

## Assembly Instruction

### FLAMRO BSB-K Combi Seal EN EI 90 / EI 120

Approval No.: ETA - 15/0710

Please respect the permit specifications. All documents may be downloaded from [www.flamro.com/services/downloads](http://www.flamro.com/services/downloads).

It is assumed that

- any damage to the seal will be repaired
- the structural stability of the adjacent component is not compromised (including in the event of a fire) due to the installation of the seal
- the ledge or the ceiling for the seal does not contain any additional vertical loading
- the line fixings are attached to the adjacent component (and not on the seal)

#### Assembly steps

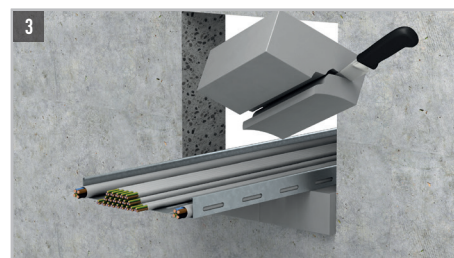
The fire protection bricks stay elastic so that a subsequent installation is possible. For subsequent installations, a ring joint with min. 1 cm is to be produced and then sealed with FLAMRO BSB-KL compound.



Clean the aperture and remove all loose parts.



The first layer of bricks should be placed beneath the cable rack.



Fire protection bricks must be tailored custom-fit in order to create a firm support for building component.



Fire Protection bricks should be stapled in place with offset joints.



Remaining gaps and joints are to be sealed with FLAMRO BSB-KL Compound.

