



Innovative Fire Protection Systems

Table of contents

Company	3-8
/ <i>Introduction</i>	3
/ <i>Credentials</i>	4
/ <i>Certified safety</i>	5
/ <i>Approval Overview</i>	6
System Overview	9-14
/ <i>System Advantages</i>	10
/ <i>UL Through Penetrations Numbering System</i>	12
/ <i>ZAPP-ZIMMERMANN UL Systems</i>	13
Through penetration firestop systems	15-34
/ <i>Fire Protection Foam</i>	16
/ <i>Fire Protection Block</i>	22
/ <i>Fire Protection Plug</i>	26
/ <i>Fire Protection Sealant</i>	30
Legal notice	35



Innovative fire safety systems for more than 25 years

ZAPP-ZIMMERMANN has been offering innovative fire safety systems for more than 25 years, specialising in the areas of cable, pipe and combination penetration seals, as well as firestop joint seals. In addition to our proven product line of intumescent moulded parts made of PU Fire Protection Foam, we also offer other construction materials, such as silicone and acrylic for civil engineering, tunnel construction, shipbuilding, and rail vehicles.

For the above reasons, our customers in industry and in administrative, telecommunications or transport sectors have decided in favour of ZAPP-ZIMMERMANN fire protection solutions. Our large team of experts can put its vast expertise to work for you, providing you with the required consulting and training services. We have made it a principle of our corporate culture that excellent quality and product safety must be paired with excellent service.

In the course of harmonising fire safety in Europe, ZAPP-ZIMMERMANN GmbH tests its fire safety systems in accordance with the European test standards to obtain European Technical Approvals and European Technical Assessments.

5 years ago ZAPP-ZIMMERMANN started to test the successful firestop products according to the American standards ASTM E814 (UL 1479) to obtain UL classified firestop systems.

We invite you to profit from our many years of experience and know-how in structural fire engineering and to make use of specialist's tried-and-trusted products to protect yourselves and your property.



Medicine:

University Medical Center Düsseldorf
University Medical Center (Goethe), Frankfurt



Management:

Allianz Deutschland AG
Deutsche Telekom AG
Deutsche Rentenvers. Bund
Deutsche Rentenvers. Land



Transport:

Cologne/Bonn Airport
Munich Airport
Berlin-Brandenburg Airport
Düsseldorf Airport
Frankfurt Airport
Kölner Verkehrs-Betriebe AG
Deutsche Bahn AG



Industry:

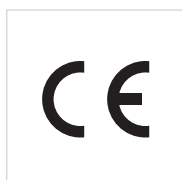
Audi AG
Ford AG
Bayer AG
Lanxess AG
Evonik Industries AG
Siemens AG
ThyssenKrupp AG



ZAPP-ZIMMERMANN GmbH is a company certified in accordance with DIN ISO 9001. Successful annual surveillance audits, conducted by TÜV Rheinland, demonstrate the high priority placed on quality management in our company and our ongoing commitment to the highest quality.



Moreover, all of our tested and certified products are subject to regular external monitoring by the materials testing institutes, MPA Stuttgart and MPA Braunschweig. Employees of the materials testing institutes inspect the self-monitoring data and take product samples that are tested in the laboratory of the materials testing institute. Thus, you can be sure that all products always satisfy the specifications of the general technical approvals and assessments.



Our European approved products have a certificate of conformity or a certificate of constancy of performance issued by MPA Braunschweig and are CE marked. With that it is verified and confirmed that the products have been subjected to initial inspection, and are subjected to factory production control. In addition, an external inspection takes place yearly.



Our UL classified products are listed by UL. Representative samples of these products have been evaluated by UL and meet applicable safety standards.



National approvals

In Germany, for more than 25 years, ZAPP-ZIMMERMANN has been using fire-protection systems that are approved by the Deutsches Institut für Bautechnik (DIBt). After successful testing the test report is submitted to the DIBt, thereafter a technical approval (AbZ) is issued for the tested system. We have additional approvals for our fire-protection systems for Switzerland (VKF), The Netherlands (Efectis) and Great Britain (Warrington Fire).



European Technical Approvals/ European Technical Assessments

The European Organisation for Technical Assessments (EOTA) was founded in the course of European harmonization. This organisation works out the fundamentals for granting European Technical Assessments (ETA). All European assessment bodies are represented in the EOTA (OIB, DIBt, etc.).

The assessment bodies issue European Technical Assessments for systems, which have to be tested in laboratories of notified test bodies. Through the introduction of ETAs, European test standards and uniform classifications for fire-protection systems can be used throughout Europe. Each Member State is free to specify its level of safety in the construction sector, as well as the requisite fire resistance classifications.

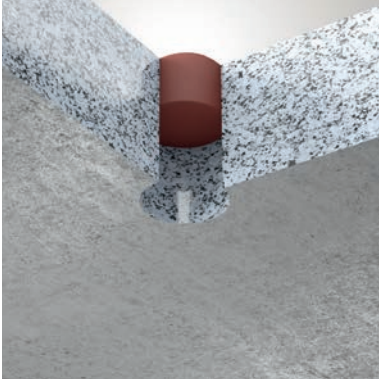
UL Systems

There is a UL promulgated system for each of our ZAPP-ZIMMERMANN Fire Stop Systems applications according to ASTM E 814 (ANSI/UL 1479) "Standard Test Method for Fire Tests of Through-Penetration Fire Stops." A firestop system is a very specific, tested combination of the following parameters: substrate (wall or floor) and its specific properties (e.g., material, fire rating, thickness), penetrating items, hole size and shape and devices, and/or materials used to seal the hole.

To evaluate firestop systems' compliance with the US and Canadian codes, they are frequently tested by independent third-party test labs such as UL (Underwriters Laboratories) and ULC (Underwriters Laboratories of Canada). Successfully passing the test results in a UL promulgated firestop system. The last item above - the individual devices and/or materials used to seal the hole, colloquially referred to as firestopping - is a UL Classified or Certified product for the application.

System Overview

System Advantages



Fire Protection Plug ZZ 160

- / Very Fast and easy installation in circular openings
- / Blank openings are sealed by pressing Plug ZZ 160 from top surface in the opening, no sealant required
- / Easy retroactive installation of cables, interstices between cables sealed with Fire Protection Sealant ZZ 365



Fire Protection Sealant ZZ 365

- / The affordable and quick firestop solution for metallic cables
- / Fast and easy installation in circular openings
- / Suitable for small penetration seals, openings with many penetrating elements and openings that are difficult to access or that are irregular



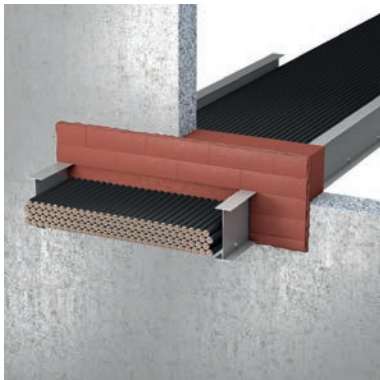
Fire Protection Foam ZZ 360

- / Fast and easy installation
- / Especially suited for openings with medium to high density of penetrants
- / Perfect firestop solution for openings that are difficult to access or that are irregular
- / The expanding ZZ 360 easily seals voids between and around penetrations such as cable bundles, conduits etc.
- / Easy retroactive installation of cables or pipes due to soft and elastic material characteristics



Fire Protection Block ZZ 260

- / Fast and easy installation in rectangular openings up to 32 x 12 [in.]
- / Especially suited for openings with big blank areas
- / Use of wire mesh not required
- / No mechanical fixing necessary
- / Easy retroactive installation of cables or pipes due to soft and elastic material characteristics



Combination of Fire Protection Foam ZZ 360 & Fire Protection Block ZZ 260

- / The perfect solution through the combination of Fire Protection Foam ZZ 360 and Fire Protection Block ZZ 260 in rectangular openings up to 32 x 12 [in.]
- / Closure of areas with medium to high density of penetrants with Fire Protection Foam ZZ 360
- / The expanding ZZ 360 easily seals voids between penetrants such as cable bundles and pipes
- / The remaining blank areas can be sealed quickly and easily with Fire Protection Block ZZ 260
- / Easy retroactive installation of cables or pipes due to soft and elastic material characteristics



UL Through Penetrations Numbering System

For through penetration firestopping, UL uses an alphanumeric system that categorizes types of construction as well as the penetrating item(s). By following the guidelines of the chart below, you can achieve a basic understanding of each system and its uses.

