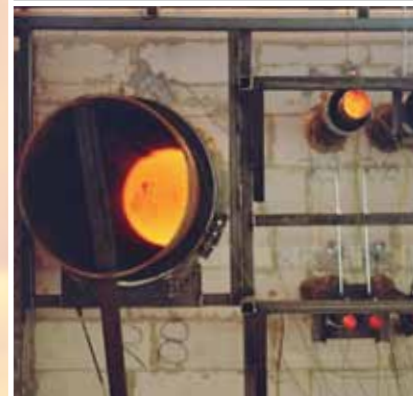


# FOAMGLAS<sup>®</sup> Insulation

Wall penetrations R90 / R120



**FOAMGLAS<sup>®</sup>**  
Industry

Pittsburgh Corning

# Unique product properties

The unique properties make FOAMGLAS® the preeminent insulation material.



- 1 Waterproof
- 2 Resistant to attack
- 3 High compressive strength
- 4 Incombustible
- 5 Impervious to water vapour
- 6 Dimensionally stable
- 7 Acid resistant
- 8 Easily cut to shape
- 9 Ecological

## Our unique properties that protect against fire.

**High compressive strength:** FOAMGLAS® cellular glass insulation gives exceptionally high compressive strength without deformation under permanent load.

**Benefit:** FOAMGLAS® insulation will not compress or settle and provides full support to tank bases and pipe supports, without thermal bridges.

**Incombustible:** FOAMGLAS® cannot burn because it consists of pure glass. Fire behaviour: Classification according to EN 13501: A1.

**Benefit:** Safe storage and a safe installation. As an inorganic material FOAMGLAS® insulation will not burn or support combustion.

**Vapour tight:** FOAMGLAS® is vapour-tight because it consists of hermetically sealed glass cells.

**Benefit:** It prevents inflammable gases or liquids to pass through and start a wicking effect which will spread the fire even more rapidly.

**Acid resistant:** FOAMGLAS® is resistant to organic solvents and acids because it consists of pure glass.

**Benefit:** no destruction of the insulation by aggressive mediums and atmospheres.



# Non-combustible insulating material

**FOAMGLAS® is classified as a non-combustible building material under Euroclass A1 according to the European classification system.**

The performance test results confirm that it does not contribute to the development of fire. Criteria for the tests also prove: there is no fire propagation, no smoke release, and no burning drips. FOAMGLAS® insulation is also registered as a non-combustible building material in accordance with DIN 4102, Part 4.



## **FOAMGLAS® brings fire protection and insulation**

Cellular glass is a closed-cell insulating material, the walls of its cells are made of glass and it is particularly appropriate for the insulation of industrial installations, especially installations with low or dual service temperatures. The pipe shells or elements used for insulation are stuck together with adhesive to the surface of the pipe. In addition to the general functions of an insulating material, FOAMGLAS® also improves the effective fire protection, especially the fire resistance of a system. Among all insulation products, only FOAMGLAS® offers the advantage that no inflammable gas or liquid can penetrate and build up in the cell structure of the insulating material, which can lead to disastrous consequences in case of a real fire.





# FOAMGLAS® wall penetrations R 90

## 1. FOAMGLAS® wall penetrations through solid walls

Up to DN 100 no jacketing necessary\*



## 2. FOAMGLAS® wall penetration through lightweight walls

Up to DN 100 no jacketing necessary\*



# FOAMGLAS® wall penetrations R 90

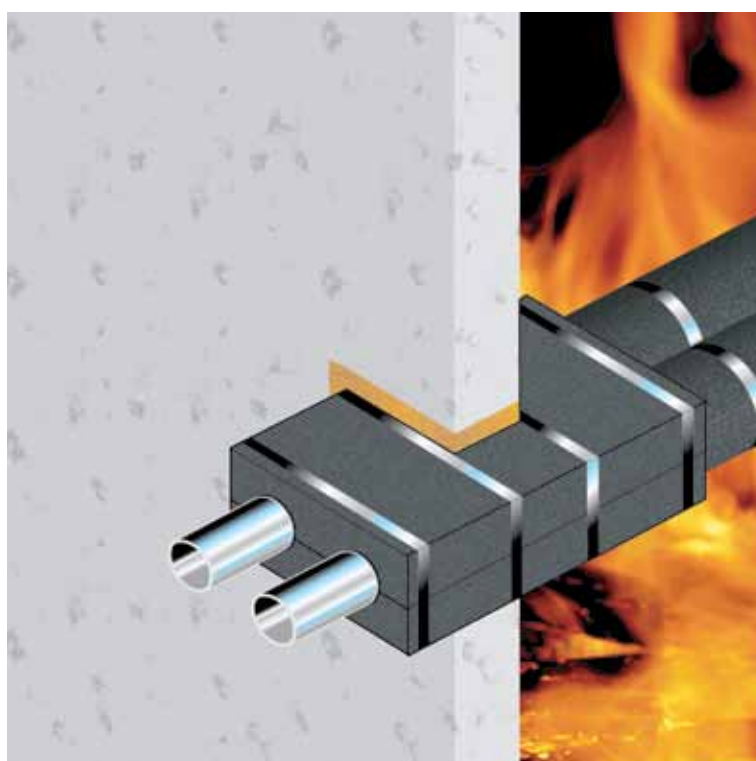
## 3. FOAMGLAS® wall penetration through concrete deck

