

# Multiwrap

Fire wrap

European  
Technical Assessment  
ETA 23/0054



Technical Data Sheet

**MULCOL**  
INTERNATIONAL

# Contents

<b>Product specification</b>	3
■ Advantages	
■ Applications	
■ Packaging	
<b>1. Technical data</b>	4
<b>2. Acoustic properties</b>	4
<b>3. Performance Overview</b>	5
<b>4. Actually tested solutions</b>	6
<b>5. Pipe Insulation (Configuration)</b>	7
<b>6. Permitted Insulation Materials</b>	7
<b>7. Pipe Support Penetrations</b>	7
<b>8. Installation Manual</b>	8
<b>9. Test Configuration</b>	9
<b>10. Building Element Properties</b>	10
<b>11. Available Documents</b>	10

**MULCOL**  
INTERNATIONAL

Pragmatic, effective  
and applicable  
solutions



# Multiwrap

Fire wrap



**Fire resistance**  
≤ 240 minutes



**Working life**  
25 years

## Fire wrap

Multiwrap is a graphite-based wrap on a roll, for the fire-resistant sealing of combustible pipes and insulation. The Multiwrap provides a fire-resistant seal to adjacent rooms. Multiwrap reacts to heat and it seals openings caused by the melting of plastic pipes or combustible insulation.

Multiwrap forms part of the Mulcol® Penetration Seal System.

### Advantages

- ✓ Fire resistance ≤ 240 minutes
- ✓ CE-certified
- ✓ Environmentally and user-friendly
- ✓ Quick and easy application
- ✓ Ideal for hard-to-reach locations
- ✓ Halogen-free
- ✓ Working life of 25 years

### Application

- ✓ Rigid floors, stone and wood
- ✓ Rigid walls, stone and wood
- ✓ Flexible walls
- ✓ In combination with Multimortar and Multimastic C fireboards
- ✓ Plastic pipes with a diameter of up to Ø 160 mm
- ✓ Metal pipes with combustible insulation

### Packaging

	Dimensions	Box	Outer box	Pallet	Article number
Roll	10000 x 50 x 1,8 mm	1 piece	8 pieces	480 pieces	207001050

## 1. Technical Data

<b>EAN-code</b>	8719324470209
<b>Condition</b>	Ready to use
<b>Colour</b>	Anthracite
<b>Shelf life</b>	Not applicable
<b>Transportation- storage temperature</b>	+5 °C to +30 °C (store dry and dustfree in the original packaging)
<b>Application temperature</b>	0 °C to +50 °C
<b>Temperature resistance</b>	0 °C to +80 °C
<b>Graphite weight</b>	1.3 kg/m <sup>2</sup> per mm thickness
<b>Graphite density</b>	1300 kg/m <sup>3</sup>
<b>Gebruikscategorie <sup>1)</sup></b>	Type Y1 conform EAD 350454-00-1104
<b>Acoustic properties</b>	Rw 28 dB (on installation in combination with Multimastic FB system) Rw 37 dB (when installed in combination with Multimortar)
<b>Fire class</b>	E in accordance with EN 13501-1
<b>Approvals</b>	ETA report 23/0054
<b>Function retention</b>	25 years
<b>Seam finish</b>	Multimastic SP, Multimortar of Multimastic C system
<b>Finishing of large recesses</b>	Multimastic C system of Multimortar (≤ 1200 x 2400 mm)