Example – UL system C-AJ-1641 translate to:

C = Either floor or wall is penetrated

A = Concrete floors with a minimum thickness less than or equal to 5"

J = Concrete walls with a minimum thickness less than or equal to 8"

1641 = Metallic pipe, conduit or tubing as penetrating items.



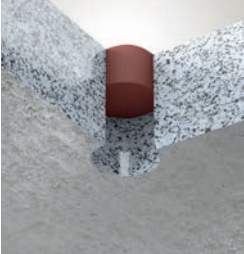

The details vary within each system in a category such as, maximum pipe size, annular distances, products used, etc.

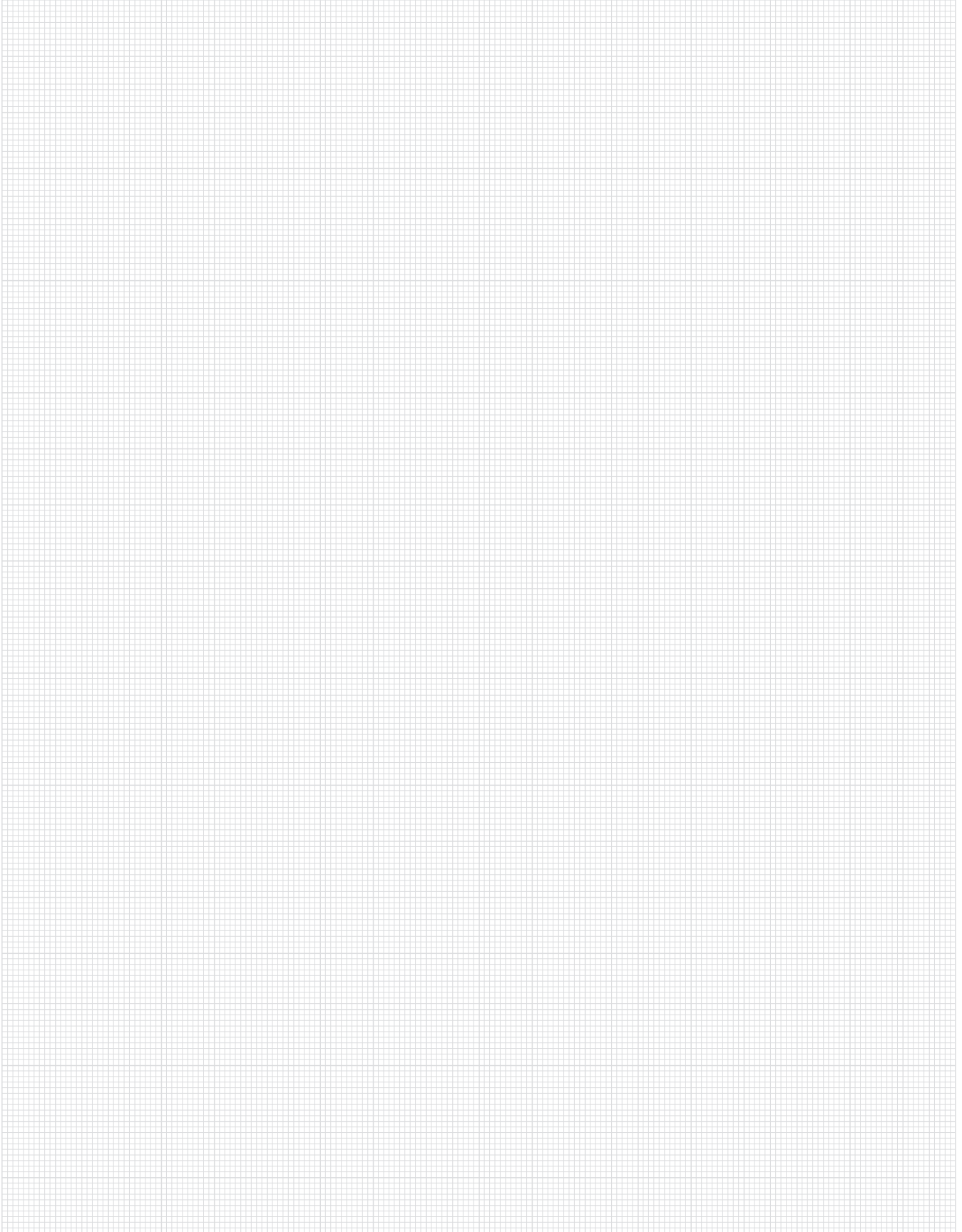
F	Floor is penetrated
W	Wall is penetrated
C	Either wall or floor

A	Concrete floors with a min. thickness of less than or equal to 5"
B	Concrete floors with a min. thickness greater than 5"
C	Framed floors
D	Steel deck in marine vessels
E	Floor ceiling assemblies consisting of concrete with membrane protection
F-I	Not currently used
J	Concrete or masonry wall with a min. thickness less than or equal 8"
K	Concrete or masonry wall with a min. thickness greater than 8"
L	Framed walls
M	Bulkheads in marine vessels
N	Composite panel walls
O-Z	Not currently used

0000	No penetrating items
1000	Metallic pipe, conduit, or tubing
2000	Non-metallic pipe, conduit, or tubing
3000	Electrical cables
4000	Cable trays with electrical cables
5000	Insulated pipes
6000	Misc. electrical penetrants such as bus ducts
7000	Misc. mechanical penetrants such as air ducts
8000	Groupings of penetrations including any combination of items listed above
9000	Not currently used



Description	Benefit	Application				
		Blank opening	Metal pipes	Cables/ cable trays	Insulated metal pipes	Mixed penetration seal (incl. AC Limeset with plastic pipes)
 <p>Fire Protection Foam ZZ 360 A two component product in cartridges with intumescent fire protection additives. Increases in volume and forms a polyurethane foam after application.</p>	<p>“One-product solution”, no additional components, only one work step necessary.</p> <p>Fast and easy sealing of openings with many penetrating elements and for openings that are difficult to access or that are irregular.</p> <p>Easy retroactive installation of cables or pipes due to soft and elastic material characteristics.</p>		C-AI-1641	C-AI-3331, C-AI-4104, W-L-4085	C-AI-5355	C-AI-8233, C-AI-8235
 <p>Fire Protection Block ZZ 260 A block-shaped intumescent elastic product (can be vacuum-packed) on the basis of polyurethane with intumescent fire protection additives.</p>	<p>Fast and easy installation in rectangular openings up to 32 x 12 [in.]</p> <p>Especially suited for openings with big blank areas.</p> <p>Easy retroactive installation of cables or pipes due to soft and elastic material characteristics.</p>	C-AI-0150, W-L-0046		C-AI-4104, C-AI-4105, W-L-4085		C-AI-8233, C-AI-8234
 <p>Fire Protection Plug ZZ 160 Plug-shaped intumescent elastic product on the basis of polyurethane with intumescent fire protection additives.</p>	<p>Very fast and easy installation in circular openings up to Ø 5 in. No special tools required.</p> <p>Easy retroactive installation of cables due to soft and elastic material characteristics.</p>	C-AI-0151		C-AI-3329		
 <p>Fire Protection Sealant ZZ 365 Sealant in cartridges on the basis of waterborne polyacrylate with intumescent fire protection additives.</p>	<p>The affordable and quick firestop solution for metallic pipes and cables.</p> <p>Suitable for small penetration seals, openings with many penetrating elements and openings that are difficult to access or that are irregular.</p>		C-AI-1642	C-AI-3330		



