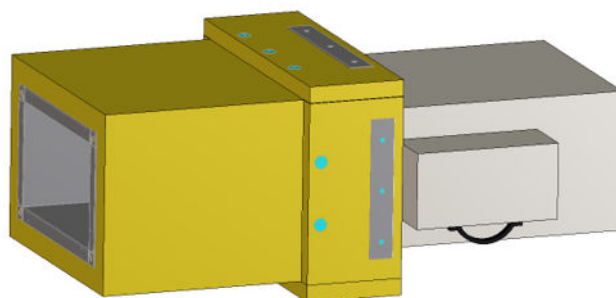




# Connecting Frame

## EK2-EU – FF

for smoke control damper EK2-EU  
Promaseal-LW gasket (by others)  
to the face of the connecting frame



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Original document

A00000085701, 2, GB/en

03/2023

Valid from 03/2023

## General information

### About this manual

This operating and installation manual enables operating or service personnel to correctly install the TROX product described below and to use it safely and efficiently.

This operating and installation manual is intended for use by fitting and installation companies, in-house technicians, technical staff, instructed persons, and qualified electricians or air conditioning technicians.

It is essential that these individuals read and fully understand this manual before starting any work. The basic prerequisite for safe working is to comply with the safety notes and all instructions in this manual.

The local regulations for health and safety at work and general safety regulations also apply.

This manual must be given to the system owner when handing over the system. The system owner must include the manual with the system documentation. The manual must be kept in a place that is accessible at all times.

Illustrations in this manual are mainly for information and may differ from the actual design.

### Copyright

This document, including all illustrations, is protected by copyright and pertains only to the corresponding product.

Any use without our consent may be an infringement of copyright, and the violator will be held liable for any damage.

This applies in particular to:

- Publishing content
- Copying content
- Translating content
- Microcopying content
- Saving content to electronic systems and editing it

### TROX Technical Service

To ensure that your request is processed as quickly as possible, please keep the following information ready:

- Product name
- TROX order number
- Delivery date
- Brief description of the fault

Online	<a href="http://www.troxtechnik.com">www.troxtechnik.com</a>
Phone	+49 2845 202-400

### Limitation of liability

The information in this manual has been compiled with reference to the applicable standards and guidelines, the state of the art, and our expertise and experience of many years.

The manufacturer does not accept any liability for damages resulting from:

- Non-compliance with this manual
- Incorrect use
- Operation or handling by untrained individuals
- Unauthorised modifications
- Technical changes
- Use of non-approved replacement parts

The actual scope of delivery may differ from the information in this manual for bespoke constructions, additional order options or as a result of recent technical changes.

The obligations agreed in the order, the general terms and conditions, the manufacturer's terms of delivery, and the legal regulations in effect at the time the contract is signed shall apply.

We reserve the right to make technical changes.

### Warranty claims

The provisions of the respective delivery terms apply to warranty claims. For purchase orders placed with TROX GmbH, these are the regulations in section "VI. Warranty claims" of the Delivery and Payment Terms of TROX GmbH, see [www.trox.de/en/](http://www.trox.de/en/).

## Safety notes

Symbols are used in this manual to alert readers to areas of potential hazard. Signal words express the degree of the hazard.

Comply with all safety instructions and proceed carefully to avoid accidents, injuries and damage to property.

### **DANGER!**

Imminently hazardous situation which, if not avoided, will result in death or serious injury.

### **WARNING!**

Potentially hazardous situation which, if not avoided, may result in death or serious injury.

### **CAUTION!**

Potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

### **NOTICE!**

Potentially hazardous situation which, if not avoided, may result in property damage.

### **ENVIRONMENT!**

Environmental pollution hazard.

## Tips and recommendations



*Useful tips and recommendations as well as information for efficient and fault-free operation.*

## Safety notes as part of instructions

Safety notes may refer to individual instructions. In this case, safety notes will be included in the instructions and hence facilitate following the instructions. The above listed signal words will be used.

Example:

1. ▶ Loosen the screw.

2. ▶

### **CAUTION!**


**Danger of finger entrapment when closing the lid.**

Be careful when closing the lid.

3. ▶ Tighten the screw.

## Specific safety notes

The following symbols are used in safety notes to alert you to specific hazards:

Warning signs	Type of danger
	Warning – danger zone.

<b>1</b>	<b>Safety</b> .....	<b>6</b>
	1.1 General safety notes .....	6
	1.2 Qualified staff .....	6
<b>2</b>	<b>Classification</b> .....	<b>7</b>
<b>3</b>	<b>Installation</b> .....	<b>10</b>

## 1 Safety

### 1.1 General safety notes

#### Sharp edges, sharp corners and thin sheet metal parts

 **CAUTION!****Danger of injury from sharp edges, sharp corners and thin sheet metal parts!**

Sharp edges, sharp corners and thin sheet metal parts may cause cuts or grazes.

- Be careful when carrying out any work.
- Wear protective gloves, safety shoes and a hard hat.

### 1.2 Qualified staff

 **WARNING!****Danger of injury due to insufficiently qualified individuals!**

Incorrect use may cause considerable injury or damage to property.

- Only specialist personnel must carry out work.

**Specialist personnel**

Specialist personnel are individuals who have sufficient professional or technical training, knowledge and actual experience to enable them to carry out their assigned duties, understand any potential hazards related to the work under consideration, and recognise and avoid any risks involved.

