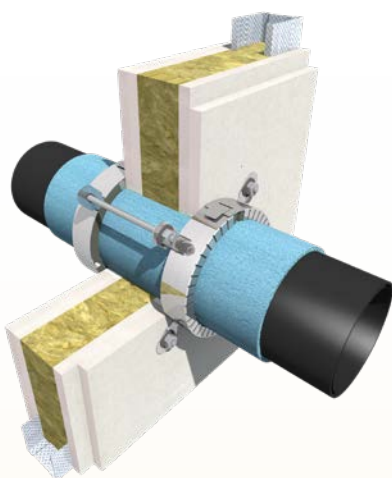
Steel studs (CW profiles) or timber studs* lined on both sides with at least 2 x 12.5 mm and at least two layers



RORCOL V30 surface mounted



RORCOL V30 surface mounted



RORCOL V30 surface mounted

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN100, DN110, DN125, DN140

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material / Outer pipe diameter

- PE, PP $\leq \varnothing 135$ mm
- PVC-U $\leq \varnothing 125$ mm
- PP multilayer pipes $\leq \varnothing 125$ mm
 - POLO-KAL NG, XS, 3S; RAUPIANO PLUS, etc.

Insulating material / Insulation thickness (LS, CS)²

- Uninsulated
- PE ≤ 5 mm
- Elastomer ≤ 6 mm

Fixing

- Threaded bars end to end

Installation method

- Surface mounted

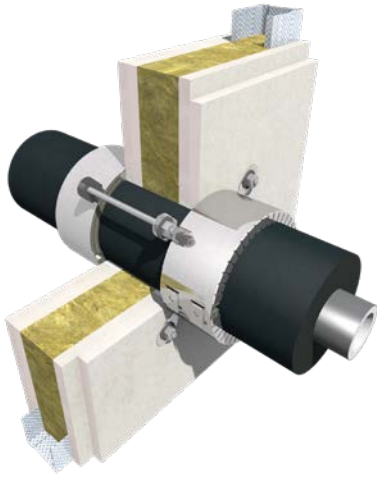
¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

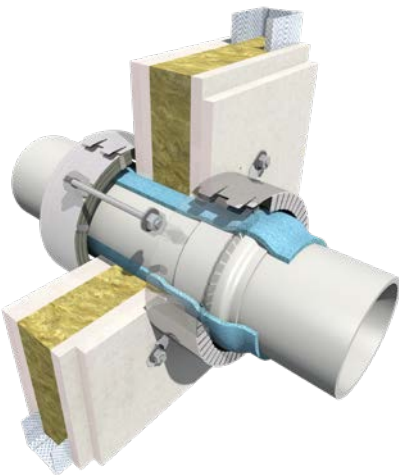
RORCOL V60 For plastic sewage and pressurised water pipes

Flexible walls, thickness ≥ 100 mm

Steel studs (CW profiles) or timber studs* lined on both sides with at least 2 x 12.5 mm and at least two layers



RORCOL V60 surface mounted



RORCOL V60 surface mounted
Plug-in sleeve



RORCOL V60 mounted as
Omega-application, on the top side of the floor

Application areas

RORCOL dimension

- DN56, DN63, DN80, DN110, DN125, DN140, DN160, DN180, DN200

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material / Outer pipe diameter

- PE $\leq \varnothing 200$ mm
- PP $\leq \varnothing 160$ mm
- PP-R $\leq \varnothing 110$ mm
- PVC-U $\leq \varnothing 200$ mm
- PP multilayer pipes $\leq \varnothing 160$ mm
- POLO-KAL NG ($\leq \varnothing 200$ mm), XS, 3S; RAUPIANO PLUS, etc.

Insulating material / Insulation thickness (LS, CS)²

- Uninsulated
- PE ≤ 5 mm
- Elastomer ≤ 6 mm
- Elastomer ≤ 43 mm for PP-R pipes
- Mineral wool with aluminium laminate ≤ 50 mm for PP-R pipes

Fixing

- Threaded bars end to end (if surface mounted)
- Drywall screws (if flush mounted)

Installation method

- Surface mounted
- Flush mounted with mounting lug extension

Other applications

- Omega-application
- U-application

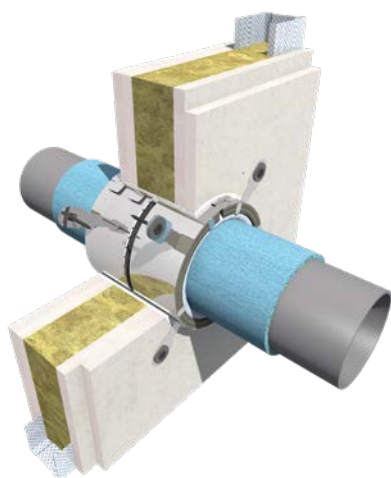
¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

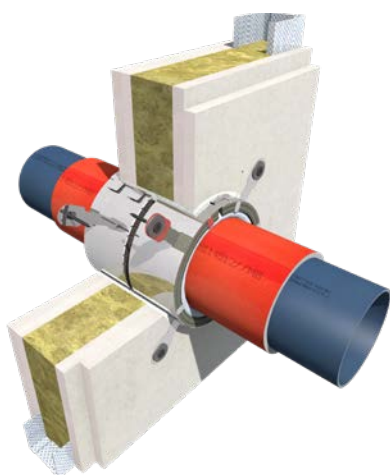
RORCOL V60 – flush mounted For plastic sewage and pressurised water pipes

Flexible walls, thickness ≥ 100 mm

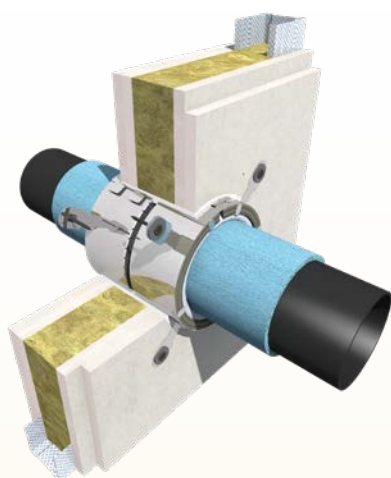
Steel studs (CW profiles) or timber studs* lined on both sides with at least 2 x 12.5 mm and at least two layers



RORCOL V60 flush mounted



RORCOL V60 flush mounted



RORCOL V60 flush mounted

Application areas

RORCOL dimension

- DN56, DN63, DN80, DN110, DN125, DN140, DN160

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material / Outer pipe diameter

- PE $\leq \varnothing 160$ mm
- PP $\leq \varnothing 160$ mm
- PP-R $\leq \varnothing 110$ mm
- PVC-U $\leq \varnothing 160$ mm
- PP multilayer pipes $\leq \varnothing 160$ mm
- POLO-KAL NG, XS, 3S; RAUPIANO PLUS, etc.

Insulating material / Insulation thickness (LS, CS)²

- Uninsulated
- PE ≤ 5 mm
- Elastomer ≤ 6 mm
- Elastomer ≤ 43 mm for PP-R pipes
- Mineral wool with aluminium laminate ≤ 50 mm for PP-R pipes

Fixing

- Threaded bars end to end (if surface mounted)
- Drywall screws (if flush mounted)

Installation method

- Surface mounted
- Flush mounted with mounting lug extension

Other applications

- Omega-application
- U-application

- Fixed in place with drywall screws – no additional threaded bars required
- Less space needed

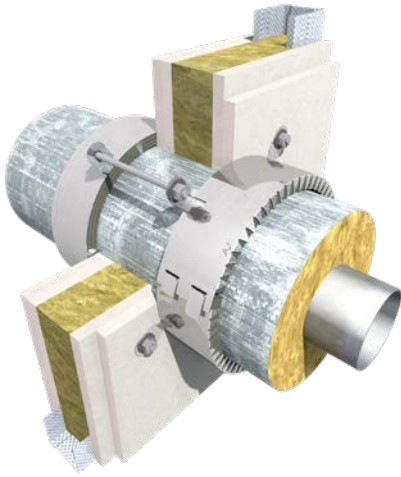
¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

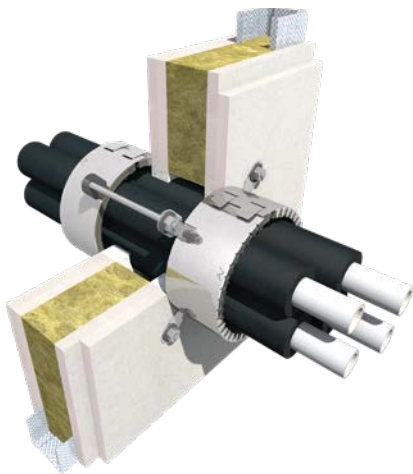
RORCOL AV60 For multi-layer composite pipes, metal pipes and cables

Flexible walls, thickness ≥ 100 mm

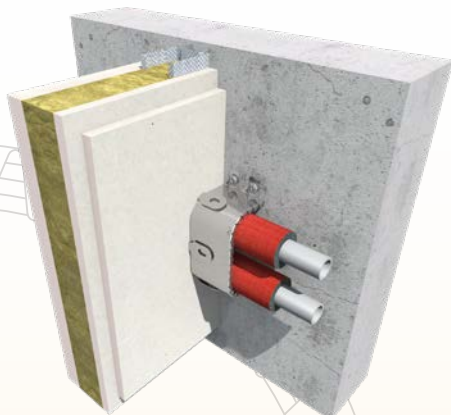
Steel studs (CW profiles) or timber studs* lined on both sides with at least 2 x 12.5 mm and at least two layers



RORCOL AV60 surface mounted



RORCOL AV60 surface mounted
Multiple penetration



RORCOL AV60 mounted as
Omega-application, on the wall

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN110, DN125, DN140, DN160

Pipe end configuration¹

- U/C; C/C

Pipe material / Outer pipe diameter

- Multi-layer composite pipes $\leq \varnothing 63$ mm
 - TECEflex, KELOX® ($\leq \varnothing 75$ mm), etc.
- Metal pipes: Carbon steel $\leq \varnothing 76$ mm
Copper $\leq \varnothing 22$ mm

Insulating material / Insulation thickness (CS)²

For multi-layer composite pipes:

- PE protective pipe
- PE 9-10 mm
- Elastomer 9-32 mm
- Mineral wool with aluminium laminate ≤ 50 mm

For metal pipes:

- PE ≥ 10 mm
- Elastomer ≥ 9 mm
- Mineral wool with aluminium laminate ≥ 30 mm

Fixing

- Threaded bars end to end (if surface mounted)
- Drywall screws (if flush mounted)

Installation method

- Surface mounted
- Flush mounted with mounting lug extension

Other applications

- Omega-application
- Penetration seals for electrics and air conditioning – see page 54

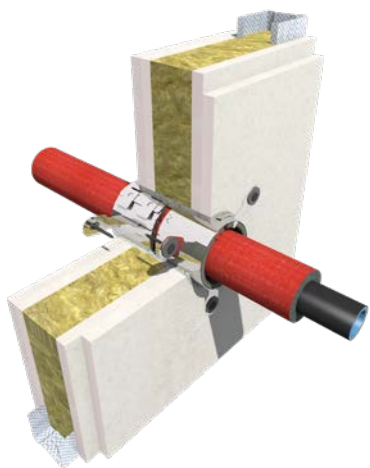
¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

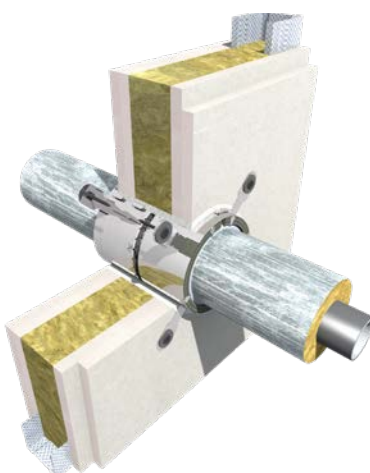
RORCOL AV60 – flush mounted For multi-layer composite pipes, metal pipes and cables

Flexible walls, thickness ≥ 100 mm

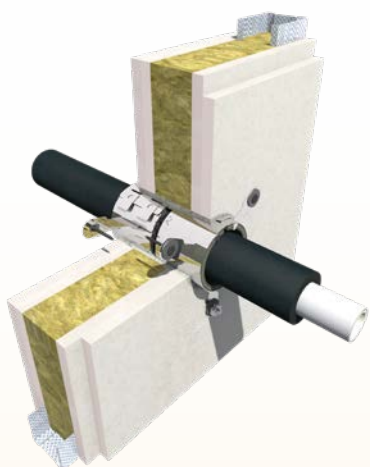
Steel studs (CW profiles) or timber studs* lined on both sides with at least 2 x 12.5 mm and at least two layers



RORCOL AV60 flush mounted



RORCOL AV60 flush mounted



RORCOL AV60 flush mounted

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN110, DN125, DN140, DN160

Pipe end configuration¹

- U/C; C/C

Pipe material / Outer pipe diameter

- Multi-layer composite pipes $\leq \varnothing 63$ mm
 - TECEflex, KELOX® ($\leq \varnothing 75$ mm), etc.
- Metal pipes: Carbon steel $\leq \varnothing 76$ mm
 - Copper $\leq \varnothing 22$ mm

Insulating material / Insulation thickness (CS)²

For multi-layer composite pipes:

- PE protective pipe
- PE 9-10 mm
- Elastomer 9-32 mm
- Mineral wool with aluminium laminate ≤ 50 mm

For metal pipes:

- PE ≥ 10 mm
- Elastomer ≥ 9 mm
- Mineral wool with aluminium laminate ≥ 30 mm

Fixing

- Threaded bars end to end (if surface mounted)
- Drywall screws (if flush mounted)

Installation method

- Surface mounted
- Flush mounted with mounting lug extension

Other applications

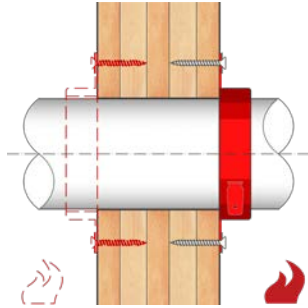
- Omega-application
- Penetration seals for electrics and air conditioning – see page 55

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

Cross-laminated timber walls

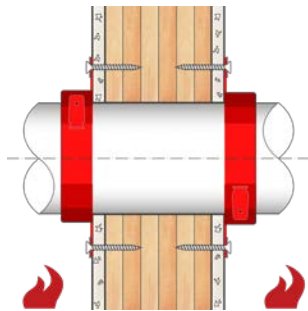
ETA-06/0138 – 150 mm cross-laminated timber
ETA-06/0138 – 100 mm cross-laminated timber
+ 15 mm fire-resistant plasterboard on both sides
Plasterboard in accordance with EN 520 DF (fire-resistant plasterboard)



150 mm cross-laminated timber

Type of pipe collar:

- RORCOL V30/DN40 – DN140
- RORCOL V60/DN56 – DN160
- RORCOL AV60/DN40 – DN140



100 mm cross-laminated timber + 15 mm fire-resistant plasterboard on both sides

Type of pipe collar:

- RORCOL V30/DN40 – DN110
- RORCOL V60/DN56 – DN110
- RORCOL AV60/DN40 – DN125



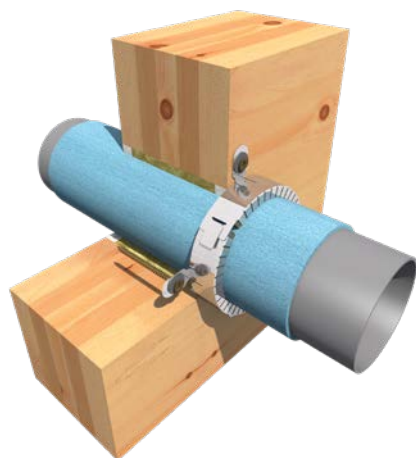
RORCOL V30 / RORCOL V60 / RORCOL AV60

For plastic pipes or multi-layer composite pipes, metal pipes and cables

Cross-laminated timber walls

ETA-06/0138 – 150 mm cross-laminated timber

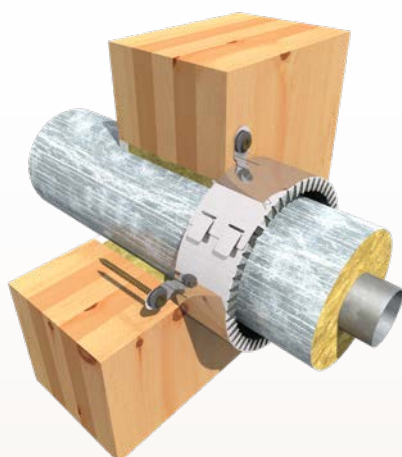
ETA-06/0138 – 100 mm cross-laminated timber + 15 mm fire-resistant plasterboard on both sides