Through penetration firestop systems

/Fire Protection Foam ZZ 360

/Fire Protection Block ZZ 260

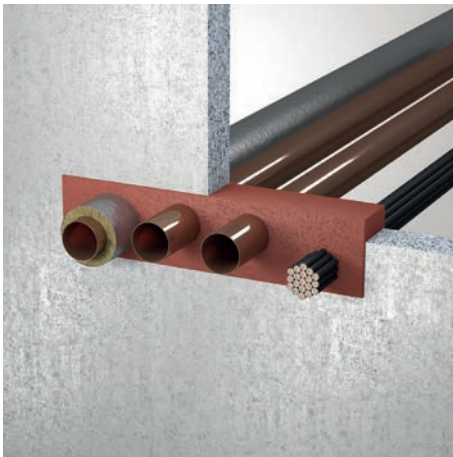
/Fire Protection Plug ZZ 160

/Fire Protection Sealant ZZ 365

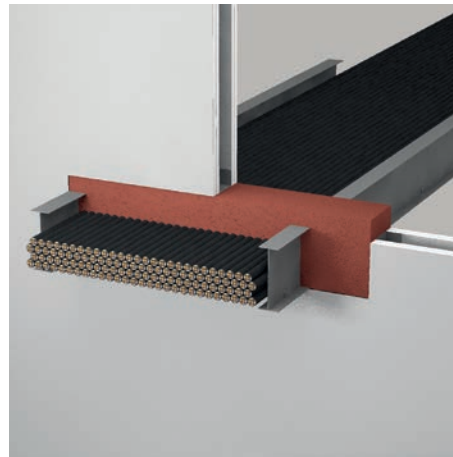
Fire Protection Foam ZZ 360

System No. C-AJ-1641; C-AJ-3331; C-AJ-4104; C-AJ-5355; C-AJ-8233; C-AJ-8235; W-L-4085

Cable penetration seal/ Pipe penetration seal/ Mixed penetration seal. Through penetration firestop system for electrical cables, telecommunication cables, optical fibre cables, cable support systems, insulated and non-insulated non-flammable pipes, as well as flammable pipes. Max dimension of through penetration firestop system up to 32 x 12 [in.] or Ø 12 [in.] diameter.



Mixed penetration seal (C-AJ-8233)



Cable penetration seal (W-L-4085)

Especially suited for: 1. Fast and easy sealing of openings 2. Openings with medium to high density of penetrants 3. Openings that are difficult to access or that are irregular

		Systems					
Approved penetrating elements		C-AJ-1641	C-AJ-3331	C-AJ-4104	C-AJ-5355	C-AJ-8233	C-AJ-8235
cables & cable tray	Max 300 pair No. 24 AWG (or smaller) copper conductor telecommunication cables		•	•		•	
	Max 1/C 500 kcmil (or smaller) copper conductor cables		•	•		•	
	Max 1/C 750 kcmil (or smaller) copper conductor cables		•			•	
	Max 3/C No. 2 AWG copper or aluminum conductor cables		•	•			
	Max 7/C No. 12 AWG copper conductor power and control cables		•	•		•	
	Multiple fiber optic communication cables		•	•		•	
	Max No. 18 AWG Type RG/6 coaxial cables			•		•	
	Max four pair No. 18 AWG (or smaller) thermostat cables						•
	Max 3/C copper conductor No. 10 AWG (or smaller) with bare aluminum ground, PVC insulated steel metal-clad cables		•				•
Cable support systems (cable trays) made of steel or aluminum profiles (can be routed through the penetration seal)				•			

Approved penetrating elements	Systems					
	C-AJ-1641	C-AJ-3331	C-AJ-4104	C-AJ-5355	C-AJ-8233	C-AJ-8235
pipes & insulation	Non-flammable pipes of steel or iron and steel conduits up to nom. 8 in. diameter	•			•	
	Non-flammable pipes of steel, iron or copper and steel conduits up to nom. 4 in. diameter	•			•	•
	Non-flammable pipes of steel or copper and steel conduits up to nom. 1 in. diameter	•			•	•
	Plastic pipes (PVC or CPVC) or PVC conduits up to nom. 1 in. diameter					•
	Max. 1 in. thick glass fiber pipe insulation (density min. 3.5 pcf)				•	•
	Max. 1/2 in. thick rubber insulation (AB /PVC)					•

Products

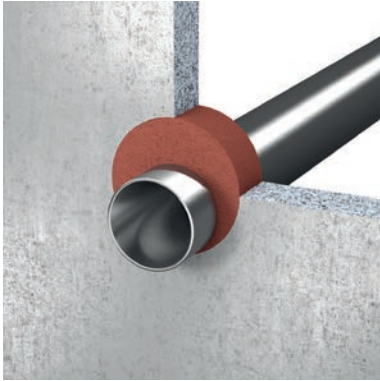


Designation	Art. no.	PU
1. Fire Protection Foam ZZ 360, 6-cartridge set <i>incl. 12 mixing nozzles, 6 pairs of gloves, 1 roll of duct tape</i>	B15N01-0134	1
2. Fire Protection Block ZZ 260-8 (8 x 5 x 2-1/3 [in.])	B01N00-0041	4; 18
3. Fire Protection Block ZZ 260-40 (40 x 5 x 2-1/3 [in.])	B06N00-0018	3

Accessories

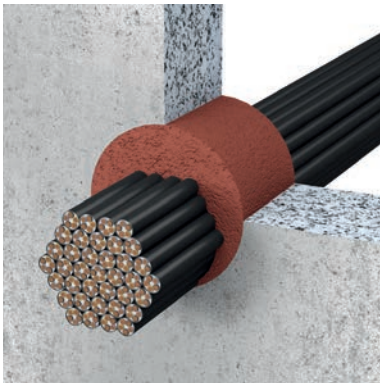


Designation	Art. no.	PU
4. Knife with serrated blade, narrow & magnetic blade guard	B16H00-0042	1
5. Knife with serrated blade, wide & magnetic blade guard	B16H00-0043	1
6. Duct tape	B99H00-0111	1
7. Dispensing gun HandyMax 380 ml (5:1)	B16H00-0044	1
8. Dispensing gun DynamicMax 380 ml (5:1)	B16H00-0045	1
9. Mixing nozzle 380 ml, 12 pc. set	B99H00-0112	1
10. Extension for mixing nozzle, 12 pc. set	B99H00-0172	1



