
Flexible connectors (compensators)



Flexible connectors

APPLICATION

Flexible connectors (expansion joints) are used in HVAC systems for

Isolating structure-borne noise

Absorbing expansion

Fire damper connections (for smoke extraction ducts as per DIN V 18232-6, see catalogue section 7.3 XDuct® smoke extraction duct, accessories, non-metallic expansion joints)

STANDARDS AND GUIDELINES

DIN EN 13501

Classification of construction products

DIN EN 4102

Fire behaviour of building materials and building components

DIN 75200

Determination of burning behaviour of interior materials

DIN 53359 A

Flex cracking test

VDI 6022

Hygiene requirements for ventilation and air-conditioning systems and units

Loba guideline (NRW regional mining inspectorate)

ATEX directive 94/9/EC

Design and testing principles of the DiBt (German Institute for Structural Engineering)

DESIGN DETAILS

Depending on the application, various types of coated types of fabric are used, either as prefabricated strips sandwiched in sheet steel, or without a sheet steel surround. The strips are cut to size and shaped to form rectangular or round cross sections and fitted with frames for the components to be connected. The joints of the flexible part are glued, sewn or welded depending on the type of backing material.

For the approved ATEX version, a special material with a fixed composition is used. The maximum circumference of a flexible duct connector is 6500 mm. For instructions on use, see the enclosed type examination certificate.

DECLARATION OF CONFORMITY

Flexible connectors of the type EK / P600S are certified according to VDI 6022

ILH reg. no.: HBMP / D / 0057 / 8BL / ...

Flexible connectors of the type EK / ATEX are type tested:

Reg. no.: IBExU 09ATEXB003 X



1



2



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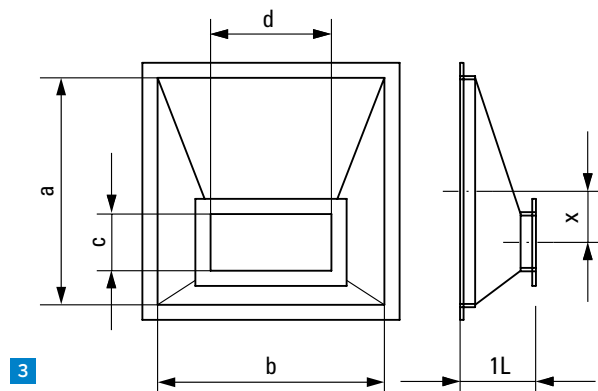
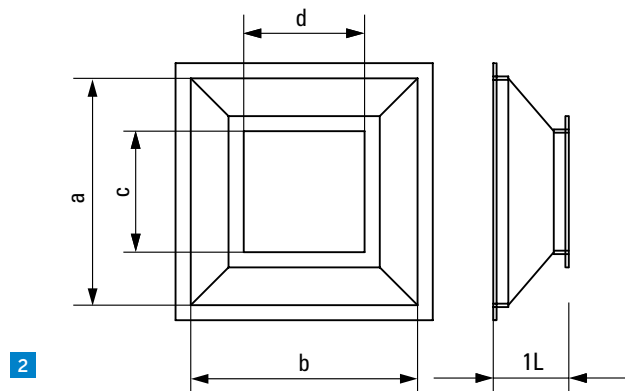
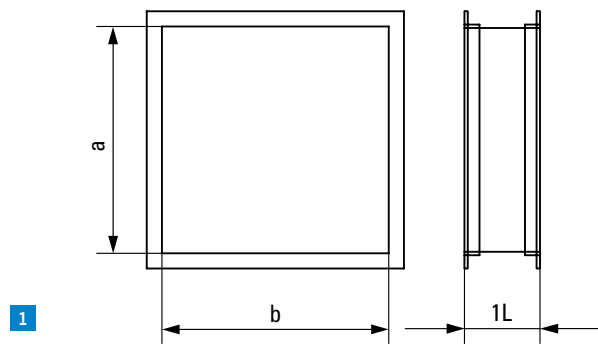
1 | PVC flexible duct connector