RORCOL V30 surface mounted



RORCOL AV60 surface mounted



RORCOL AV60 surface mounted

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN100, DN110, DN125, DN140, DN160

Pipe end configuration¹

For sewage pipes:

- U/U, U/C, C/U, C/C

For multi-layer composite pipes:

- U/C, C/C

Pipe material

- PE
- PP
- Multi-layer composite pipes
 - TECEflex, Geberit Mepla
- Metal pipes: Carbon steel
Copper

Insulating material (LS, CS)²

For sewage and pressurised water pipes:

- Uninsulated
- PE

For multi-layer composite pipes:

- PE
- Elastomer

For metal pipes:

- Mineral wool with aluminium laminate

Fixing

- Chipboard screws

Installation method

- Surface mounted on one side³
- Surface mounted on both sides

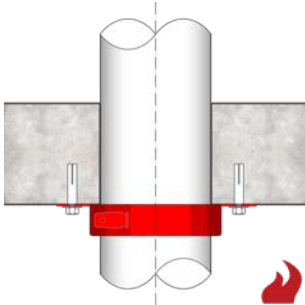
¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

³ Observe national building regulations applicable locally

Rigid floors

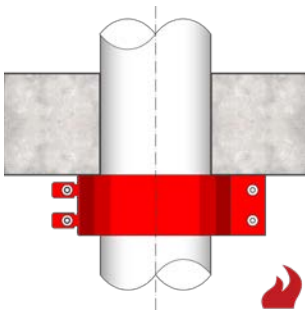
Thickness ≥ 150 mm, density ≥ 500 kg/m³
 Aerated concrete floors, concrete floors



Surface mounted

Type of pipe collar:

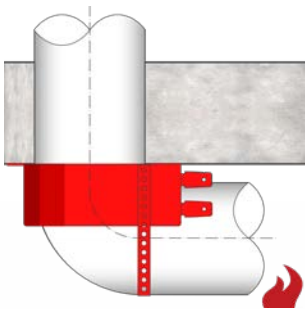
- RORCOL V30/DN40 – DN140
- RORCOL V60/DN56 – DN250
- RORCOL AV60/DN40 – DN160



Omega-application

Type of pipe collar:

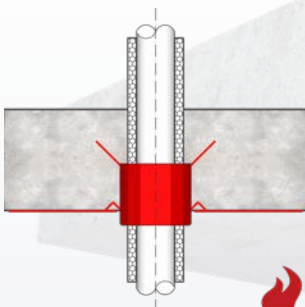
- RORCOL V60/DN56 – DN110



U-application

Type of pipe collar:

- RORCOL V60/DN63 – DN160



Flush mounted with formwork with integrated positioning aid (see page 58)

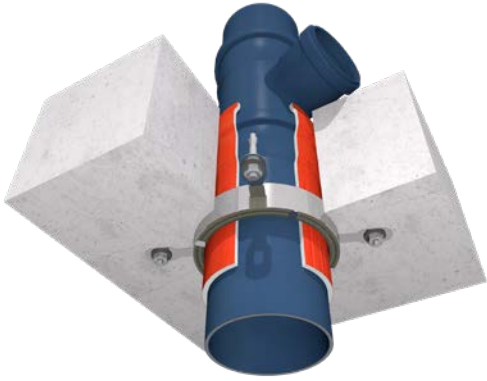
Type of pipe collar:

- RORCOL V60/DN56 – DN160
- RORCOL AV60/DN40 – DN160

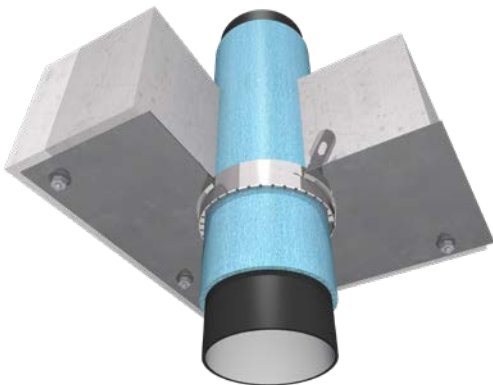
RORCOL V30 For plastic sewage pipes

Rigid walls, thickness ≥ 150 mm, density ≥ 500 kg/m³

Aerated concrete floors, concrete floors



RORCOL V30 flush mounted
with integrated mounting lug extension



RORCOL V30 flush mounted with formwork



RORCOL V30 surface mounted
Slanted penetrating element

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN100, DN110, DN125, DN140

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material / Outer pipe diameter

- PE, PP $\leq \varnothing 135$ mm
- PP multilayer pipes $\leq \varnothing 125$ mm
 - POLO-KAL NG, XS, 3S; RAUPIANO PLUS, etc.

Insulating material / Insulation thickness (LS, CS)²

- Uninsulated
- PE ≤ 5 mm
- Elastomer ≤ 6 mm

Fixing

- Metal anchor, metal dowel with screws
- Chipboard screws (aerated concrete)
- MH/RORCOL mounting tool

Installation method

- Surface mounted on the bottom side of the floor
- Flush mounted on the bottom side of the floor – see page 59
- Flush mounted on the bottom side of the floor with integrated mounting lug extension – see page 59
- Flush mounted on the bottom side of the floor using MH/RORCOL mounting tool – see page 59
- Flush mounted on the bottom side of the floor in formwork – see page 59

Other applications

- Diagonally surface mounted up to pipe $\varnothing 110$ mm and 45° – see page 59

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

RORCOL V60 For plastic sewage and pressurised water pipes

Rigid walls, thickness ≥ 150 mm, density ≥ 500 kg/m³

Aerated concrete floors, concrete floors



RORCOL V60 surface mounted Plug-in sleeve



RORCOL V60 flush mounted slanted penetrating element



RORCOL V60 surface mounted Electrofusion sleeve coupling

Application areas

RORCOL dimension

- DN56, DN63, DN80, DN110, DN125, DN140, DN160, DN250

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material / Outer pipe diameter

- PE $\leq \varnothing 135$ mm
- PP $\leq \varnothing 160$ mm
- PP-R $\leq \varnothing 110$ mm
- PP multilayer pipes $\leq \varnothing 160$ mm
- POLO-KAL NG ($\leq \varnothing 200$ mm), XS, 3S; RAUPIANO PLUS, etc.

Insulating material / Insulation thickness (LS, CS)²

- Uninsulated
- PE ≤ 5 mm
- PE ≤ 10 mm for PP-R pipes
- Elastomer ≤ 25 mm
- Elastomer ≤ 43 mm for PP-R pipes EI90
- Mineral wool with aluminium laminate ≤ 50 mm for PP-R pipes

Fixing

- Metal anchor, metal dowel with screws
- Chipboard screws (aerated concrete)
- MH/RORCOL mounting tool

Installation method

- Surface mounted on the bottom side of the floor
- Flush mounted on the bottom side of the floor – see page 60
- Flush mounted on the bottom side of the floor with integrated mounting lug extension – see page 60
- Flush mounted on the bottom side of the floor using MH/RORCOL mounting tool – see page 60
- Flush mounted on the bottom side of the floor in formwork with integrated positioning aid – see page 60

Other applications

- Omega-application
- U-application
- Plug-in sleeves up to pipe $\varnothing 160$ mm – see page 60
- Electrofusion sleeve couplings up to pipe $\varnothing 110$ mm – see page 60
- Diagonally surface mounted up to pipe $\varnothing 110$ mm and 45° – see page 60
- Diagonally surface mounted up to pipe $\varnothing 125$ mm and 45° – see page 60

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

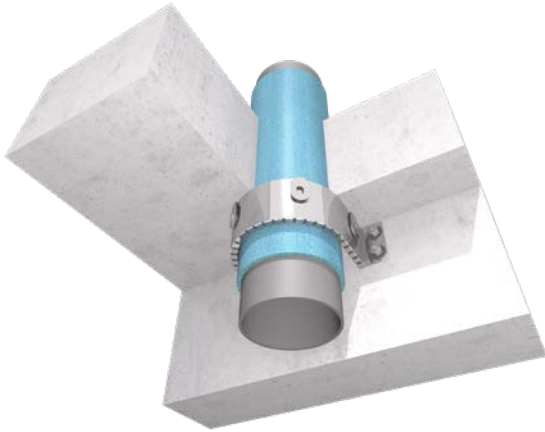
² With local or continuous insulation in accordance with EN 1366-3 – see page 12

RORCOL V60 – Omega-application

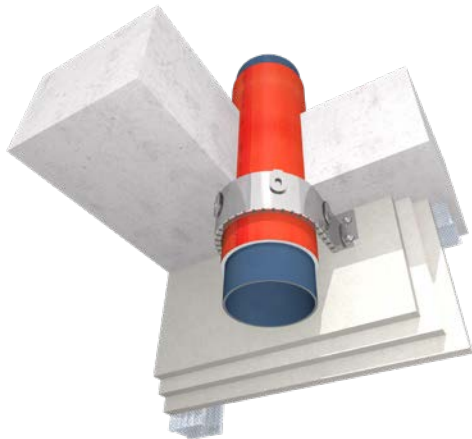
For plastic sewage and pressurised water pipes

Rigid walls, thickness ≥ 150 mm, density ≥ 500 kg/m³

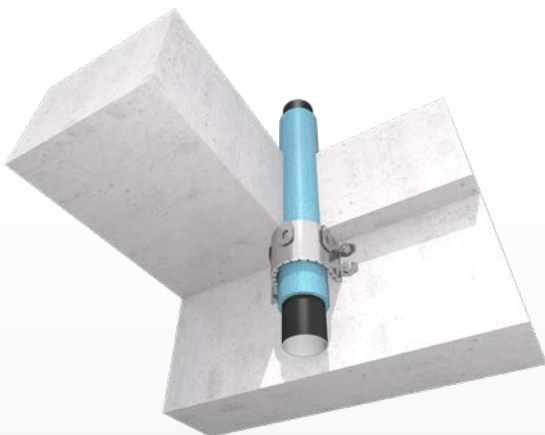
Aerated concrete floors, concrete floors



RORCOL V60 mounted as Omega-application, on the wall



RORCOL V60 mounted as Omega-application, on the wall



RORCOL V60 mounted as Omega-application, on the wall

Application areas

RORCOL dimension

Omega-application Required collar sizes			
Type	Pipe material	Outer pipe diameter [mm]	Collar size required
RORCOL V60	PP	Ø50	DN50
		Ø75	DN80
		Ø90	DN80
		Ø110	DN110

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material / Outer pipe diameter

- PP $\leq \text{Ø}110$ mm
- PP multilayer pipes $\leq \text{Ø}110$ mm
 - Geberit Silent PP, Pipelife Master 3 Plus, etc.

Insulating material / Insulation thickness (LS, CS)²

- PE 5 mm

Fixing

- Depending on adjacent separating element

Installation method

- Surface mounted on the bottom side of the floor, mounted on the wall

Other applications

- Plug-in sleeves up to pipe Ø75 mm – see page 61

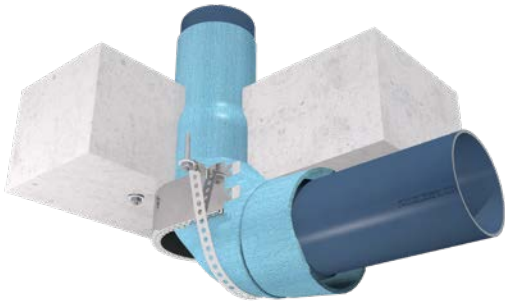
¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

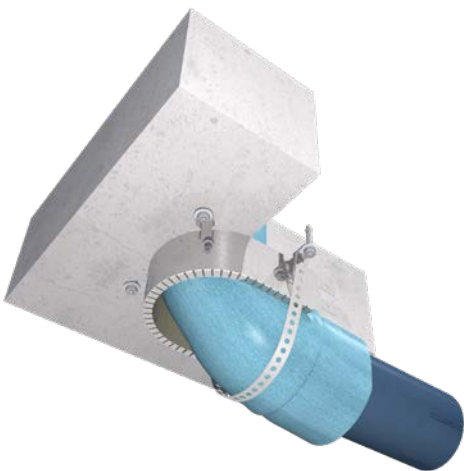
RORCOL V60 - U-application For plastic sewage elbows

Rigid walls, thickness ≥ 150 mm, density ≥ 500 kg/m³

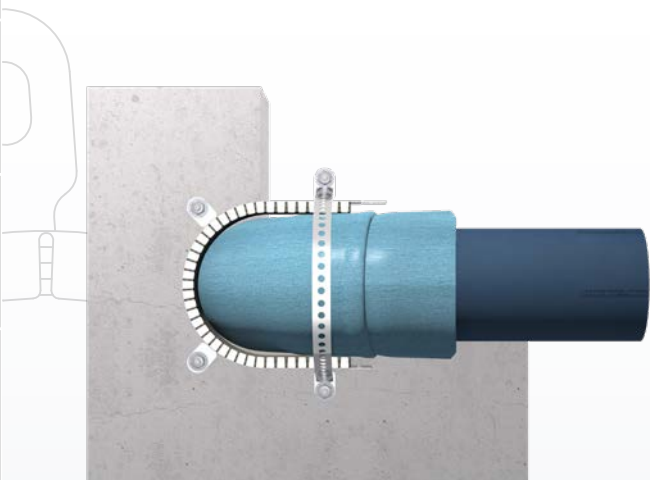
Aerated concrete floors, concrete floors



RORCOL V60 mounted as U-application



RORCOL V60 mounted as U-application



RORCOL V60 mounted as U-application

Application areas

RORCOL dimension

U-application Required collar sizes			
Type	Material	Outer pipe diameter [mm]	Collar size required
RORCOL V60	PP	Ø50	DN63
		Ø75	DN110
		Ø90	DN110
		Ø110	DN125
		Ø125	DN140
		Ø135	DN160

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material / Outer pipe diameter

- PP $\leq \text{Ø}135$ mm
- PP multilayer pipes $\leq \text{Ø}125$ mm
- POLO-KAL NG, RAUPIANO PLUS, etc.