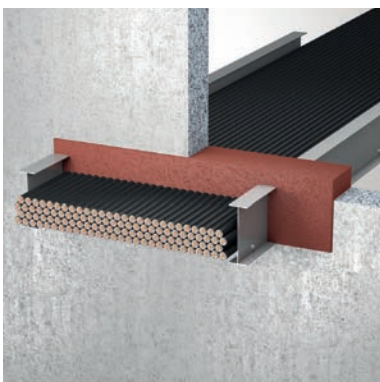
Metallic pipe in solid wall or floor (C-AJ-1641)

- / Copper pipes up to 4 in. diameter and steel pipes, iron pipes or steel conduits up to 8 in. diameter
- / F-Rating: 2 h; T-Rating: ¼ h
- / Maximum diameter of opening is 12 in.
- / Floor or wall of min. 4-1/2 in. thick reinforced concrete or any UL Classified Concrete Blocks
- / Annular space: Point contact to max. 4 in.
- / Optional: Steel sleeve grouted into floor or wall



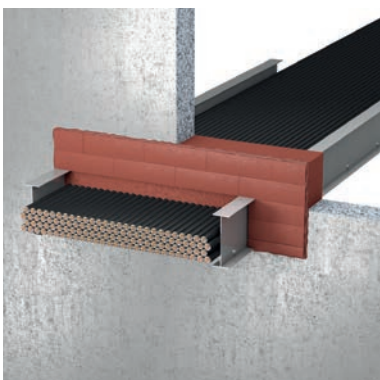
Cables in solid wall or floor (C-AJ-3331)

- / Power and control cables, telecommunication cables, optical fibre cables
- / F-Rating: 2 h; T-Rating: ½ h
- / Max. 45% cable fill in opening of max. 8 in. diameter
- / Floor or wall of min. 4-1/2 in. thick reinforced concrete or any UL Classified Concrete Blocks
- / Annular space: Point contact to max. 4 in.
- / Optional: Steel sleeve grouted into floor or wall



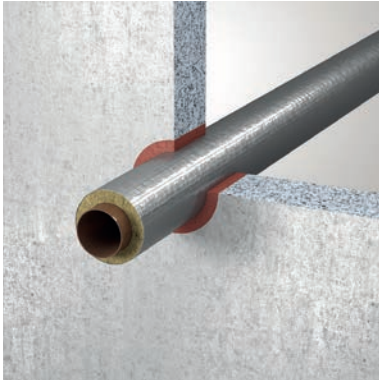
Cable tray with cables in solid wall or floor (C-AJ-4104)

- / Up to 6 in. by 24 in. steel or aluminum cable tray with max. 45% cable fill
- / F-Rating: 2 h; T-Rating: 1 h
- / Max. opening size: 224 in.² with a max dimension of 32 in.
- / Floor or wall of min. 4-1/2 in. thick reinforced concrete or any UL Classified Concrete Blocks
- / Annular space: point contact to max. 3-1/2 in. (vertical) and 8 in. (horizontal)



Cable tray with cables in combination with Fire Protection Block ZZ 260 in solid wall or floor (C-AJ-4104)

- / Up to 6 in. by 24 in. steel or aluminum cable tray with max. 45% cable fill
- / F-Rating: 2 h; T-Rating: 1 h
- / Maximum opening size: 384 in.² with a max dimension of 32 in.
- / Floor or wall of min. 4-1/2 in. thick reinforced concrete or any UL Classified Concrete Blocks
- / Annular space: point contact to max. 3-1/2 in. (vertical) and 8 in. (horizontal) to periphery of opening or foam/block interface, rest of the opening has to be sealed with Fire Protection Block ZZ 260



Insulated metal pipe in solid wall or floor (C-AJ-5355)

- / Copper pipes up to 4 in. diameter and steel pipes, iron pipes or steel conduits up to 8 in. diameter with glass fiber insulation
- / F-Rating: 2 h; T-Rating: 2 h
- / Maximum diameter of opening is 12 in.
- / Floor or wall of min. 4-1/2 in. thick reinforced concrete or any UL Classified Concrete Blocks
- / Annular space: point contact to max. 4 in.
- / Optional: Steel sleeve grouted into floor or wall



Mixed penetration seal in solid wall or floor (C-AJ-8233)

- / Cable bundle up to 4 in. diameter, metal pipes up to 4 in. diameter optionally glass fiber insulated
- / F-Rating: 2 h; T-Rating: 1/4 h, 1-1/4 h and 1-3/4 h
- / Maximum opening size: 224 in.² with a max. dimension of 32 in.
- / Floor or wall of min. 4-1/2 in. thick reinforced concrete or any UL Classified Concrete Blocks
- / Annular space: point contact to max. 3-1/2 in. (vertical) and 8 in. (horizontal)



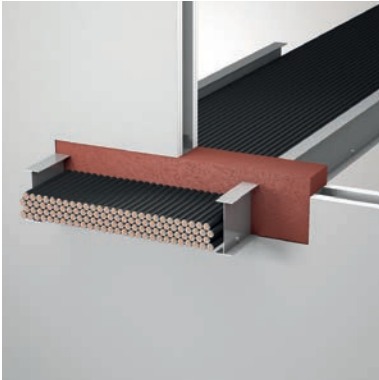
Mixed penetration seal in combination with Fire Protection Block ZZ 260 in solid wall or floor (C-AJ-8233)

- / Cable bundle up to 4 in. diameter, metal pipes up to 4 in. diameter optionally glass fiber insulated
- / F-Rating: 2 h; T-Rating: 1/4 h, 1-1/4 h and 1-3/4 h
- / Max. opening size: 384 in.² with a max. dimension of 32 in.
- / Floor or wall of min. 4-1/2 in. thick reinforced concrete or any UL Classified Concrete Blocks
- / Annular space: point contact to max. 3-1/2 in. (vertical) and 8 in. (horizontal) to periphery of opening or foam/block interface, rest of the opening has to be sealed with Fire Protection Block ZZ 260

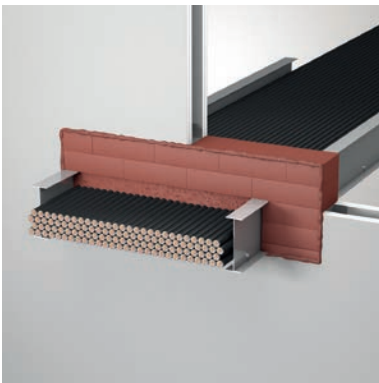


Mixed penetration seal (AC lineset) in solid wall or floor (C-AJ-8235)

- / Up to four metallic pipes optionally AB/PVC insulated and one PVC/CPVC pipe each up to 1 in. diameter, four cables
- / F-Rating: 2 h; T-Rating: 1/4 h, 3/4 h and 2 h
- / Maximum diameter of opening is 6 in.
- / Floor or wall of min. 4-1/2 in. thick reinforced concrete or any UL Classified Concrete Blocks
- / Annular space: point contact to max. 2 in.