## 2 Classification

This guide covers the tested solution for TROX type EK2-EU dampers, installed in combination with FF connecting frames and metal, multi-compartment smoke control ducts insulated with Rockwool Fire Duct Slab insulation ( $\geq 167\text{kg/m}^3$ ).

When insulated in accordance with this guide, the classification of TROX type EK2-EU can be assured against the Declaration of Performance (DoP) and is supported by independent testing by our Notified Body.

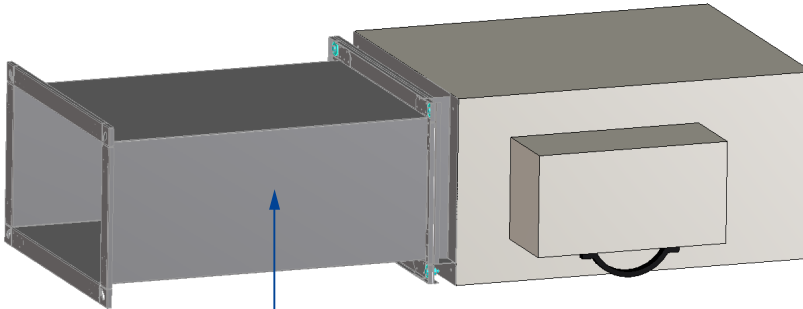
**The following guide supports classifications upto EI 120 (ved, i↔o) S 1500 Cmod HOT400/30 MA multi**



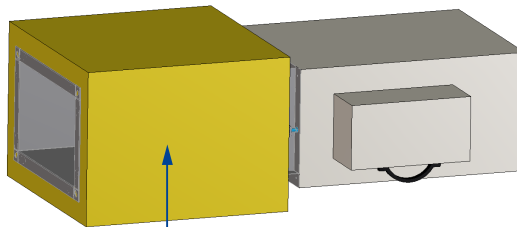
**Please Note**

*INSTALLATION DETAILS ARE SUBJECT TO CHANGE Before commencing any works, check with TROX that you have the latest version of this guide.*

## Ventilation & smoke extract fire duct system



## FIRE DUCT SLAB



**Technical database**  
FIREPRO® FIRE DUCT SYSTEMS  
Version 2.00, June 2022

**FIREPRO® FIRE DUCT SYSTEMS**

Single-layer fire protection for rectangular, circular and oval ducts.

**Fire Duct Systems**

- Three products are available in the Fire Duct Systems range:
  - Fire Duct Slab – for rectangular ducts
  - Fire Duct Section – for circular ducts between 60mm and 356mm diameter
  - Fire Duct PSM – for circular ducts between 60mm and 1200mm diameter
- All three Fire Duct products are applied faced on one side with reinforced aluminium foil.
- Fire Duct Slab is a high density insulation slab faced with reinforced aluminium foil.
- Fire Duct Section is a high density pre-formed pipe section faced with reinforced aluminium foil.
- Fire Duct PSM is a high density slab with factory machined grooves to facilitate installation around a circular duct, faced with reinforced aluminium foil.
- Tested to BS 476-24
- 1%, 1, 1% and 2 hour fire protection for stability, integrity and insulation
- Choice of fixing options

For more information visit [rockwool.com/uk](http://rockwool.com/uk)

**FIREPRO® FIRE DUCT SYSTEMS**

**PERFORMANCE**

Fire

**Fire Duct Slab & Fire Duct PSM**

Non-combustibility: Euroclass A1 to BS EN 13501-1

**Fire Duct Section**

Non-combustibility: Euroclass A2, -1, D0 to BS EN 13501-1

**Fire Duct System test data**

The Fire Duct products have been tested in accordance with BS 476 – 24, ‘Fire tests on building materials and structures – Methods for determination of the fire resistance of ventilation ducts’.

Fire Duct products can be used to provide fire protection to horizontal, vertical, rectangular, circular, ventilation and smoke extract steel ductwork fully in accordance with BS 476 – 24, ducts ‘Type A’ and ‘Type B’, ‘Fire outside duct’ and ‘Fire inside duct’.

The 1%, 1, 1%, and 2 hour periods of fire resistance stated in this manual are for stability, integrity and insulation in equal measure. For example, the 60 minutes duct constructions shown are certified for 60 minutes stability, 60 minutes integrity and 60 minutes insulation.

**STANDARDS & APPROVAL**

**Certificate**

Fire Duct Systems are third party approved by the Loss Prevention Council Certification board (LPCB) for performance and quality and are listed in the ‘Red Book’ – certificate no. 022f. Certificates can be accessed online at [rockwool.com/uk](http://rockwool.com/uk) or [redbooklive.com](http://redbooklive.com)

This product has been authorised for use in LUL surface and sub-surface premises when installed in accordance with this datasheet – please refer to the LUL Approved Product Register website [www.LU-apr.co.uk](http://www.LU-apr.co.uk) for specific details.

Duct type	Fire resistance (minutes)	Required insulation thickness (mm)		Drop rod protection thickness (mm)		Max duct size (mm)	
		Vertical duct	Horizontal duct	Fire duct section*	Fire duct slab	Vertical duct	Horizontal duct
HVAC and smoke outlet	30	25	25	17x30	30	1000x1000	1000x1000
	60	30	40	17x40	40	1000x1500	1500x1500
	90	50	70	17x50	50	1500x1000	1200x1200
	120	70	90	17x60	60	1500x1500	1000x1000

\*OD x wall thickness



Connecting frame



Institut für Brandschutztechnik  
und Sicherheitsforschung

TROX GmbH  
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47506 Neukirchen-Vluyn  
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Firmenbuchnummer 89116d  
Landesgericht Linz / UID-Nr. ATU23289705

19.12.2022  
Robert Brenner / Elsa  
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Smoke control damper EK2-EU and EK-JZ  
Evaluation of connection to sheet steel ducts

Dear Mr. Markwaldt,

With regard to the connection of the smoke dampers EK2-EU (from certificate no. 1322-CPR-7 4135/14) and EK-JZ (from certificate no. 1322-CPR-7 4135/10) to sheet steel ducts, two supplementary tests were carried out in 2022 at the IBS test centre (test report no. 322031702-1 and 322052404-1).