2 | Glass wool duct connector

3 | PVC flexible tube connector

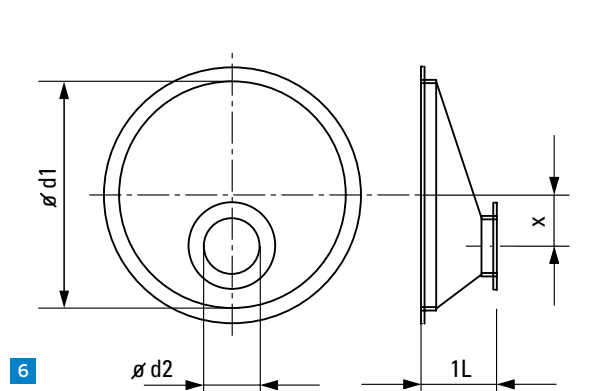
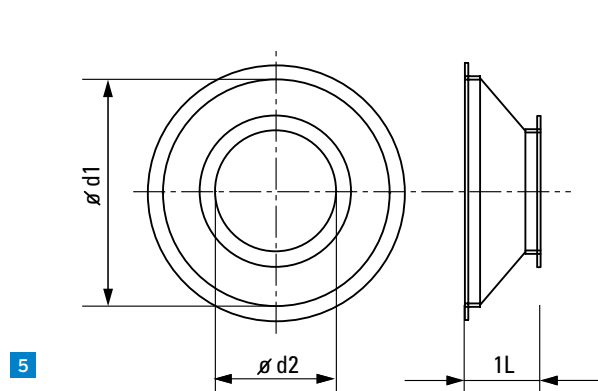
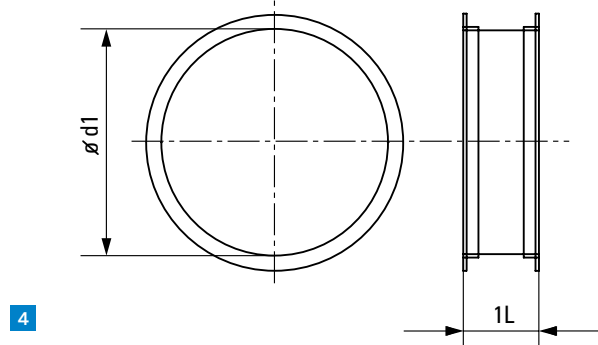
Designs

FLEXIBLE DUCT CONNECTORS



- 1 | EK Flexible duct connector
- 2 | EÜK-s Flexible symmetrical transition duct connector
- 3 | EÜK-as Flexible asymmetrical transition duct connector

FLEXIBLE TUBE CONNECTORS



- 4 | ER Flexible tube connector
- 5 | EÜR-s Flexible symmetrical transition tube connector
- 6 | EÜR-as Flexible asymmetrical transition tube connector

TYPES OF CONNECTING FRAME

| Flexible duct connectors with sheet steel surround | Flexible duct connectors without sheet steel surround | Flexible tube connectors with sheet steel surround | Flexible tube connectors without sheet steel surround |
|--|---|--|---|
| With duct profile 20 / 30 / 40 | With duct profile 20 / 30 / 40 | Sheet steel surround with flange for clamp ring | Only as sleeve with tape |
| With recessed straight frame | | With METU flange / clamp ring | |
| With recessed angle frame | | With recessed straight flange (DIN 24154) | |
| Corners sealed | | With recessed angle flange (DIN 24150) | |

MATERIALS

| Type | Backing material | Coating | Temperature | | Fire resistance |
|-------------------|------------------|--|-------------|---|---|
| | | | Min. | Max. | |
| PVC | Polyester | PVC | - 25° C | +70° C | <100 mm / min (DIN 75200) |
| P 600 S | Polyester | PVC | - 25° C | +70° C | Flame retardant as per DIN 4102 B1 / B2 |
| PVC-ATEX | Polyester | PVC | - 25° C | +70° C | Flame retardant as per DIN 4102 B1 / B2 |
| Glass / aluminium | Glass fabric | Aluminium / polyester foil on one side | - 40° C | +200° C (coating) +500° C (glass fabric) | Flame retardant as per DIN 4102 B1 / B2 |
| Neoprene | Polyester | Synthetic rubber | - 40° C | +100° C (+130° C briefly) | |

All materials are free of silicone.

PRESSURE RATINGS AND TIGHTNESS CLASSES

Flexible connectors can be used
up to pressure rating M (+2000 Pa/ -1000 Pa)
for tightness class C as per EN 1507

Special designs are available for higher requirements if specified in detail.