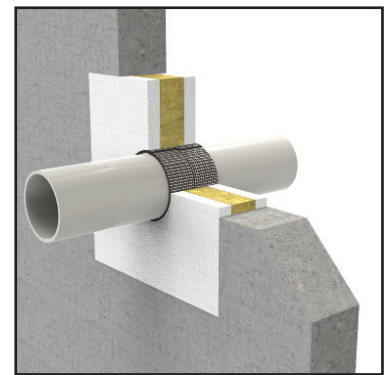
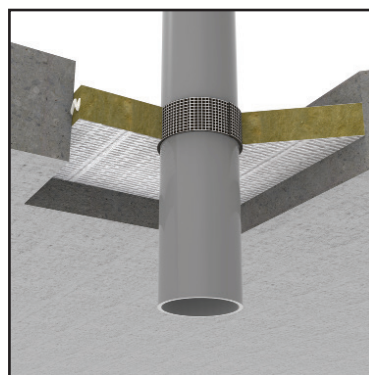
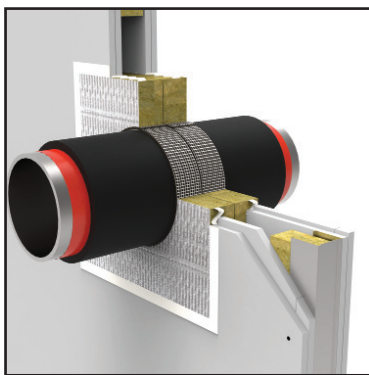
### <sup>1)</sup> Permissible environmental conditions

Product intended for use at temperatures below 0 °C with exposure to UV (occasionally) but no exposure to rain (TR 024, type Y1).

## 2. Acoustic properties

The sound insulation value only applies to the sealant and not to other elements in the building structure.

- ✓ Multiwrap installed in Multimastic C system (coated board system): Rw 28 dB
- ✓ Multiwrap installed in Multimortar (fire resistant mortar): Rw 37 dB



### 3. Performance Overview

#### Multwrap in Multimastic FB system

Mulcol product	Services	Size $\phi$ (mm)	Insulation type	Construction			Classification minutes
				FW-100	RW-100	RF-150	
Multwrap in Multimastic FB system	Plastic pipes <sup>(1)</sup>	$\leq 110$	n.a.			✓	$\leq$ EI 120-U/C
		$\leq 125$		✓	✓		
		$\leq 160$		✓	✓		$\leq$ EI 90-U/C
	Noise-reducing pipes <sup>(2)</sup>	$\leq 110$				✓	$\leq$ EI 240-U/U
		$\leq 125$				✓	$\leq$ EI 240-U/C
		$\leq 160$		✓	✓		$\leq$ EI 120-U/U
	Fibre composite pipes <sup>(3)</sup>	$\leq 110$	✓	✓		$\leq$ EI 120-U/C	
	Copper, cast iron and steel pipes	$\leq 324$	Elastomeric <sup>(4)</sup>	✓	✓		$\leq$ EI 120-C/U
		$\leq 168$				✓	

#### Multwrap in Multimortar system

Mulcol product	Services	Size $\phi$ (mm)	Insulation type	Construction			Classification minutes
				FW-100	RW-100	RF-150	
Multwrap in Multimortar system	Plastic pipes <sup>(1)</sup>	$\leq 110$	n.a.	✓	✓		$\leq$ EI 120-U/U
		$\leq 160$				✓	$\leq$ EI 240-U/U
	Plastic pipes <sup>(1)</sup> with cables	$\leq 110$		✓	✓		$\leq$ EI 90-U/C
						✓	$\leq$ EI 180-U/C
	Noise-reducing pipes <sup>(2)</sup>	$\leq 160$			✓	$\leq$ EI 240-U/C	
	Copper, cast iron and steel pipes	$\leq 324$	Elastomeric <sup>(4)</sup>	✓	✓		$\leq$ EI 120-C/U
					✓	$\leq$ EI 180-C/U	

<sup>(1)</sup> Permitted plastic pipes (or equivalent)

PE(-HD), PE-X, ABS, SAN+PVC, PP, PVC(-U/C) pipes

<sup>(2)</sup> Permitted noise-reducing pipes (or equivalent)