Based on the test results, a connection to sheet steel ducts, as described in the attached supplements to the existing installation instructions (transmitted by e-mail on 29.11.2022), can be made with immediate effect on the basis of the currently valid regulations.

The additions will be included in the next revision of the relevant classification reports (EK2-EU: 320112502-A of 15.12.2020 and EK-JZ: 317011008-A Rev4 of 22.11.2022).



Institut für Brandschutztechnik  
und Sicherheitsforschung

Should the assessment criteria change due to normative innovations or new testrelevant findings arise, we reserve the right to adapt the scope of application accordingly.

Kind regards

IBS - Institut für Brandschutztechnik und  
Sicherheitsforschung Gesellschaft m.b.H.  
Akkreditierte Prüf-, Inspektions- und  
Zertifizierungsstelle

	<b>Überschicker</b>	Exp. Mag. Robert Brenner
	<b>DatenZentrum</b>	1002-10-10015-41-31-61-00
	<b>Prüfnummer</b>	1322031702-1 und 322052404-1

	<b>Überschicker</b>	Ing. Konrad Mayr
	<b>DatenZentrum</b>	1002-10-10015-41-31-61-00
	<b>Prüfnummer</b>	1322031702-1 und 322052404-1

Ing. Mag. Robert BRENNER  
Technischer Leiter  
der Zertifizierungsstelle

Ing. Konrad Mayr  
Zeichnungsberechtigter

Attachments:

- EK2-EU - FF\_Kf\_Connecting Frame - Existing Installation - Metal Duct Insulation (v2.01)
- EK2-EU - FF\_LW\_Connecting Frame - New Metal Duct Insulation (v1.04)
- EK-JZ - FF\_Kf\_Connecting Frame - Existing Installation - Metal Duct Insulation (v2.02)
- EK-JZ - FF\_LW\_Connecting Frame - New Metal Duct Insulation (v1.06)



egwif austriac ab cr

00 Landesbank AG (Hypo Oberösterreich)  
IBAN AT46 5400 0000 0021 2944 / BIC OBLAAT2L  
Oberbank AG  
IBAN AT37 1500 0006 2100 6055 / BIC OBKLAT2L

Seite 2 von 2

## 3 Installation

### Personnel:

- Specialist personnel

For clarity on the following instructions, the breadth (width) 'B' is the nominal damper size parallel to the blade and the height 'H' is the nominal damper size perpendicular to the blade.