**Cable tray with cables in drywall (W-L-4085)**

- / Up to 6 in. by 24 in. steel or aluminum cable tray with max. 45% cable fill
- / F-Rating: 2 h; T-Rating: 1 h
- / Maximum opening size: 224 in.² with a max. dimension of 32 in.
- / Fire rated gypsum board/ steel stud wall according to U400, V400 or W400 Series with minimum 2-1/2 in. wide studs
- / Annular space: point contact to max. 3-1/2 in. (vertical) and 8 in. (horizontal)

**Cable tray with cables in combination with Fire Protection Block ZZ 260 in drywall (W-L-4085)**

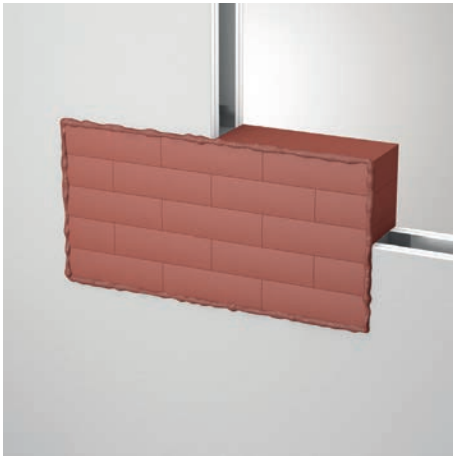
- / Up to 6 in. by 24 in. steel or aluminum cable tray with max. 45% cable fill
- / F-Rating: 2 h; T-Rating: 1 h
- / Maximum opening size: 384 in.² with a max. dimension of 32 in.
- / Fire rated gypsum board/ steel stud wall according to U400, V400 or W400 Series with minimum 2-1/2 in. wide studs
- / Annular space: point contact to max. 3-1/2 in. (vertical) and 8 in. (horizontal) to periphery of opening or foam/block interface, rest of the opening has to be sealed with Fire Protection Block ZZ 260



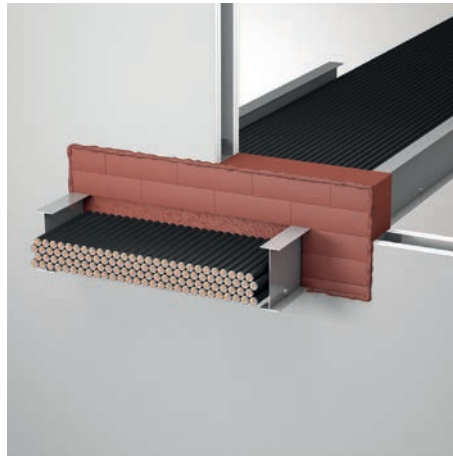
Fire Protection Block ZZ 260

System No. C-AJ-0150; C-AJ-4104; C-AJ-4105; C-AJ-8233; C-AJ-8234; W-L-0046; W-L-4085

Blank penetration seal/ Cable penetration seal/ Pipe penetration seal/ Mixed penetration seal. Through penetration firestop system for electrical cables, telecommunication cables, optical fibre cables, cable support systems, insulated and non-insulated non-flammable pipes. Max dimension of through penetration firestop system up to 32 x 12 [in.].



Blank seal (W-L-0046)

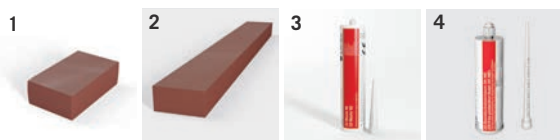


Cable penetration seal (W-L-4085)

Especially suited for: 1. Medium-sized and large penetration seals 2. Through penetration firestop systems with frequently changing penetrating elements 3. Fast and easy installation in rectangular openings up to 32 x 12 [in.]

		Systems				
Approved penetrating elements		C-AJ-0150	C-AJ-4104	C-AJ-4105	C-AJ-8233	C-AJ-8234
cables & cable tray	Blank opening	•				
	Max 300 pair No. 24 AWG (or smaller) copper conductor telecommunication cables		•	•	•	•
	Max 1/C 500 kcmil (or smaller) copper conductor cables		•	•	•	•
	Max 1/C 750 kcmil (or smaller) copper conductor cables				•	•
	Max 3/C No. 2 AWG copper or aluminum conductor cables		•	•		
	Max 7/C No. 12 AWG copper conductor power and control cables		•	•	•	•
	Multiple fiber optic communication cables		•	•	•	•
	Max No. 18 AWG Type RG/6 coaxial cables		•	•	•	•
	Max 3/C copper conductor No. 10 AWG (or smaller) with bare aluminum ground, PVC insulated steel metal-clad cables				•	•
Cable support systems (cable trays) made of steel or aluminum profiles (can be routed through the penetration seal)		•	•			
pipes & insulation	Non-flammable pipes of steel, iron or copper and steel conduits up to nom. 4 in. diameter				•	•
	Max. 1 in. thick glass fiber pipe insulation (density min. 3.5 pcf)				•	•

Products

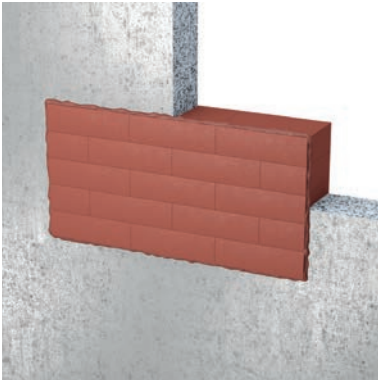


Designation	Art. no.	PU
1. Fire Protection Block ZZ 260-8 (8 x 5 x 2-1/3 [in.])	B01N00-0041	4; 18
2. Fire Protection Block ZZ 260-40 (40 x 5 x 2-1/3 [in.])	B06N00-0018	2
3. Fire Protection Sealant ZZ 365	B15N00-0016	12
4. Fire Protection Foam ZZ 360, 6-cartridge set <i>incl. 12 mixing nozzles, 6 pairs of gloves, 1 roll of duct tape</i>	B15N01-0134	1

Accessories

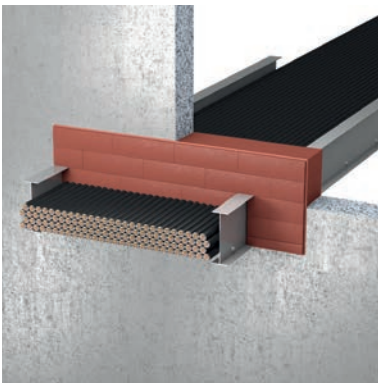


Designation	Art. no.	PU
5. Knife with serrated blade, narrow & magnetic blade guard	B16H00-0042	1
6. Knife with serrated blade, wide & magnetic blade guard	B16H00-0043	1
7. Professional dispensing gun 310 ml	B16H00-0024	1
8. EconoMax dispensing gun (310 ml cartridge & 580 ml tubular bag)	B16H00-0052	1
9. PowerMax dispensing gun (310 ml cartridge & 580 ml tubular bag)	B16H00-0053	1
10. Duct tape	B99H00-0111	1
11. Dispensing gun HandyMax 380 ml (5:1)	B16H00-0044	1
12. Dispensing gun DynamicMax 380 ml (5:1)	B16H00-0045	1
13. Mixing nozzle 380 ml, 12 pc. set	B99H00-0112	1
14. Extension for mixing nozzle, 12 pc. set	B99H00-0172	1



Blank opening in solid wall or floor (C-AJ-0150)

- / F-Rating: 2 h; T-Rating: 2 h
- / Maximum opening size: 384 in.² with a max. dimension of 32 in.
- / Floor or wall of min. 4-1/2 in. thick reinforced concrete or any UL Classified Concrete Blocks
- / Fire Protection Sealant ZZ 365 or Fire Protection Foam ZZ 360 to be filled between ZZ 260 and periphery of opening



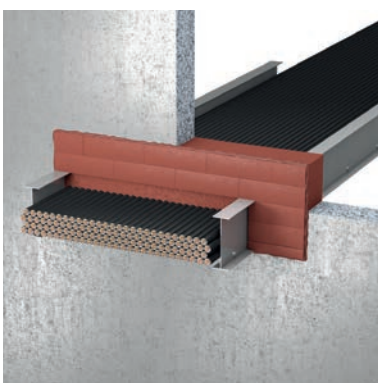
Cable tray with cables in solid wall or floor (C-AJ-4105)