Coes PhoNoFire, Coestilen BluePower, Geberit Silent PP, Geberit Silent dB 20, Girpi Friaphon, Marley Silent, Pipelife Master 3, PhonEX AS, Poloplast POLO-KAL NG, Poloplast POLO-KAL 3S, Skolan dB, Raupiano Plus, Valsir Triplus, Wavin SiTech+, Wavin AS, DykaSono, Uponor Decibel

<sup>(3)</sup> Permitted fibre composite pipes (or equivalent)

Aquatechnik Fusio PP-R 80, Aquatechnik Fusio PP-RCT, Aquatherm Blue-S, Aquatherm Blue-MF, Aquatherm Red-MF, Aquatherm Green-MF, Aquatherm Green-MS, Aquatherm Lilac-S, Aquatherm Grey-MS and Aquatherm Orange M, Bänninger PP-R, Bänninger Climatec PP-RCT and Bänninger Watertec PP-RCT

<sup>(4)</sup> Permitted elastomer isooltite types (or equivalent)

- Reaction to fire class  $\leq$  B-s1, d0 - e.g. ArmaFlex Ultima, Kaiflex KK Plus S1
- Reaction to fire class  $\leq$  B-s2, d0 - e.g. ArmaFlex AF EVO, Kaiflex KK Plus S2 / ST
- Reaction to fire class  $\leq$  B-s3, d0 - e.g. ArmaFlex AF / XG / SH, K-Flex H
- Reaction to fire class  $\leq$  C-s2, d0 - e.g. Kaiflex HT S2
- Reaction to fire class  $\leq$  D-s3, d0 - e.g. ArmaFlex NH / SH / HT

The insulations may also have a BL, CL or DL classification (linear insulation)

FW-100:

MW-100:

MV-150:

$\phi$  (mm)

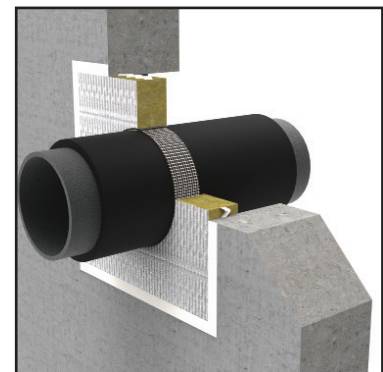
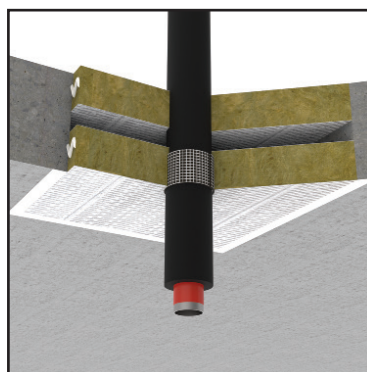
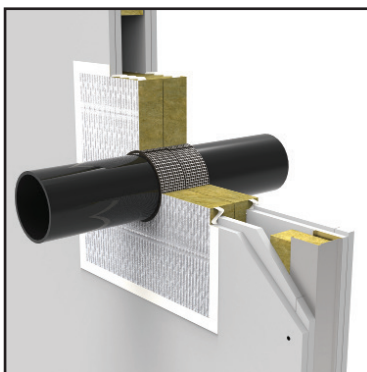
Flexible wall, 100 mm thick

