

# Declaration of performance

DoP/FKRS-EU/DE/002



**TROX<sup>®</sup> 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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## 5 System of assessment and verification of constancy of performance

System 1

## 6 Harmonised standard



EN 15650:2010

### Notified body or body/ies

The notified bodies 0749 - BCCA and 1322 - IBS carried out the initial inspection of the manufacturing plant 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:

0749-CPR-BC1-606-4645-15650.04-4651 and  
1322-CPR-74135/02

## 7 Declared performances

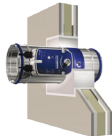
| Essential characteristic: fire resistance — size [mm]: Ø 100 to Ø 200                                             |                                                                                                                                                     |                       |                             |                               |
|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------|-------------------------------|
| Supporting construction                                                                                           | Construction details                                                                                                                                | Installation location | Installation type           | Class of performance (EI TT)  |
| <br>Solid wall                 | <ul style="list-style-type: none"> <li>d ≥ 100 mm</li> <li>ρ ≥ 500 kg/m<sup>3</sup></li> </ul>                                                      | in the wall           | Fire batt                   | EI 120 (v <sub>e</sub> i↔o) S |
| <br>Lightweight partition wall | <ul style="list-style-type: none"> <li>Metal stud wall, gypsum plasterboard DF</li> <li>d ≥ 100 mm</li> <li>With or without mineral wool</li> </ul> | in the wall           | Mortar-based installation   | EI 120 (v <sub>e</sub> i↔o) S |
|                                                                                                                   | <ul style="list-style-type: none"> <li>Metal stud wall, gypsum plasterboard DF</li> <li>d ≥ 100 mm</li> <li>With or without mineral wool</li> </ul> | in the wall           | Dry mortarless installation | EI 120 (v <sub>e</sub> i↔o) S |

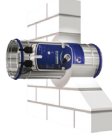
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| Essential characteristic: fire resistance — size [mm]: Ø 100 to Ø 200                                           |                                                                                                                                                                                                                                                                                                                                                       |                       |                   |                                        |
|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------|----------------------------------------|
| Supporting construction                                                                                         | Construction details                                                                                                                                                                                                                                                                                                                                  | Installation location | Installation type | Class of performance (EI TT)           |
| <br>Lightweight partition wall | <ul style="list-style-type: none"> <li>• Metal stud wall, gypsum plasterboard DF</li> <li>• <math>d \geq 100 \text{ mm}</math></li> <li>• With or without mineral wool</li> </ul>                                                                                                                                                                     | in the wall           | Fire batt         | EI 120 ( $v_e i \leftrightarrow o$ ) S |
|                                                                                                                 | <ul style="list-style-type: none"> <li>• Metal stud wall, gypsum plasterboard DF</li> <li>• <math>d \geq 100 \text{ mm}</math></li> <li>• With or without mineral wool</li> <li>• Minimum distance to load-bearing structural elements <math>\geq 40 \text{ mm}</math></li> <li>• Distance between casings <math>\geq 40 \text{ mm}</math></li> </ul> | in the wall           | Fire batt         | EI 90 ( $v_e i \leftrightarrow o$ ) S  |

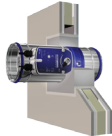
| Essential characteristic: fire resistance — size [mm]: Ø 100 to Ø 315                             |                                                                                                                                                                                                                                                                                                                 |                         |                             |                                        |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------|----------------------------------------|
| Supporting construction                                                                           | Construction details                                                                                                                                                                                                                                                                                            | Installation location   | Installation type           | Class of performance (EI TT)           |
| <br>Solid wall | <ul style="list-style-type: none"> <li>• <math>d \geq 100 \text{ mm}</math></li> <li>• <math>\rho \geq 500 \text{ kg/m}^3</math></li> </ul>                                                                                                                                                                     | in the wall             | Dry mortarless installation | EI 90 ( $v_e i \leftrightarrow o$ ) S  |
|                                                                                                   | <ul style="list-style-type: none"> <li>• <math>d \geq 100 \text{ mm}</math></li> <li>• <math>\rho \geq 500 \text{ kg/m}^3</math></li> </ul>                                                                                                                                                                     | on the face of the wall | Dry mortarless installation | EI 90 ( $v_e i \leftrightarrow o$ ) S  |
|                                                                                                   | <ul style="list-style-type: none"> <li>• <math>d \geq 100 \text{ mm}</math></li> <li>• <math>\rho \geq 500 \text{ kg/m}^3</math></li> <li>• Minimum distance to load-bearing structural elements <math>\geq 40 \text{ mm}</math></li> <li>• Distance between casings <math>\geq 40 \text{ mm}</math></li> </ul> | in the wall             | Mortar-based installation   | EI 120 ( $v_e i \leftrightarrow o$ ) S |
|                                                                                                   | <ul style="list-style-type: none"> <li>• <math>d \geq 100 \text{ mm}</math></li> <li>• <math>\rho \geq 500 \text{ kg/m}^3</math></li> <li>• Minimum distance to load-bearing structural elements <math>\geq 40 \text{ mm}</math></li> <li>• Distance between casings <math>\geq 40 \text{ mm}</math></li> </ul> | in the wall             | Fire batt                   | EI 90 ( $v_e i \leftrightarrow o$ ) S  |