- / Up to 6 in. by 24 in. steel or aluminum cable tray with max. 45% cable fill
- / F-Rating: 2 h; T-Rating: 0 h
- / Maximum opening size: 384 in.² with a max dimension of 32 in.
- / Floor or wall of min. 4-1/2 in. thick reinforced concrete or any UL Classified Concrete Blocks
- / Annular space: point contact to max. 8 in.
- / Fire Protection Sealant ZZ 365 to be filled between cables, in voids between cables and ZZ 260 and between periphery of opening and ZZ 260



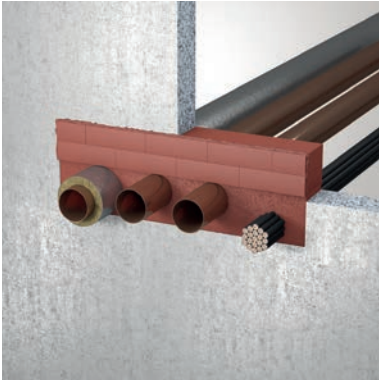
Mixed penetration seal in solid wall or floor (C-AJ-8234)

- / Cable bundle up to 4 in. diameter, metal pipes up to 4 in. diameter optionally glass fiber insulated
- / F-Rating: 2 h; T-Rating: 1/4 h, 1-1/2 h and 2 h
- / Max. opening size: 384 in.² with a max. dimension of 32 in.
- / Floor or wall of min. 4-1/2 in. thick reinforced concrete or any UL Classified Concrete Blocks
- / Annular space: point contact to max. 7-7/8 in.
- / Fire Protection Sealant ZZ 365 to be filled between cables/ pipes and ZZ 260 and between periphery of opening and ZZ 260



Cable tray with cables in combination with Fire Protection Foam ZZ 360 in solid wall or floor (C-AJ-4104)

- / Up to 6 in. by 24 in. steel or aluminum cable tray with max. 45% cable fill
- / F-Rating: 2 h; T-Rating: 1 h
- / Maximum opening size: 384 in.² with a max dimension of 32 in.
- / Floor or wall of min. 4-1/2 in. thick reinforced concrete or any UL Classified Concrete Blocks
- / Annular space: point contact to max. 3-1/2 in. (vertical) and 8 in. (horizontal) to periphery of opening or foam/block interface, rest of the opening has to be sealed with ZZ 260



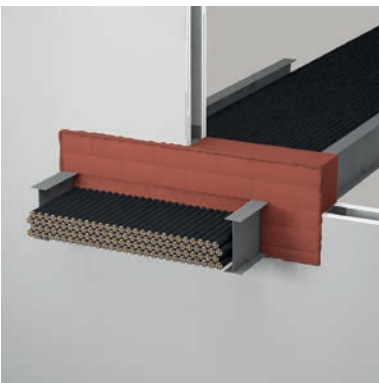
Mixed penetration seal in combination with Fire Protection Foam ZZ 360 in solid wall or floor (C-AJ-8233)

- / Cable bundle up to 4 in. diameter, metal pipes up to 4 in. diameter optionally glass fiber insulated
- / F-Rating: 2 h; T-Rating: 1/4 h, 1-1/4 h and 1-3/4 h
- / Max. opening size: 384 in.² with a max. dimension of 32 in.
- / Floor or wall of min. 4-1/2 in. thick reinforced concrete or any UL Classified Concrete Blocks
- / Annular space: point contact to max. 3-1/2 in. (vertical) and 8 in. (horizontal) to periphery of opening or foam/block interface, rest of the opening has to be sealed with ZZ 260



Blank opening in combination with Fire Protection Foam ZZ 360 in drywall (W-L-0046)

- / F-Rating: 2 h; T-Rating: 2 h
- / Maximum opening size: 384 in.² with a max. dimension of 32 in.
- / Fire rated gypsum board/ steel stud wall according to U400, V400 or W400 Series with minimum 2-1/2 in. wide studs
- / Fire Protection Foam ZZ 360 to be filled between ZZ 260 and periphery of opening



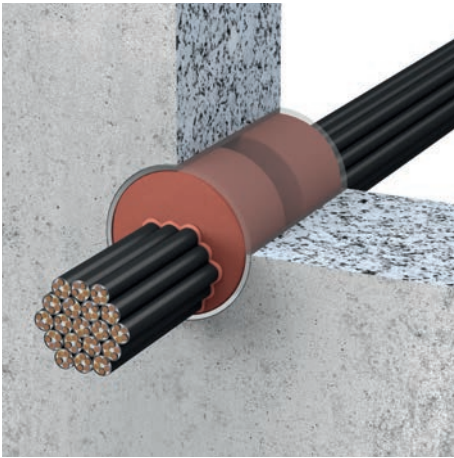
Cable tray with cables in combination with Fire Protection Foam ZZ 360 in drywall (W-L-4085)

- / Up to 6 in. by 24 in. steel or aluminum cable tray with max. 45% cable fill
- / F-Rating: 2 h; T-Rating: 1 h
- / Maximum opening size: 384 in.² with a max. dimension of 32 in.
- / Fire rated gypsum board/ steel stud wall according to U400, V400 or W400 Series with minimum 2-1/2 in. wide studs
- / Annular space: point contact to max. 3-1/2 in. (vertical) and 8 in. (horizontal) to periphery of opening or foam/block interface, rest of the opening has to be sealed with ZZ 260

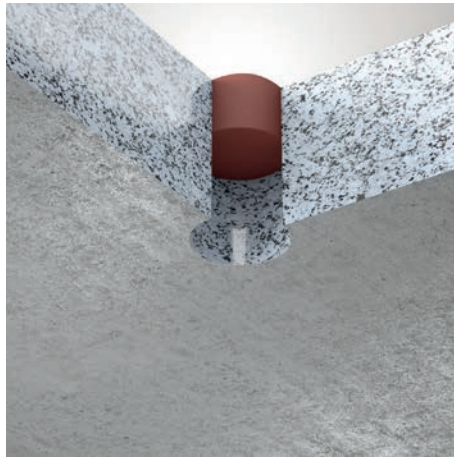
Fire Protection Plug ZZ 160

System No. C-AJ-0151; C-AJ-3329

Blank penetration seal/ Cable penetration seal. Through penetration firestop system for electrical cables, telecommunication cables, optical fibre cables. Max dimension of through penetration firestop system up to Ø 5 [in.] diameter.



