# Multimastic SP

## Firestop Mastic

**European**
**Technical Assessment**
**ETA 16/0565**
**ETA 16/0985**


## Technical Data Sheet

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Pragmatic, effective and applicable solutions

# Content

# Multimastic SP

Firestop Mastic


**Fire resistance**
≤ 240 minutes

**Acoustic insulation**
Rw 62 dB

**Working life**
30 years

**Paintable**
after 24 hrs

## Firestop Mastic

Multimastic SP is an acrylic-based firestop mastic for the fire-resistant sealing of openings around cable trays, pipe and cable penetrations and for glueing Multimastic FB1/FB2 firestop boards (together). Multimastic SP expands when exposed to heat and creates a fire-resistant and smoke-proof seal to adjacent rooms.

Multimastic SP forms part of the Mulcol® Penetration Seal System. Multimastic SP can also be used in combination with the Multimastic C firestop coating.

### Advantages

- Brandwerendheid ≤ 240 minuten
- CE-certified
- Very high acoustic insulation
- Environmentally and user-friendly
- Quick and easy application
- Suitable for most surfaces, including concrete, masonry, steel, plaster, glass, plastic and most non-porous surfaces.
- No primer needed for use on most surfaces
- Dries fast & recoatable
- Remains elastic during movement up to 12.5% (ISO 11600)
- Use i.c.w. Multimastic C for sealing joints
- Shelf life of 18 months after production date
- Working life of 30 years

### Applications

- Rigid walls and floors
- Flexible walls
- Firestop boards

- Metal pipes with a diameter of up to 324 mm with insulation
- Cable trays, cable ladders, electric cables and cable bundles
- Aluminium composite pipes with and without insulation
- Plastic pipes, blank seals and joints

### Packaging

| | Contents | Box | Pallet | Pallet | Article number |
|---|---|---|---|---|---|
| Cartridge | 310 ml | 12 pieces | 128 boxes | 1536 pieces | 203012310 |
| Bucket | 6 kilos | - | 80 buckets | 480 kilos | 203001006 |

# 1. Technical Data

| | |
|---|---|
| **EAN-code cartridge 310 ml** | 8719324470087 |
| **EAN-code bucket 6 kg** | 8719324470445 |
| **Condition** | Ready to use, on acrylic base |
| **Colour** | White |
| **Colour code** | RAL 9002 / NCS S1002-Y |
| **Shelf life** | 18 months in unopened packaging at a temperature between +5 °C and +30 °C |
| **Transport and storage temperature** | +5 °C to +30 °C |
| **Application temperature** | +5 °C to +30 °C |
| **Temperature resistance** | -20 °C to +70 °C |
| **Film formation** | After max. 25 minutes |
| **Non- adhesive** | After max. 75 minutes |
| **Fully cured** | 3 to 5 days, depending on the thickness and the temperature |
| **Flexibility** | ± 12,5% (according to ISO 11600) |
| **Specific weight** | 1,56 - 1,60 g/cm$^3$ |
| **Heat conduction** | 0,845 W/mK (+/- 3%) at 20 mm thickness |
| **Flash point** | None |
| **Category of use** [1)] | Type $Z_2$ in accordance with ETAG 026-2 |
| **Recoatable** [2)] | Yes |
| **Installation from 1 side possible** | Yes |
| **Suitable for smoke-proof finishing of penetrations** | Yes ($S_a$ – $S_{200}$) |
| **Acoustic properties** | RW 62 dB (at 12 mm depth, 1 sided installation) |
| **Fire class** | D-s1, d1 in accordance with EN 13501-1 |
| **LEED VOC** | 42 - 62 g/l |
| **Approvals** | ETA 16/0985 & ETA 16/0565 |
| **Compatibility** | Suitable for use with most materials, but should not be used in direct contact with bituminous materials gc |
| **Function retention** | 30 years |

**[1)] Permissible environmental conditions**

Joint sealant for use in interior conditions with humidity of < 85% RH without temperatures below 0°C and without exposure to rain and/or UV ( (TR 024:2009, type $Z_2$).

**[2)] Recoatable**

Mulcol® Multimastic SP can be painted with most emulsion or alkyd (gloss) paints.

# 2. Acoustic properties

Multimastic SP has been tested at BM Trada (UKAS accredited); according to EN ISO 10140-2: 2010. The same or higher sound insulation can be achieved with a deeper or double-sided seal or by applying backing material. The sound insulation value only applies to the sealant and not to other elements in the building structure.

