



**copper / steel pipes**

pipe Ø (mm)    pipe type    pipe thickness (mm)    construct. type

**standard classification ≤ Ø219 mm**

copper + steel ≤ Ø35	Cu / steel (1,0 up to 1,5)	1+2+3
	insulated + Armaflex AF 13 + 25mm 700LS	
	+ Rockwool 810 25mm 700LS	
	+ Rockwool 810 50mm 700LS	
coated pipe	3 + 5	
in floors + glasswool 22 / 30mm alu2 1000CS		

steel ≥ Ø42 ≤ Ø219	steel (3,25 up to 14,2)	1+2+3
	non-insulated	
	insulated + Armaflex AF 13mm 1000LS	
	+ Armaflex AF 25mm 1000LS	
	+ Rockwool 810 25mm 700LS	
	+ Rockwool 810 50mm 700LS	
	+ PIR 25 + 50mm 1000LS	
coated pipe	5	
in floors + Armaflex AF 13 + 25mm 750LS + PIR 25 + 50mm 1000LS		

**pipe penetrations in FR mortar or PA board**

in stone wool or mortar	Cu / steel ≤ Ø22 (1,1)	1+2+3+5
	MIXED + Armaflex AF 13mm 700LS	
	steel ≤ Ø101,6 (3,6)	1+2+3
	MIXED + Armaflex AF 13mm 1000LS	
	steel Ø219,1 (4,5)	5
	+ Armaflex AF 25mm 1000LS	
Cu / steel ≤ Ø54 (2,0)	3	
	+ Rockwool 810 25mm 1000LS	
	+ Rockwool 810 alu 32mm 500LI	

Graphite DoP CPR-14/0273	or	Acrylic or PA sealer DoP CPR-14/0273	or	Wrap DoP CPR-14/0251
<i>for higher EI requirements, see individual test results on page 2+3</i>				
EI 90 C/U in walls 1+2+3				
EI 60 C/U in walls 1+2+3				
EI 90 C/U in walls 1+2+3				
joint 10x25mm				
EI 30 C/U in walls 1+2+3				
joint 10x25mm				
<i>for application in floors, see page 2+3</i>				
EI 30 C/U in walls 1+2+3				EI 180 C/U
joint 10x25mm				Wrap: 1 layer
EI 120 C/U in walls 1+2+3				
EI 60 C/U in walls 1+2+3				
EI 60 C/U in walls 1+2+3				
EI 60 C/U in walls 1+2+3				
EI 90 C/U in walls 1+2+3				
EI 60 C/U in walls 1+2+3				
joint 10x25mm				
EI 60 C/U in walls 1+2+3				
joint 10x25mm				
EI 60 C/U in floors				
EI 90 C/U in floors				
joint 15x25mm				
EI 60 C/U in walls 1+2+3 + floors				
joint 10x25mm				
EI 90 C/U in walls 3 + floors				
joint 10x25mm				
EI 60 C/U in walls 1+2+3 + floors				
joint 10x25mm				
EI 90 C/U in floors				
joint 10x25mm				
EI 60 C/U in walls 1+2+3				
joint 10x25mm				
				EI 120 C/U in floors 15x25mm

opening in supporting construction		finish	
max. opening (mm)	FR mortar DoP CPR-14/0260	or	PA board DoP CPR-14/0260
			PA coating or PA sealer DoP CPR-14/0260 / 14/0273
61 up to 98			
85 up to 105			
128 up to 155			
41 up to 55			PA sealer 300 LI 3mm layer
63 up to 99			
62 up to 239			
89 up to 265			
89 up to 290			
112 up to 289			
162 up to 339			
112 up to 339			
61 up to 245			PA sealer 300 LI 3mm layer
98 up to 300			
122 up to 349			
walls: 600x1200 + 25% floors: 600x5000	FR mortar 100mm		PA board 2x 50mm 2S
1000x1200	FR mortar 100mm		PA board 2x 50mm 2S
walls: 600x1200 + 25% floors: 600x5000	FR mortar 100mm		PA board 2x 50mm 2S
1000x1200	FR mortar 100mm		PA board 2x 50mm 2S
600x1200	FR mortar 100mm		PA board 2x 50mm 2S
600x700	FR mortar 100mm		PA board 2x 50mm 2S
200x200	FR mortar 100mm		EI 120 C/C in walls 2x 50mm 2S
			PA coating 300 mm perimeter coat layer 0,8 - 1,0mm

use PA board if annular space of pipe is larger; see How-to-read

- 1 walls: metal stud ≥100mm
- 2 walls: blockwork ≥100mm
- 3 walls: blockwork ≥150mm
- 5 floors: aerated concrete ≥150mm