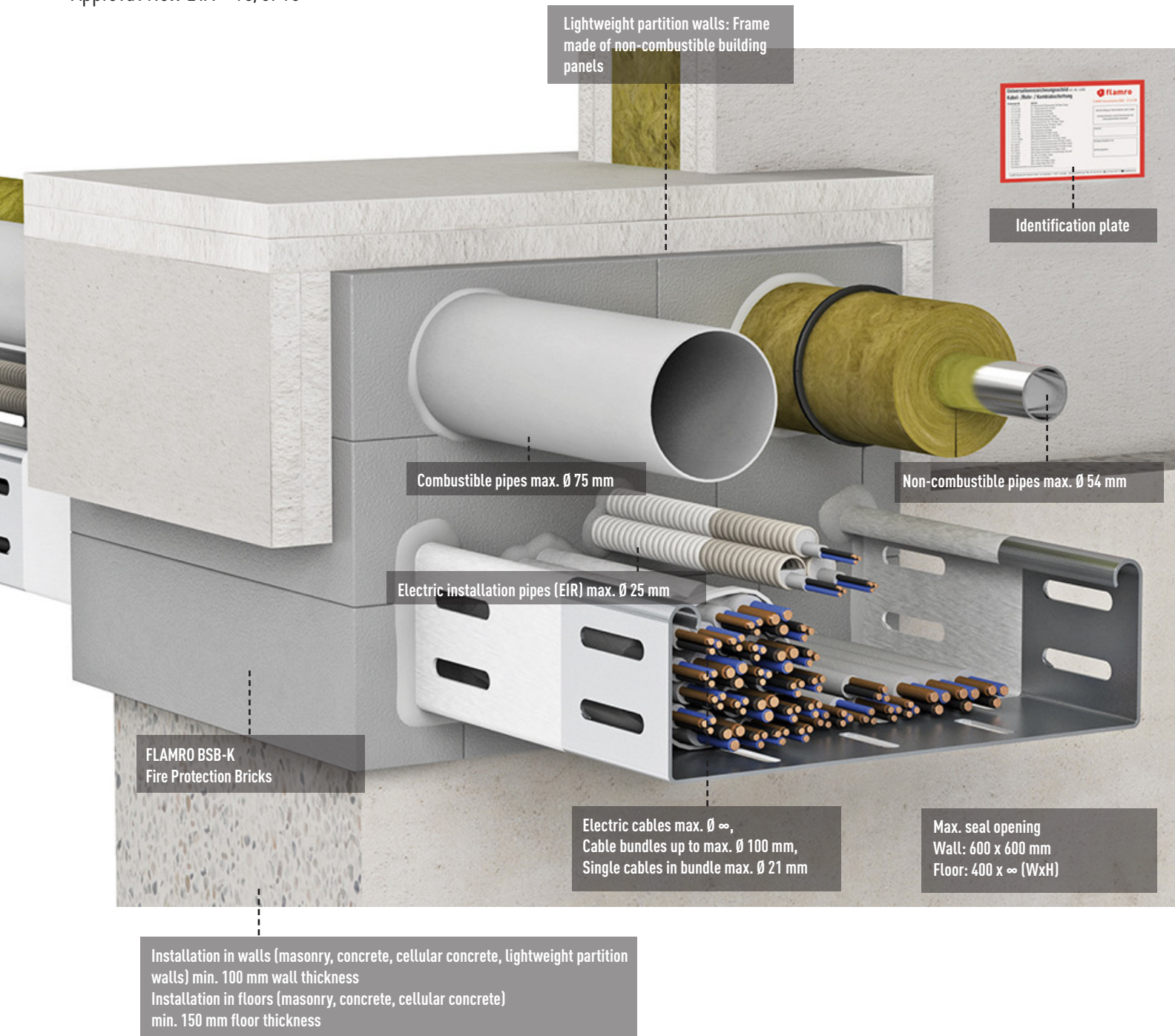


The seal must then be permanently labelled with a sign. The identification plate must be attached to the component next to the seal and may be obtained from FLAMRO.

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Use in walls according to ETA-15/0710

#### Installations (walls)

Cable	Max. Ø (mm)	Fire resistance duration	Additional measures	Coating (mm)	1. Support (mm)
Sheathed cables	≤ 50	EI 120 / E 120	BSB-KL Compound	≥ 100	≤ 225
Sheathed cables	≤ 80	EI 90 / E 120	BSB-KL Compound	≥ 100	≤ 225
Cables	≤ 21		BSB-KL Compound	≥ 100	≤ 225
Non-sheathed cables	≤ 24	EI 120 / E 120	BSB-KL Compound	≥ 100	≤ 225
Cable bundles	≤ 100	EI 120 / E 120	BSB-KL Compound	≥ 100	≤ 225
Cable supporting constructions			BSB-KL Compound / UBB	≥ 360 / 50	≤ 225

EIR	Max. Ø (mm)	Fire resistance duration	Additional measures	Coating (mm)	Insulation (mm)	1. Support (mm)
EIR steel	≤ 25	EI 120 / E 120	BSB-KL Compound	≥ 360	(C/C)	≤ 225
EIR plastic	≤ 16	EI 120 / E 120	BSB-KL Compound	≥ 100	(C/C)	≤ 225
EIR bundle (up to zu 3 pcs.)			BSB-KL Compound	≥ 100		≤ 225
EIR with supporting construction			BSB-KL Compound / UBB	≥ 360 / 50		≤ 225

Combustible pipes	Max. Ø (mm)	Fire resistance duration	Additional measures	Coating (mm)	Insulation (mm)	1. Support (mm)
PE	50	EI 90 / E 180		2,3 - 4,6	(U/C, C/C)	≤ 450
PE	75	EI 90 / E 180	UBB / ROKU® Strip	2,3 - 4,5	50 (U/C, C/C)	≤ 450
PVC	50	EI 90 / E 180		1,8 - 5,6	(U/C, C/C)	≤ 450
PVC	75	EI 90 / E 180	UBB / ROKU® Strip	1,8 - 5,6	50 (U/C, C/C)	≤ 450

Non-combustible pipes	Max. Ø (mm)	Fire resistance duration	Additional measures	Coating (mm)	Insulation (mm)	1. Support (mm)
Copper	≤ 18	EI 90 / E 120	Mineral fiber	≥ 500	20 (C/U, C/C)	≤ 450
Copper	> 18 ≤ 54	EI 90 / E 120	Mineral fiber	≥ 500	30 (C/U, C/C)	≤ 450
Copper	54	EI 90 / E 120	RS800	≥ 1160	30 (U/C, C/C)	≤ 450
Copper	18	EI 90 / E 120	RS800	≥ 1160	20 (U/C, C/C)	≤ 450

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### FLAMRO BSB-K Combi Seal EN EI 90 / EI 120

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Distances of installations (wall) according to PB 314100114-2 and PB 314100114-3