Rigid wall, 100 mm thick

Rigid wall, 150 mm thick

Rigid floor, 150 mm thick

Diameter of the service



## Multiwrap directly into the wall

Mulcol product	Services	Size $\phi$ (mm)	Insulation type	Construction			Classification minutes	
				FW-100	RW-100	RF-150		
Multiwrap directly into the wall	Plastic pipes <sup>(1)</sup>	$\leq 110$	n.a.	✓	✓	✓	$\leq$ EI 120-U/C	
		$\leq 125$				✓	$\leq$ EI 240-U/C	
		$\leq 160$		✓	✓	✓	$\leq$ EI 120-U/C	
				✓	✓	✓	$\leq$ EI 90-U/C	
						✓	$\leq$ EI 240-U/C	
						✓	$\leq$ EI 90-U/C	
	Plastic pipes <sup>(1)</sup> with cables	$\leq 110$		✓	✓	✓	$\leq$ EI 120-U/U	
		Noise-reducing pipes <sup>(2)</sup>		$\leq 125$	✓	✓	✓	$\leq$ EI 120-U/C
				$\leq 160$	✓	✓	✓	$\leq$ EI 120-U/C
	Fibre composite pipes <sup>(3)</sup>	$\leq 110$		✓	✓	✓	$\leq$ EI 120-U/C	
	Copper, cast iron and steel pipes	$\leq 324$		Elastomeric <sup>(4)</sup>	✓	✓	✓	$\leq$ EI 120-C/U

<sup>(1)</sup> **Permitted plastic pipes (or equivalent)**

PE(-HD), PE-X, ABS, SAN+PVC, PP, PVC(-U/-C) pipes

FW-100:

MW-100:

MW-150:

MV-150:

$\phi$  (mm)

Flexible wall, 100 mm thick

Rigid wall, 100 mm thick

Rigid wall, 150 mm thick

Rigid floor, 150 mm thick

Diameter of the service

<sup>(2)</sup> **Permitted noise-reducing pipes (or equivalent)**

Coes PhoNoFire, Coestilen BluePower, Geberit Silent PP, Geberit Silent dB 20, Girpi Friaphon, Marley Silent, Pipelife Master 3, PhonEX AS, Poloplast POLO-KAL NG, Poloplast POLO-KAL 3S, Skolan dB, Raupiano Plus, Valsir Triplus, Wavin SiTech+, Wavin AS, DykaSono, Uponor Decibel

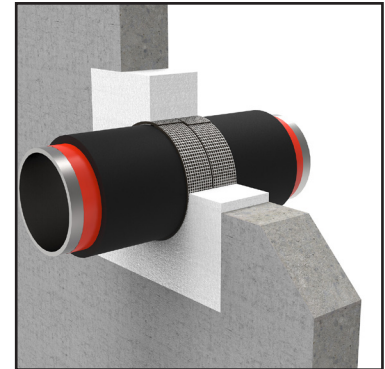
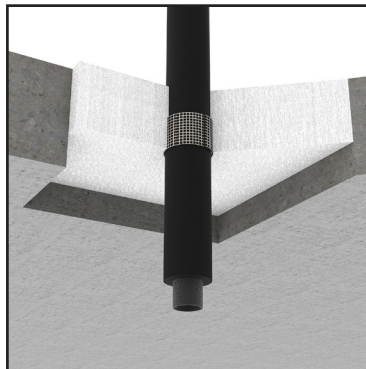
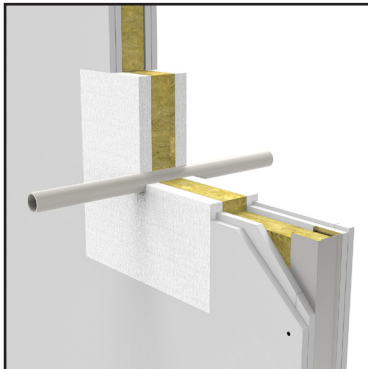
<sup>(3)</sup> **Permitted fibre composite pipes (or equivalent)**

Aquatechnik Fusio PP-R 80, Aquatechnik Fusio PP-RCT, Aquatherm Blue-S, Aquatherm Blue-MF, Aquatherm Red-MF, Aquatherm Green-MF, Aquatherm Green-MS, Aquatherm Lilac-S, Aquatherm Grey-MS and Aquatherm Orange M, Bänninger PP-R, Bänninger Climatec PP-RCT and Bänninger Watertec PP-RCT