mastic: apply on 2 sides, also in floors!  
joint details: min. W x D in mm  
pipe insulation LS = total length in mm through construction

wrap: apply with smoke seal Acrylic on 2 sides

coat on 2 sides  
LI = x00mm per side

**NOTE:**  
aluPE-X + PE-Xa pipes: see chart PE-X  
spiral pipes: see chart AIR CONTROL

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**copper / steel pipes**

pipe Ø (mm)    pipe type    pipe thickness (mm)    construct. type

**higher EI per pipe Ø**

airco pipes	Cu / steel Ø6 + Ø8 (0,8) + plastic wrapping 9mm	1+2+3
Ø12	Cu / steel (1,0) coated pipe	1+2+3+5
	non-insulated	3+5
	insulated + Armaflex AF 13mm 700LS	
Ø15	Cu / steel (1,0) non-insulated	1+2+3+5
	coated pipe	
	insulated + Armaflex AF 13mm 700LS + Rockwool 810 25mm 700LS	
	+ Rockwool 810 25mm 1000LS	
	+ Rockwool 810 50mm 700LS	
Ø22	Cu / steel (1,1) non-insulated	1+2+3+5
	coated pipe	3+5
	insulated + Armaflex AF 13mm 700LS + Rockwool 810 25mm 1000LS	
Ø26,9	steel (2,9) coated pipe	1+2+3+5
	non-insulated	3+5
Ø28	Cu / steel (1,2) coated pipe	1+2+3+5
	non-insulated	3+5
	2x bundled only PA coating	
	insulated + Armaflex AF 13mm 700LS	

Graphite DoP CPR-14/0273	or	Acrylic or PA sealer DoP CPR-14/0273	or	Wrap DoP CPR-14/0251
<a href="#">EI 60 C/U in walls 1+2+3 joint 10x25mm</a>				
<a href="#">EI 90 C/U in walls 1+2+3 joint 10x25mm</a>		<a href="#">EI 90 C/U in walls 1+2+3 joint 10x25mm</a>		
<a href="#">EI 120 C/U in walls 3 + floors joint 10x25mm</a>				
		<a href="#">EI 120 C/U in walls 3 + floors joint 10x25mm</a>		
		<a href="#">EI 120 C/U in walls 3 + floors joint 10x25mm</a>		
<a href="#">EI 30 C/U in walls 1+2+3 joint 10x25mm</a>		<a href="#">EI 120 C/U in walls 3 + floors joint 15x25mm</a>		
<a href="#">EI 120 C/U in walls 1+2+3 + floors joint 14x25mm</a>		<a href="#">EI 60 C/U in walls 1+2+3 joint 10x25mm</a>		
<a href="#">EI 120 C/U in walls 1+2+3 joint 10x25mm</a>		<a href="#">EI 120 C/U in walls 3 + floors joint 10x25mm</a>		
<a href="#">EI 90 C/U in walls 1+2+3 joint 10x25mm</a>		<a href="#">joint 7x25mm</a>		
<a href="#">EI 120 C/U in walls 1+2+3 joint 10x25mm</a>				
		<a href="#">EI 60 C/U in walls 3 + floors joint 10x25mm</a>		
<a href="#">EI 60 C/U in walls 1+2+3 joint 10x25mm</a>		<a href="#">EI 60 C/U in walls 1+2+3 joint 10x25mm</a>		
<a href="#">EI 120 C/U in walls 3 + floors joint 10x25mm</a>				
		<a href="#">EI 120 C/U in walls 3 + floors joint 10x25mm</a>		
		<a href="#">EI 120 C/U in walls 3 + floors joint 5x25mm</a>		
<a href="#">EI 120 C/U in walls 1+2+3 + floors joint 10x25mm</a>				
		<a href="#">EI 120 C/U in walls 3 + floors joint 11x25mm</a>		
<a href="#">EI 60 C/U in walls 1+2+3 joint 10x25mm</a>				
<a href="#">EI 90 C/U in walls 3 + floors joint 10x25mm</a>				
		<a href="#">EI 60 C/U in walls 3 + floors joint 11x25mm</a>		
		<a href="#">EI 120 C/U in walls 3 + floors joint 10x25mm</a>		

max. opening (mm)	opening in supporting construction	
	FR mortar DoP CPR-14/0260	or PA board DoP CPR-14/0260
50		
graphite: 30 acrylic: 32		
32		
32		
58		
graphite: 35 acrylic: 44		
graphite: 37 up to 44 acrylic: 35		
61		
85		
82		
128		
44		
42		
44		
68		
82		
46 up to 50		
50		
48		
50		
50		
2x 35		
74		

finish
PA coating DoP CPR-14/0260
300 LI if used with graphite 200 LI if used with acrylic
200 LI
200 LI
300 LI if used with graphite 200 LI if used with acrylic
200 LI
walls: 300 LI floors: 200 LI
300 LI
200 LI
<a href="#">EI180 C/U in walls 3 + floors</a> 200 LI