Up to DN 100 no jacketing necessary\*



## 4. FOAMGLAS® wall penetration through solid walls, decks and lightweight walls

Maximum pipe diameter DN 25



\* More information see tables on page 10 to 16

# FOAMGLAS® Rohrdurchführungen R 120

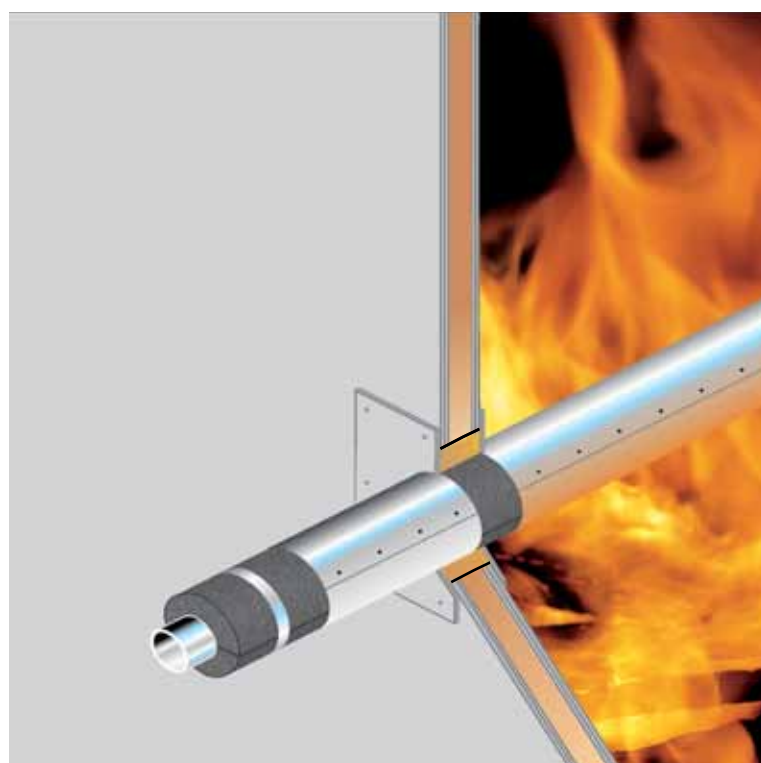
## 1. FOAMGLAS® wall penetrations through solid walls

