

# Declaration of performance

DoP/FKR-EU/DE/003



**TROX<sup>®</sup> TECHNIK**  
The art of handling air

## 1 Product

FKR-EU

Unique identification code of the product type

## 2 Intended use

Fire damper

## 3 Manufacturer

TROX GmbH

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## 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-74135/05  
1322-CPR-61977/03

## 7 Declared performances

Essential characteristic: fire resistance — size [mm]: Ø 315 to Ø 800

Supporting construction	Construction	Installation location	Installation type	Class of performance (EI TT)
 Solid wall	<ul style="list-style-type: none"> <li>d ≥ 100 mm</li> <li>Distance to load-bearing structural elements ≥ 40 mm</li> <li>Distance between casings ≥ 40 mm</li> </ul>	in the wall	Mortar-based installation	EI 120 (v <sub>e</sub> i↔o) S
 Lightweight partition wall	<ul style="list-style-type: none"> <li>Metal support structure or steel support structure</li> <li>Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards</li> <li>d ≥ 98 mm</li> <li>With or without mineral wool</li> <li>Distance to load-bearing structural elements ≥ 40 mm</li> <li>Installation kit TQ</li> </ul>	in the wall	Dry mortarless installation	EI 90 (v <sub>e</sub> i↔o) S
	<ul style="list-style-type: none"> <li>Metal support structure or steel support structure</li> <li>Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards</li> <li>d ≥ 98 mm</li> <li>With or without mineral wool</li> <li>Distance to load-bearing structural elements ≥ 40 mm</li> <li>Distance between casings ≥ 40 mm</li> </ul>	in the wall	Mortar-based installation	EI 90 (v <sub>e</sub> i↔o) S

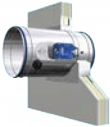
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## Essential characteristic: fire resistance — size [mm]: Ø 315 to Ø 800

Supporting construction	Construction	Installation location	Installation type	Class of performance (EI TT)
 <p>Lightweight partition wall</p>	<ul style="list-style-type: none"> <li>• Metal stud wall with sheet steel insert, used as a fire wall, safety partition wall or to provide radiation protection</li> <li>• Gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum</li> <li>• <math>d \geq 100</math> mm</li> <li>• With or without mineral wool</li> <li>• Distance to load-bearing structural elements <math>\geq 40</math> mm</li> <li>• Distance between casings <math>\geq 40</math> mm</li> </ul>	in the wall	Mortar-based installation	EI 90 ( $v_e i \leftrightarrow o$ ) S
	<ul style="list-style-type: none"> <li>• Metal stud wall with sheet steel insert, used as a fire wall, safety partition wall or to provide radiation protection</li> <li>• Gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum</li> <li>• <math>d \geq 100</math> mm</li> <li>• With or without mineral wool</li> <li>• Installation kit TQ</li> </ul>	in the wall	Dry mortarless installation	EI 90 ( $v_e i \leftrightarrow o$ ) S
	<ul style="list-style-type: none"> <li>• Metal stud wall</li> <li>• Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards</li> <li>• <math>d \geq 75</math> mm</li> <li>• With or without mineral wool</li> <li>• Wall thickness increased to <math>d \geq 98</math> mm</li> </ul>	in the wall	Mortar-based installation	EI 30 ( $v_e i \leftrightarrow o$ ) S
	<ul style="list-style-type: none"> <li>• Metal stud wall</li> <li>• Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards</li> <li>• <math>d \geq 75</math> mm</li> <li>• With or without mineral wool</li> <li>• Wall thickness increased to <math>d \geq 98</math> mm</li> <li>• Installation kit TQ</li> </ul>	in the wall	Dry mortarless installation	EI 30 ( $v_e i \leftrightarrow o$ ) S
	<ul style="list-style-type: none"> <li>• Timber stud wall (also timber panel constructions and timber frames)</li> <li>• Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards</li> <li>• <math>d \geq 130</math> mm</li> <li>• Distance between casings <math>\geq 40</math> mm</li> <li>• Distance to load-bearing structural elements <math>\geq 40</math> mm</li> </ul>	in the wall	Mortar-based installation	EI 90 ( $v_e i \leftrightarrow o$ ) S
	<ul style="list-style-type: none"> <li>• Timber stud wall (also timber panel constructions and timber frames)</li> <li>• Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards</li> <li>• <math>d \geq 130</math> mm</li> <li>• Installation kit TQ</li> </ul>	in the wall	Dry mortarless installation	EI 90 ( $v_e i \leftrightarrow o$ ) S
	<ul style="list-style-type: none"> <li>• Timber stud wall (also timber panel constructions and timber frames)</li> <li>• Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards</li> <li>• <math>d \geq 105</math> mm</li> <li>• Wall thickness increased to <math>d \geq 130</math> mm</li> <li>• Distance between casings <math>\geq 40</math> mm</li> <li>• Distance to load-bearing structural elements <math>\geq 40</math> mm</li> </ul>	in the wall	Mortar-based installation	EI 30 ( $v_e i \leftrightarrow o$ ) S
	<ul style="list-style-type: none"> <li>• Timber stud wall (also timber panel constructions and timber frames)</li> <li>• Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards</li> <li>• <math>d \geq 105</math> mm</li> <li>• Wall thickness increased to <math>d \geq 130</math> mm</li> <li>• Installation kit TQ</li> </ul>	in the wall	Dry mortarless installation	EI 30 ( $v_e i \leftrightarrow o$ ) S

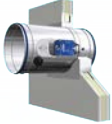


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## Essential characteristic: fire resistance — size [mm]: Ø 315 to Ø 800