**use PA board if annular space of pipe is larger; see How-to-read**

mastic: apply on **2 sides**, also in floors!  
joint details: min. W x D in mm  
pipe insulation LS = **total** length in mm through construction

coat on 2 sides, also in floors!  
LI = x00mm per side  
coat layer 0,8-1,0mm

- 1 walls: metal stud ≥100mm
- 2 walls: blockwork ≥100mm
- 3 walls: blockwork ≥150mm
- 5 floors: aerated concrete ≥150mm

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**copper / steel pipes**

pipe Ø (mm)    pipe type    pipe thickness (mm)    construct. type

**higher EI per pipe Ø**

Ø32	Cu / steel <i>insulated</i>	(1,5) + Rockwool 810 25mm 1000LS	3+5
Ø42,2	steel <i>non-insulated</i>	(3,25)	1+2+3
	mastic + PA coating <i>insulated</i>	+ Armaflex AF 13 + 25mm 700LS + PIR 25 + 50mm 1000LS	
	only PA coating <i>insulated</i>	+ Armaflex AF 13 + 25mm 750LS + Rockwool 810 25mm 1000LS + PIR 25 + 50 mm 1000LS	
Ø54	Cu / steel <i>non-insulated</i>	(2,0)	3
Ø60,3	steel	(3,0)	1+2+3+5
	mastic + PA coating <i>non-insulated</i>		3+5
Ø101,6	steel <i>mastic + PA coating</i>	(3,6)	1+2+3
Ø219,1	steel <i>insulated</i>	(4,5) + Rockwool 810 25 + 50mm 700LS + Rockwool 810 25mm 1000LS + PIR 25mm 1000LS	1+2+3
			5

Graphite DoP CPR-14/0273	or	Acrylic or PA sealer DoP CPR-14/0273	or	Wrap DoP CPR-14/0251
		<a href="#">EI 120 C/U in walls 3 + floors</a> joint 10x25mm		
<a href="#">EI 60 C/U in walls 1+2+3</a> joint 10x25mm				
<a href="#">EI 90 C/U in walls 1+2+3</a> joint 10x25mm				
<a href="#">EI 120 C/U in walls 1+2+3</a> joint 10x25mm				
<a href="#">EI 120 C/U in walls 1+2+3</a> joint 10x25mm				
<a href="#">EI 180 C/U in walls 3 + floors</a> joint 15x25mm				
		<a href="#">EI 120 C/U in walls 3 + floors</a> joint 9x25mm		
<a href="#">EI 240 C/U in floors</a> joint 15x25mm				
		<a href="#">EI 30 C/U in walls 1+2+3</a> joint 10x25mm		
		<a href="#">EI 90 C/U in walls 3 + floors</a> joint 10x25mm		
		<a href="#">EI 120 C/U in walls 3 + floors</a> joint 10x25mm		
		<a href="#">EI 30 C/U in walls 1+2+3</a> joint 10x25mm		
<a href="#">EI 90 C/U in walls 1+2+3</a> joint 10x25mm				
<a href="#">EI 120 C/U in floors</a>				
<a href="#">EI 180 C/U in floors</a> joint 15x25mm				

max. opening (mm)	opening in supporting construction		finish
	FR mortar DoP CPR-14/0260	or	PA board DoP CPR-14/0260
			PA coating DoP CPR-14/0260
102			
62			
62			300 LI
89 up to 104			
112 up to 162			
50			<a href="#">EI 180 C/U in walls 3 + floors</a> 200 LI
98 up to 122			
110			
112 up to 172			
100			<a href="#">EI 30 C/C in walls 3</a> 100 LI
80			300 LI
82			200 LI
82			
120			300 LI
289 up to 339			
299			

**use PA board if annular space of pipe is larger; see How-to-read**

mastic: apply on **2 sides**, also in floors!  
joint details: min. W x D in mm  
pipe insulation LS = **total** length in mm through construction

coat on 2 sides, also in floors!  
LI = x00mm per side  
coat layer 0,8-1,0mm

- 1 walls: metal stud ≥100mm
- 2 walls: blockwork ≥100mm
- 3 walls: blockwork ≥150mm
- 5 floors: aerated concrete ≥150mm

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