<sup>(4)</sup> **Permitted elastomer isoolite types (or equivalent)**

- Reaction to fire class  $\leq$  B-s1, d0 - e.g. ArmaFlex Ultima, Kaiflex KK Plus S1
- Reaction to fire class  $\leq$  B-s2, d0 - e.g. ArmaFlex AF EVO, Kaiflex KK Plus S2 / ST
- Reaction to fire class  $\leq$  B-s3, d0 - e.g. ArmaFlex AF / XG / SH, K-Flex H
- Reaction to fire class  $\leq$  C-s2, d0 - e.g. Kaiflex HT S2
- Reaction to fire class  $\leq$  D-s3, d0 - e.g. ArmaFlex NH / SH / HT

The insulations may also have a BL, CL or DL classification (linear insulation)



## 4. Actually tested solutions

All the latest tested solutions with the Multiwrap can be found in our **Multiselector**. Scan the QR code or press the Multiselector button to get directly to the tested solution for your project.



Our **Multiselector** can also be found in our **Mulcol Fire Protection App**.

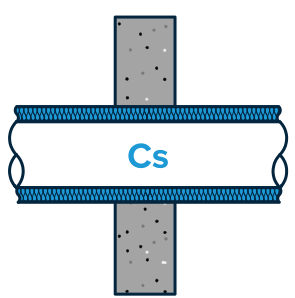
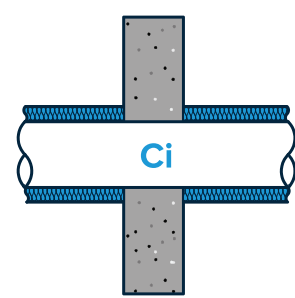
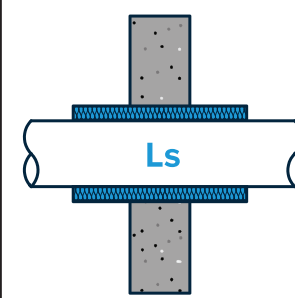
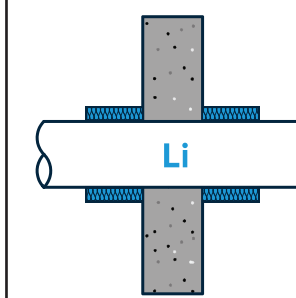
It can be downloaded from the **App Store** (iOS) or **Google Play Store** (Android).



## 5. Pipe Insulation (Configuration)

All the latest tested solutions with the Multiwrap can be found in our Multiselector. Scan the QR code or press the Multiselector button to get directly to the tested solution for your project.

Possible configurations are shown below:

Continued insulation		Local insulation	
Continued sustained	Continued interrupted	Local sustained	Local interrupted
			

## 6. Permitted Insulation Materials

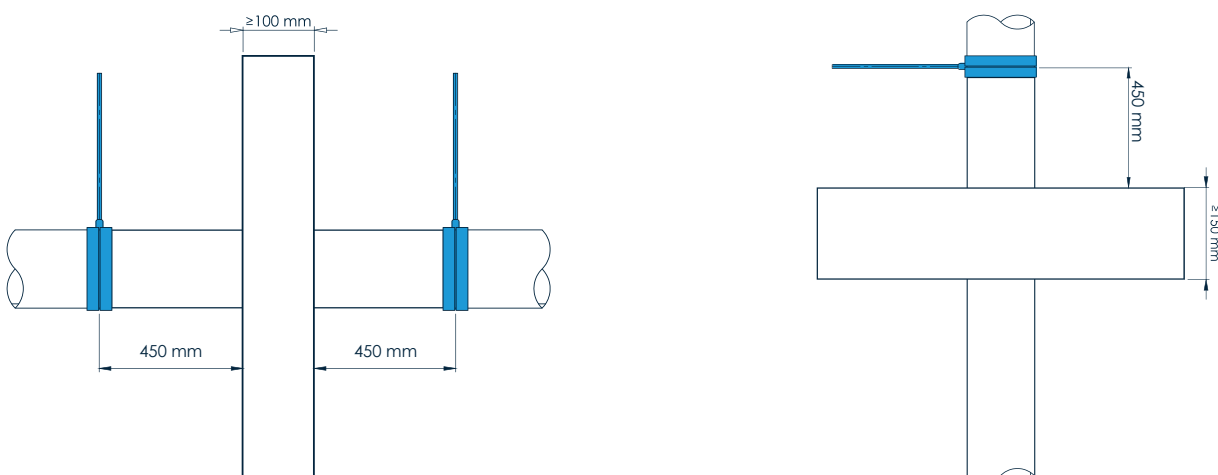
Multiwrap, Fire Wrap has been extensively tested with a number of insulation materials; the table below shows the permitted insulation materials. For principle details, refer to the Multiselector and our ETA report: 23/0054.