Steel-/Cast iron pipes  
Copper

R 120  
R 90



## 2. FOAMGLAS® wall penetration through lightweight walls

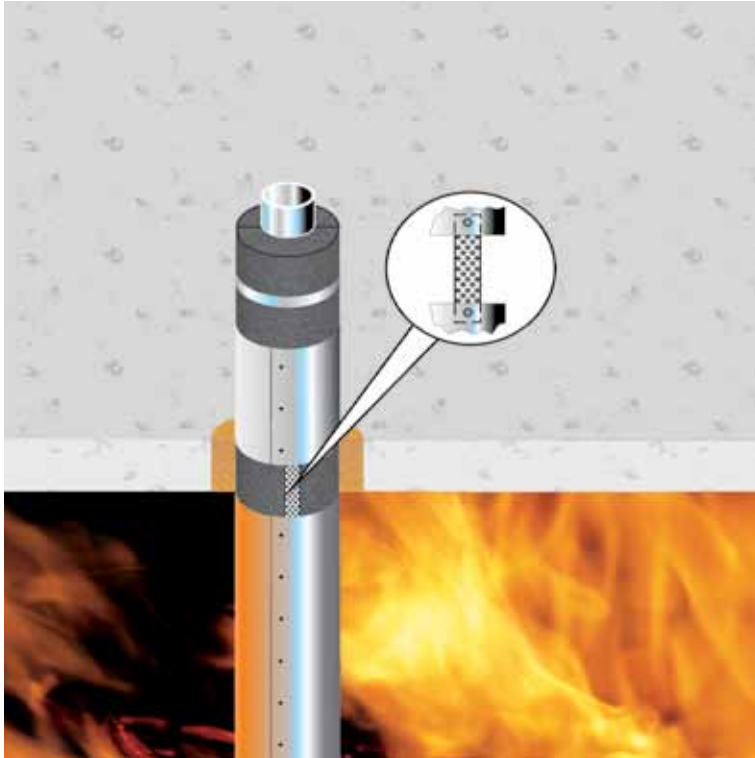


Steel-/Cast iron pipes  
Copper

R 120  
R 90

# FOAMGLAS® Rohrdurchführungen R 120

## 3. FOAMGLAS® wall penetration through concrete deck



Steel-/Cast iron pipes  
Copper

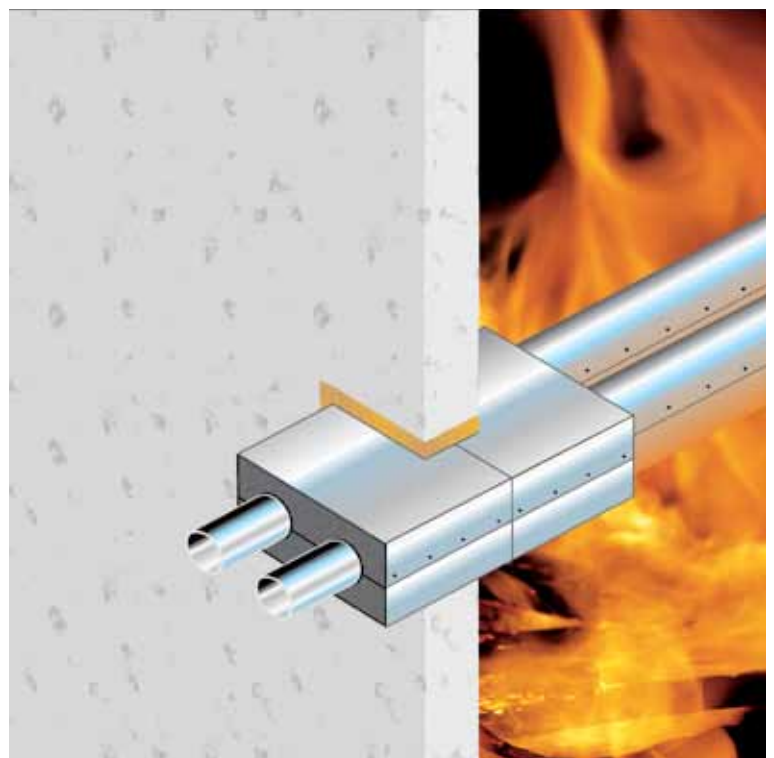
R 120  
R 90

## 4. FOAMGLAS® Rohrdurchführungen für Massivwände, -Decken und leichte Trennwände

Maximum pipe diameter DN 25

Steel-/Cast iron pipes  
Copper

R 120  
R 90



# Certified fire protection

**For different applications of cold insulation with FOAMGLAS , the system resisted fire for more than 90 and 120 minutes.**

**FOAMGLAS® successfully passed the tests for fire resistant wall penetrations. Fire tests have been performed on walls and decks in independent testing institutes in accordance with DIN 4102, Part 11 – “Reaction to fire of building materials and elements”.**

Because of the particular suitability of FOAMGLAS® insulation – as an insulating material with additional properties of fire protection - many fire wall penetrations have been designed and installed since the beginning of the 1990's. R120 fire resistance with FOAMGLAS® through solid walls is standard.

**The answer is: R 90 / R 120 !**

## Requirement:

All pipe penetrations of building elements have the same duration of fire resistance as the building itself.