Designs

DIMENSIONS – COMPONENT LENGTHS

| Type | Sheet steel / flexible material / sheet steel | Straight length ¹ mm | Recommended fitted length mm | Remarks |
|-------------------|--|------------------------------------|----------------------------------|---|
| PVC | 45 / 60 / 45 35 / 100 / 35 45 / 120 / 45 | 150 170 210 | 110 -130 100 -150 130 -190 | Use on fire dampers ² |
| P 600 S | 45 / 60 / 45 45 / 120 / 45 | 150 210 | 110 -130 130 -190 | Tested as per VDI 6022 ⁴ |
| PVC-ATEX | 45 / 60 / 45 | 150 | 110 -130 | ATEX-approved ³ electrical surface resistance $< 1 \times 10^8 \text{ ohm}$ |
| Glass / aluminium | 35 / 100 / 35 45 / 120 / 45 | 170 210 | 100 -150 130 -190 | |
| Neoprene | 45 / 60 / 45 | 150 | 110 -130 | |

¹ Different straight lengths are produced without sheet steel surrounds on both sides

² According to the DiBt design and test guidelines, the flexible part must be at least 100 mm when used on fire dampers

³ ATEX approval no. IBExU09ATEXB003 X

⁴ ILH reg. no.: HBMP/D/0057/8 BL

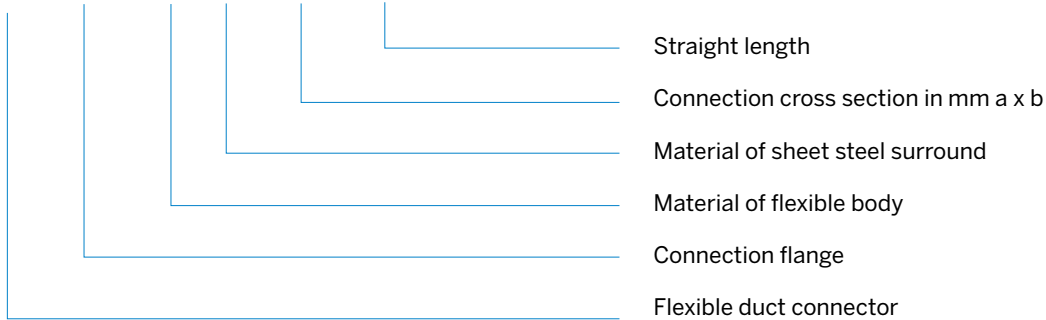
DIMENSIONS – CONNECTION CROSS SECTIONS

| | | |
|--|-------------------------|--|
| Type EK – Flexible duct connector | | Edge length A max. 1250 mm Edge length B max. 2000 mm |
| Type EÜK – Flexible transition duct connector | Symmetrical transition | Flexible material without sheet steel surround Max. step in edge length 200 mm Straight length min. 200 mm |
| | Asymmetrical transition | Flexible material without sheet steel surround Max. step in edge length 100 mm Max. offset 100 mm Straight length min. 200 mm |
| Type ER – Flexible tube connector | | DN 100 to DN 1250 Flanges R1 and R2 |
| Type EÜR – Flexible transition tube connector | Symmetrical transition | Max. step in diameter 130 mm Straight length min. 200 mm |
| | Asymmetrical transition | Max. step in diameter 100 mm Max. offset 100 mm Straight length min. 200 mm |

Type codes

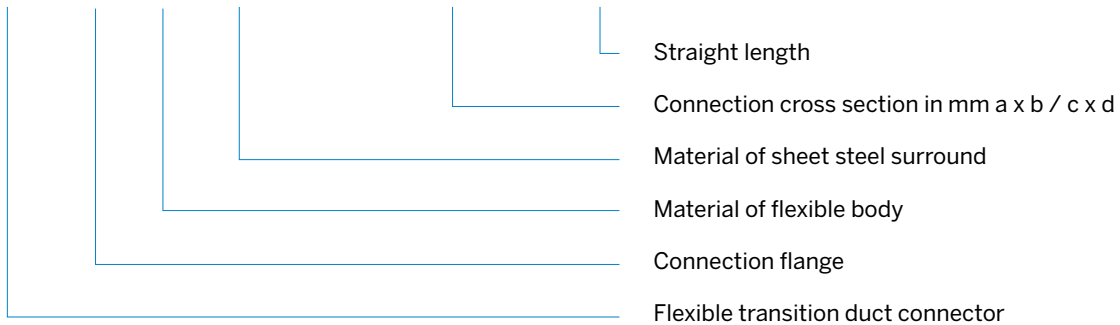
FLEXIBLE DUCT CONNECTOR (EK)