Insulation types	Pipe types	Permitted <sup>1)</sup>
<b>Stone wool insulation</b> <i>Fire class A1, in accordance with EN 13501-1</i>	<ul style="list-style-type: none"> <li>✓ Copper pipes</li> <li>✓ (Stainless) steel pipes</li> <li>✓ Cast iron pipes</li> </ul>	<ul style="list-style-type: none"> <li>✓ Rockwool, min. 80 kg / m<sup>3</sup> or equal</li> </ul>
<b>Elastomeric insulation</b> <i>Fire class BL-s3,d0 of B-s3,d0 to D-s3,d0 or DL-s3,d0 in accordance with EN 13501-1</i>	<ul style="list-style-type: none"> <li>✓ (Stainless) steel pipes</li> <li>✓ Cast iron pipes</li> <li>✓ Fibre composite pipes</li> <li>✓ Multilayer pipes</li> </ul>	<ul style="list-style-type: none"> <li>✓ ArmaFlex AF (EVO) / XG / SH / NH / HT / Ultima</li> <li>✓ Kaiflex KK Plus S1 / S2 / ST / HT</li> <li>✓ K-Flex EC (AD) / ST / SK / SRC (Eco)</li> <li>✓ Or equal</li> </ul>

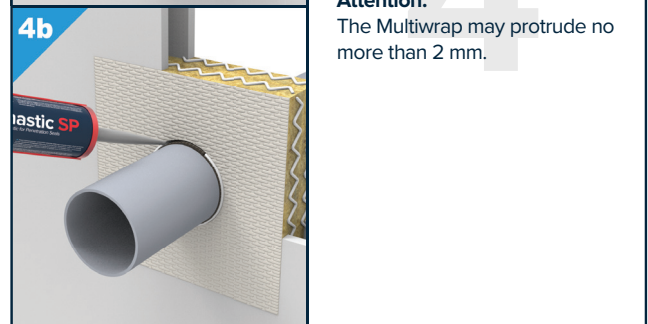
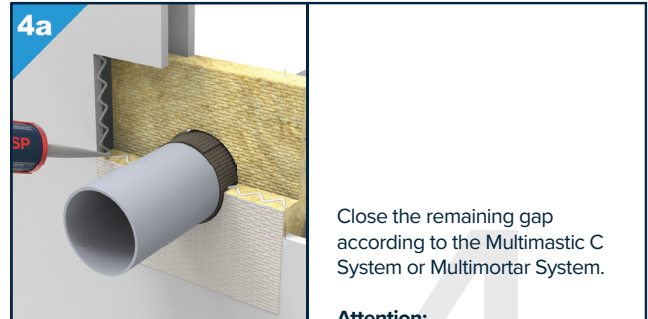
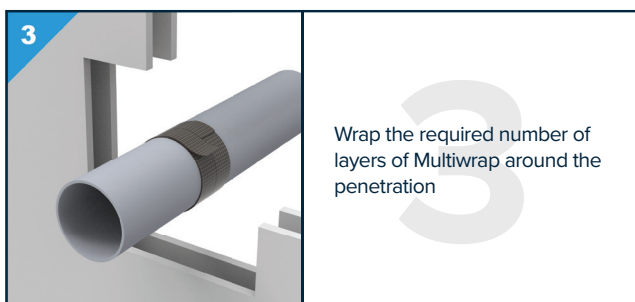
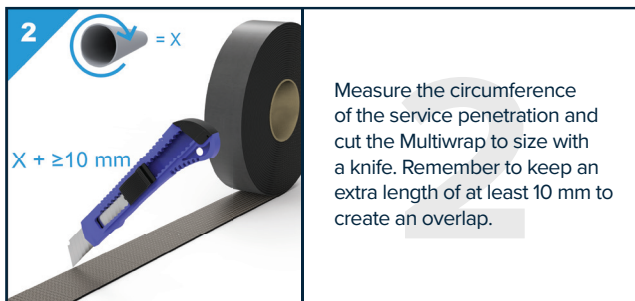
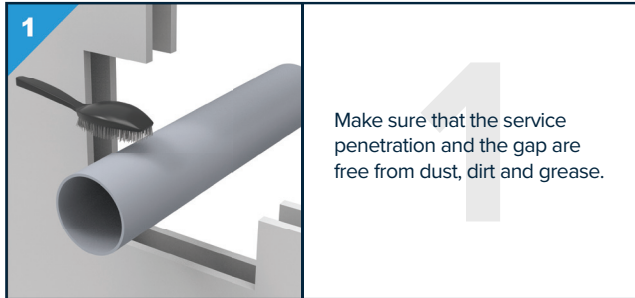
<sup>1)</sup> Insulation materials must have at least the same fire class as tested in accordance with EN 13501-1