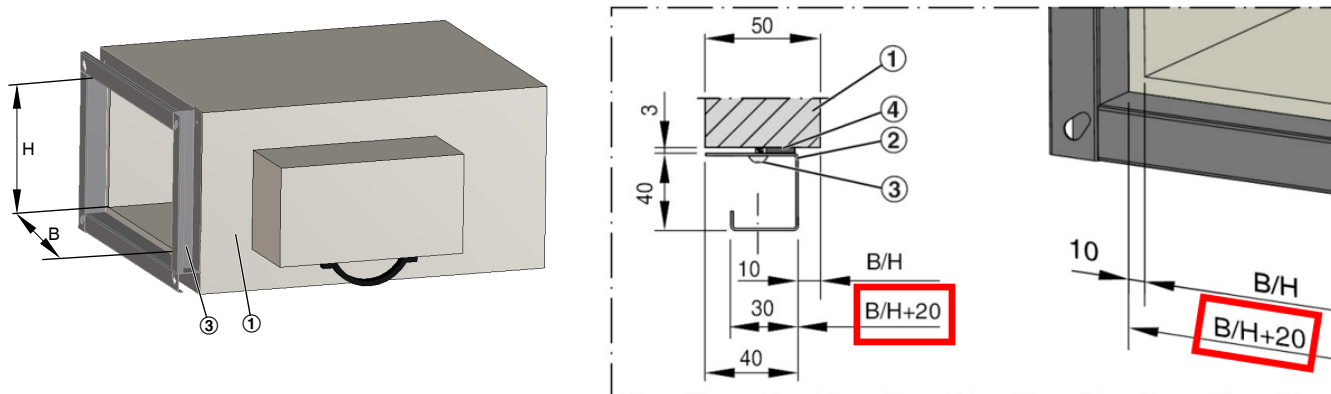


Fig. 2: EK2-EU with connecting frame

### Preparing the damper connecting frame

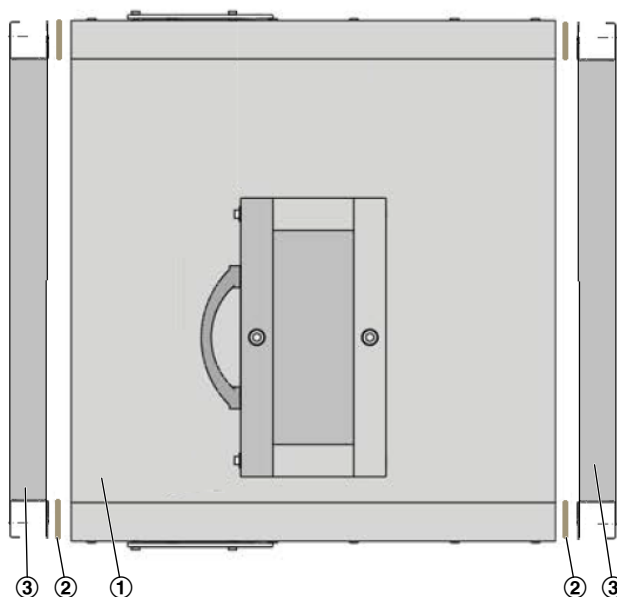


Fig. 3: EK2-EU frame mount

- If EK2-EU damper ( Fig. 3 /1) is delivered with loose connecting frame ( Fig. 3 /2), this should be installed to the damper using the screws provided according to TROX IOM. If the gasket ( Fig. 3 /3) is supplied loose, this must be applied to the face of the connecting frame before installation to the damper.

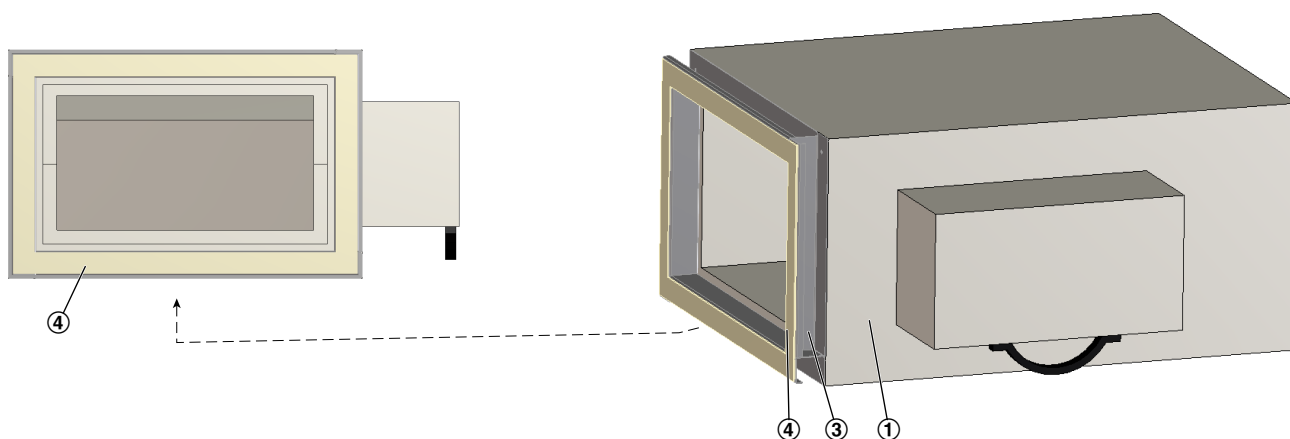


Fig. 4: EK2-EU Attach gasket

2. ▶ Attach 15 mm x 1,8 mm Promaseal-LW gasket ( Fig. 4 /4, by others) to the face of the connecting frame ( Fig. 4 /3).

#### Connect the ductwork to the TROX FF connecting frame

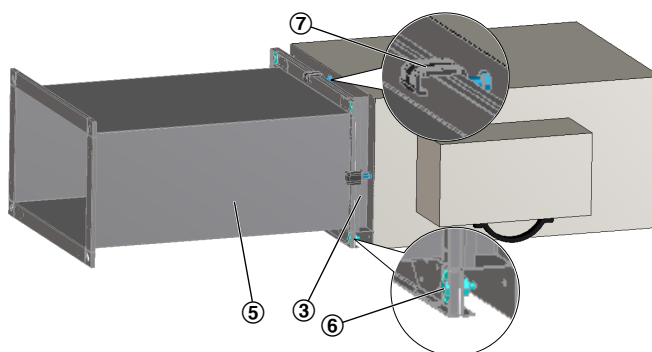


Fig. 5: Connect the duct

3. ▶ **Corners:** Attach the duct ( Fig. 5 /5) to the connecting frame ( Fig. 5 /3) with the use of M8 screws ( Fig. 5 /6), washers and nuts.

**Sides:** Attach the duct to the subframe with the use of duct clamps ( Fig. 5 /7) or alternatively drill and bolt together ( $\leq 150$  mm spacing)

#### Insulate the ductwork

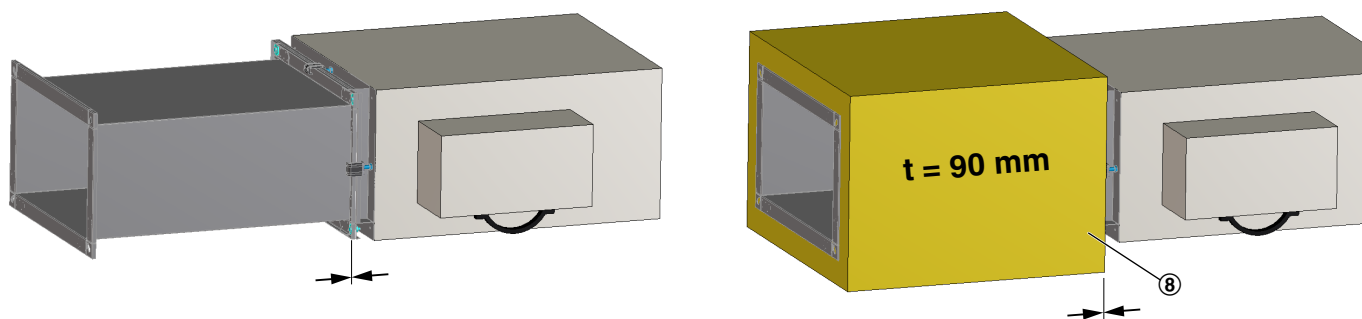


Fig. 6: Insulate the ductwork

4. ▶ Insulate the ductwork according with Fire Duct Slab ( Fig. 6 /8) to the manufacturers detail. Insulation should finish at the end of the ductwork (Arrow).