EK - P20/P20 - PVC - vz - 500x400 - 150



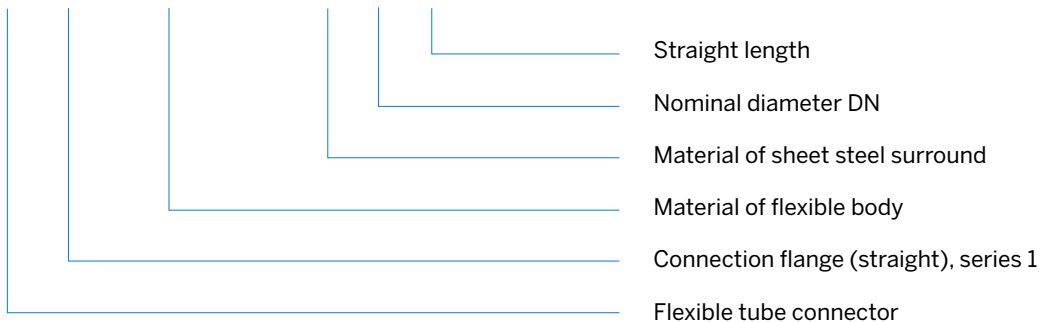
FLEXIBLE TRANSITION DUCT CONNECTOR (EÜK)

EÜK - P20/P30 - PVC - stainless steel - 1000 x1000 / 1120 x1120 - 200



FLEXIBLE TUBE CONNECTOR (ER)

ER - F1/F1 - glass / aluminium - vz - 400 - 170



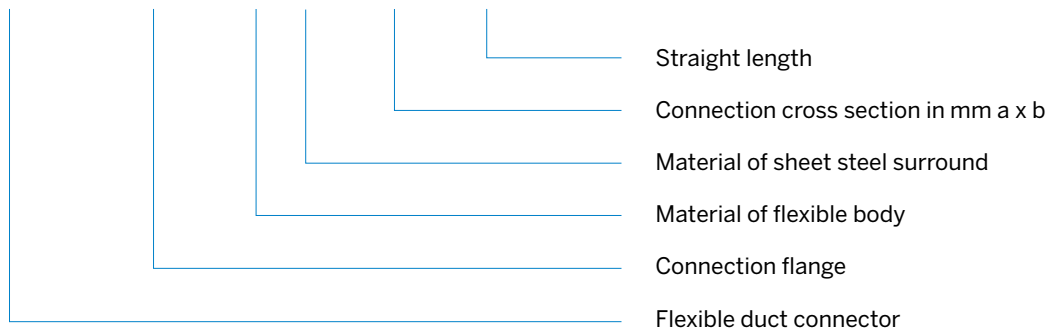
FLEXIBLE TRANSITION TUBE CONNECTOR (EÜR)

EÜR - W1/W1 - neoprene - stainless steel - 630 / 500 - 150



FLEXIBLE DUCT CONNECTOR WITH TYPE EXAMINATION CERTIFICATE (EK/ATEX)

EK / ATEX - P20 / P20 - PVC - vz - 500 x 400 - 150



Tender specification text

Flexible connector (expansion joint) for isolating structure-borne noise and absorbing expansion in HVAC systems, consisting of flexible material connected enclosed in sheet steel strips

Made of ...

Complete as appropriate:

PVC

P 600 S (with hygiene test certificate no.: ILH reg. no.: HBMP / D / 0057 / 8 BL ...)

PVC-ATEX (with ATEX test certificate no. IBExU09ATEXB003 X)

Glass / aluminium

Neoprene:

Type ...

Complete as appropriate:

Flexible duct connector (EK)

Flexible transition duct connector (EÜK)

Flexible tube connector (ER)

Flexible transition tube connector (EÜR)

Type-tested flexible duct connector (EK/ATEX)

Straight length ...

Complete as appropriate:

150

170

210

Connection frame ...

Complete as appropriate:

Duct profile 20 (30 ; 40)

Straight frame or flange

Angle frame or flange

Connection frame material ...

Complete as appropriate:

Galvanised steel

Stainless steel (1.4301)

Type code:

Flexible connectors (expansion joints)

Manufacturer:

BerlinerLuft. Technik GmbH