

# BLÜCHER®

At BLÜCHER® more than 300 employees create an annual turnover of more than 50 million euro.

Through know-how, dedicated service and common sense we develop, produce and market high quality stainless steel drainage solutions for customers within the housing, commercial, industrial and marine sectors all over the world.

Find your local BLÜCHER® specialist at [www.blucher.com](http://www.blucher.com)

**BLÜCHER® EuroPipe**

**BLÜCHER® Channel**

**BLÜCHER® Drain**



KEEPING UP THE FLOW

# BLÜCHER® EuroPipe

Non-combustible drainage solutions



**BLÜCHER®**

K E E P I N G   U P   T H E   F L O W

STAINLESS STEEL DRAINAGE SYSTEMS

## Stop the fire

In the event of a fire, it is of vital importance to stop or delay the fire spreading into other parts of the building. This will give the persons in the building time to escape and reduce the damage caused by the fire to only that part of the building.

To prevent fire spreading and damage caused in the event of fire, it is important to consider the construction elements that penetrate various fire compartments, for instance the drainage piping:


- Is the pipework combustibile, allowing fire to spread directly via the pipes?
- Is any kind of fire insulation required for the pipework?
- Have the pipe penetrations from one fire compartment to another been sealed, and is the sealing an approved fire-safe solution?
- Has the level of heat transmission through the installation been taken into consideration?
- In case of a fire, will there be risk of emission of smoke and toxic fumes from combustibile components?

BLÜCHER® EuroPipe drainage pipes and fittings are all in stainless steel, which cannot burn. They do not require any fire collars and will not cause spread of fire either up or down.



# Reaction to fire

BLÜCHER® EuroPipe drainage pipes and fittings are all in stainless steel. According to an EU Commission Decision\* stainless steel is a non-combustible material not contributing to fire.



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MPA/ADR  
File: PH13381-2

Att: Jan Ooppelstrup

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**Statement on Blücher EuroPipe system's reaction to fire properties**

On 2009-06-09 Blücher Metal A/S requested a statement of Blücher EuroPipe system's reaction to fire properties.

Blücher EuroPipe system is steel pipes with diameters from ø50 mm to ø250 mm. When assembling the pipes together an EPDM sealing strip, designated BODE lip-sealing, is used. When installed the BODE lip-sealing is covered on both side by the steel pipes. See drawing provided by Blücher Metal A/S on enclosure 1.

**The steel pipe**


The steel pipe is deemed to satisfy Class A1 in accordance with Commission Decision of 4<sup>th</sup> October 1996 "Establishing the list of products belonging to Classes A 'No contribution to fire' provided for in Decision 94/611/EC implementing Article 20 of Council Directive 89/106/EEC on construction products" shown in the table in enclosure 2.

**Reaction to fire classification of the Blücher EuroPipe system**


The test standard EN 1366-3 *Fire resistance tests for service installations – Part 3: Penetration seals* does not take into account the reaction to fire properties of minor combustible parts as sealants or joints. Nor does EN 13501-1:2007 *Fire classification of construction products and build elements – Part 1: Classification using test data from reaction to fire tests* gives a direct method for determining the reaction to fire classification of steel pipes with combustible joints.

It is DBI opinion that the BODE lip-sealing when installed correctly has no or very little contribution to the fire because of the relatively small amount of EDPM and because the sealing strip is completely covered by the steel when the two pipe sections are locked together.

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## RATING CLASSES

Class A is for non-combustible products like stainless steel, galvanized steel and cast iron. The class A comprises a number of sub-classes:

- A1 is the best fire rating and does not have any sub-classes
- A2 is a slightly inferior fire rating and has sub-classes S1-S3 and d0-d2

Class B are for combustible products like plastics, and furthermore classes C, D, E and F exist.

**BLÜCHER® EuroPipe drainage pipes and fittings are in stainless steel which is rated class A1.**

\* Commission Decision of 4th October 1996 "Establishing the list of products belonging to Classes A "No contribution to fire" provided for in Decision 94/611/EC implementing Article 20 of Council Directive 89/106/EEC on construction products.

# Spread of fire

BLÜCHER has carried out fire testing for BLÜCHER® EuroPipe stack pipes Ø50-Ø250mm according to the European standard EN 1366-3 (Fire resistance tests for service installations - Part 3: Penetration seals)

And the BLÜCHER® EuroPipe system has been classified according to the European standard EN13501-2 (Fire classifications of construction products and building elements - Part 2: Classifications using data from fire resistance tests, excluding ventilation services).