- ✓ With one-sided seal 12 mm deep, without backing: RW 62 dB
- ✓ With one-sided seal 12 mm deep, without backing: RW > 62 dB



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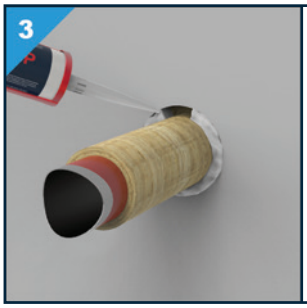
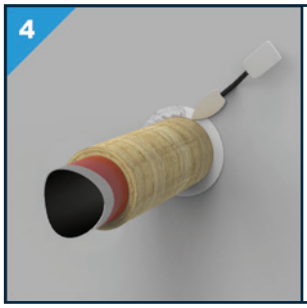
## 3. Installation Manual


Make sure that the service penetration and the gap are free from dust, dirt and grease. Moisten the structure, if necessary.


If backing is applied, cut it slightly wider than the gap width and make sure that it is applied to the correct depth in the structure.




Apply Multimastic SP generously in the gap to prevent air bubbles.




Smooth the joint with a damp spatula or filler knife.


Fill in the conformity statement and paste it next to the fireproof seal.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### Information

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** For professional use only.



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# 4. Consumption tables

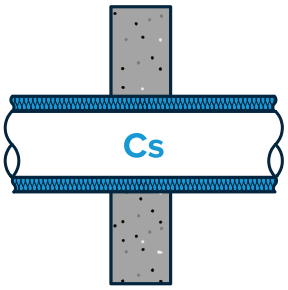
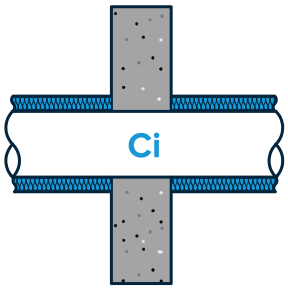
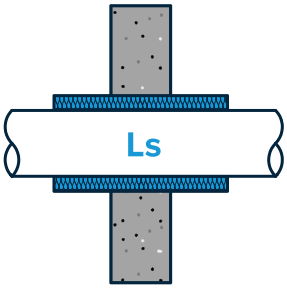
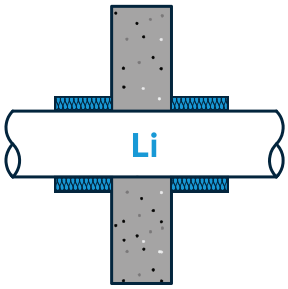
## Per cartridge of 310 ml

| Joint width | 10 mm | 15 mm | 20 mm | 25 mm | 30 mm | 40 mm | 50 mm | 60 mm | 80 mm | 100 mm |
|---|---|---|---|---|---|---|---|---|---|---|
| **Joint depth 12.5 mm** | 2.45 m¹ | 1.65 m¹ | 1.20 m¹ | 1.00 m¹ | 0.80 m¹ | 0.60 m¹ | 0.50 m¹ | 0.40 m¹ | 0.30 m¹ | 0.25 m¹ |
| **Joint depth 15 mm** | 2.05 m¹ | 1.35 m¹ | 1.00 m¹ | 0.80 m¹ | 0.65 m¹ | 0.50 m¹ | 0.40 m¹ | 0.30 m¹ | 0.25 m¹ | 0.20 m¹ |
| **Joint depth 25 mm** | 1.20 m¹ | 0.80 m¹ | 0.60 m¹ | 0.50 m¹ | 0.40 m¹ | 0.30 m¹ | 0.25 m¹ | 0.20 m¹ | 0.15 m¹ | 0.10 m¹ |

# 5. Pipe Insulation (Configuration)

Insulations serve different functions and can therefore be arranged around pipes in different manners. This must be taken into account when applying fire stopping seals on these pipes.