Insulating material / Insulation thickness (LS, CS)²

- PE 5 mm

Fixing

Stainless steel perforated tape with/without plastic coating and

- Metal anchor, metal dowel with screws
- Chipboard screws (aerated concrete)

Installation method

- Surface mounted

■ Suitable for 1 x 87.5° and 2 x 45° sewage elbows

■ Changes of direction can be made right after the bottom side of the floor

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

RORCOL AV60 For multi-layer composite pipes, metal pipes and cables

Rigid walls, thickness ≥ 150 mm, density ≥ 500 kg/m³

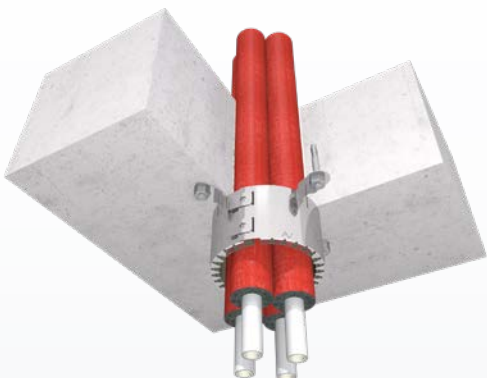
Aerated concrete floors, concrete floors



RORCOL AV60 surface mounted



RORCOL AV60 surface mounted



RORCOL AV60 surface mounted
Multiple penetration

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN110, DN125, DN140, DN160

Pipe end configuration¹

- U/C; C/C

Pipe material / Outer pipe diameter

- Multi-layer composite pipes $\leq \varnothing 63$ mm
 - TECEflex, KELOX® ($\leq \varnothing 75$ mm), etc.
- Metal pipes: Carbon steel $\leq \varnothing 76$ mm
 - Copper $\leq \varnothing 22$ mm

Insulating material / Insulation thickness (CS)²

For multi-layer composite pipes:

- PE protective pipe
- PE 9-10 mm
- Elastomer 9-43 mm
- Mineral wool with aluminium laminate ≤ 60 mm

For metal pipes:

- PE ≥ 9 mm
- Elastomer ≥ 6 mm
- Mineral wool with aluminium laminate ≥ 20 mm

Fixing

- Metal anchor, metal dowel with screws
- Chipboard screws (aerated concrete)
- MH/RORCOL mounting tool

Installation method

- Surface mounted on the bottom side of the floor
- Flush mounted on the bottom side of the floor – see page 63
- Flush mounted on the bottom side of the floor with integrated mounting lug extension – see page 63
- Flush mounted on the bottom side of the floor in formwork with integrated positioning aid – see page 63

Other applications

- Multiple penetration – see page 63
- Penetration seals for electrics and air conditioning – see page 63

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

Cross-laminated timber floors

ETA-06/0009 – 200 mm cross-laminated timber

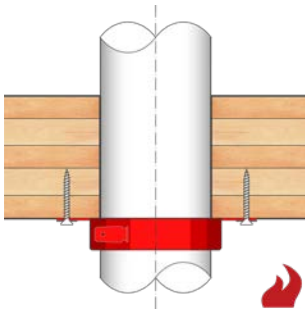
ETA-06/0138 – 140 mm cross-laminated timber

+ 12.5 mm fire-resistant plasterboard

ETA-06/0138 – 90 mm cross-laminated timber

+ 2 x 15 mm fire-resistant plasterboard

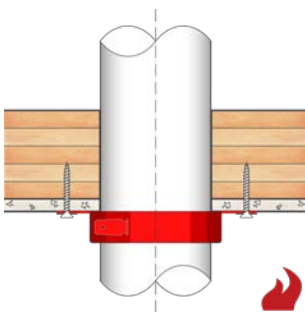
Plasterboard in accordance with EN 520 DF (fire-resistant plasterboard)



200 mm cross-laminated timber

Type of pipe collar:

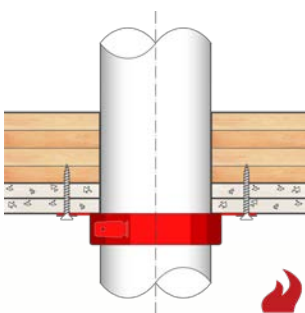
- RORCOL V30/DN40 – DN110
- RORCOL V60/DN56 – DN110
- RORCOL AV60/DN40 – DN110



140 mm cross-laminated timber + 12.5 mm fire-resistant plasterboard

Type of pipe collar:

- RORCOL V30/DN40 – DN125
- RORCOL V60/DN56 – DN125



90 mm cross-laminated timber + 2 x 15 mm fire-resistant plasterboard

Type of pipe collar:

- RORCOL V60/DN56 – DN110
- RORCOL AV60/DN40 – DN110



RORCOL V30 / RORCOL V60 / RORCOL AV60

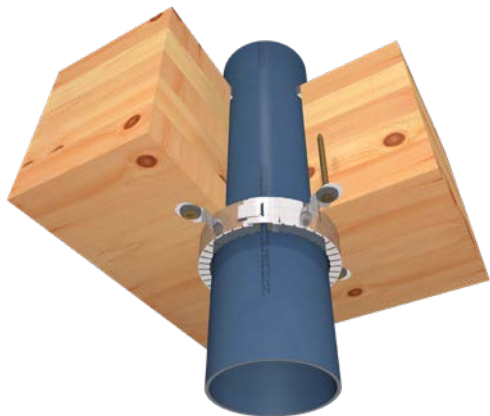
For plastic pipes or multi-layer composite pipes, metal pipes and cables

Cross-laminated timber floors

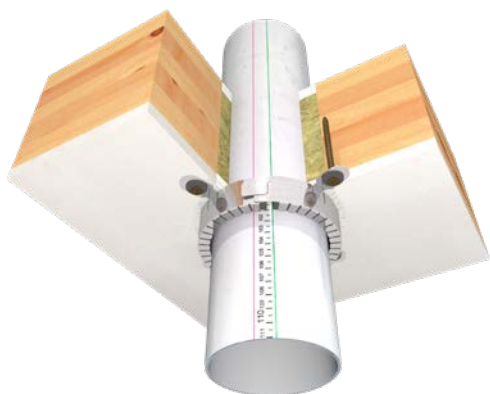
ETA-06/0009 – 200 mm cross-laminated timber

ETA-06/0138 – 140 mm cross laminated timber + 12.5 mm fire-resistant plasterboard

ETA-06/0138 – 90 mm cross-laminated timber + 2 x 15 mm fire-resistant plasterboard



RORCOL V30 surface mounted



RORCOL V30 surface mounted



RORCOL AV60 surface mounted

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN100, DN110, DN125

Pipe end configuration¹

For sewage pipes:

- U/U, U/C, C/U, C/C

For multi-layer composite pipes:

- U/C, C/C

Pipe material

- PE
- PP
- Multi-layer composite pipes
 - TECEflex, Geberit Mepla, etc.
- Metal pipes

Insulating material (LS, CS)²

For sewage and pressurised water pipes:

- Uninsulated
- PE

For multi-layer composite pipes:

- PE
- Elastomer
- Mineral wool with aluminium laminate

For metal pipes:

- Elastomer
- Mineral wool with aluminium laminate

Fixing

- Chipboard screws

Installation method

- Surface mounted on the bottom side of the floor

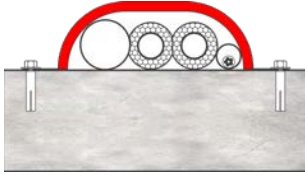
¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

Omega-application

To use a RORCOL V60 or RORCOL AV60 fire protection collar as Omega-application, it is opened at the closure system and positioned so as to lie above the pipe(s) and cables. It is mounted on the adjacent building element (wall, top or bottom side of the floor) using the four fastening methods envisaged for this purpose on the closure system.

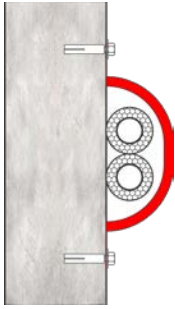
Floor



Type of pipe collar:

- RORCOL V60/DN56 – DN110
- RORCOL AV60/DN40 – DN80

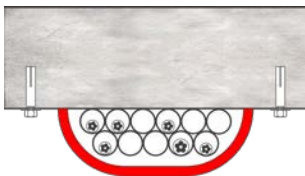
Wall



Type of pipe collar:

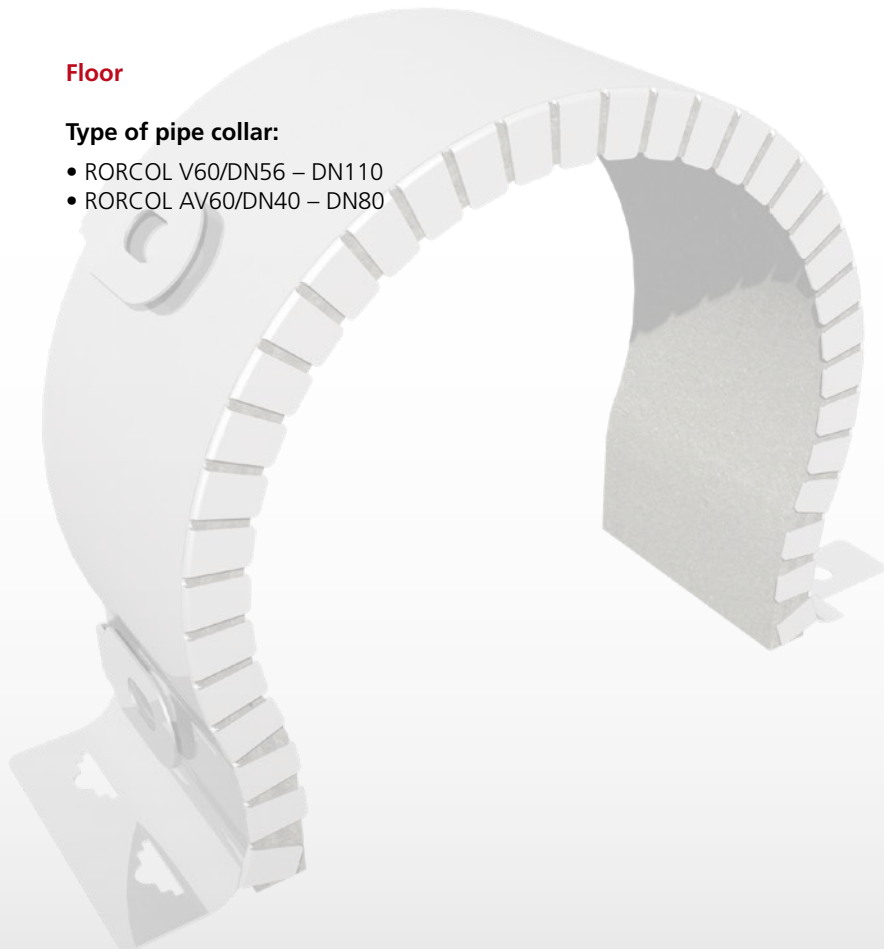
- RORCOL V60/DN56 – DN110
- RORCOL AV60/DN40 – DN80

Floor



Type of pipe collar:

- RORCOL V60/DN56 – DN110
- RORCOL AV60/DN40 – DN80

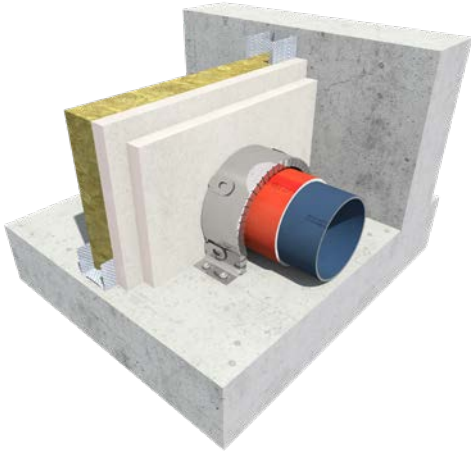


RORCOL V60

For plastic sewage and pressurised water pipes

Omega-application

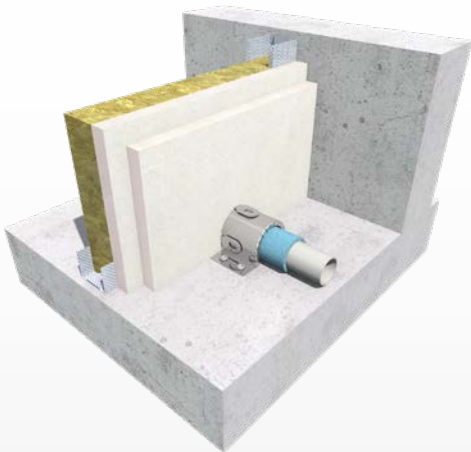
Shaft walls, rigid floors



RORCOL V60 mounted as Omega-application, on the top side of the floor



RORCOL V60 mounted as Omega-application, on the wall



RORCOL V60 mounted as Omega-application, on the top side of the floor

Application areas

RORCOL dimension

Omega-application Required collar sizes			
Type	Pipe material	Outer pipe diameter [mm]	Collar size required
RORCOL V60	PP	Ø50	DN50
		Ø75	DN80
		Ø90	DN80
		Ø110	DN110

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material / Outer pipe diameter

- PE, PP ≤ Ø110 mm
- PP multilayer pipes ≤ Ø110 mm
 - POLO-KAL NG, RAUPIANO PLUS, etc.

Insulating material / Insulation thickness (LS, CS)²

- PE 5 mm

Fixing

- Depending on adjacent separating element

Installation method

- Surface mounted, mounted on the top side of the floor
- Surface mounted, mounted on the wall

Other applications

- Plug-in sleeves up to pipe Ø78 mm

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

RORCOL AV60 For multi-layer composite pipes, metal pipes and cables

Omega-application

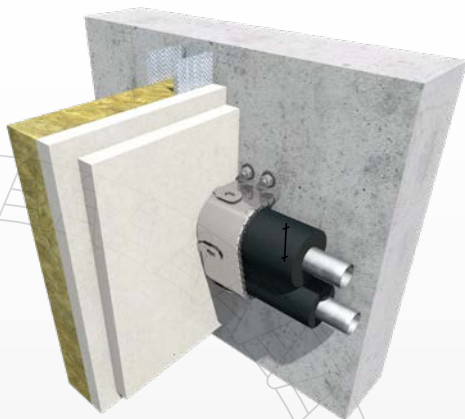
Shaft walls, rigid and flexible walls



RORCOL AV60 mounted as Omega-application, on the top side of the floor



RORCOL AV60 mounted as Omega-application, on the top side of the floor



RORCOL AV60 mounted as Omega-application, on the wall

Application areas

RORCOL dimension

Omega-application Required collar sizes (if no spacing between pipes)			
Type	Pipe material	Outer pipe diameter [mm]	Collar size required
RORCOL AV60	max. 2 x Al-PE	≤ Ø26	DN40
	max. 1 x PP	≤ Ø50	DN56
	max. 2 x Al-PE	≤ Ø26	DN63
	max. 1 x PP	≤ Ø75	
	max. 1 x electrical conduit	≤ Ø25	DN80

Pipe end configuration¹

For sewage pipes:

- U/U, U/C, C/U, C/C

For multi-layer composite pipes:

- U/C, C/C

Maximum penetration:

Shaft walls, rigid and flexible walls

- Max. 2 x multi-layer composite pipe ≤ Ø26 mm
- Max. 1 x PP pipe ≤ Ø75 mm

Insulating material / Insulation thickness (CS)²

For multi-layer composite pipes:

- PE 9-10 mm
- Elastomer 9-13 mm

For metal pipes:

- Elastomer ≥ 9 mm

Fixing

- Depending on adjacent separating element

Installation method

- Surface mounted, mounted on the top side of the floor
- Surface mounted, mounted on the wall
- Surface mounted, mounted on the bottom side of the floor

Other applications

- Diagonal up to 45°

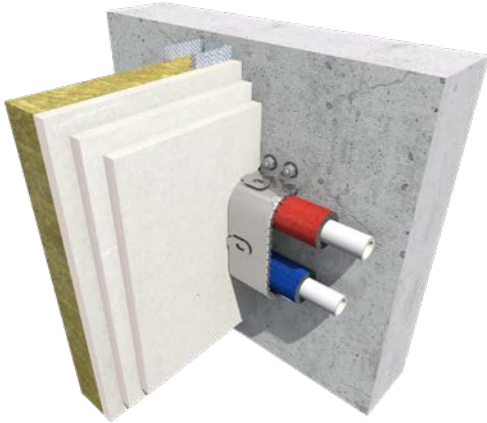
¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

RORCOL AV60 For multi-layer composite pipes, metal pipes and cables

Omega-application – Working clearances

Shaft walls, rigid and flexible walls, rigid floors



RORCOL AV60 mounted as Omega-application, on the wall

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80

Shaft walls ≥ EI90 lined on one side

- 2 x 20 mm fire-resistant plasterboard
- 3 x 15 mm fire-resistant plasterboard
- 2 x 25 mm fire-resistant plasterboard

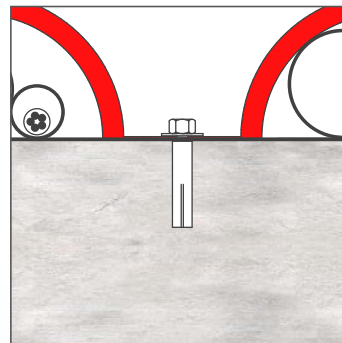
Rigid walls

Thickness ≥ 100 mm

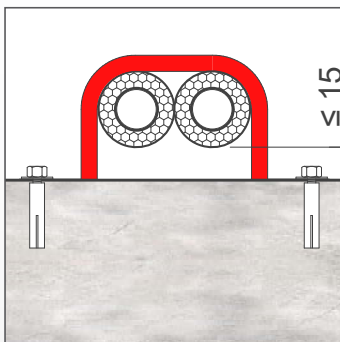
- Aerated concrete walls
- Brick walls
- Concrete walls