Installation distances (mm)	to component reveal above	to component reveal sideways	to component reveal beneath	to a parallel cable position, cable rack or ladder above	to a sideways cable position, cable rack or ladder	to outer material of combustible pipes	to non-combustible pipes (outer material RS800)	to EIR (up to 3 items)
From cables / cable supporting constructions	50	0	0	50	0	50	50	50
From EIR (up to 3 items)	100	50	0	50	50	100	60	50
From combustible pipes	75	50	100	50	100	50	50	100
From outer material RS800 Insulation non-combustible pipes	100	78	100	50	100	50	50	60

### Specifications (wall)

Insulation thickness	160 mm
Min. wall thickness	100 mm
Walls consisting of	Masonry, concrete or cellular concrete or light partition walls
Max. seal dimensions	600 x 600 mm

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### FLAMRO BSB-K Combi Seal EN EI 90 / EI 120

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Use in floors according to ETA-15/0710

#### Installations (floors)

Cable	Max. Ø (mm)	Fire resistance duration	Additional measures	Coating (mm)	1. Support (mm)
Sheathed cables	≤ 50	EI 120 / E 120	BSB-KL Compound	≥ 100	≤ 500
Sheathed cables	≤ 80	EI 90 / E 120	BSB-KL Compound	≥ 100	≤ 500
Cables	≤ 21		BSB-KL Compound	≥ 100	≤ 500
Non-sheathed cables	≤ 24	EI 120 / E 120	BSB-KL Compound	≥ 100	≤ 500
Cable bundles	≤ 100	EI 120 / E 120	BSB-KL Compound	≥ 100	≤ 500
Cable supporting constructions			BSB-KL Compound / UBB	≥ 360 / 50	≤ 500

EIR	Max. Ø (mm)	Fire resistance duration	Additional measures	Coating (mm)	Insulation (mm)	1. Support (mm)
EIR steel	≤ 25	EI 120 / E 120	BSB-KL Compound	≥ 360	(C/C)	≤ 500
EIR plastic	≤ 16	EI 120 / E 120	BSB-KL Compound	≥ 100	(C/C)	≤ 500
EIR bundle (up to zu 3 pcs.)			BSB-KL Compound	≥ 100		≤ 500
EIR with supporting construction			BSB-KL Compound / UBB	≥ 360 / 50		≤ 500

Combustible pipes	Max. Ø (mm)	Fire resistance duration	Additional measures	Coating (mm)	Insulation (mm)	1. Support (mm)
PE	50	EI 180		3,0 - 4,6	(U/C, C/C)	≤ 450
PE	75	EI 180	UBB / ROKU® Strip	2,3 - 4,5	50 (U/C, C/C)	≤ 450
PVC	50	EI 180		1,8 - 5,6	(U/C, C/C)	≤ 450
PVC	75	EI 180	UBB / ROKU® Strip	1,8 - 5,6	50 (U/C, C/C)	≤ 450

Non-combustible pipes	Max. Ø (mm)	Fire resistance duration	Additional measures	Coating (mm)	Insulation (mm)	1. Support (mm)
Copper	≤ 18	EI 90 / E 120	Mineral fiber	≥ 500	20 (C/U, C/C)	≤ 500
Copper	18 ≤ 54	EI 90 / E 120	Mineral fiber	≥ 500	30 (C/U, C/C)	≤ 500
Copper	54	EI 90 / E 120	RS800	≥ 1160	30 (U/C, C/C)	≤ 450
Copper	18	EI 90 / E 120	RS800	≥ 1160	20 (U/C, C/C)	≤ 450



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Distances of installations (floor) according to PB 315020408-1 und PB 315020408-2

Installation distances (mm)	from opening of the structural element above	from opening of the structural element sideways	from opening of the structural element beneath	from a parallel cable position, cable rack or ladder above	from a sideways cable position, cable rack or ladder	from outer material of combustible pipes	from non-combustible pipes (outer material RS800)	from EIR (up to 3 pcs.)
From cables / cable supporting constructions	50	0	0	50	0	50	50	50
From EIR (up to 3 pcs.)	100	50	0	60	50	100	60	50
From combustible pipes	50	50	50	50	100	50	50	100
From outer material RS800 Insulation non-combustible pipes	100	100	100	50	100	50	50	60

### Specifications (ceiling)

Insulation thickness	160 mm
Min. floor thickness	150 mm
Floors consisting of	Masonry, concrete or cellular concrete
Max. seal dimensions	600 x 600 mm