Cable penetration seal (C-AJ-3329)

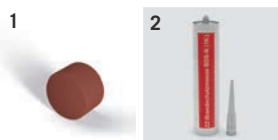


Blank sea (IC-AJ-0151)

Especially suited for: 1. Very fast and easy installation in circular openings 2. Through penetration firestop systems with frequently changing penetrating elements 3. Blank openings

Approved penetrating elements		Systems	
		C-AJ-0151	C-AJ-3329
cables	Blank opening	•	
	Max 300 pair No. 24 AWG (or smaller) copper conductor telecommunication cables		•
	Max 1/C 750 kcmil (or smaller) copper conductor cables		•
	Max 3/C No. 2 AWG copper or aluminum conductor cables		•
	Max 7/C No. 12 AWG copper conductor power and control cables		•
	Multiple fiber optic communication cables		•
	Max 3/C copper conductor No. 10 AWG (or smaller) with barealuminum ground, PVC insulated steel metal-clad cables		•

Products



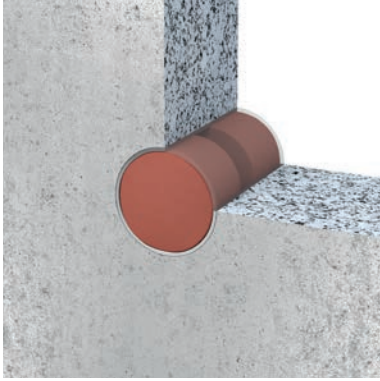
Designation	Art. no.	PU
1. Fire Protection Plug ZZ 160	<i>see variants</i>	
2. Fire Protection Sealant ZZ 365	B15N00-0016	12

Variants	Max. opening diameter in.	Art. no.	PU
1. ZZ 160-2.5	2.5	B02N00-0077	4
1. ZZ 160-3	3	B02N00-0078	4
1. ZZ 160-4	4	B02N00-0075	4
1. ZZ 160-4.5	4.5	B02N00-0079	4
1. ZZ 160-5	5	B02N00-0080	4

Accessories

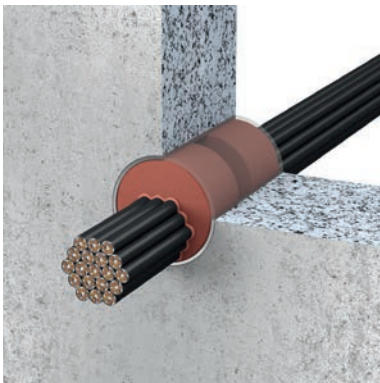
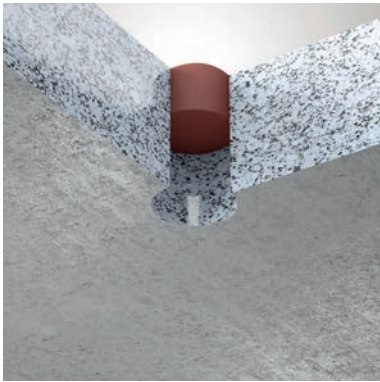


Designation	Art. no.	PU
3. Knife with serrated blade, narrow & magnetic blade guard	B16H00-0042	1
4. Knife with serrated blade, wide & magnetic blade guard	B16H00-0043	1
5. Professional dispensing gun 310 ml	B16H00-0024	1
6. EconoMax dispensing gun (310 ml cartridge & 580 ml tubular bag)	B16H00-0052	1
7. PowerMax dispensing gun (310 ml cartridge & 580 ml tubular bag)	B16H00-0053	1



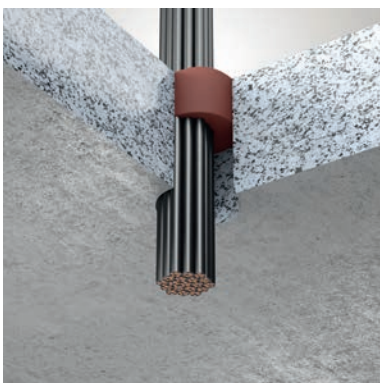
Blank opening in solid wall or floor (C-AJ-0151)

- / F-Rating: 2 h; T-Rating: 2 h
- / Maximum opening size: 5 in. diameter
- / Floor or wall of min. 4-1/2 in. thick reinforced concrete or any UL Classified Concrete Blocks
- / Optional: Steel sleeve grouted into floor or wall



Cables in solid wall or floor (C-AJ-3329)

- / Power and control cables, telecommunication cables, optical fibre cables
- / F-Rating: 2 h; T-Rating: 1/2 h
- / Maximum 60% cable fill in opening of max. 5 in. diameter
- / Floor or wall of min. 4-1/2 in. thick reinforced concrete or any UL Classified Concrete Blocks
- / Optional: Steel sleeve grouted into floor or wall

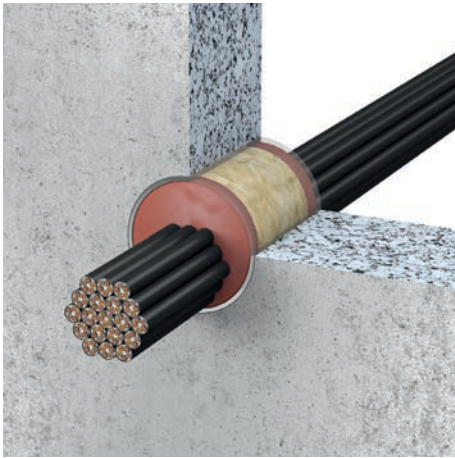




Fire Protection Sealant ZZ 365

System No. C-AJ-1642; C-AJ-3330

Cable penetration seal/ Pipe penetration seal. Through penetration firestop system for electrical cables, telecommunication cables, optical fibre cables and non-flammable pipes. Max dimension of through penetration firestop system up to Ø 5 [in.] diameter.



Cable penetration seal (C-AJ-3330)



Pipe penetration seal (C-AJ-1642)

- Especially suited for:**
1. Fast and easy installation in circular openings
 2. Small penetration seals
 3. Openings that are difficult to access or that are irregular

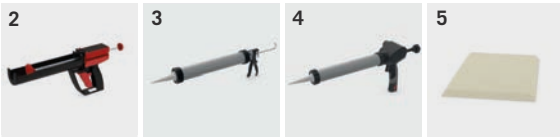
Approved penetrating elements		Systems	
		C-AJ-1642	C-AJ-3330
cables	Max 300 pair No. 24 AWG (or smaller) copper conductor telecommunication cables		•
	Max 1/C 500 kcmil (or smaller) copper conductor cables		•
	Max 3/C No. 2 AWG copper or aluminum conductor cables		•
	Max 7/C No. 12 AWG copper conductor power and control cables		•
	Multiple fiber optic communication cables		•
pipes	Non-flammable pipes of steel, iron or copper and steel conduits up to nom. 4 in. diameter.	•	

Products

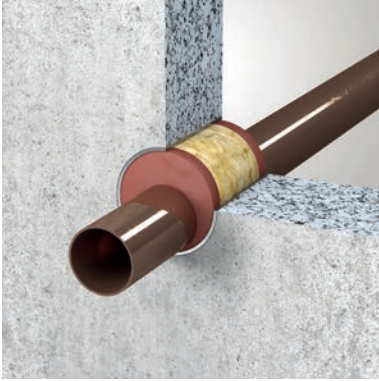


Designation	Art. no.	PU
1. Fire Protection Sealant ZZ 365	B15N00-0016	12

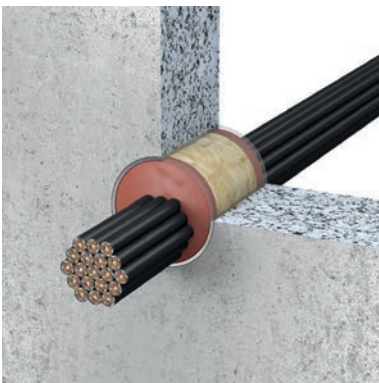
Accessories



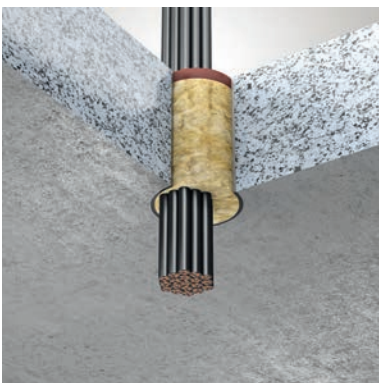
Designation	Art. no.	PU
2. Professional dispensing gun 310 ml	B16H00-0024	1
3. EconoMax dispensing gun (310 ml cartridge & 580 ml tubular bag)	B16H00-0052	1
4. PowerMax dispensing gun (310 ml cartridge & 580 ml tubular bag)	B16H00-0053	1
5. Smoothing trowel	B99H00-0161	1