## 7. Pipe Support Penetrations

For pipes, the first bracket must be fitted at  $\leq 450$  mm from the fire separation, with cables and cable trays at  $\leq 250$  mm. For floors, the first bracket should be fitted at a distance of  $\leq 450$  mm from the top of the floor, for cables and cable trays at  $\leq 250$  mm.



## 8. Installation Manual



For use and for more information about an application, refer to the Mulcol documentation, local and international approvals.

See the **Mulcol Fire Protection app** for the correct application in combination with fire resistance, or use our **selector** at [www.mulcol.com](http://www.mulcol.com).

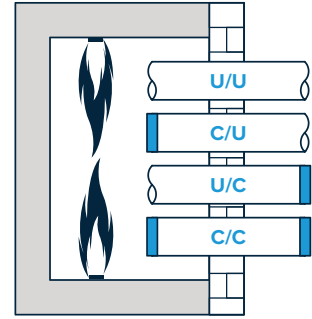


# 9. Test Configuration

## Introduction

The test configuration determines the application of plastic pipes. Before testing a pipeline type, the intended use of the pipeline must be considered. Where will it be used in practice? Standard EN 1366-3:2009 sets requirements in this regard. The end of the pipe must be capped or uncapped, based on this. See the test configuration in table 1 and 2.

In a test, the conditions to which the pipeline and the sealing system are exposed to are determined by asking whether one or both pipe ends are capped in practice. The pressure and flowrate of hot gases will be different in a pipe that is in contact with the outside air than in a capped pipe. It is important to ensure that the sealing system is tested under appropriate conditions.



**Table 1 - Test configuration plastic pipes**

Test setup	Pipe end		Permitted use			
	In the oven	Outside the oven	U/U	C/U	U/C	C/C
U/U	Uncapped	Uncapped	✓	✓	✓	✓
C/U	Capped	Uncapped	✗	✓	✓	✓
U/C	Uncapped	Capped	✗	✗	✓	✓
C/C	Capped	Capped	✗	✗	✗	✓

**Table 2 - Test configuration metal pipes**

Test setup	Pipe end		Permitted use		
	In the oven	Outside the oven	U/C	C/U	C/C
U/C *	Uncapped	Capped	✓	✓	✓
C/U	Capped	Uncapped	✗	✓	✓
C/C	Capped	Capped	✗	✗	✓

\* U/C tested and therefore U/U is covered

## Plastic Pipes

Table H.1 shows a few examples of types of pipes and the intended use, where the end of the pipe is capped or uncapped. The table does not take all possible applications into account. The choice of whether to close the end or leave it open depends on a number of aspects: is the system under pressure and it is ventilated or unventilated? Consider the intended use of the pipe to determine whether it should be capped or left uncapped. If national regulations set different requirements than those contained in table H1, follow the regulations.