## Insulating the FF connecting frame

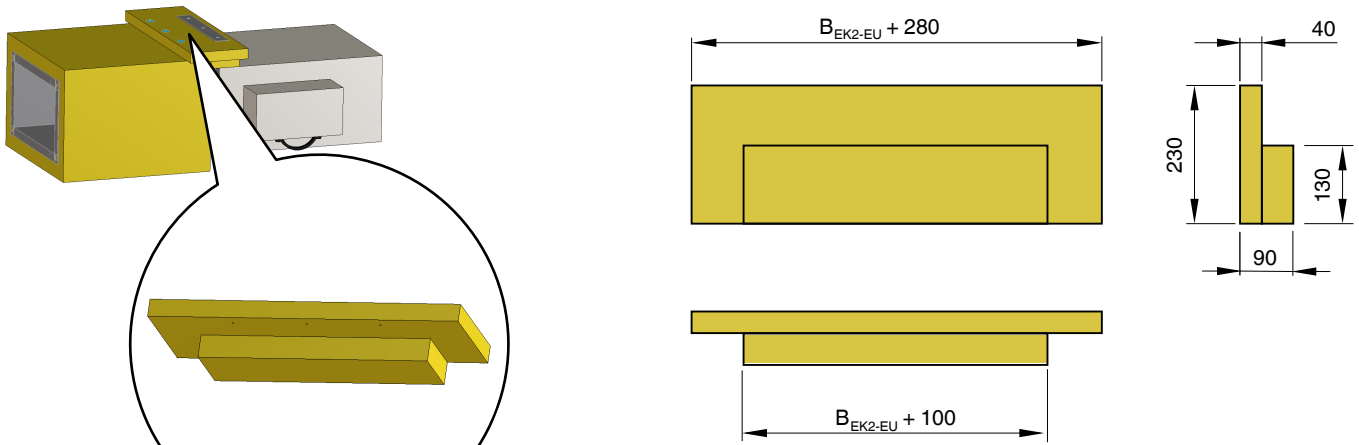


Fig. 7: Insulation block

5. ▶ Prepare 1x profiled insulation block using Rockwool Fire Duct Slab.

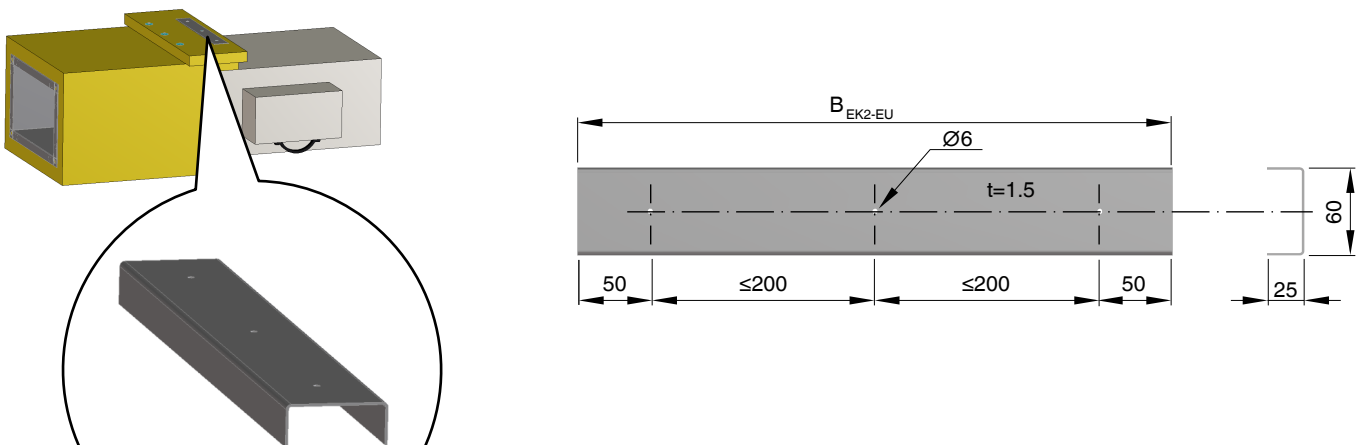


Fig. 8: U-Profile

6. ▶ Prepare 1x U-Profile (60mm x 25mm x 1.5mm)