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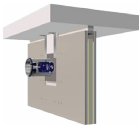
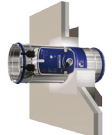

| Essential characteristic: fire resistance — size [mm]: Ø 100 to Ø 315                                           |                                                                                                                                                                                                                                                                               |                       |                             |                              |
|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------|------------------------------|
| Supporting construction                                                                                         | Construction details                                                                                                                                                                                                                                                          | Installation location | Installation type           | Class of performance (EI TT) |
| <br>Lightweight partition wall | <ul style="list-style-type: none"> <li>• Metal stud wall, gypsum plasterboard DF</li> <li>• d ≥ 100 mm</li> <li>• With or without mineral wool</li> <li>• Minimum 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 |
|                                                                                                                 | <ul style="list-style-type: none"> <li>• Metal stud wall, gypsum plasterboard DF</li> <li>• d ≥ 100 mm</li> <li>• With or without mineral wool</li> <li>• Minimum distance to load-bearing structural elements ≥ 40 mm</li> <li>• Distance between casings ≥ 40 mm</li> </ul> | in the wall           | Fire batt                   | EI 90 (v <sub>e</sub> i↔o) S |
|                                                                                                                 | <ul style="list-style-type: none"> <li>• Metal stud wall, gypsum plasterboard DF</li> <li>• d ≥ 100 mm</li> <li>• With or without mineral wool</li> </ul>                                                                                                                     | in the wall           | Dry mortarless installation | EI 90 (v <sub>e</sub> i↔o) S |
|                                                                                                                 | <b>Fire wall</b> <ul style="list-style-type: none"> <li>• Metal stud wall with sheet steel</li> <li>• d ≥ 115 mm</li> <li>• Minimum 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 |
|                                                                                                                 | <b>Fire wall</b> <ul style="list-style-type: none"> <li>• Metal stud wall with sheet steel</li> <li>• d ≥ 115 mm</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 stud wall, gypsum plasterboard DF</li> <li>• d ≥ 75 mm</li> <li>• With or without mineral wool</li> <li>• Wall thickness increased to d ≥ 100 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>• Metal stud wall, gypsum plasterboard DF</li> <li>• d ≥ 75 mm</li> <li>• With or without mineral wool</li> <li>• Wall thickness increased to d ≥ 100 mm</li> </ul>                                                                    | in the wall           | Dry mortarless installation | EI 30 (v <sub>e</sub> 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           | Class of performance (EI TT)  |
| <br>Lightweight partition wall | <b>Flexible ceiling joint</b> <ul style="list-style-type: none"><li>• Metal stud wall, gypsum plasterboard DF</li><li>• d ≥ 100 mm</li><li>• With or without mineral wool</li><li>• Minimum distance to load-bearing structural elements ≥ 50 mm</li></ul> | in the wall           | Dry mortarless installation | EI 90 (v <sub>e</sub> i↔o) S  |
| <br>Shaft wall                 | <ul style="list-style-type: none"><li>• With metal support structure, cladding on one side</li><li>• d ≥ 90 mm</li><li>• 2 x 20 mm gypsum plasterboard DF</li></ul>                                                                                        | in the wall           | Mortar-based installation   | EI 90 (v <sub>e</sub> i↔o) S  |
|                                                                                                                 | <ul style="list-style-type: none"><li>• With metal support structure, cladding on one side</li><li>• d ≥ 90 mm</li><li>• 2 x 20 mm gypsum plasterboard DF</li></ul>                                                                                        | in the wall           | Dry mortarless installation | EI 90 (v <sub>e</sub> i↔o) S  |
| <br>Solid ceiling slab       | <ul style="list-style-type: none"><li>• d ≥ 150 mm</li><li>• ρ ≥ 600 kg/m³</li><li>• Distance between casings ≥ 45 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 ≥ 150 mm</li><li>• ρ ≥ 600 kg/m³</li></ul>                                                                                                                                                                       | in the ceiling        | Dry mortarless installation | EI 90 (h <sub>o</sub> i↔o) S  |
|                                                                                                                 | <ul style="list-style-type: none"><li>• d ≥ 150 mm</li><li>• ρ ≥ 600 kg/m³</li></ul>                                                                                                                                                                       | in the ceiling        | Fire batt                   | EI 90 (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 1366-2:1999                  | Pass        |
| <b>Operational reliability</b> <ul style="list-style-type: none"> <li>Open and closing cycle, 50 cycles</li> </ul>                                                                                  | EN 15650:2010<br>EN 1366-2:1999 | 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</li> <li>– B(L)F-T-(ST)-TR</li> </ul>                      | EN 15650:2010                   | Pass        |
| <b>Protection against corrosion</b>                                                                                                                                                                 | EN 15650:2010                   | Pass        |
| <b>Damper blade leakage</b>                                                                                                                                                                         | EN 1751:1999                    | Class 3     |
| <b>Damper casing leakage</b>                                                                                                                                                                        | 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.

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 November 2014

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