## FIRE RATINGS

Fire ratings according to EI 60, EI 90 and EI 120 require that penetrations remain intact throughout the entire test and that the heat transmission during the test period does not exceed the limits set. Consequently, a construction may require insulation in full or in part. For details regarding insulation of BLÜCHER® EuroPipe please see page 6 - 7.

Fire ratings according to E 120 do not take heat transmission into consideration, and consequently only require that the integrity, i.e. fire resistance is maintained throughout the test period stated.

Explanation: E - Integrity, i.e. maintaining functionality  
I - Temperature requirements (max 180°C temperature increase)  
60, 90 and 120 - duration of fire resistance

BLÜCHER holds the following classification report:

Report with fire rating E120, EI 60, EI 90 and EI 120 – According to EN13501-2

## APPROVED VERTICAL FIRE SEAL CONSTRUCTIONS

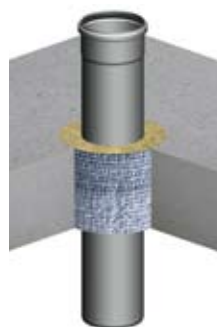
The gap between pipe and rigid floor can be closed in either one of the following ways:

### A. Concrete



Casted mortar in  
oversize hole, approx.  
 $d + 40 \text{ mm}$

### B. Stone wool insulation



Stone wool insulation,  
density min. 155 kg/m<sup>3</sup> and  
reaction to fire A1 or A2.  
Silicate mastic applied on  
top of and underneath the  
stone wool

