Declaration of performance

DoP/FKRS-EU/DE/003

TROX® TECHNIK
The art of handling air

1 Product — **FKRS-EU**

Unique identification code of the product type

2 Intended use — Fire damper

3 Manufacturer

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47504 Neukirchen-Vluyn,
Germany
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Fax +49 (0)2845 202265
E-mail trox@trox.de
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Switzerland
Phone +41 (0)55250 7111
Fax +41 (0)55250 7310
E-mail info@troxhesco.ch
Internet www.troxhesco.com

5 System of assessment and verification of constancy of performance — System 1

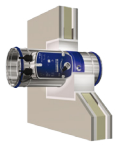
6 Harmonised standard — EN 15650:2010

Notified body/ies

The notified body 1322 - IBS carried out the initial inspection of the manufacturing plants and of the factory production control as well as the continuous surveillance, assessment and evaluation of factory production control according to System 1 of the Construction Products Regulation and issued the certificate of constancy of performance:

1322-CPR-74135/02
1322-CPR-61977/02

7 Declared performances

Essential characteristic: fire resistance — size [mm]: Ø 100 to Ø 200				
Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Performance class (EI TT) up to**
 Solid wall	• d ≥ 100 mm • Coating or sleeve • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 120 (v_e i↔o) S
 Lightweight partition wall	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • With mineral wool	in the wall	Mortar-based installation	EI 120 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • With mineral wool • Installation block EQ	in the wall	Dry mortarless installation	EI 120 (v_e i↔o) S

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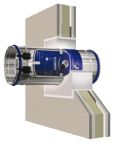
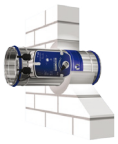
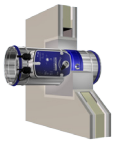
Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Performance class (EI TT) up to**
 Lightweight partition wall	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • With mineral wool • Coating or sleeve • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 120 (v_e i↔o) S
	• Timber stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Coating or sleeve	in the wall	Fire batt	EI 120 (v_e i↔o) S

Essential characteristic: fire resistance — size [mm]: Ø 100 to Ø 315				
Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Performance class (EI TT) up to**
 Solid wall	• d ≥ 100 mm • Coating or sleeve • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 90 (v_e i↔o) S
	• d ≥ 100 mm • Coating or two sleeves • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 120 (v_e i↔o) S
	• d ≥ 100 mm • Installation block ER	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• d ≥ 100 mm • Installation kit WA	on the face of the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• d ≥ 100 mm • Installation kit WE • Cladding on 2, 3 or 4 sides	remote from the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• d ≥ 100 mm • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 120 (v_e i↔o) S
 Lightweight partition wall	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • Coating or two sleeves • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 120 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • Coating or sleeve • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 90 (v_e i↔o) S

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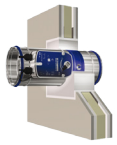
Essential characteristic: fire resistance — size [mm]: Ø 100 to Ø 315				
Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Performance class (EI TT) up to**
 Lightweight partition wall	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • With or without mineral wool • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 90 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • Reinforcing board on both sides • With or without mineral wool	in the wall	Mortar-based installation	EI 120 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • With or without mineral wool • Installation block EQ	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • With mineral wool • Installation kit TQ • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Metal stud wall with sheet steel insert, used as a fire wall, safety partition wall or to provide radiation protection • Gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum • d ≥ 100 mm • With or without mineral wool • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 90 (v_e i↔o) S
	• Metal stud wall with sheet steel insert, used as a fire wall, safety partition wall or to provide radiation protection • Gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum • d ≥ 100 mm • With mineral wool • Installation kit TQ • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Metal stud wall with sheet steel as fire wall • Gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum • d ≥ 100 mm • With or without mineral wool • Installation block EQ	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 80 mm • With or without mineral wool • Wall thickness increased to d ≥ 98 mm • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 30 (v_e i↔o) S

Declaration of performance

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The art of handling air

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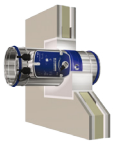
Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Performance class (EI TT) up to**
 Lightweight partition wall	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 75 mm • With or without mineral wool • Wall thickness increased to d ≥ 98 mm • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 60 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 75 mm • With or without mineral wool • Wall thickness increased to d ≥ 98 mm • Installation kit TQ • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Dry mortarless installation	EI 30 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • Flexible ceiling joint • d ≥ 100 mm • With or without mineral wool • Installation kit GL • Distance to load-bearing structural elements ≥ 50 mm	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Lightweight partition wall with metal support structure made of steel • Gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum • d ≥ 98 mm • With or without mineral wool • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 90 (v_e i↔o) S
	• Lightweight partition wall with metal support structure made of steel • Gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum • d ≥ 98 mm • With or without mineral wool • Installation kit TQ • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • With or without mineral wool • Cladding on 2, 3 or 4 sides • Installation kit WE	remote from the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Timber stud wall (also timber panel constructions and timber frames) • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 120 (v_e i↔o) S