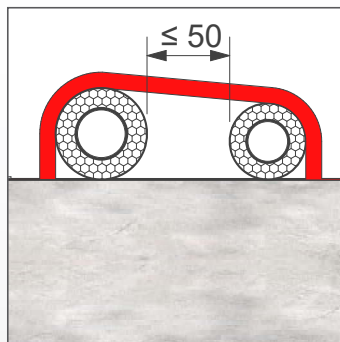
RORCOL AV60 mounted as Omega-application, on the top side of the floor



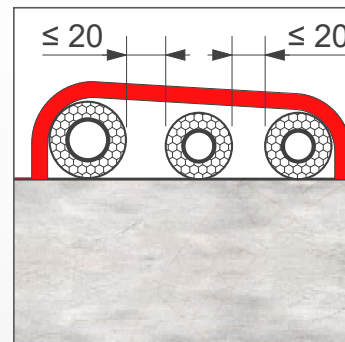
Concerted screw fastening



Distance between adjacent rigid building element and pipes



Distance between two pipes

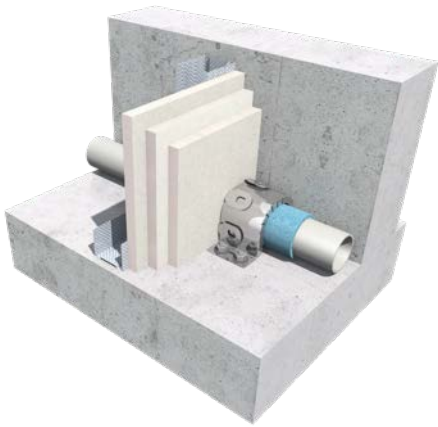


Distance when there are multiple feedthroughs

RORCOL V60 For plastic sewage and pressurised water pipes

Omega-application – in corners

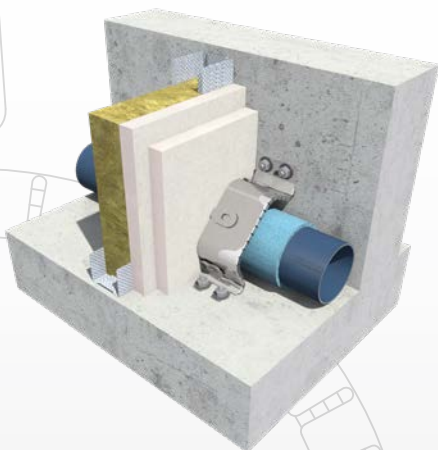
Shaft walls, rigid and flexible walls



RORCOL V60 mounted as Omega-application, fixed in the corner



RORCOL V60 mounted as Omega-application, fixed in the corner



RORCOL V60 mounted as Omega-application, fixed in the corner

Application areas

RORCOL dimension

- DN56, DN63, DN80

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material / Outer pipe diameter

- PP ≤ Ø78 mm
- PP multilayer pipes ≤ 50 mm
 - Pipelife Master 3 Plus, Geberit Silent PP, etc.

Insulating material / Insulation thickness (LS, CS)²

- PE 5 mm

Fixing

- Depending on adjacent separating element

Installation method

- Surface mounted, fixed in the corner

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

RORCOL V60 / RORCOL AV60

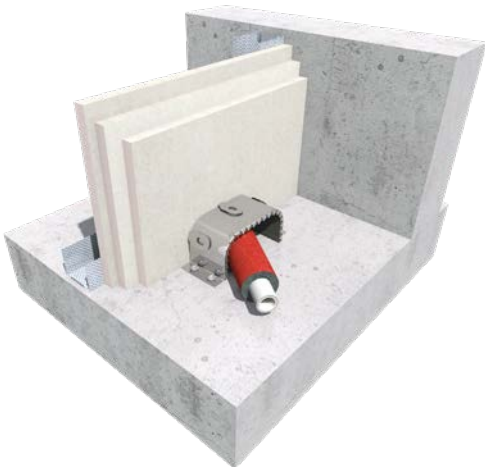
For plastic pipes or multi-layer composite pipes, metal pipes and cables

Omega-application – slanted penetrating element

Shaft walls



RORCOL AV60 mounted as Omega-application, on the top side of the floor



RORCOL AV60 mounted as Omega-application, on the top side of the floor



RORCOL AV60 mounted as Omega-application, on the top side of the floor

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN110

Shaft walls \geq EI90 lined on one side

- 2 x 20 mm fire-resistant plasterboard
- 3 x 15 mm fire-resistant plasterboard
- 2 x 25 mm fire-resistant plasterboard

Rigid walls

Thickness \geq 100 mm

- Aerated concrete walls
- Brick walls
- Concrete walls

Flexible walls

Thickness \geq 100 mm

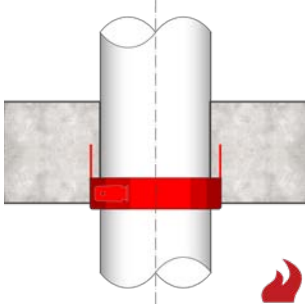
- Lined on both sides with at least 2 x 12.5 mm and at least two layers

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

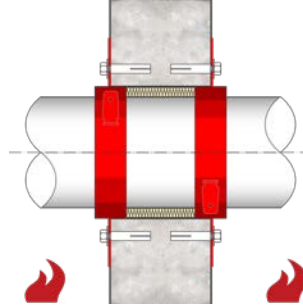
Solutions for specific requirements

Customised solutions make RORCOL pipe collars easier to install and enable them to be fitted even in the most difficult conditions.



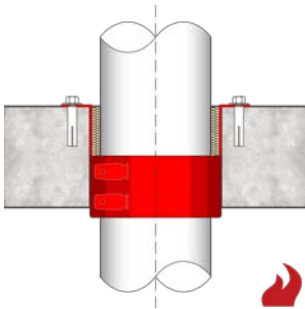
Flush mounted

- Rigid walls
- Rigid floors



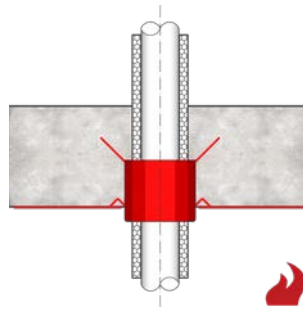
Flush mounted with integrated mounting lug extension

- Shaft walls
- Rigid walls
- Flexible walls
- Rigid floors



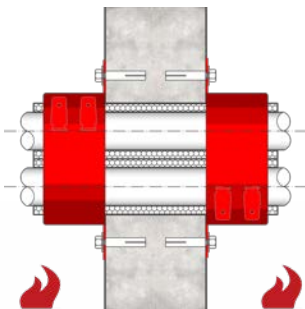
Flush mounted with MH/RORCOL mounting tool

- Protolith installation block
- Rigid walls
- Rigid floors



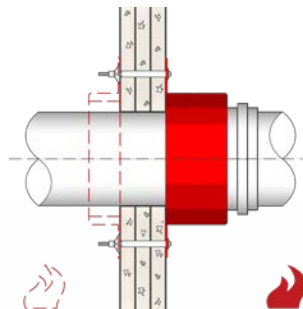
Flush mounted with formwork (with integrated positioning aid)

- Installation in formwork
- Rigid floors



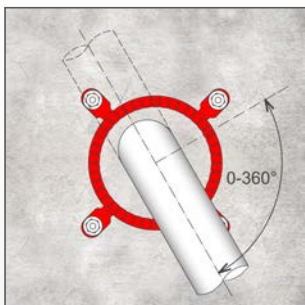
Multiple penetration

- Rigid walls
- Flexible walls
- Rigid floors



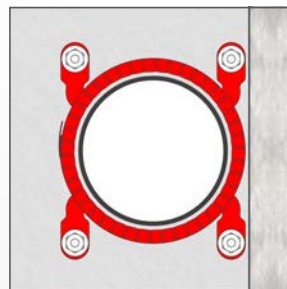
Plug-in sleeve and electrofusion sleeve couplings

- At 90° to the separating element
- Shaft walls
- Rigid walls
- Rigid floors



Slanted penetrating element

- Feedthroughs at between 90° and 45° to the separating element
- Shaft walls
- Rigid walls
- Rigid floors



Twistable mounting lugs

- For fitting into tight spaces
- Walls
- Floors

RORCOL V30 / RORCOL V60 / RORCOL AV60

For plastic pipes or multi-layer composite pipes, metal pipes and cables

Flush mounted

RORCOL pipe collars can be installed via insertion. They are fixed in place using BFM/K310 firestop sealant or another non-combustible material.



RORCOL V30 flush mounted



RORCOL V60 flush mounted



RORCOL AV60 flush mounted

Application areas

RORCOL dimension

For plastic sewage and pressurised water pipes:

- RORCOL V30/DN40-DN140
- RORCOL V60/DN56-DN160

For multi-layer composite pipes and metal pipes:

- RORCOL AV60/DN40-DN160

Separating elements

Rigid walls

Thickness ≥ 100 mm

- Aerated concrete walls
- Brick walls
- Concrete walls

Rigid floors

Thickness ≥ 150 mm

- Aerated concrete floors
- Concrete floors

■ No need for fixings – saves time and money

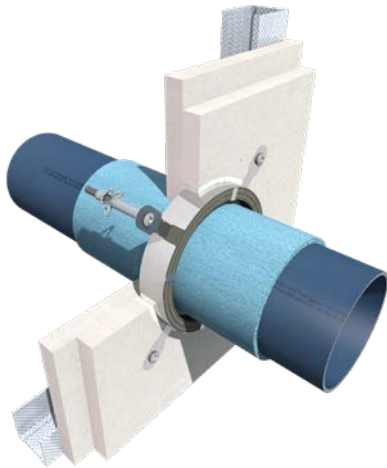
■ Changes of direction can be made right after the separating element

RORCOL V30 / RORCOL V60 / RORCOL AV60

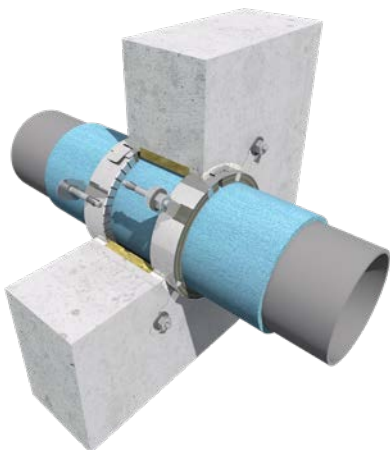
For plastic pipes or multi-layer composite pipes, metal pipes and cables

Flush mounted with integrated mounting lug extension

The stainless steel housing of the RORCOL pipe collar is designed to allow the mounting lugs to be extended by 15 mm using the integrated mounting lug extension.



RORCOL V30 flush mounted with integrated mounting lug extension



RORCOL V30 flush mounted with integrated mounting lug extension

Application areas

RORCOL dimension

For plastic sewage and pressurised water pipes:

- RORCOL V30/DN40-DN140
- RORCOL V60/DN56-DN160

For multi-layer composite pipes and metal pipes:

- RORCOL AV60/DN40-DN160

Separating elements

Shaft walls \geq EI90 lined on one side

- 2 x 20 mm fire-resistant plasterboard
- 3 x 15 mm fire-resistant plasterboard
- 2 x 25 mm fire-resistant plasterboard

Rigid walls

Thickness \geq 100 mm

- Aerated concrete walls
- Brick walls
- Concrete walls

Flexible walls

Thickness \geq 100 mm

- Lined on both sides with at least 2 x 12.5 mm and at least two layers

Rigid floors

Thickness \geq 150 mm

- Aerated concrete floors
- Concrete floors

- *Extends the mounting lug by 15 mm*
- *Bridge larger annular gaps*
- *No chipping during drilling work*
- *Predefined position inside the drilled core*

Integrated mounting lug extension

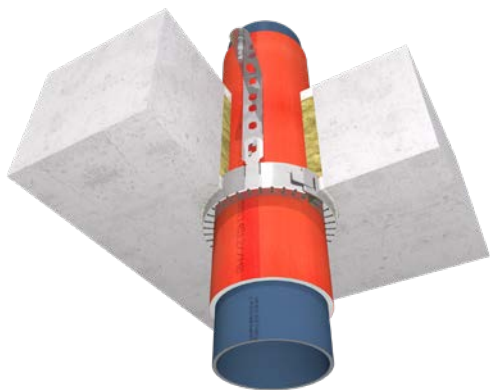


RORCOL V30 / RORCOL V60 / RORCOL AV60

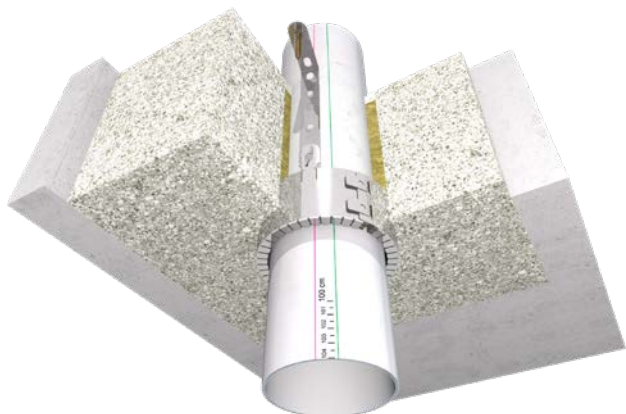
For plastic pipes or multi-layer composite pipes, metal pipes and cables

Flush mounted with MH/RORCOL mounting tool

The MH/RORCOL mounting tool serves as an extension to the mounting lugs. It makes installation easier in hard-to-access places and is used to fit the RORCOL pipe collar inside the Prottelith installation block.



RORCOL V30 flush mounted with MH/RORCOL mounting tool



RORCOL V60 flush mounted with MH/RORCOL mounting tool

Application areas

RORCOL dimension

For plastic sewage and pressurised water pipes:

- RORCOL V30/DN40-DN140
- RORCOL V60/DN56-DN200

For multi-layer composite pipes and metal pipes:

- RORCOL AV60/DN40-DN160

Separating elements

Rigid walls

Thickness ≥ 100 mm

- Aerated concrete walls
- Brick walls
- Concrete walls

Rigid floors

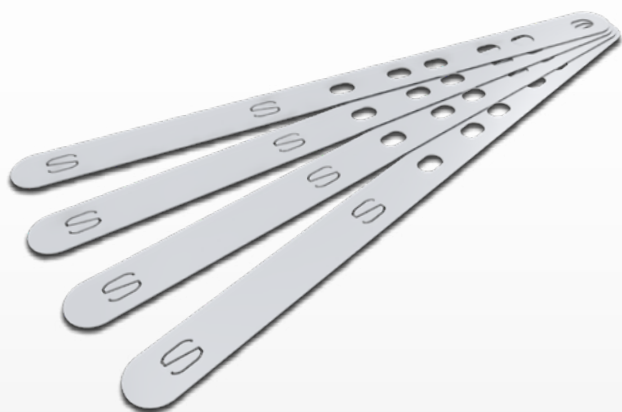
Thickness ≥ 150 mm

- Aerated concrete floors
- Concrete floors

Prottelith installation block

Thickness ≥ 200 mm

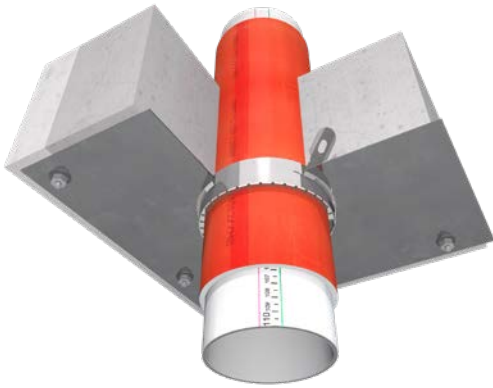
- Made from stainless sheet steel
- Extension of the mounting lugs
- Mounted on the mounting lugs using an integrated mechanism
- Can be adjusted in line with wall/floor thickness



RORCOL V30 For plastic sewage pipes

Flush mounted with formwork

RORCOL V30 pipe collars can be cemented in using formwork. The collar's integrated mounting lug extension makes it easier to align in the formwork.