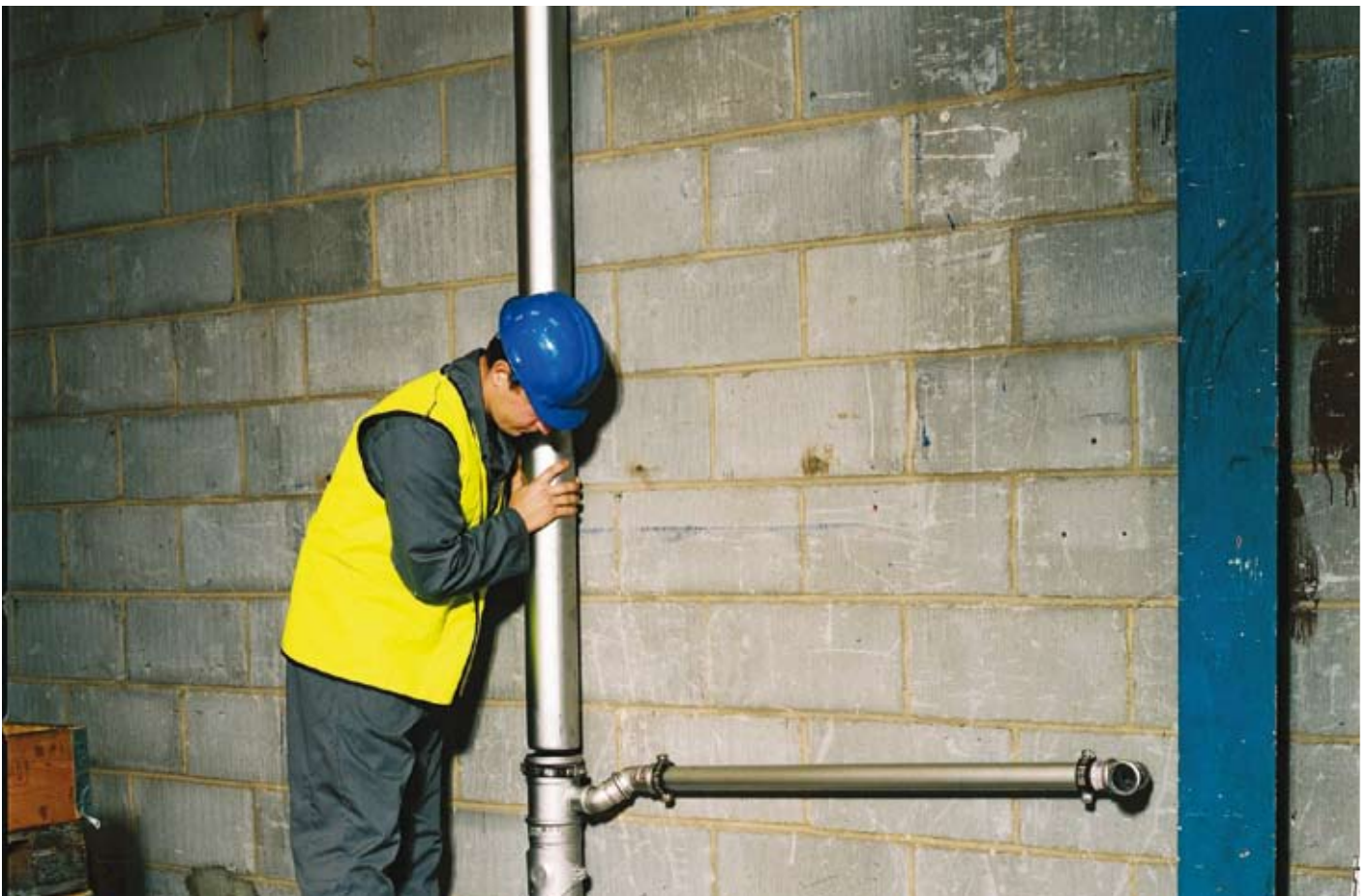
## PIPE INSULATION

For detailed information on insulation, please see page 6 - 7. Minimum insulation densities are:



- For pipe diameter  $\varnothing 50$  mm = 76 kg/m<sup>3</sup>
- For pipe diameters  $\varnothing 75$  -  $\varnothing 250$  mm = 118 kg/m<sup>3</sup>

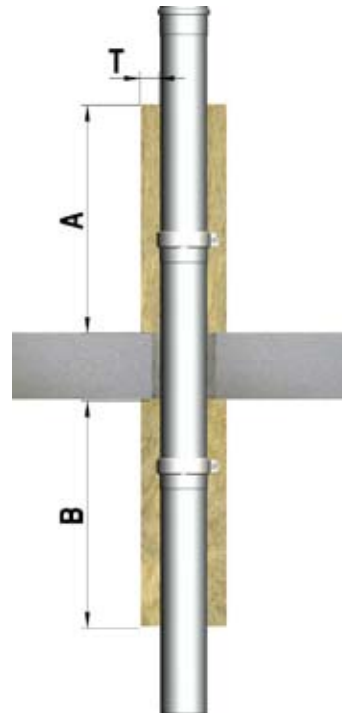
## FIELDS OF APPLICATIONS

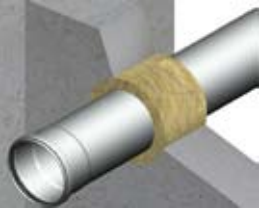
- Pipes penetrating rigid floors with thickness minimum 150 mm and density minimum 650 kg/m<sup>3</sup>
- Single service pipe with a minimum separating distance of 100 mm between the pipes (measured from outside of pipe wall or insulation to outside of pipe wall or insulation)
- Pipes with increased length of insulation as compared to the length specified
- Pipes with increased density of insulation as compared to the density specified
- Pipes must be fixed with stainless steel pipe hangers or BLÜCHER joint clamps to maintain a closed system
- Only vertical pipe penetrations