## Test conditions:

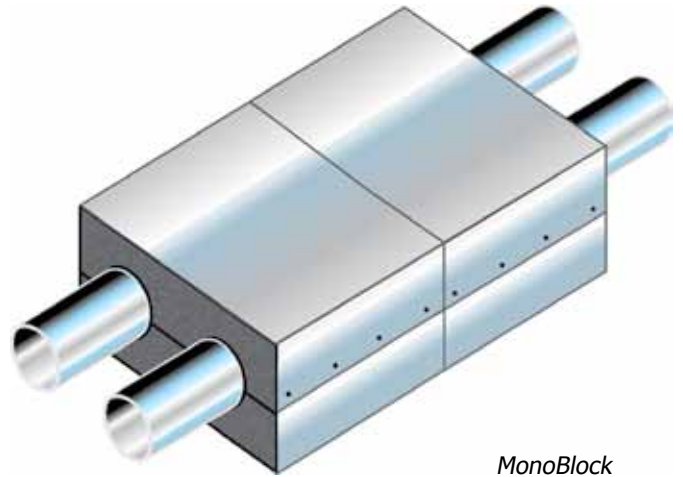
Fire tests for pipe penetrations with FOAMGLAS® insulation have been prepared in independent testing institutes in accordance with DIN 4102, Part 11 – “Reaction to fire of building material and elements”.

## Criteria:

During fire behaviour tests, the airtightness of the room (without penetration by gas) and an increase of temperature must be within guaranteed limits.

## Another advantage:

For special applications on the jobsite, when there is not enough space to make the fire wall penetrations, FOAMGLAS developed special elements, i.e. mono blocks for pipes with diameters up to 28 mm.



*MonoBlock*



**Brandwerendheid  
Coupe-Feu  
Feuerwiderstandsklasse**

**R90-R120** nach DIN 4102-11:1985-12

iBMB – MPA TU Braunschweig Nr. P-3769/0132-MPA BS vom 31.01.2003  
Leidingdoorvoering – Traversées de murs – Rohrdurchführungen  
Produced in Europe, on behalf of PCE, Tessenderlo - Belgium.

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## Valid for:

Solid walls  
Lightweight walls  
Concrete decks



# Smoke and toxic gases

**The most frequent cause of death in a fire is not the fire itself, as often supposed, but smoke poisoning.**

**Many of the materials used release toxic gases. Düsseldorf airport and its well-known consequences was a particularly sad example.**

Also the flare up of smouldering fires – long after the beginning of the fire and the leaving of the fire brigade - is a feared, but not rare, phenomenon (see special reports).

## **Consequence:**

In many building fires people die first from the poisonous smoke.



## **Chilled water lines with FOAMGLAS®**

### **Advantages:**

- Effective fire protection and resistance to fire
- Sealing of the room in respect of the temperature criteria in accordance with DIN 4102
- Reliable installation of insulation layer without additional building elements or coatings
- Condensation will be avoid.
- The lifespan of the installations is not influenced by the choice of the insulation system

### **Some references**

- Messe Hall 11, Frankfurt
- Deutsche Bank, Frankfurt
- Posttower, Bonn
- T-Mobil, Bonn
- Börse, Frankfurt
- Opel, Rüsselheim
- ARAG, Düsseldorf
- Flughafen, Düsseldorf