RORCOL V30 flush mounted with formwork with integrated mounting lug extension

Application areas

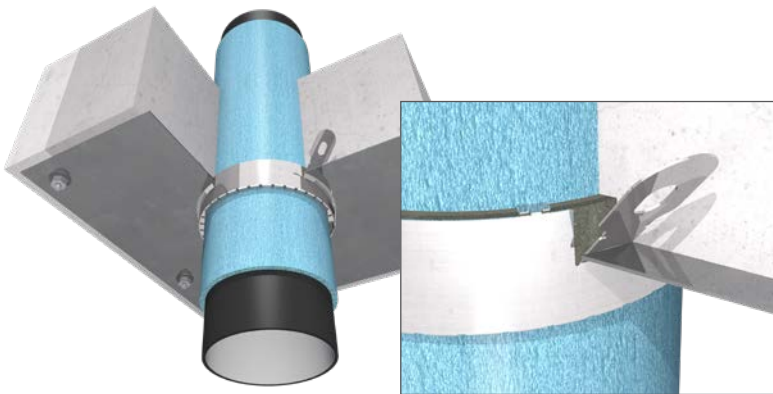
RORCOL dimension

- DN40, DN56, DN63, DN80, DN100, DN110, DN125, DN140

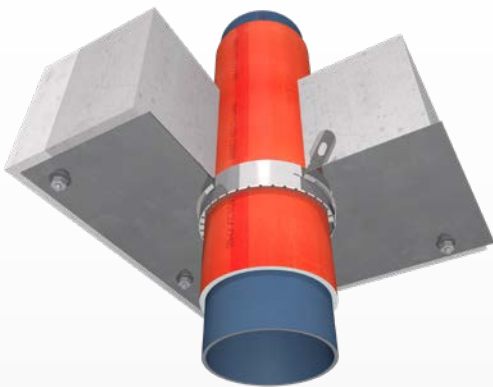
Separating elements

Rigid floors

- Thickness \geq 150 mm
- Aerated concrete floors
 - Concrete floor



RORCOL V30 flush mounted with formwork with integrated mounting lug extension



RORCOL V30 flush mounted with formwork with integrated mounting lug extension

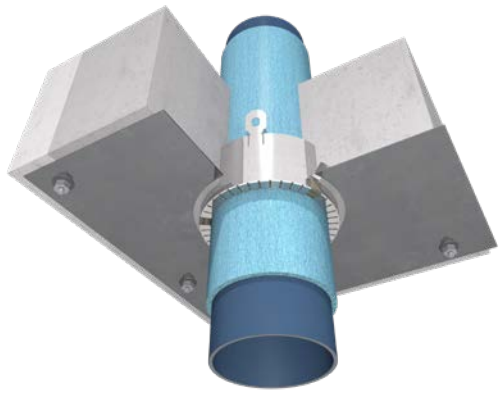
- No need for fixings – saves time and money
- Changes of direction can be made right after the separating element

RORCOL V60 / RORCOL AV60

For plastic pipes or multi-layer composite pipes, metal pipes and cables

Flush mounted with formwork with integrated positioning aid

RORCOL V60 and RORCOL AV60 pipe collars can be cemented in using formwork. The collar's integrated positioning aid makes it easier to align in the formwork.



RORCOL V60 flush mounted with formwork with integrated positioning aid

Application areas

RORCOL dimension

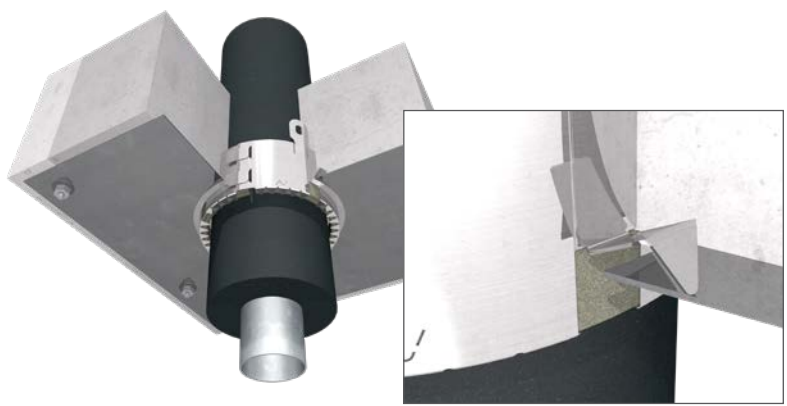
- DN40, DN56, DN63, DN80, DN100, DN110, DN125, DN140, DN160

Separating elements

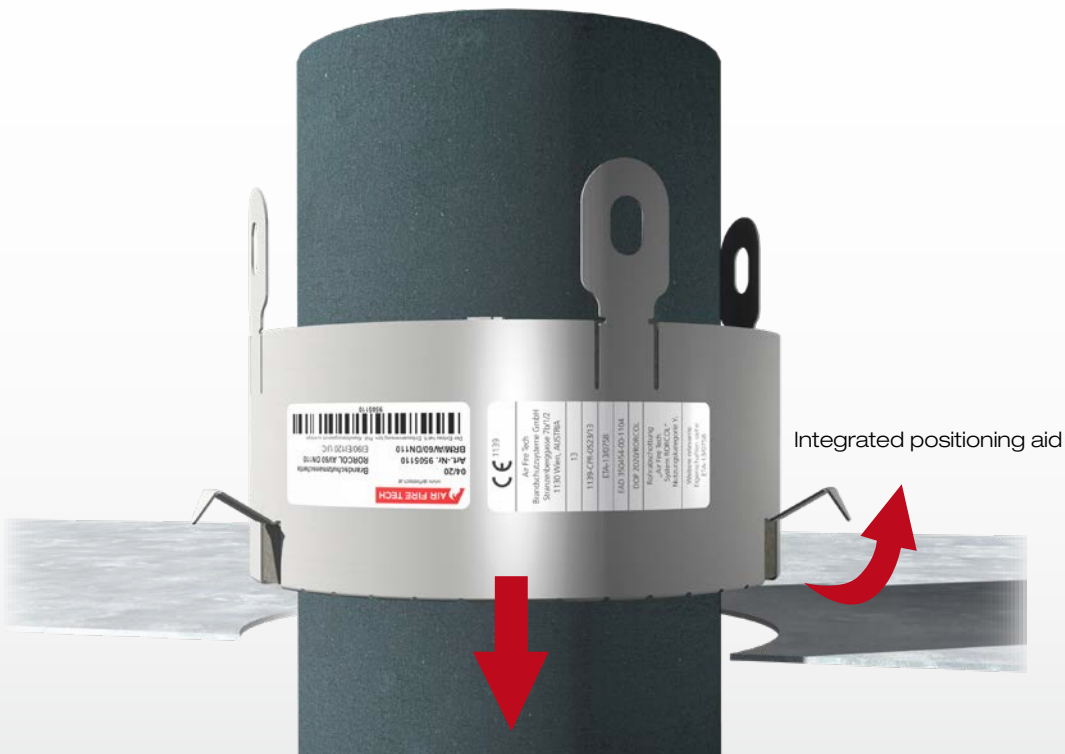
Rigid floors

Thickness ≥ 150 mm

- Aerated concrete floors
- Concrete floor



RORCOL AV60 flush mounted with formwork with integrated positioning aid

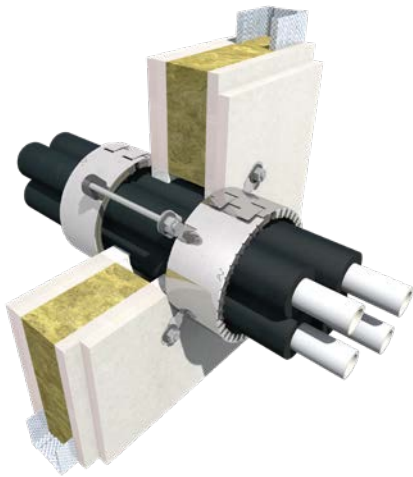


Integrated positioning aid

RORCOL AV60 For multi-layer composite pipes, metal pipes and cables

Multiple penetration

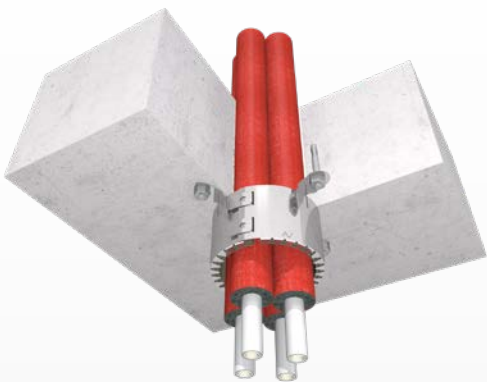
The AIR FIRE TECH System RORCOL allows several pipes to be sealed off using only a single pipe collar.



RORCOL AV60 surface mounted, multiple penetration



RORCOL AV60 surface mounted, multiple penetration



RORCOL AV60 surface mounted, multiple penetration

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN100, DN110

Separating elements / Maximum penetration

Shaft walls

- Max. 1 x copper pipe ≤ Ø22 mm
- Max. 1 x copper pipe ≤ Ø18 mm
- Max. 1 x PVC pipe ≤ Ø32 mm
- Max. 1 x electrical conduit ≤ Ø32 mm
- With 1 pc. cable ≤ 5 x 10.0 mm²

Rigid walls and flexible walls

- Max. 4 x multi-layer composite pipes ≤ Ø21 mm
- Max. 1 x copper pipe ≤ Ø16 mm
- Max. 1 x copper pipe ≤ Ø16 mm
- Max. 1 x PP pipe ≤ Ø32 mm
- Max. 1 x electrical conduit ≤ Ø25 mm
- With 1 pc. cable ≤ 5 x 2.5 mm²

Rigid floors

- Max. 4 x multi-layer composite pipes ≤ Ø26 mm
- Max. 1 x copper pipe ≤ Ø16 mm
- Max. 1 x copper pipe ≤ Ø10 mm

Insulating material / Insulation thickness (CS)²

For multi-layer composite pipes:

- PE ≤ 10 mm
- Elastomer ≤ 9 mm

For metal pipes:

- PE ≥ 10 mm
- Elastomer ≥ 9 mm

Installation method

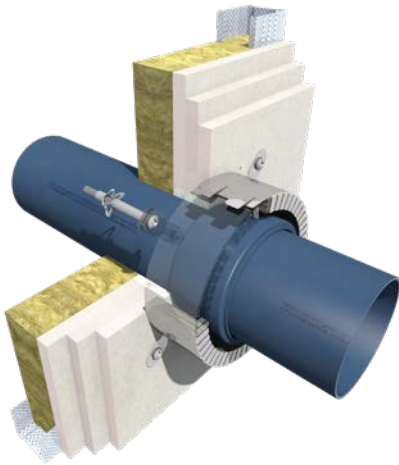
- Surface mounted on one side³
- Surface mounted on both sides
- Surface mounted on the bottom side of the floor

- Lower costs thanks to fewer feedthroughs
- Less space needed
- Saves time and effort

RORCOL V60 For plastic sewage and pressurised water pipes

Plug-in sleeve and electrofusion sleeve couplings

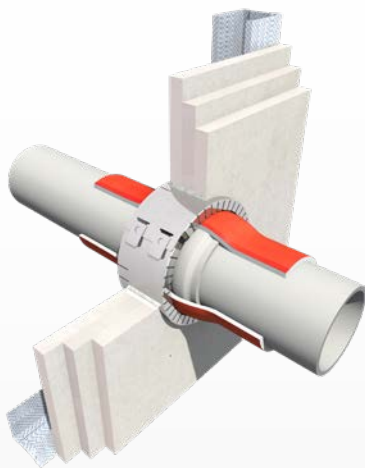
The RORCOL V60 pipe collar can be used to seal off plug-in sleeve and electrofusion sleeve couplings. The pipe has to be installed in an angle of 90° to the surface of the separating element.



RORCOL V60 surface mounted, plug-in sleeve



RORCOL V60 surface mounted, electrofusion sleeve coupling



RORCOL V60 symmetrical flush mounted plug-in sleeve

Application areas

RORCOL dimension

Sealing off collars Required collar sizes			
Type	Material	Outer pipe diameter [mm]	Collar size required
RORCOL V60	PP	Ø32	DN56
		Ø50	DN63
		Ø75	DN110
		Ø90	DN110
		Ø110	DN125
		Ø125	DN140
		Ø160	DN180

Separating elements

Shaft walls \geq EI90 lined on one side

- Plug-in sleeves \leq Ø110 mm

Rigid walls

- Plug-in sleeves \leq Ø160 mm

Rigid floors

- Plug-in sleeves \leq Ø160 mm
- Electrofusion sleeve couplings \leq Ø110 mm

Insulating material / Insulation thickness (LS, CS)²

For plug-in sleeves:

- PE \leq 5 mm

For electrofusion sleeve couplings:

- Elastomer \leq 9 mm

Installation method

- Surface mounted on one side³
- Surface mounted on both sides
- Surface mounted on the bottom side of the floor
- Flush mounted on the bottom side of the floor

- *Less space needed*
- *Changes of direction can be made right after the separating building element*

RORCOL V30 / RORCOL V60 For plastic sewage pipes

Slanted penetrating element

Depending on the separating element and installation method involved, uninsulated plastic pipes up to 160 mm in diameter can be installed at any angle from 90° to 45° to the separating element.



RORCOL V60 flush mounted slanted penetrating element



RORCOL V30 surface mounted slanted penetrating element



RORCOL V60 flush mounted slanted penetrating element

Application areas

RORCOL dimension

For plastic sewage and pressurised water pipes

- RORCOL V30/DN40-DN110
- RORCOL V60/DN56-DN160

Separating elements

Rigid walls

- RORCOL V30 / RORCOL V60 surface mounted up to Ø110
- RORCOL V60 flush mounted up to Ø160

Rigid floors

- RORCOL V30 / RORCOL V60 surface mounted up to Ø110
- RORCOL V60 flush mounted up to Ø125

Installation method

- Surface mounted on both sides
- Flush mounted on both sides
- Surface mounted on the bottom side of the floor
- Flush mounted on the bottom side of the floor

■ *Sealing off slanted pipes*

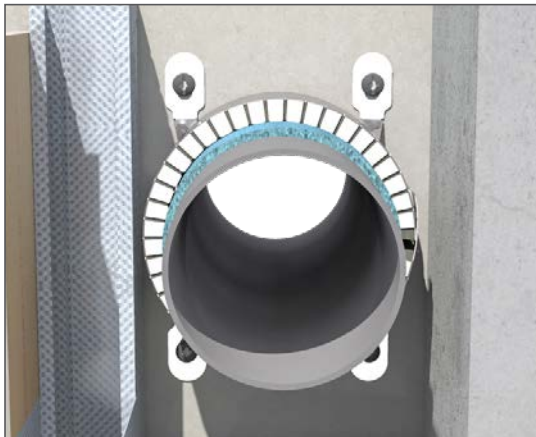
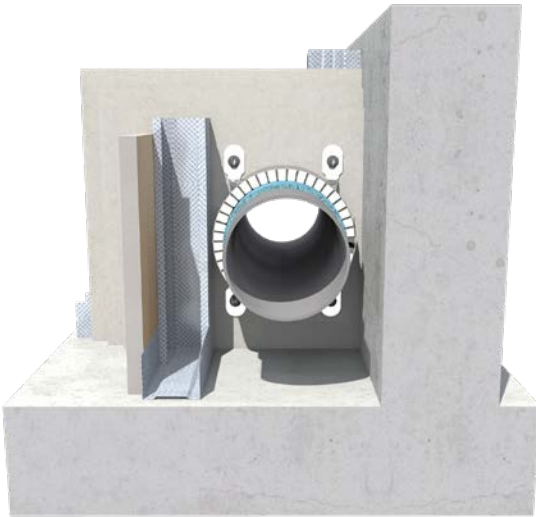


RORCOL V30 / RORCOL V60 / RORCOL AV60

For plastic pipes or multi-layer composite pipes, metal pipes and cables

Twistable mounting lugs

The stainless steel housing of RORCOL pipe collars is designed to allow up to four mounting lugs to be twisted in all angles between 0° and 45°.