Possible configurations are shown below:

| Continued insulation | | Local insulation | |
|---|---|---|---|
| Continued sustained | Continued interrupted | Local sustained | Local interrupted |
|  |  |  |  |



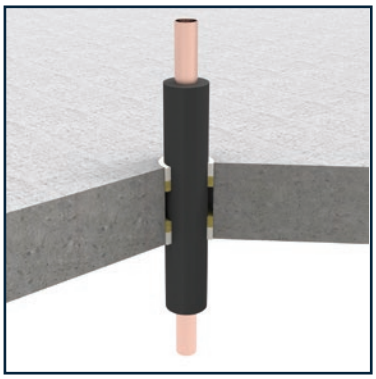


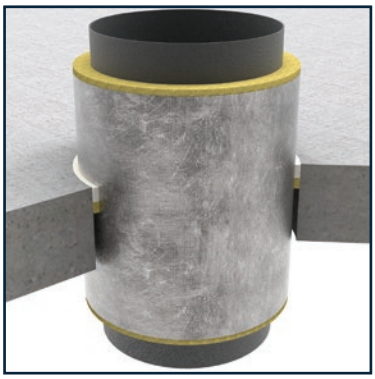

# 6. Permitted Insulation Materials

Multimastic SP Firestop and (in case of heat) foaming mastic have been extensively tested with various insulation materials; the table below shows the permitted insulation materials. For principle details, refer to the Multiselector and our test reports: ETA 16/0565 and ETA 16/0985.

| Insulation types | Pipe types | Permitted [1] |
|---|---|---|
| **Stone wool insulation**<br>*Fire class A1, in accordance with EN 13501-1* | ✓ Copper pipes<br>✓ (Stainless) steel pipes<br>✓ Cast iron pipes | ✓ Rockwool 810 |
| **Elastomeric insulation**<br>*Fire class BL-s3, d0 or B-s3, d0, in accordance with EN 13501-1* | ✓ PVC pipes<br>✓ Fibre composite pipes<br>✓ Multilayer pipes<br>✓ (Stainless) steel pipes<br>✓ Copper pipes<br>✓ Cast iron pipes | ✓ AF/Armaflex<br>✓ SH/Armaflex<br>✓ Kaiflex ST<br>✓ Kaiflex KK plus s2<br>✓ K-Flex EC<br>✓ K-Flex EC AD<br>✓ K-Flex EC<br>✓ K-Flex ST<br>✓ K-Flex ST/SK<br>✓ K-Flex ST Frigo<br>✓ K-Flex SRC<br>✓ K-Flex SRC Eco |

*[1] Insulation materials must have at least the same fire class as tested in accordance with EN 13501-1*





# 7. Performance

## Uninsulated Plastic Pipe Penetrations through Flexible Walls, Rigid Walls and Floors EN 1366-3

| Plastic pipes | Size Ø x s [mm] | Injection depth [wxd / mm] | Backing required | Insulation config. / L [mm] | Construction FW-100 | Construction RW-100 | Construction RF-150 | Classification minutes |
|---|---|---|---|---|---|---|---|---|
| PVC-U / PVC-C | ≤ 32 x 1,7 | ≥ 10 x 12,5 | No | n.a. | ✓ | ✓ | | ≤ EI 90-U/C |
| | ≤ 40 x 3,4 | | Yes | | | | ✓ | ≤ EI 240-U/C |
| PP | ≤ 32 x 2,0 | ≥ 10 x 25 | No | | ✓ | ✓ | | ≤ EI 90-U/C |
| | ≤ 40 x 3,0 | | Yes | | | | ✓ | ≤ EI 120-U/C |
| | ≤ 75 x 3,0 | ≥ 20 x 25 | | | | | | ≤ EI 180-U/C |
| PE / PE-HD / ABS / SAN+PVC | ≤ 40 x 4,0 | ≥ 10 x 25 | | | | | ✓ | ≤ EI 240-U/C |

## Insulated Metal Pipe Penetrations through Flexible Walls, Rigid Walls and Floors
## Stone wool insulation, Fire class $A2_L$-s1, d0 in accordance with EN 13501-1
## Thickness: ≤ 20 mm

**EN 1366-3**

| Metal pipes | Size Ø x s [mm] | Injection depth [wxd / mm] | Backing required | Insulation config. / L [mm] | Construction FW-100 | Construction RW-100 | Construction RF-150 | Classification minutes |
|---|---|---|---|---|---|---|---|---|
| Copper pipes | ≤ 54 x 14,2 | ≥ 10 x 12,5 | n.a. | LI - 500 or CI | ✓ | ✓ | | ≤ EI 120-C/U |
| | | ≥ 10 x 15 | | LI-1000 or CI | | | ✓ | ≤ EI 180-C/U |
| Cast iron and (stainless) steel pipes | ≤ 324 x 14,2 | ≥ 10 x 12,5 | | CS | ✓ | ✓ | | ≤ EI 90-C/U |
| | | ≥ 10 x 15 | | | | | ✓ | ≤ EI 240-C/U |