Supporting construction	Construction	Installation location	Installation type	Class of performance (EI TT)
 <p>Lightweight partition wall</p>	<ul style="list-style-type: none"> <li>Half-timbered wall</li> <li>Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards</li> <li>d ≥ 140 mm</li> <li>Distance between casings ≥ 40 mm</li> <li>Distance to load-bearing structural elements ≥ 40 mm</li> </ul>	in the wall	Mortar-based installation	EI 90 (v <sub>e</sub> i↔o) S
	<ul style="list-style-type: none"> <li>Half-timbered wall</li> <li>Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards</li> <li>d ≥ 140 mm</li> <li>Installation kit TQ</li> </ul>	in the wall	Dry mortarless installation	EI 90 (v <sub>e</sub> i↔o) S
	<ul style="list-style-type: none"> <li>Half-timbered wall</li> <li>Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards</li> <li>d ≥ 115 mm</li> <li>Wall thickness increased to d ≥ 140 mm</li> <li>Distance between casings ≥ 40 mm</li> <li>Distance to load-bearing structural elements ≥ 40 mm</li> </ul>	in the wall	Mortar-based installation	EI 30 (v <sub>e</sub> i↔o) S
	<ul style="list-style-type: none"> <li>Half-timbered wall</li> <li>Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards</li> <li>d ≥ 115 mm</li> <li>Wall thickness increased to d ≥ 140 mm</li> <li>Installation kit TQ</li> </ul>	in the wall	Dry mortarless installation	EI 30 (v <sub>e</sub> i↔o) S
 <p>Shaft wall</p>	<ul style="list-style-type: none"> <li>Metal support structure or steel support structure</li> <li>Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards</li> <li>Cladding on one side</li> <li>d ≥ 90 mm</li> <li>Distance to load-bearing structural elements ≥ 40 mm</li> </ul>	in the wall	Mortar-based installation	EI 90 (v <sub>e</sub> i↔o) S
	<ul style="list-style-type: none"> <li>Metal support structure</li> <li>Additional safety board</li> <li>Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards</li> <li>Cladding on one side</li> <li>with reinforcing board ≥ 90 mm</li> </ul>	in the wall	Mortar-based installation	EI 90 (v <sub>e</sub> i↔o) S
	<ul style="list-style-type: none"> <li>without metal support structure</li> <li>Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards</li> <li>Cladding on one side</li> <li>d ≥ 50 mm</li> <li>Distance to load-bearing structural elements ≥ 40 mm</li> </ul>	in the wall	Mortar-based installation	EI 90 (v <sub>e</sub> i↔o) S
 <p>Solid ceiling slab</p>	<ul style="list-style-type: none"> <li>d ≥ 100 mm</li> <li>Distance between casings ≥ 40 mm</li> <li>Distance to load-bearing structural elements ≥ 40 mm</li> </ul>	in the ceiling	Mortar-based installation	EI 120 (h <sub>o</sub> i↔o) S
	<ul style="list-style-type: none"> <li>d ≥ 100 mm</li> <li>combined with wooden beam ceilings</li> <li>Distance between casings ≥ 40 mm</li> <li>Distance to load-bearing structural elements ≥ 40 mm</li> </ul>	in the ceiling	Mortar-based installation	EI 90 (h <sub>o</sub> i↔o) S
	<ul style="list-style-type: none"> <li>d ≥ 100 mm</li> <li>Combined with suspended ceiling systems (Cadolto system)</li> <li>Distance between casings ≥ 40 mm</li> <li>Distance to load-bearing structural elements ≥ 40 mm</li> </ul>	in the ceiling	Mortar-based installation	EI 120 (h <sub>o</sub> i↔o) S

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## 7 Declared performances

Essential characteristics	Technical specification	Performance
<b>Nominal activation conditions/sensitivity</b> <ul style="list-style-type: none"> <li>Sensing element load-bearing capacity</li> <li>Sensing element response temperature 72 °C, 95 °C</li> </ul>	ISO 10294-4:2001	Pass
<b>Response delay/response time</b> <ul style="list-style-type: none"> <li>Closure time</li> </ul>	EN 1366-2:2015	Pass
<b>Operational reliability</b> <ul style="list-style-type: none"> <li>Open and closing cycle, 50 cycles</li> </ul>	EN 15650:2010 EN 1366-2:2015	Pass
<b>Durability of response delay</b> <ul style="list-style-type: none"> <li>Sensing element response to temperature and load-bearing capacity</li> </ul>	ISO 10294-4:2001	Pass
<b>Durability of operational reliability</b> <ul style="list-style-type: none"> <li>Testing of the open and closing cycle, 10,000 cycles                             <ul style="list-style-type: none"> <li>– BLF 230-T-(ST) TR, BLF 24-T-(ST) TR</li> <li>– BF 230-T-(ST) TR, BF 24-T-(ST) TR</li> <li>– BF 24-TL-T-ST(-2) TR</li> <li>– BFN 230-T-(ST) TR, BFN 24-T-(ST) TR</li> <li>– BFL 230-T-(ST) TR, BFL 24-T-(ST) TR</li> <li>– ExMax 15-BF TR, RedMax 15-BF TR</li> <li>– GGA126.1E/T../GGA326.1E/T...</li> <li>– GRA126.1E/T../GRA326.1E/T...</li> <li>– GNA126.1E/T../GNA326.1E/T...</li> </ul> </li> </ul>	EN 15650:2010	Pass
<b>Protection against corrosion</b>	EN 15650:2010	Pass
<b>Damper blade leakage</b>	EN EN 1751:2014	Class 4
<b>Damper casing leakage</b>	EN EN 1751:2014	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 March 2017

*Jan Heymann*  
Jan Heymann • Authorised Representative • CE-marked products