Application areas

RORCOL dimension

For plastic sewage and pressurised water pipes:

- RORCOL V30/DN40-DN140
- RORCOL V60/DN56-DN250

For multi-layer composite pipes and metal pipes:

- RORCOL AV60/DN40-DN160

For cables:

- RORCOL AV60/DN40-DN125

Separating elements

Shaft walls \geq EI90 lined on one side

- 2 x 20 mm fire-resistant plasterboard
- 3 x 15 mm fire-resistant plasterboard
- 2 x 25 mm fire-resistant plasterboard

Rigid walls

Thickness \geq 100 mm

- Aerated concrete walls
- Brick walls
- Concrete walls

Flexible walls

Thickness \geq 100 mm

- Lined on both sides with at least 2 x 12.5 mm and at least two layers

Rigid floors

Thickness \geq 150 mm

- Aerated concrete floors
- Concrete walls

■ For fitting into tight spaces

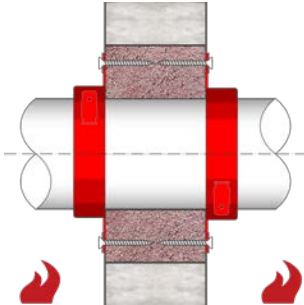
Twistable mounting lugs



TIROTECH® protective mortar

in accordance with ETA-17/0586

Installation in rigid walls; thickness of the penetration seal ≥ 100 mm



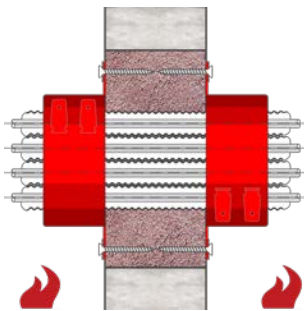
Surface mounted

Type of pipe collar:

- RORCOL V30/DN40 – DN140
- RORCOL V60/DN56 – DN160
- RORCOL AV60/DN40 – DN160



PDF download:
TIROTECH® Installation Instructions



Electrics

Type of pipe collar:

- RORCOL AV60/DN40 – DN125

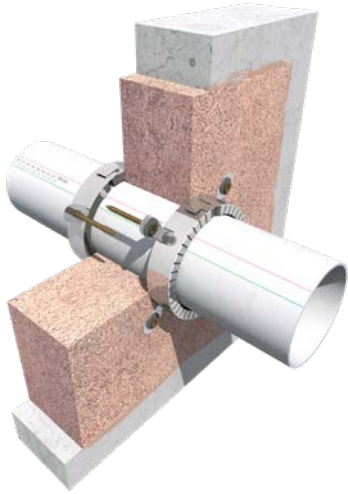
GOIDINGER

BAU+LEICHTBETON GESELLSCHAFT MBH

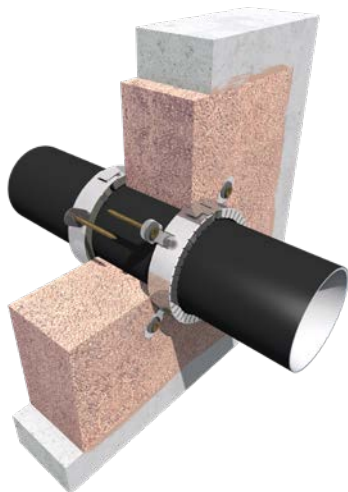
RORCOL V30 For plastic sewage pipes

TIROTECH® protective mortar

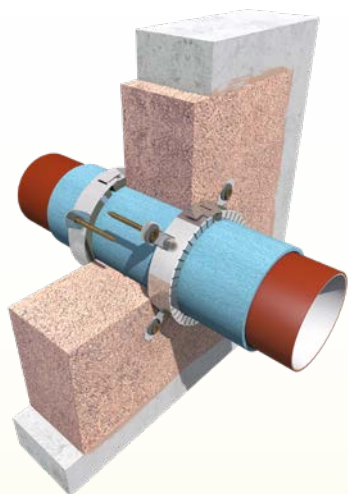
Installation in rigid walls; thickness of the penetration seal ≥ 100 mm



RORCOL V30 surface mounted



RORCOL V30 surface mounted



RORCOL V30 surface mounted

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN100, DN110, DN125, DN140

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material

- PE
- PP
- PP multilayer pipes
 - POLO-KAL NG, XS, 3S; RAUPIANO PLUS, etc.

Insulating material (LS, CS)²

- Uninsulated
- PE

Fixing

- Chipboard screws

Installation method

- Surface mounted on both sides

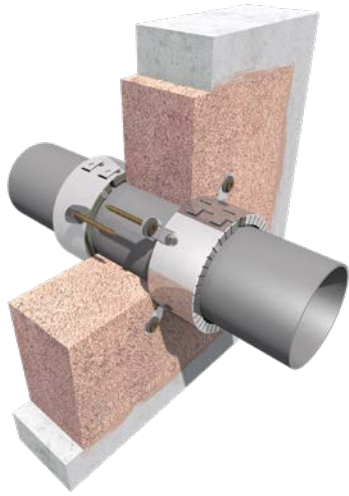
¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

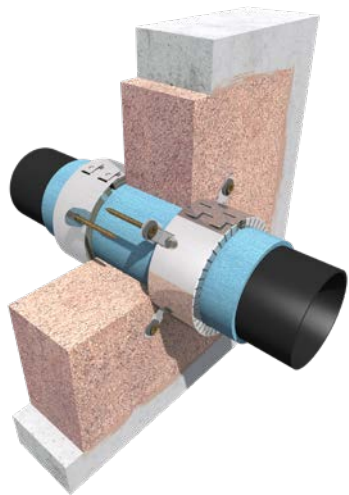
RORCOL V60 For plastic sewage and pressurised water pipes

TIROTECH® protective mortar

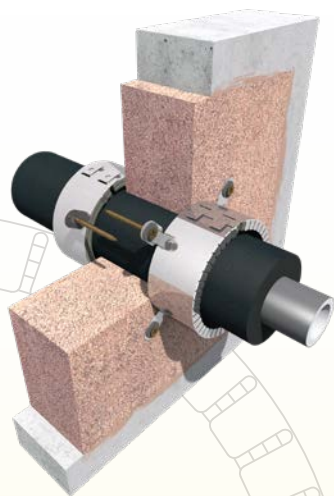
Installation in rigid walls; thickness of the penetration seal ≥ 100 mm



RORCOL V60 surface mounted



RORCOL V60 surface mounted



RORCOL V60 surface mounted

Application areas

RORCOL dimension

- DN56, DN63, DN80, DN110, DN125, DN140, DN160

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material

- PE
- PP
- PP multilayer pipes
 - POLO-KAL NG, XS, 3S; RAUPIANO PLUS, etc.

Insulating material (LS, CS)²

- Uninsulated
- PE

Fixing

- Chipboard screws

Installation method

- Surface mounted on both sides

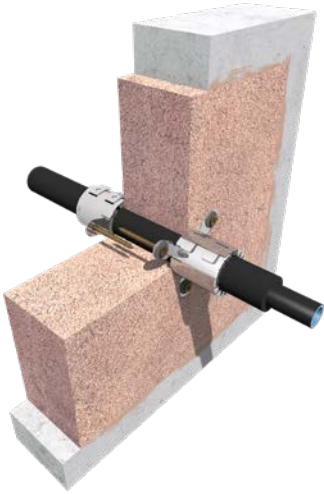
¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

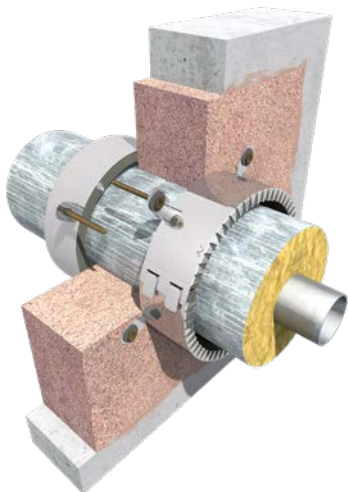
RORCOL AV60 For multi-layer composite pipes, metal pipes and cables

TIROTECH® protective mortar

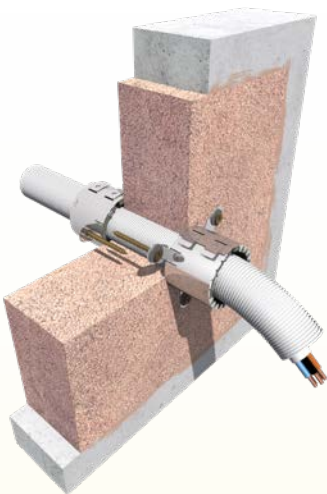
Installation in rigid walls; thickness of the penetration seal ≥ 100 mm



RORCOL AV60 surface mounted



RORCOL AV60 surface mounted



RORCOL AV60 surface mounted

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN110, DN125, DN140, DN160

Pipe end configuration¹

- U/C, C/C

Pipe material

- Multi-layer composite pipes
 - TECEflex, Geberit Mepla, etc.
- Metal pipes: Carbon steel
Copper

Insulating material (CS)²

For multi-layer composite pipes:

- PE
- Elastomer
- Mineral wool with aluminium laminate

For metal pipes:

- Elastomer
- Mineral wool with aluminium laminate

Fixing

- Chipboard screws

Installation method

- Surface mounted on both sides

Other applications

- Omega-application
- Multiple penetration
- Electrical penetration seals

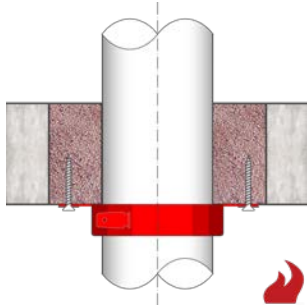
¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

TIROTECH® protective mortar

in accordance with ETA-17/0586

Installation in rigid floors; thickness of the penetration seal ≥ 150 mm



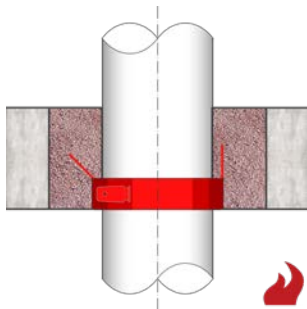
Surface mounted

Type of pipe collar:

- RORCOL V30/DN40 – DN140
- RORCOL V60/DN56 – DN160
- RORCOL AV60/DN40 – DN160



PDF download:
TIROTECH® Installation Instructions

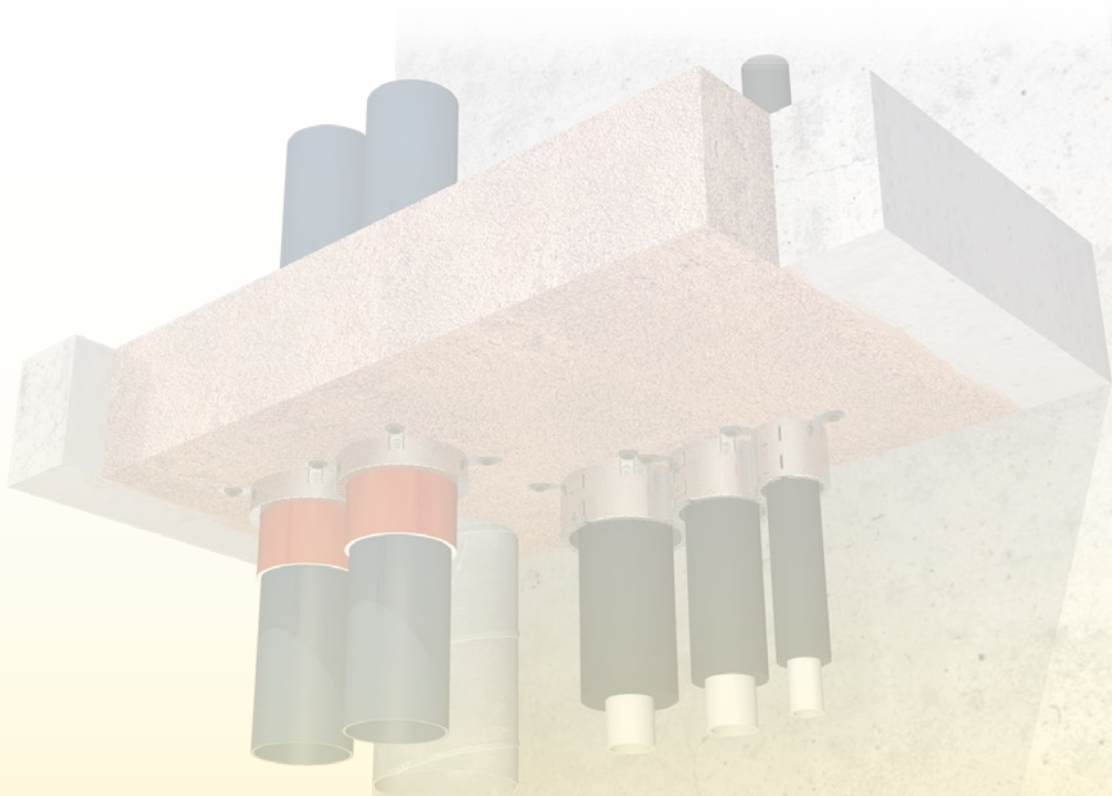


Flush mounted

Type of pipe collar:

- RORCOL V30/DN40 – DN140
- RORCOL V60/DN56 – DN160
- RORCOL AV60/DN40 – DN160

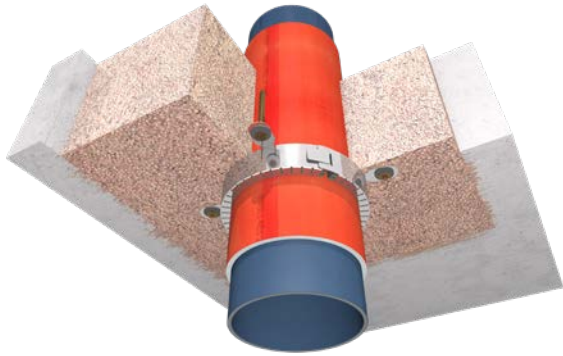
GOIDINGER 
BAU+LEICHTBETON GESELLSCHAFT MBH



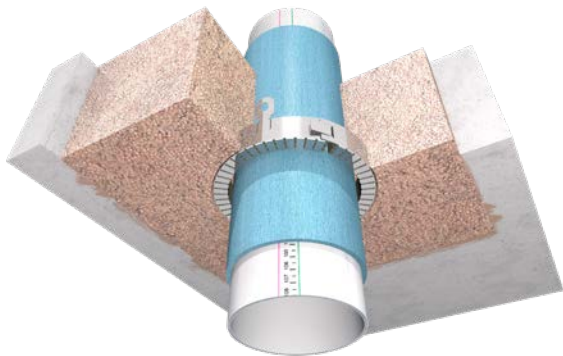
RORCOL V30 For plastic sewage pipes

TIROTECH® protective mortar

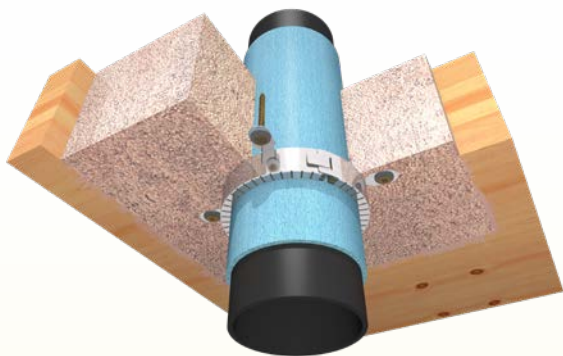
Installation in rigid floors; thickness of the penetration seal ≥ 150 mm



RORCOL V30 surface mounted



RORCOL V30 flush mounted



RORCOL V30 surface mounted
installation in timber floors⁴

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN100, DN110, DN125, DN140

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material

- PE
- PP
- PP multilayer pipes
 - POLO-KAL NG, XS, 3S; RAUPIANO PLUS, etc.

Insulating material (LS, CS)²

- Uninsulated
- PE

Fixing

- Chipboard screws

Installation method

- Surface mounted on the bottom side of the floor
- Flush mounted on the bottom side of the floor

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

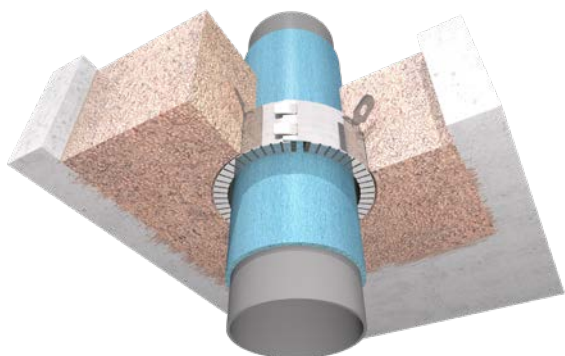
² With local or continuous insulation in accordance with EN 1366-3 – see page 12

⁴ Not currently covered in ETA-17/0586; required for use in Austria in accordance with building material list.