**Note:** Alternative option to use plate washers (≥ 25mm dia.) in lieu of U-profile.

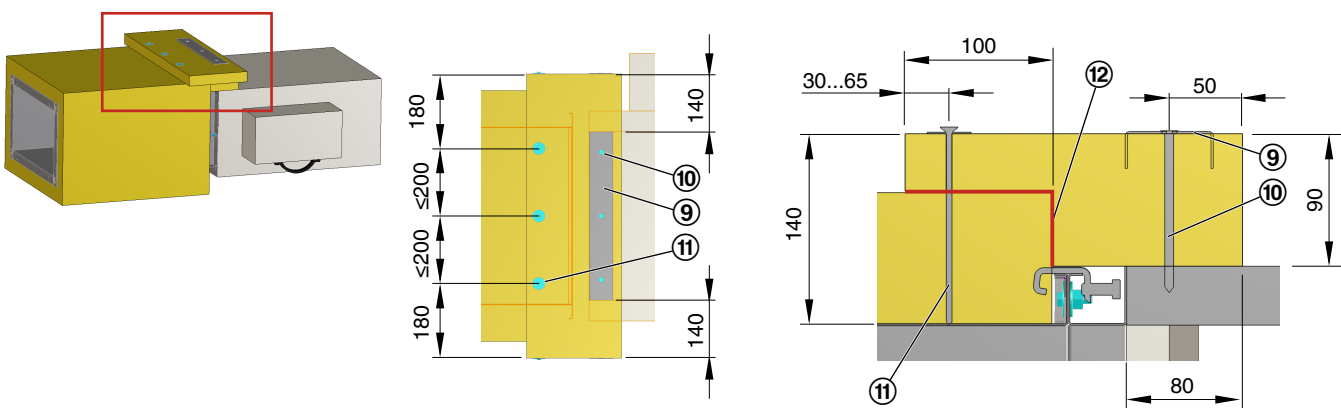


Fig. 9: Install insulation to the upper side of the damper

- 9 U-Profil  
10 5x120 chipboard screw

- 11 Welding pins  
12 Rockwool FIREPRO® Glue

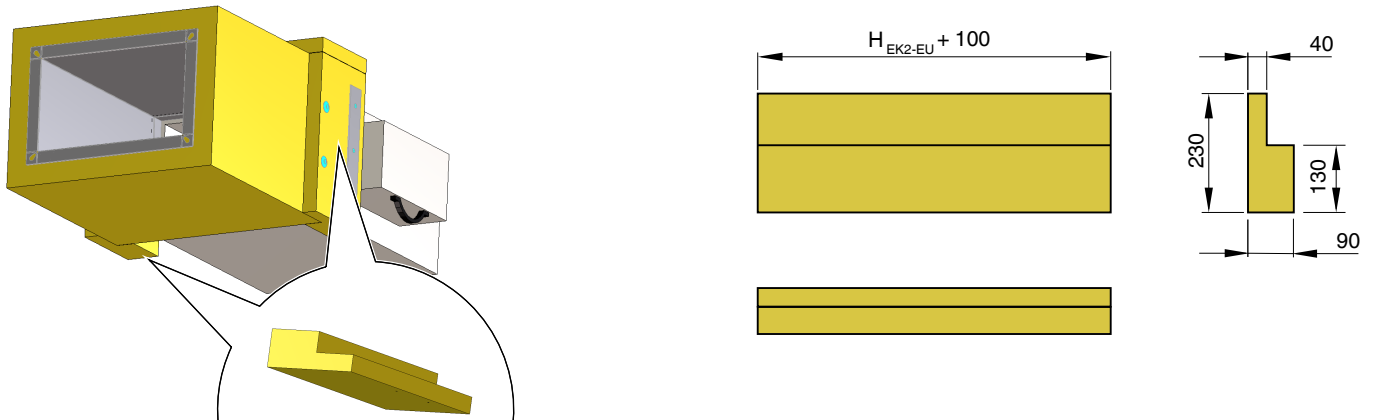


Fig. 10: Insulation block

8. ▶ Prepare 2x profiled insulation blocks using Rockwool Fire Duct Slab

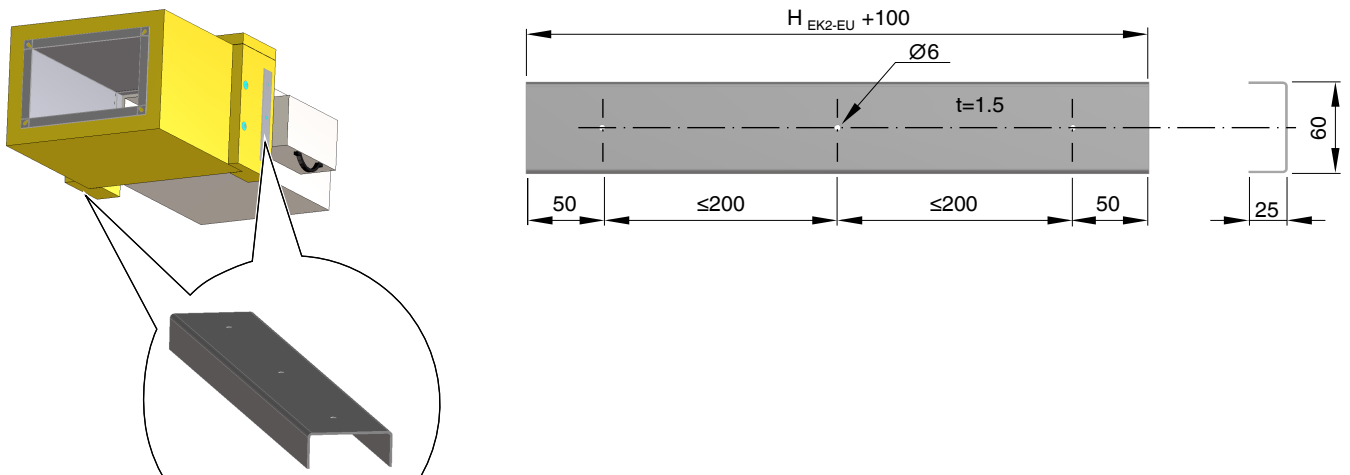


Fig. 11: U-Profile

9. ▶ Prepare 2x U-Profile (60mm x 25mm x 1.5mm)