## Insulated Metal Pipe Penetrations through Rigid Floors
## Elastomeric insulation, Fire class $B_L$-s3, d0 or B-s3, d0, in accordance with EN 13501-1
## Thickness: 13 to 19 mm

**EN 1366-3**

| Metal pipes | Size Ø x s [mm] | Injection depth [wxd / mm] | Backing required | Insulation config. / L [mm] | Construction FW-100 | Construction RW-100 | Construction RF-150 | Classification minutes |
|---|---|---|---|---|---|---|---|---|
| Cast iron and (stainless) steel pipes | ≤ 40 x 14,2 | ≤ 10 x 25 | Yes | CS | | | ✓ | ≤ EI 180-C/U |
| | ≤ 165 x 14,2 | | | | | | ✓ | ≤ EI 60-C/U |

*E:* *Integrity*
*I:* *Thermal insulation*

*FW-100:* *Flexible wall, 100 mm thick*
*RW-100:* *Rigid wall, 100 mm thick*
*RF-150:* *Rigid floor, 150 mm thick*

*Ø [mm]* *Diameter x wall thickness of the penetration*
*Ø x S [mm]* *Diameter x wall thickness of the penetration*
*config. / L [mm]* *Configuration / insulating length*

## Electric Cables through Flexible Walls, Rigid Walls and Floors — EN 1366-3

| Electric Cables | Size Ø [mm] | Injection depth [wxd / mm] | Backing required | Insulation config. / L [mm] | Construction FW-100 | Construction RW-100 | Construction RF-150 | Classification minutes |
|---|---|---|---|---|---|---|---|---|
| Electric Cables | ≤ 80 | ≤ 10 x 25 | Yes | n.a. | ✓ | ✓ | | ≤ EI 60 |
| | ≤ 50 | ≤ 7 x 15 | | | | | ✓ | ≤ EI 90 |
| Cable bundels | ≤ 100 | ≤ 10 x 25 | | | ✓ | ✓ | | ≤ EI 120 |
| | ≤ 80 | ≤ 7 x 15 | | | | | ✓ | ≤ EI 60 |

## Blank Seals through Flexible Walls, Rigid Walls and Floors — EN 1366-3

| Penetration | Gap size [mm] | Injection depth [wxd / mm] | Backing required | Insulation config. / L [mm] | Construction FW-100 | Construction RW-100 | Construction RF-150 | Classification minutes |
|---|---|---|---|---|---|---|---|---|
| n.a. | ≤ 300 x 300 or ≤ 100 x 1000 | ≤ 12,5 | Yes | n.a. | ✓ | ✓ | | ≤ EI 120 |
| | | ≤ 15 | | | | | ✓ | ≤ EI 60 |
| | | ≤ 25 | | | | | ✓ | ≤ EI 120 |

*E:* *Integrity*
*I:* *Thermal insulation*

*FW-100:* *Flexible wall, 100 mm thick*
*RW-100:* *Rigid wall, 100 mm thick*
*RF-150:* *Rigid floor, 150 mm thick*

*Ø [mm]* *Diameter x wall thickness of the penetration*
*Ø x S [mm]* *Diameter x wall thickness of the penetration*
*config. / L [mm]* *Configuration / insulating length*

## 8. Actually tested solutions

All the latest tested solutions with the Multimastic SP 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.

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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).

App Store Google Play



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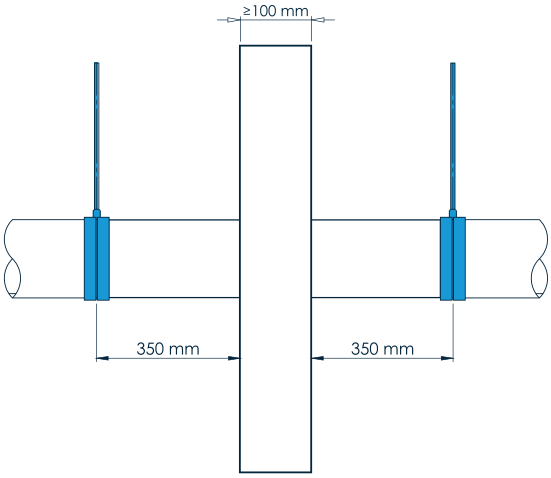
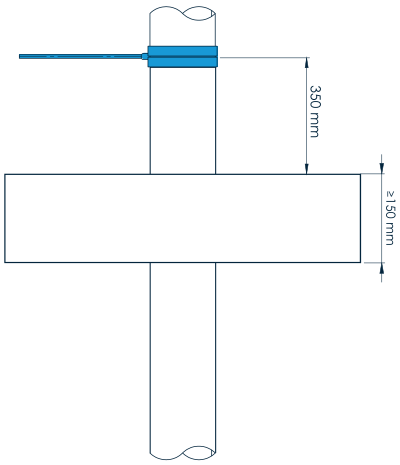
## 9. Pipe Support Penetrations