## Fire insulation of BLÜCHER® EuroPipe

Vertical pipe lines					
Fire seal: Casted mortar	Insulation dimensions				
	Pipe dimension	Fire class According to EN13501-2	Dim T Insulation on pipe thickness	Dim A Insulation on pipe (Unexposed side)	Dim B Insulation on pipe (Exposed side)
	Ø50	E120	---	Insulation not required	
		Ei60	---	Insulation not required	
		Ei90	---	Insulation not required	
		Ei120	---	Insulation not required	
	Ø75	E120	---	Insulation not required	
		Ei60	30mm	500mm	500mm
		Ei90	30mm	500mm	500mm
		Ei120	30mm	500mm	500mm
	Ø82	E120	---	Insulation not required	
		Ei60	30mm	500mm	500mm
		Ei90	30mm	500mm	500mm
		Ei120	30mm	500mm	500mm
	Ø110	E120	---	Insulation not required	
		Ei60	30mm	500mm	500mm
		Ei90	30mm	500mm	500mm
		Ei120	30mm	500mm	500mm
	Ø125	E120	---	Insulation not required	
		Ei60	30mm	500mm	500mm
		Ei90	30mm	500mm	500mm
		Ei120	30mm	500mm	500mm
Ø160	E120	---	Insulation not required		
	Ei60	40mm	500mm	500mm	
	Ei90	40mm	500mm	500mm	
	Ei120	40mm	1000mm	1000mm	
Ø200	E120	---	Insulation not required		
	Ei60	40mm	500mm	500mm	
	Ei90	40mm	1000mm	1000mm	
	Ei120	40mm	Continuous	Continuous	
Ø250	E120	---	Insulation not required		
	Ei60	40mm	500mm	500mm	
	Ei90	40mm	1000mm	1000mm	
	Ei120	40mm	Continuous	Continuous	
Fire seal: Stone wool	Insulation dimensions				
	Pipe dimension	Fire class According to EN13501-2	Dim T Insulation on pipe thickness	Dim A Insulation on pipe (Unexposed side)	Dim B Insulation on pipe (Exposed side)
	Ø50	E120	---	Insulation not required	
		Ei60	20mm	500mm	500mm
		Ei90	20mm	500mm	500mm
		Ei120	20mm	500mm	500mm
	Ø75	E120	---	Insulation not required	
		Ei60	30mm	500mm	500mm
		Ei90	30mm	500mm	500mm
		Ei120	30mm	500mm	500mm
	Ø82	E120	---	Insulation not required	
		Ei60	30mm	500mm	500mm
		Ei90	30mm	500mm	500mm
		Ei120	30mm	1000mm	1000mm
	Ø110	E120	---	Insulation not required	
		Ei60	30mm	500mm	500mm
		Ei90	30mm	500mm	500mm
		Ei120	30mm	1000mm	1000mm
	Ø125	E120	---	Insulation not required	
		Ei60	30mm	500mm	500mm
		Ei90	30mm	500mm	500mm
		Ei120	30mm	1000mm	1000mm
Ø160	E120	---	Insulation not required		
	Ei60	40mm	500mm	500mm	
	Ei90	40mm	1000mm	1000mm	
	Ei120	40mm	1000mm	1000mm	
Ø200	E120	---	Insulation not required		
	Ei60	40mm	1000mm	1000mm	
	Ei90	40mm	Continuous	Continuous	
	Ei120	40mm	Continuous	Continuous	
Ø250	E120	---	Insulation not required		
	Ei60	40mm	1000mm	1000mm	
	Ei90	40mm	Continuous	Continuous	
	Ei120	40mm	Continuous	Continuous	



Horizontal pipe lines					
Fire seal: Stone wool	Insulation dimensions				
	Pipe dimension	Fire class According to EN13501-2	Fire seal (Rockwool Conlit Pipesection) thickness	Dim T Insulation on pipe thickness	Dim A / B Insulation on pipe (Rockwool Alureinforced Pipesection on both sides)
	ø50	EI60	≥ 20mm	≥ 20mm	1000mm
	ø75	EI60	≥ 20mm	≥ 20mm	1000mm
	ø82	EI60	≥ 20mm	≥ 20mm	1000mm
	ø110	EI60	≥ 30mm	≥ 30mm	1000mm
	ø125	EI60	≥ 30mm	≥ 30mm	1000mm
	ø160	EI60	≥ 30mm	≥ 30mm	1000mm
	ø200	EI60	≥ 40mm	≥ 40mm	1000mm
	ø250	EI60	≥ 40mm	≥ 40mm	1000mm



Note: All data re. horizontal pipe insulation is from Rockwool - For more details we refer to [www.rockwool.dk](http://www.rockwool.dk) or [info@rockwool.dk](mailto:info@rockwool.dk)

Insulation stated as “Continuous” is not classified in accordance with the EN classification report. For these, an expert assessment from DBI Danish Institute of Fire and Security Technology is available.

Please note that not all countries have fully adopted the European Classification Standard EN 13501-2, and these countries may require a separate national statement or approval.

## More advantages of BLÜCHER® EuroPipe

High tensile strength

Can use thinner material than other metallic systems because of high strength to weight ratio.

Corrosion resistant

Avoids the use of alternative materials that require more maintenance or earlier replacement

Hygienic

Non toxic, smooth surfaces, easily cleaned and sterilised

Low maintenance

Less cleaning necessary

Long lifetime

No replacement needed

Whole life cycle costs

Long life, minimum maintenance and strong residual value

100% recyclable

Not used in landfill