**Note:** Alternative option to use plate washers (≥ 25mm dia.) in lieu of U-profile

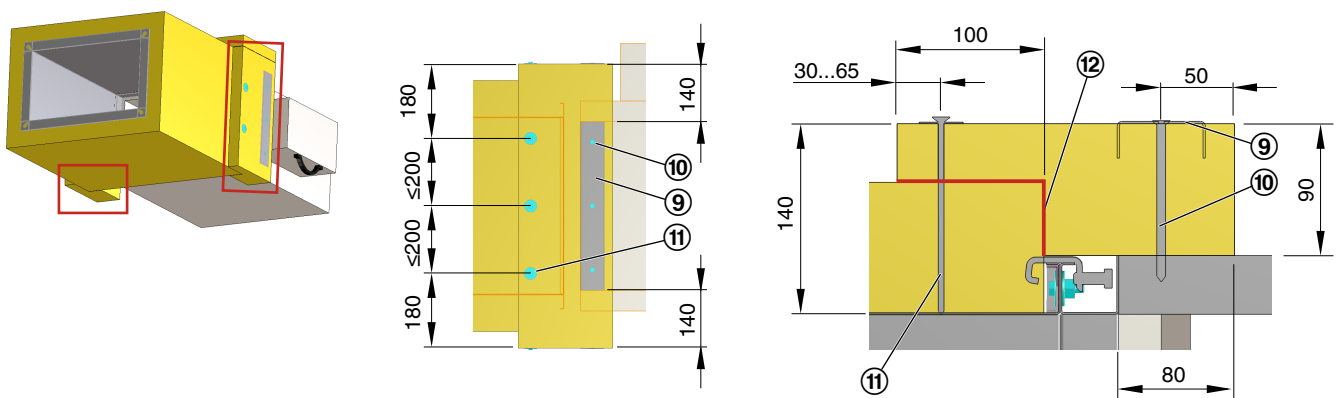


Fig. 12: Install insulation on both sides of the damper

- |    |                       |    |                        |
|----|-----------------------|----|------------------------|
| 9  | U-Profil              | 11 | Welding pins           |
| 10 | 5x120 chipboard screw | 12 | Rockwool FIREPRO® Glue |