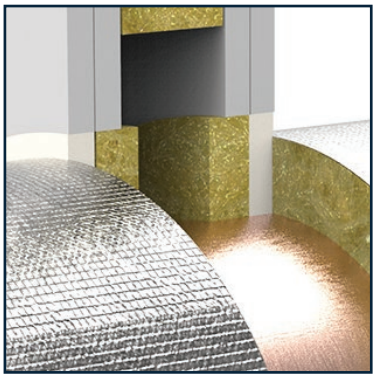
Service penetrations must be held in place ≤ 350 mm from the fire partition. With floors, the covering must only be applied at the top of the floor at a distance of ≤ 350 mm.

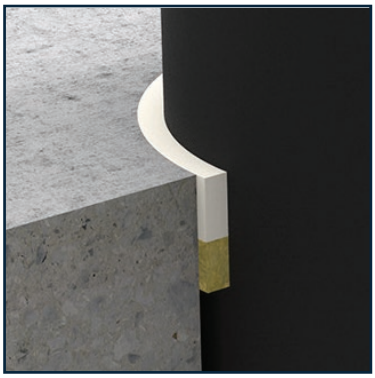


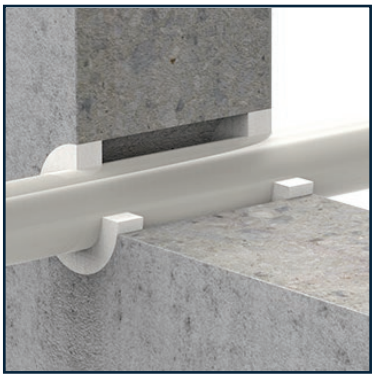




## 10. Joint Seals through Flexible Walls, Rigid Walls and Floors

Seams around pipe penetrations, whether with insulation or not, can be finished with Multimastic SP mastic to prevent the passage of smoke and hot gases to adjacent fire compartments. Depending on the type of penetration, a stone wool backing or a Multiherm Backing. For more information see ETA report 16/0985.









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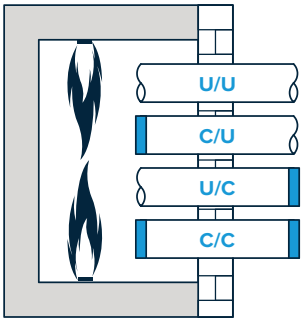
# 11. Test Configuration

**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[a] 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 |

[a]confirmed by testing or calculations (e.g. Eurocodes)



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## 12. Building Element Properties

**Flexible walls**

The minimum wall thickness must be 100 mm and the wall must consist of steel or wooden posts* with at least 2 layers of cladding on both sides with a thickness of 12.5 mm. Can also be used with fire-stopping stone wool boards, 2 x 50 mm Multimastic FB1, maximum seal size: unlimited width x 1200 mm height (uninterrupted partition styles required, with a centre distance of up to 2400 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$^3$. Can also be used with fire-stopping stone wool, 2 x 50 mm Multimastic FB1, maximum seal size: unlimited width x 1200 mm height.

**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$^3$. Can also be used with fire-stopping stone wool boards, 2 x 50 mm Multimastic FB1, maximum seal size: 2400 x 1200 mm (w x h).

**There must be a minimum distance of 100 mm from each part of the conduit seal to a wooden post and the gap between the conduit seal and the post must be capped. The cavity between the conduit seal and the post 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

## 13. Available Documents

**Technical documents**

- Product Data Sheet (PDS)
- Technical Data Sheet (TDS)
- Safety Data Sheet (SDS)
- Installation Manual
- EC certificate
- Emission reports
- Acoustic report

**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 16/0565 and ETA 16/0985
- Declaration of Performance (DoP)

The above documents are available from your Mulcol contact person or via www.mulcol.com

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

Available for Apple App Store | Available for Android Google play | YouTube | VR Virtual Reality | AR Augmented Reality | MultiSelector



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Information

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