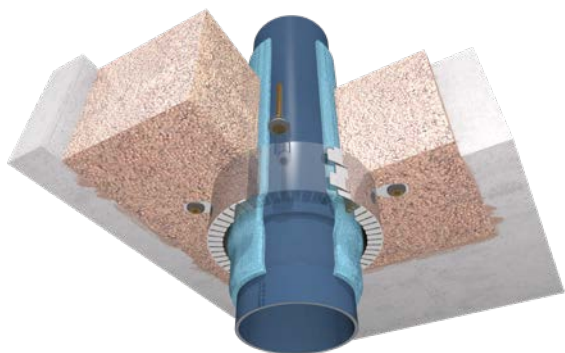
RORCOL V60 For plastic sewage and pressurised water pipes

TIROTECH® protective mortar

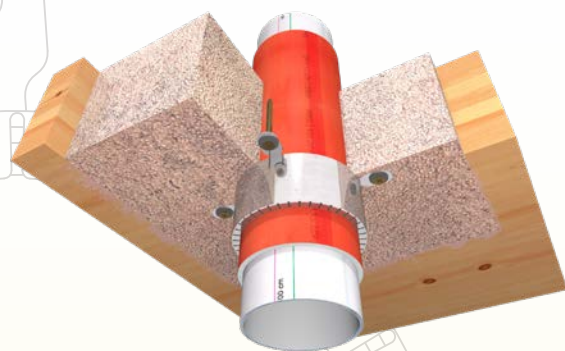
Installation in rigid floors; thickness of the penetration seal ≥ 150 mm



RORCOL V60 flush mounted



RORCOL V60 surface mounted
plug-in sleeve



RORCOL V60 surface mounted
installation in timber floors⁴

Application areas

RORCOL dimension

- DN56, DN63, DN80, DN110, DN125, DN140

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material

- PE
- PP
- PP multilayer pipes
- POLO-KAL NG, XS, 3S; RAUPIANO PLUS, etc.

Insulating material (LS, CS)²

- Uninsulated
- PE

Fixing

- Chipboard screws

Installation method

- Surface mounted on the bottom side of the floor
- Flush mounted on the bottom side of the floor

Other applications

- Plug-in sleeve

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

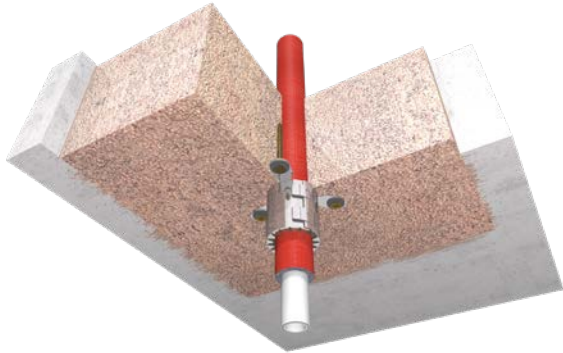
² With local or continuous insulation in accordance with EN 1366-3 – see page 12

⁴ Not currently covered in ETA-17/0586; required for use in Austria in accordance with building material list.

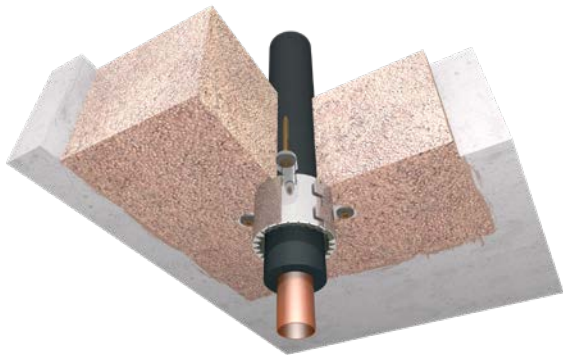
RORCOL AV60 For multi-layer composite pipes, metal pipes and cables

TIROTECH® protective mortar

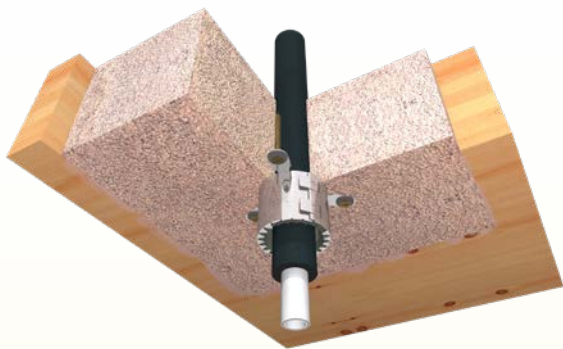
Installation in rigid floors; thickness of the penetration seal ≥ 150 mm



RORCOL AV60 surface mounted



RORCOL AV60 surface mounted



RORCOL AV60 surface mounted
installation in timber floors⁴

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN110, DN125, DN140, DN160

Pipe end configuration¹

- U/C, C/C

Pipe material

- Multi-layer composite pipes
 - TECEflex, Geberit Mepla, etc.
- Metal pipes: Carbon steel
Copper

Insulating material (CS)²

For multi-layer composite pipes:

- PE
- Elastomer
- Mineral wool with aluminium laminate

For metal pipes:

- Elastomer
- Mineral wool with aluminium laminate

Fixing

- Chipboard screws

Installation method

- Surface mounted on the bottom side of the floor
- Flush mounted on the bottom side of the floor

Other applications

- Omega-application
- Multiple penetration
- Electrical penetration seals

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

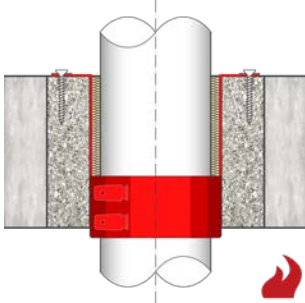
² With local or continuous insulation in accordance with EN 1366-3 – see page 12

⁴ Not currently covered in ETA-17/0586; required for use in Austria in accordance with building material list.

Prottelith installation block

Classification report MA 39 – VFA 2016-0172.01

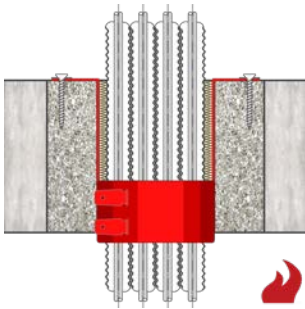
Installation in rigid floors; thickness ≥ 200 mm



Flush mounted

Type of pipe collar:

- RORCOL V60/DN56 – DN160 with MH/RORCOL mounting tool
- RORCOL AV60/DN40 – DN160 with MH/RORCOL mounting tool



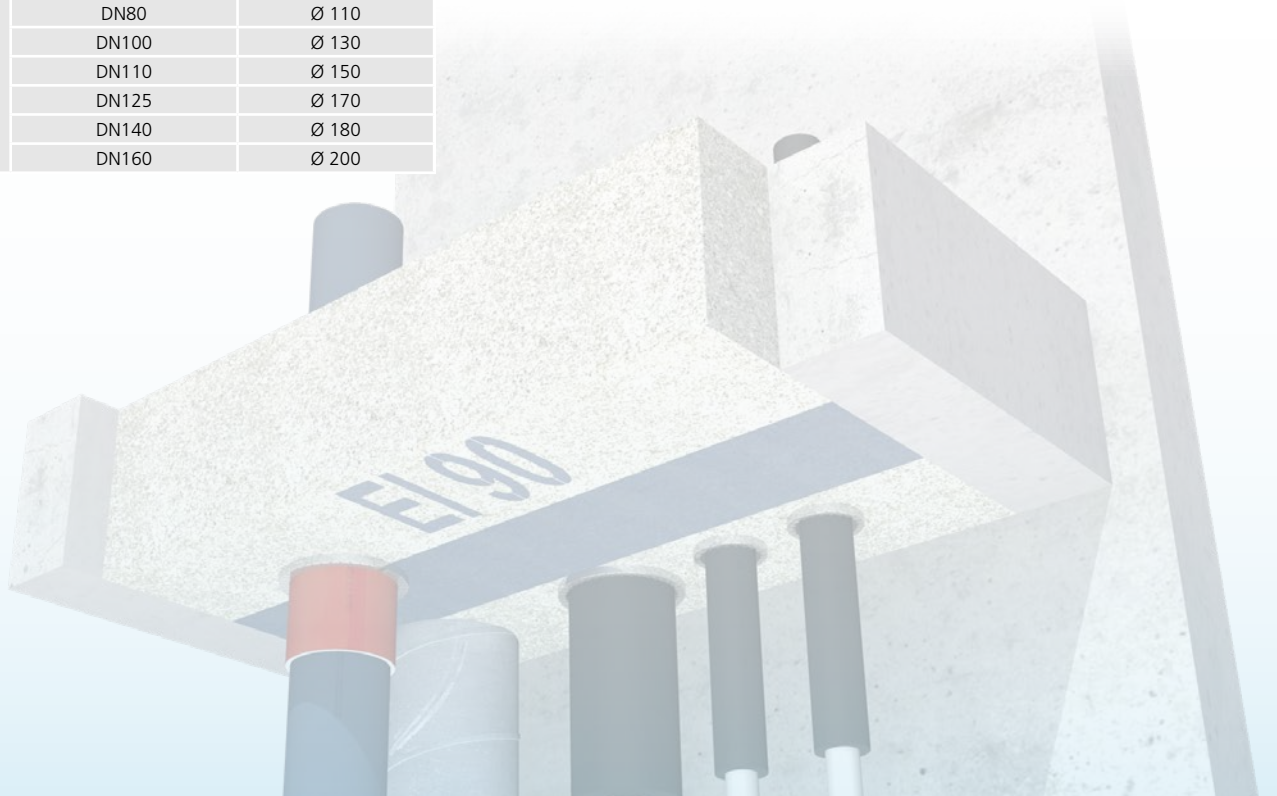
Electrics

Type of pipe collar:

- RORCOL AV60/DN40 – DN110 with MH/RORCOL mounting tool

Prottelith installation block		
Drilled hole diameters required		
Type	Size of pipe collar RORCOL	Drilled hole diameter required [mm]
RORCOL V60	DN40	Ø 70
	DN56	Ø 80
	DN63	Ø 90
	DN80	Ø 110
	DN100	Ø 130
	DN110	Ø 150
	DN125	Ø 170
	DN140	Ø 180
	DN160	Ø 200

Prottelith
installation block

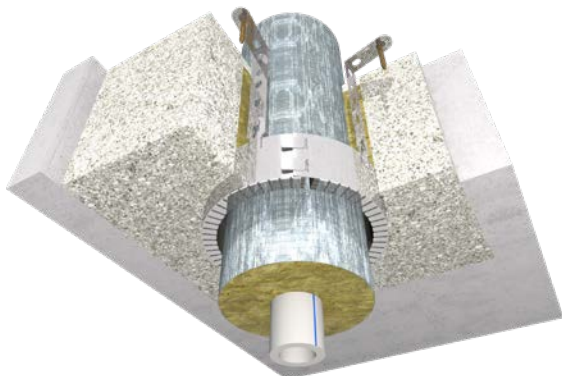


Prottelith installation block

Installation in rigid floors; thickness ≥ 200 mm



RORCOL V60 flush mounted using MH/RORCOL mounting tool



RORCOL V60 flush mounted using MH/RORCOL mounting tool



RORCOL V60 flush mounted using MH/RORCOL mounting tool

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN110, DN125, DN140, DN160

Pipe end configuration¹

- U/U, U/C, C/U, C/C

Pipe material / Outer pipe diameter

- PE $\leq \varnothing 135$ mm
- PP $\leq \varnothing 135$ mm
- PP multilayer pipes $\leq \varnothing 125$ mm
 - POLO-KAL NG, RAUPIANO PLUS, etc.
- PP-R $\leq \varnothing 63$ mm

Insulating material / Insulation thickness (LS, CS)²

- Uninsulated
- PE ≤ 5 mm
- Mineral wool with aluminium laminate ≤ 50 mm for PP-R pipes

Fixing

- MH/RORCOL mounting tool and chipboard screws (mounted on the top side of the floor)

Installation method

- Flush mounted⁵ on the bottom side of the floor using MH/RORCOL mounting tool – see page 91



¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

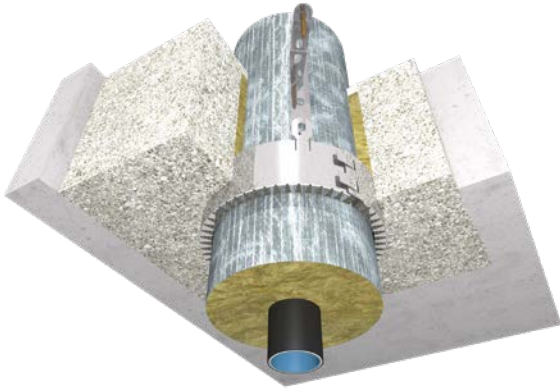
² With local or continuous insulation in accordance with EN 1366-3 – see page 12

⁵ Pipe collars used must protrude 10-25 mm out of the separating element

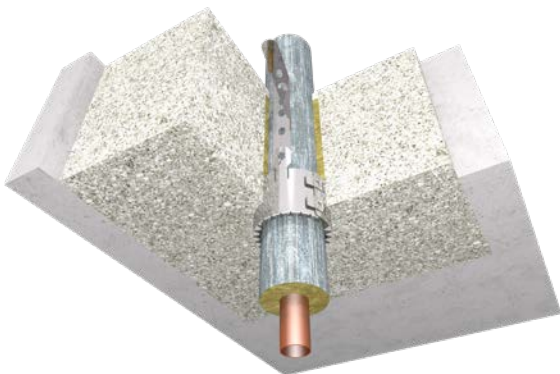
RORCOL AV60 For multi-layer composite pipes, metal pipes and cables **Pipe penetration seal**

Prottelith installation block

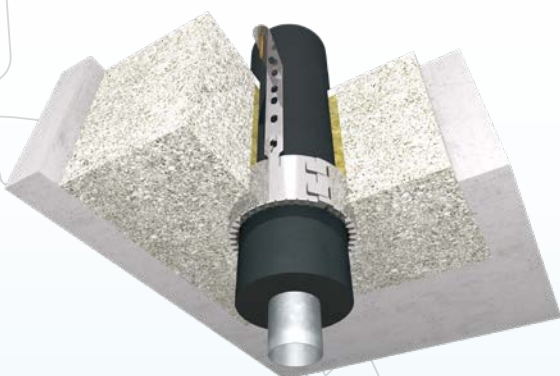
Installation in rigid floors; thickness ≥ 200 mm



RORCOL AV60 flush mounted using MH/RORCOL mounting tool



RORCOL AV60 flush mounted using MH/RORCOL mounting tool



RORCOL AV60 flush mounted using MH/RORCOL mounting tool

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN110, DN125, DN140, DN160

Pipe end configuration¹

- U/C, C/C

Pipe material / Outer pipe diameter

- Multi-layer composite pipes ≤ Ø63 mm
- TECEflex, Geberit Mepla, etc.
- Metal pipes: Carbon steel ≤ Ø42 mm
Copper ≤ Ø28 mm

Insulating material / Insulation thickness (CS)²

For multi-layer composite pipes:

- PE 10 mm
- Elastomer ≤ 43 mm
- Mineral wool with aluminium laminate ≤ 50 mm

For metal pipes:

- Elastomer ≥ 9 mm
- Mineral wool with aluminium laminate ≥ 20 mm

Fixing

- MH/RORCOL mounting tool and chipboard screws (mounted on the top side of the floor)

Installation method

- Flush mounted⁵ on the bottom side of the floor using MH/RORCOL mounting tool – see page 92



¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

⁵ Pipe collars used must protrude 10-25 mm out of the separating element

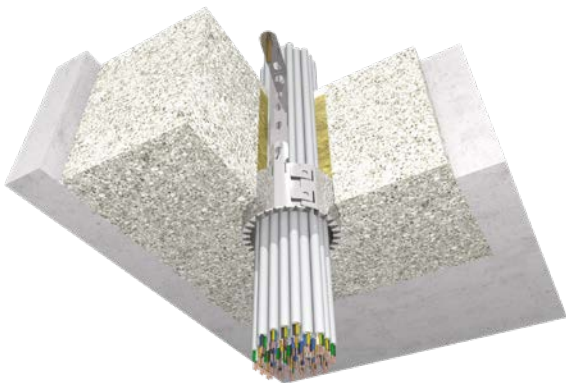
RORCOL AV60 For multi-layer composite pipes, metal pipes and cables **Cable penetration seal**