**Table H.1 - Plastic Pipe Test Configuration per Application**

Type of pipe	Pipe end		Test setup
	In the oven	Outside the oven	
Rainwater drainage	Uncapped	Uncapped	U/U
Sewage, Ventilated	Uncapped	Uncapped	U/U
Sewage, Unventilated	Uncapped	Capped	U/C
Gas pipe, drinking water pipe, hot water pipe	Uncapped	Capped	U/C

There is no application for a plastic pipe penetration with a test classification of C/U or C/C, according to table H.1 from EN 1366-3.

## Metal Pipes

Metal pipes will normally be closed in the furnace as no open end is to be expected in the event of a fire, this due to the melting away of metal. Herewith is assumed that the suspension system remains in place. If the pipes are supported by a non fire resistant suspension system or are waste disposal shafts, the pipes are not sealed in the furnace, as shown in Table H.2.

**Table H.2 - Test Configuration Metal Pipe by Application**

Type of pipe	Construction		Test setup
	In the oven	Outside the oven	
Supported by a fire resistant <sup>a</sup> suspension	Capped	Uncapped	C/U
Supported by a non fire resistant suspension system	Uncapped	Capped	U/C
Shafts for waste disposal	Uncapped	Capped	U/C

<sup>a</sup>confirmed by testing or calculations (e.g. Eurocodes)

## 10. Building Element Properties

### Flexible walls

The minimum wall thickness should be 100 mm and the wall should consist of steel or wooden studs\* with at least 2 layers of cladding on each side with a thickness of 12.5 mm.

### Rigid walls

The minimum wall thickness is 100 mm and the wall must consist of concrete, aerated concrete or brickwork, with a minimum density of 650 kg/m<sup>3</sup> or wood (CLT) with a minimum density of 400 kg/m<sup>3</sup>.

### Rigid floors

The minimum floor thickness is 150 mm and the floor must consist of concrete or aerated concrete, with a minimum density of 650 kg/m<sup>3</sup> or wood (CLT) with a minimum thickness of 140 mm and a density of 400 kg/m<sup>3</sup>.

*\*There must be a minimum distance of 100 mm from each part of the conduit seal to a timber stud and the gap between the conduit seal and the stud must be capped. The cavity between the conduit seal and the stud must have at least 100 mm class A1 or A2 insulation (according to EN 13501-1).*

The support structure must be classified in accordance with EN 13501-2 for the specified fire resistance.

## 11. Available Documents

### Technical documents available

- ✓ Product Data Sheet (PDS)
- ✓ Technical Data Sheet (TDS)
- ✓ Safety Data Sheet (SDS)
- ✓ Installation Manual
- ✓ CE certificate

### Approvals

- ✓ Tested in accordance with EN 1366-3
- ✓ Classification in accordance with EN 13501-2
- ✓ Certified in accordance with EAD 350454-00-1104
- ✓ ETA report 23/0054
- ✓ Declaration of Performance (DoP)

The above documents are available from your Mulcol contact or via [www.mulcol.com](http://www.mulcol.com)



For help in finding the right fire-stopping finish for penetrations, see our **Multiselector** at [www.mulcol.com](http://www.mulcol.com) or download the **Mulcol Fire Protection App** in the **App Store** (iOS) or **Google Play Store** (Android).



For the digital registration of firestopping in your buildings, you can use the **Mulcol Data Manager** free of charge. For registration on site, use our **Mulcol Fire Protection App**.



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