# Fire resistance classification with FOAMGLAS®

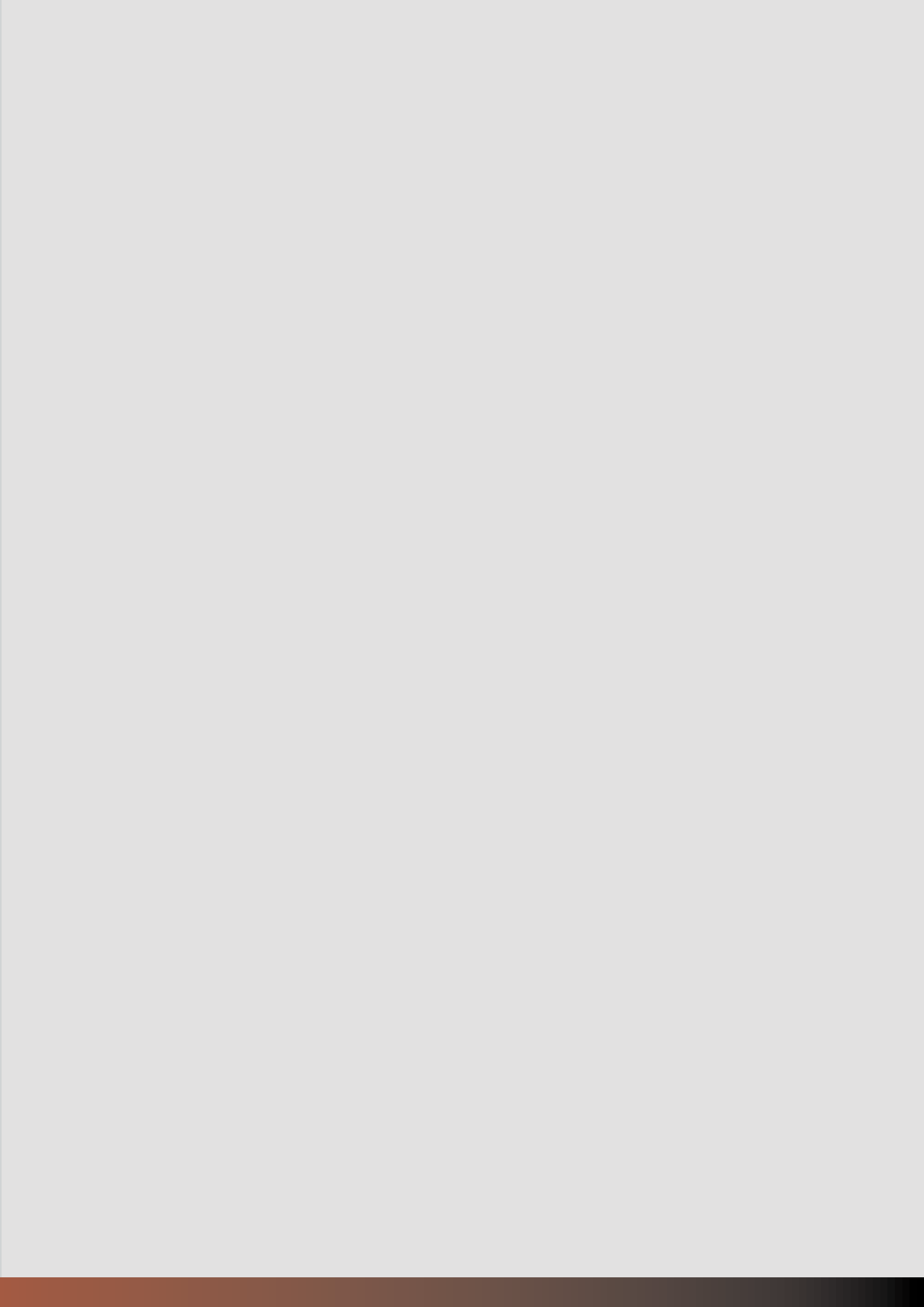
## Fire resistance classification for walls and deck penetrations

Fire resistance classification for wall and deck penetrations								
Non combustible pipes with FOAMGLAS® insulation								
Pipe of	Outside diameter of pipes		Minimum insulation thickness mm	Form of FOAMGLAS® T4	Metal jacket thickness mm	Fire resistance classification		
	From mm	to mm				Solid walls	Lightweight walls	Decks
Steel DIN 2458	13,5	60,3	23	PSH	0,5	R 120	R 120	R 120
	60,3	168,3	37	PSH	0,8	R 120	R 120	R 120
	168,3	219,1	51	PSH	0,8	R 120		R 120
	219,1	323,9	61	PSH	0,8	R 90		R 120
Copper DIN 1754	15,0	54,0	23	PSH	0,5	R 90	R 90	R 90
	54,0	108,0	37	PSH	0,8	R 90	R 90	R 90
	8,0	28,0	23	Monoblock	0,8	R 90	R 90	R 90
Cast iron DIN EN 877	78	160	37	PSH	0,8	R 120	R 120	R 120
	160	210	51	PSH	0,8	R 120	R 120	R 120
	210	326	61	PSH	0,8	R 90	R 120	R 120
						Minimum insulation length: 1800 mm	Continuous insulation	Continuous insulation
Connection between two metal jackets						None	None	2 pieces of perforated steel 20mm wide <sup>2)</sup>
Closure of the hole around the pipe						Mortar, MGIII or packing wool <sup>1)</sup>	packing wool <sup>1)</sup>	Mortar, MGIII or packing wool <sup>1)</sup>

### Remarks:

<sup>1)</sup> Packing wool: melting point 1000 °C  
SG +/- 120 kg/m<sup>3</sup> + Finishing cover

<sup>2)</sup> Perforated steel straps: 20 mm wide,  
0,7 mm thick



# FOAMGLAS<sup>®</sup>

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