Prottelith installation block

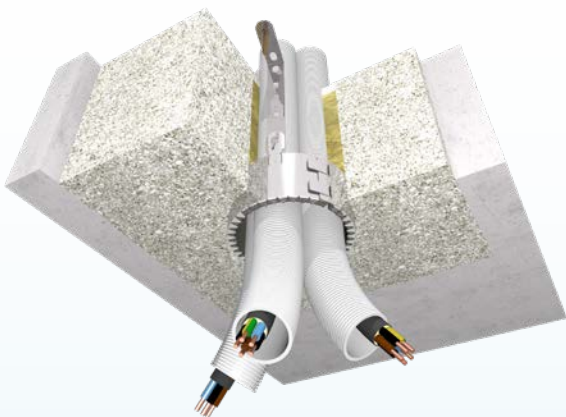
Installation in rigid floors; thickness ≥ 200 mm



RORCOL AV60 flush mounted using MH/RORCOL mounting tool



RORCOL AV60 flush mounted using MH/RORCOL mounting tool



RORCOL AV60 flush mounted using MH/RORCOL mounting tool

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN110

Pipe end configuration¹

- U/C, C/C

Maximum penetration

For electrical conduits

- Max. 3 x electrical conduit $\leq \text{Ø}50$ mm each
with 1 pc. cable $\leq 5 \times 10.0$ mm²

For cables:

- With 37 pc. cable $\leq 3 \times 1.5$ mm²
- With 3 pc. cable $\leq 5 \times 10.0$ mm²
- With 1 pc. cable $\leq 5 \times 16.0$ mm²

Fixing

- MH/RORCOL mounting tool and chipboard screws
(mounted on the top side of the floor)

Installation method

- Flush mounted⁵ on the bottom side of the floor using MH/RORCOL mounting tool – see page 93

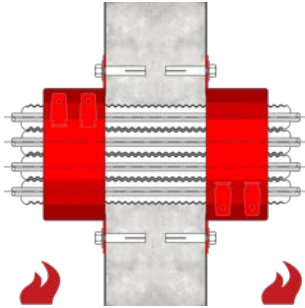


¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

⁵ Pipe collars used must protrude 10-25 mm out of the separating element

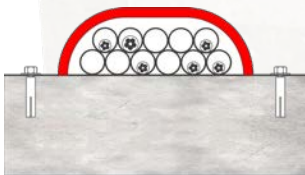
Penetration seals for electrics and air conditioning



Penetration seals for electrics

Type of pipe collar:

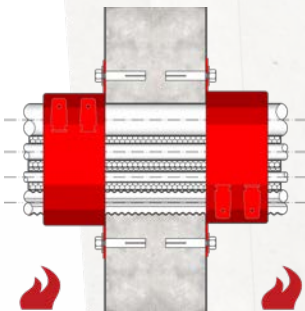
- RORCOL AV60/DN40 – DN125



Omega-application

Type of pipe collar:

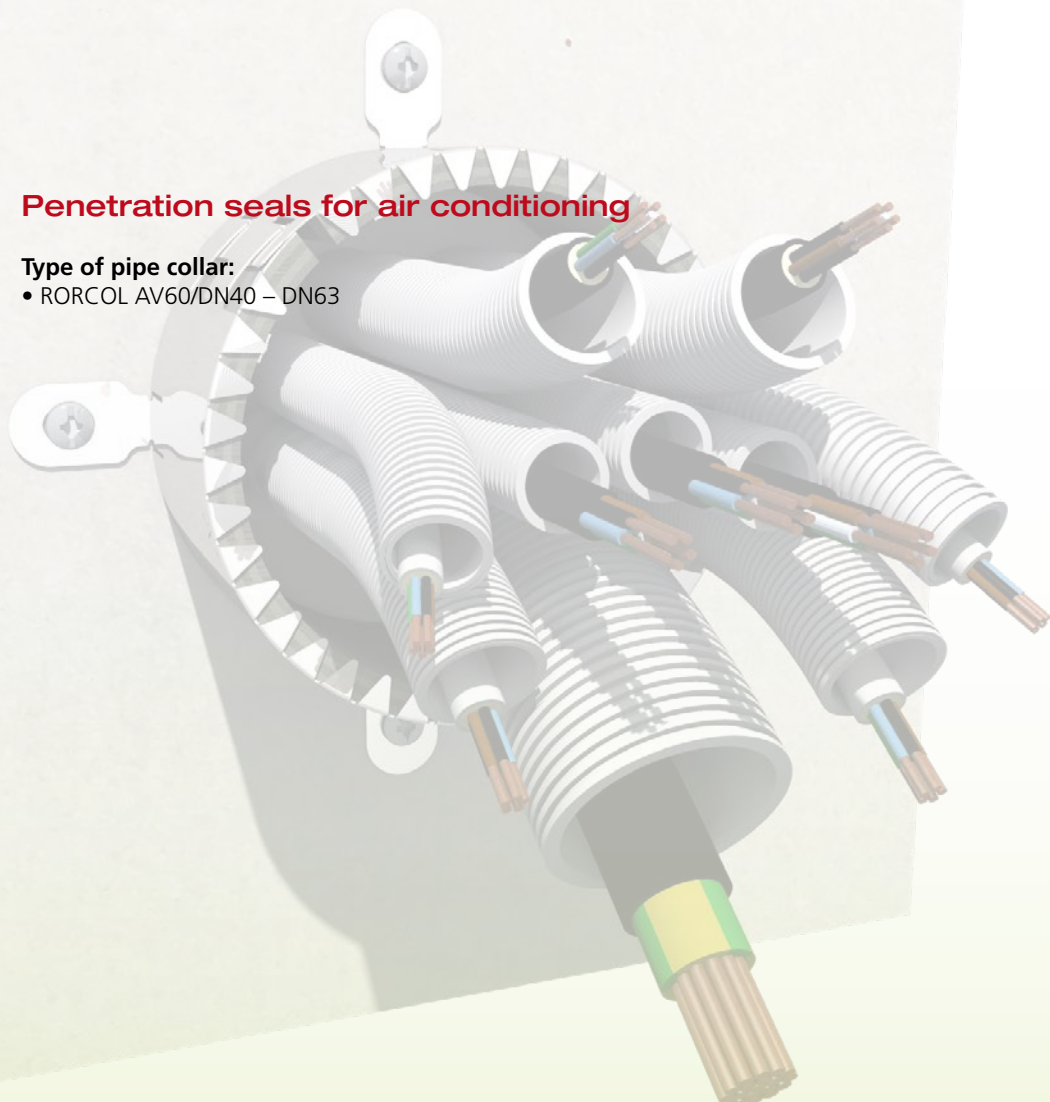
- RORCOL AV60/DN40 – DN80



Penetration seals for air conditioning

Type of pipe collar:

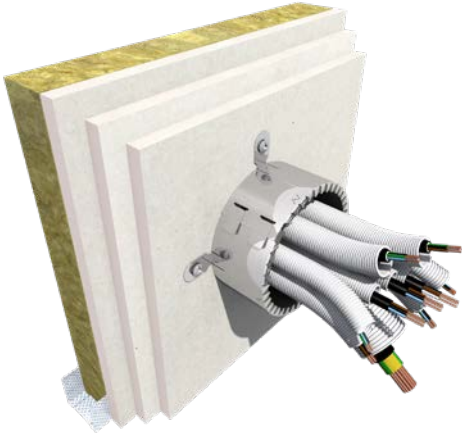
- RORCOL AV60/DN40 – DN63



RORCOL AV60

Small cable seal – RORCOL AV60 ≤ DN110

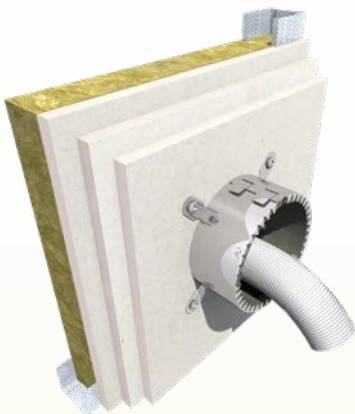
Shaft walls, rigid and flexible walls, rigid floors



RORCOL AV60 surface mounted
Bundle of electrical conduits



RORCOL AV60 surface mounted



RORCOL AV60 surface mounted,
empty pipe

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80, DN110

Separating elements

Shaft walls ≥ EI90 lined on one side

- 2 x 20 mm fire-resistant plasterboard
- 3 x 15 mm fire-resistant plasterboard
- 2 x 25 mm fire-resistant plasterboard

Rigid walls

Thickness ≥ 100 mm

- Aerated concrete walls
- Brick walls
- Concrete walls

Flexible walls

Thickness ≥ 100 mm

- Lined on both sides with at least 2 x 12.5 mm and at least two layers

Rigid floors

Thickness ≥ 150 mm

- Aerated concrete floors
- Concrete walls

Small cable seal

Dimensions of electrical conduits

- Plastic electrical conduits ≤ Ø50 mm
(with/without cables with an outer diameter ≤ Ø21 mm)
- Tightly secured bundles ≤ Ø100 mm consisting of plastic electrical conduits ≤ Ø50 mm
(with/without cables with an outer diameter ≤ Ø21 mm)

Cable dimensions

- All types of sheathed cables currently used in the European construction industry (with the exception of waveguides), with an outer diameter ≤ Ø21 mm
- Tightly secured cable bundles ≤ Ø100 mm consisting of sheathed cables currently used in the European construction industry (with the exception of waveguides), with an outer diameter ≤ Ø21 mm

Installation method

- Surface mounted on one side³
- Surface mounted on both sides

³ Observe national building regulations applicable locally

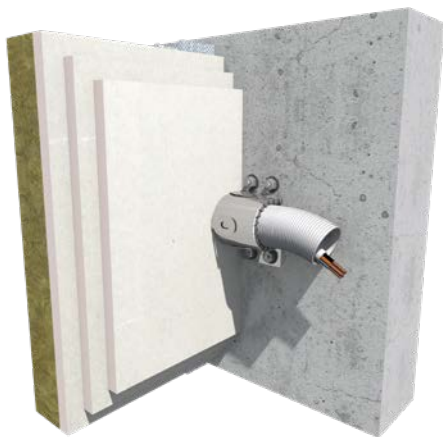
RORCOL AV60

Omega-application for cable penetration seals

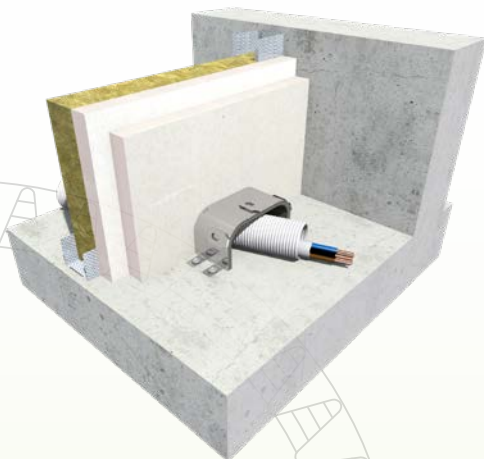
Shaft walls, rigid and flexible walls



RORCOL AV60 mounted as Omega-application, on the bottom side of the floor



RORCOL AV60 mounted as Omega-application, on the wall



RORCOL V60 mounted as Omega-application, on the top side of the floor

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80

Maximum penetration

Shaft walls ≥ EI90 lined on one side

- Max. 12 x electrical conduit ≤ Ø32 mm
Each with 1 pc. cable ≤ 5 x 2.5 mm²
- Max. 11 x electrical conduit ≤ Ø25 mm
Each with 1 pc. cable ≤ 5 x 6.0 mm²
- Max. 1 x electrical conduit ≤ Ø50 mm
Each with 1 pc. cable ≤ 5 x 16.0 mm²

Rigid walls and flexible walls

- Max. 12 x electrical conduit ≤ Ø32 mm
Each with 1 pc. cable ≤ 5 x 2.5 mm²
- Max. 11 x electrical conduit ≤ Ø25 mm
Each with 1 pc. cable ≤ 5 x 6.0 mm²
- Max. 3 x electrical conduit ≤ Ø50 mm
Each with 1 pc. cable ≤ 1 x 95.0 mm²

Installation method

- Surface mounted, mounted on the top side of the floor
- Surface mounted, mounted on the wall
- Surface mounted, mounted on the bottom side of the floor

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

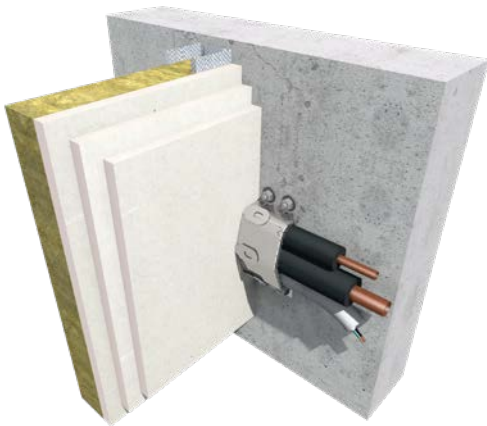
RORCOL AV60

Penetration seals for air conditioning

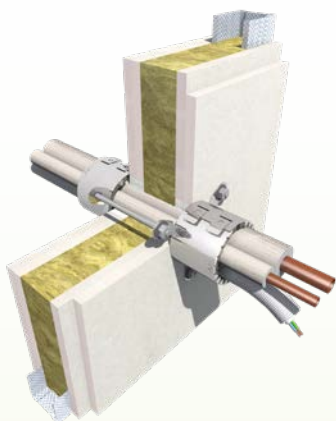
Connecting cable, refrigerant pipes and condensate drain pipes



RORCOL AV60 surface mounted



RORCOL AV60 mounted as
Omega-application, on the wall



RORCOL AV60 surface mounted

Application areas

RORCOL dimension

- DN40, DN56, DN63, DN80

Maximum penetration

Shaft walls

- Max. 1 x copper pipe $\leq \varnothing 22$ mm
- Max. 1 x copper pipe $\leq \varnothing 18$ mm
- Max. 1 x PVC pipe $\leq \varnothing 32$ mm
- Max. 1 x electrical conduit $\leq \varnothing 32$ mm
- With 1 pc. cable $\leq 5 \times 10.0$ mm²
- Omega-application:
 - Max. 1 x copper pipe $\leq \varnothing 22$ mm
 - Max. 1 x copper pipe $\leq \varnothing 18$ mm
 - Max. 1 x PP pipe $\leq \varnothing 32$ mm
 - Max. 1 x electrical conduit $\leq \varnothing 32$ mm
 - With 1 pc. cable $\leq 5 \times 10.0$ mm²

Rigid walls and flexible walls

- Max. 1 x copper pipe $\leq \varnothing 16$ mm
- Max. 1 x copper pipe $\leq \varnothing 16$ mm
- Max. 1 x PP pipe $\leq \varnothing 32$ mm
- Max. 1 x electrical conduit $\leq \varnothing 25$ mm
- With 1 pc. cable $\leq 5 \times 2.5$ mm²
- Omega-application:
 - Max. 1 x copper pipe $\leq \varnothing 16$ mm
 - Max. 1 x copper pipe $\leq \varnothing 16$ mm
 - Max. 1 x PP pipe $\leq \varnothing 32$ mm
 - Max. 1 x electrical conduit $\leq \varnothing 25$ mm
 - With 1 pc. cable $\leq 5 \times 2.5$ mm²

Rigid floors

- Max. 1 x copper pipe $\leq \varnothing 16$ mm
- Max. 1 x copper pipe $\leq \varnothing 10$ mm
- Max. 1 x electrical conduit $\leq \varnothing 25$ mm
- With 1 pc. cable $\leq 5 \times 2.5$ mm²

Installation method

- Surface mounted on one side³
- Surface mounted on both sides
- Surface mounted on the bottom side of the floor
- Omega-application
 - Surface mounted, mounted on the top side of the floor
 - Surface mounted, mounted on the wall
 - Surface mounted, mounted on the bottom side of the floor

¹ Pipe end configuration in accordance with EN 1366-3 – see page 12

² With local or continuous insulation in accordance with EN 1366-3 – see page 12

³ Observe national building regulations applicable locally

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