**Metallic pipe in solid wall or floor (C-AJ-1642)**

- / Metal pipes up to 4 in. diameter
- / F-Rating: 2 h; T-Rating: 1/4 h
- / Maximum diameter of opening is 5 in.
- / Floor or wall of min. 4-1/2 in. thick reinforced concrete or any UL Classified Concrete Blocks
- / Annular space: Point contact to max. 2-1/4 in.
- / Optional: Steel sleeve grouted into floor or wall

**Cables in solid wall or floor (C-AJ-3330)**

- / Power and control cables, telecommunication cables, optical fibre cables
- / F-Rating: 2 h; T-Rating: 1/2 h
- / Maximum 45% cable fill in opening of max. 4 in. diameter
- / Floor or wall of min. 4-1/2 in. thick reinforced concrete or any UL Classified Concrete Blocks
- / Annular space: Point contact to max. 1-1/4 in.
- / Optional: Steel sleeve grouted into floor or wall





ZZ-Masse NE
ZZ-Mastic NE
Bestellnummer/Order number: 815N00-0013

Bestandteile:
Zirkonoxid
Silica
Mastic
Kunstharzmatrix
Kunstharzmatrix
Kunstharzmatrix
Kunstharzmatrix

ZZ-Masse NE
ZZ-Mastic NE
Bestellnummer/Order number: 815N00-0013

Bestandteile:
Zirkonoxid
Silica
Mastic
Kunstharzmatrix
Kunstharzmatrix
Kunstharzmatrix
Kunstharzmatrix

ZZ-Masse NE
ZZ-Mastic NE
Bestellnummer/Order number: 815N00-0013

Bestandteile:
Zirkonoxid
Silica
Mastic
Kunstharzmatrix
Kunstharzmatrix
Kunstharzmatrix
Kunstharzmatrix

ZZ-Masse NE
ZZ-Mastic NE
Bestellnummer/Order number: 815N00-0013

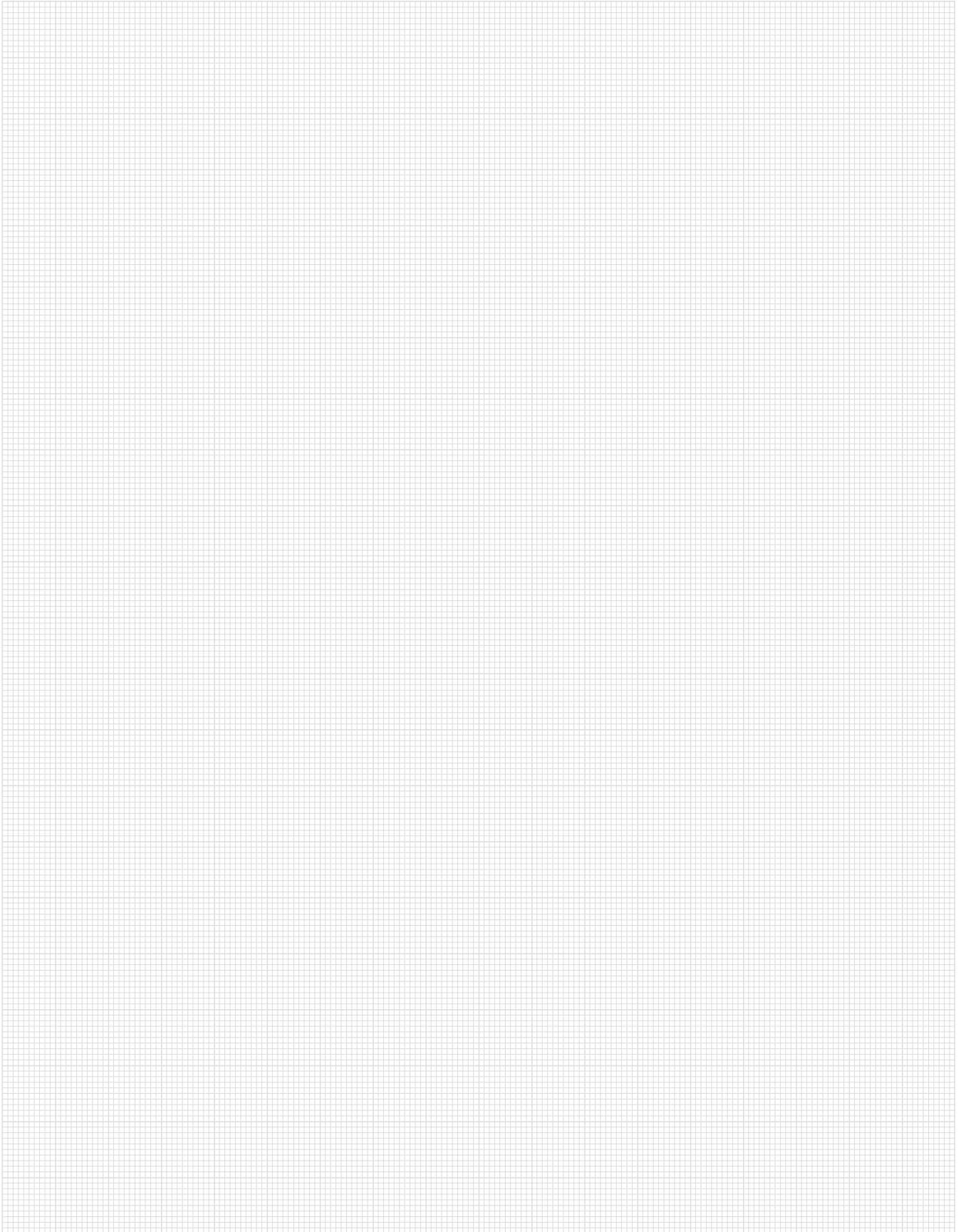
Bestandteile:
Zirkonoxid
Silica
Mastic
Kunstharzmatrix
Kunstharzmatrix
Kunstharzmatrix
Kunstharzmatrix

ZZ-Masse NE
ZZ-Mastic NE
Bestellnummer/Order number: 815N00-0013

Bestandteile:
Zirkonoxid
Silica
Mastic
Kunstharzmatrix
Kunstharzmatrix
Kunstharzmatrix
Kunstharzmatrix

ZZ-Masse NE
ZZ-Mastic NE
Bestellnummer/Order number: 815N00-0013

Bestandteile:
Zirkonoxid
Silica
Mastic
Kunstharzmatrix
Kunstharzmatrix
Kunstharzmatrix
Kunstharzmatrix



LEGAL NOTICE

ZAPP-ZIMMERMANN GmbH
Marconistrasse 7-9
50769 Cologne

Telephone: +49 221 97061-0
Fax: +49 221 97061-929
E-mail: info@z-z.eu
Internet: www.z-z.eu

Images

ZAPP-ZIMMERMANN GmbH
[iStockphoto/www.istockphoto.com](https://www.istockphoto.com)

Copyright

© ZAPP-ZIMMERMANN GmbH

Version 10.2015 Modifications and errors excepted.
Reprint, as well as any duplication only with our written consent.
Order no.: B99M00-0004

ZZ ZAPP- ZIMMERMANN

INNOVATIVE FIRE-PROTECTION SYSTEMS

www.z-z.eu