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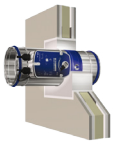
Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Performance class (EI TT) up to**
 Lightweight partition wall	• Timber stud wall (also timber panel constructions and timber frames) • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 90 (v_e i↔o) S
	• Timber stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Coating or two sleeves • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 120 (v_e i↔o) S
	• Timber stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Coating or sleeve • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 90 (v_e i↔o) S
	• Timber stud wall (also timber panel constructions and timber frames) • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Installation kit TQ • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Dry mortarless installation	EI 120 (v_e i↔o) S
	• Timber stud wall (also timber panel constructions and timber frames) • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 30 (v_e i↔o) S
	• Timber stud wall (also timber panel constructions and timber frames) • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 30 (v_e i↔o) S
	• Timber stud wall (also timber panel constructions and timber frames) • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Installation kit TQ • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Dry mortarless installation	EI 30 (v_e i↔o) S
	• Half-timbered wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 140 mm • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 90 (v_e i↔o) S

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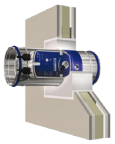
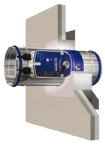
Essential characteristic: fire resistance — size [mm]: Ø 100 to Ø 315				
Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Performance class (EI TT) up to**
 Lightweight partition wall	• Half-timbered wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 140 mm • Coating or sleeve • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 90 (v_e i↔o) S
	• Half-timbered wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 140 mm • Distance to load-bearing structural elements ≥ 40 mm • Installation kit TQ	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
 Shaft wall	• Metal support structure or steel support structure • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • Cladding on one side • d ≥ 90 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 90 (v_e i↔o) S
	• Metal support structure or additional safety board • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • Cladding on one side • With reinforcing board • d ≥ 90 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 30 (v_e i↔o) S
	• Metal support structure • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • Cladding on one side • d ≥ 90 mm • Installation block EQ	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Metal support structure • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • Cladding on one side • d ≥ 90 mm • Installation kit TQ	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Without metal support structure • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • Cladding on one side • d ≥ 50 mm • Installation kit TQ	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
 Solid ceiling slab	• d ≥ 100 mm • Distance between casings ≥ 45 mm • Distance to load-bearing structural elements ≥ 40 mm	in the ceiling	Mortar-based installation	EI 120 (h_o i↔o) S
	• d ≥ 100 mm • Installation block ER	in the ceiling	Dry mortarless installation	EI 90 (h_o i↔o) S
	• d ≥ 100 mm • Coating or sleeve	in the ceiling	Fire batt	EI 90 (h_o i↔o) S

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Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Performance class (EI TT) up to**
 Solid ceiling slab	• d ≥ 100 mm • Coating or two sleeves	in the ceiling	Fire batt	EI 120 (h_o i↔o) S
	• Combined with wooden beam ceilings • Concrete bed, d ≥ 150 mm • Distance between casings ≥ 45 mm • Distance to load-bearing structural elements ≥ 40 mm	in the ceiling	Mortar-based installation	EI 90 (h_o i↔o) S
	• Combined with suspended ceiling systems (Cadolto system) • Concrete bed, d ≥ 150 mm • Distance between casings ≥ 45 mm • Distance to load-bearing structural elements ≥ 40 mm	in the ceiling	Mortar-based installation	EI 120 (h_o i↔o) S
	• d ≥ 100 mm • Below the ceiling, with horizontal duct • Perimeter gap filled with mortar or mineral wool • Cladding on 2, 3 or 4 sides • Installation kit WE	remote from the ceiling	Dry mortarless installation	EI 90 (h_o i↔o) S

Declaration of performance

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7 Declared performances

Essential characteristics	Technical specification	Performance
Nominal activation conditions/sensitivity • Sensing element load-bearing capacity • Sensing element response temperature 72 °C, 95 °C	ISO 10294-4:2001	Pass
Response delay/response time • Closure time	EN 1366-2:1999	Pass
Operational reliability • Open and closing cycle, 50 cycles	EN 15650:2010 EN 1366-2:1999	Pass
Durability of response delay • Sensing element response to temperature and load-bearing capacity	ISO 10294-4:2001	Pass
Durability of operational reliability • Testing of the open and closing cycle, 10,000 cycles – BLF 230-T-(ST) TR, BLF 24-T-(ST) TR – BF 230-T-(ST) TR, BF 24-T-(ST) TR – BF 24-TL-T-ST(-2) TR – BFN 230-T-(ST) TR, BFN 24-T-(ST) TR – BFL 230-T-(ST) TR, BFL 24-T-(ST) TR – ExMax 15-BF TR – RedMax 15-BF TR	EN 15650:2010	Pass
Protection against corrosion	EN 15650:2010	Pass
Damper blade leakage	EN 1751:1999	Class 3
Damper casing leakage	EN 1751:1999	Class C

The classification of the fire damper must not be higher than the classification of the wall or ceiling slab it is installed in. In this case the class of performance of the wall or ceiling slab applies also to the fire damper.

The performance of the product identified above is in conformity with the set of declared performances. This declaration of performance is issued, in accordance with regulation (EU) no. 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of TROX GmbH:

Neukirchen-Vluyn, 1 September 2016

i.V. Heyma

Jan Heymann • Authorised Representative • CE-marked products