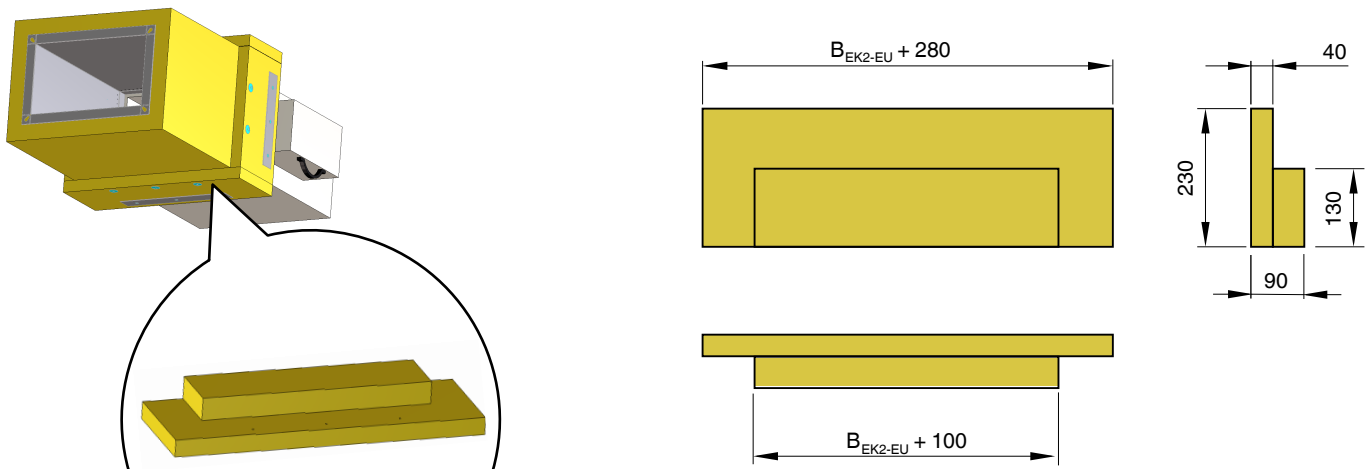


Fig. 13: Insulation block

11. ▶ A: Prepare 1x profiled insulation block using Rockwool Fire Duct Slab

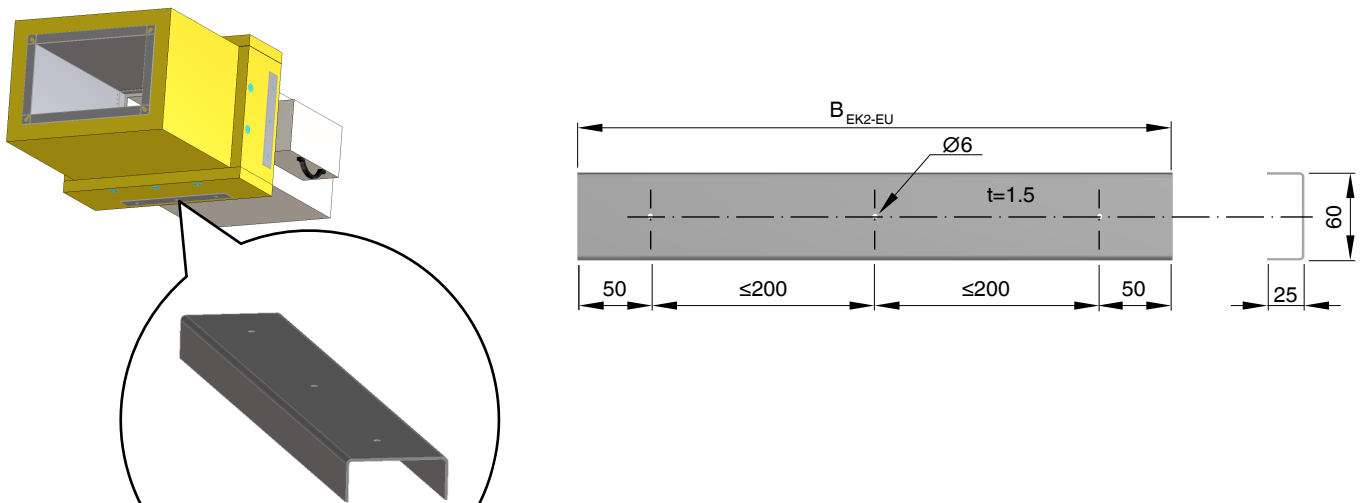


Fig. 14: U-Profile

12. ▶ Prepare 1x U-Profile (60mm x 25mm x 1.5mm)

**Note:** Alternative option to use plate washers (≥ 25mm dia.) in lieu of U-profile.

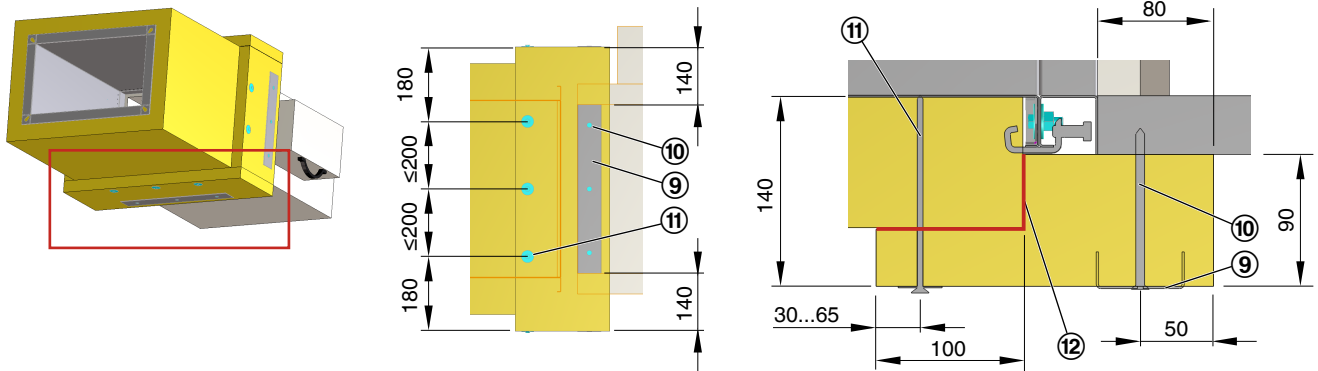


Fig. 15: Install insulation on the bottom side of the damper

- 9 U-Profil
- 10 5x120 chipboard screw

- 11 Welding pins
- 12 Rockwool FIREPRO® Glue

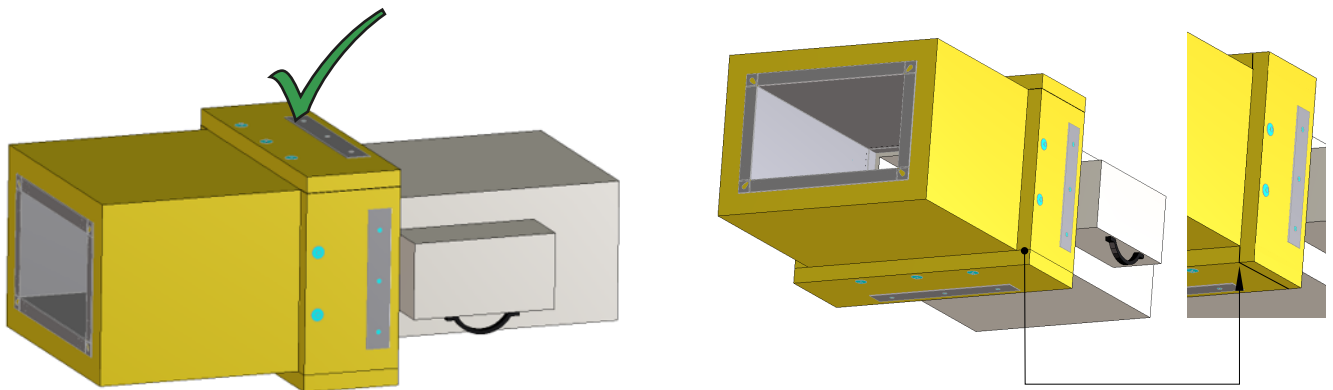


Fig. 16: Job completed

- 14.► Insulation process should be completed at both end of the damper to which metal ductwork is installed.

**Note:** Orientation of butt joint between additional insulation layers can be switched to allow sides to cover top / bottom panels.

# TROX<sup>®</sup> TECHNİK

The art of handling air

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