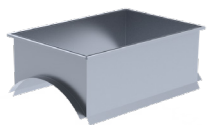



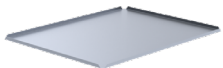



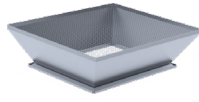

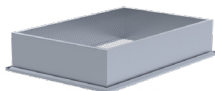
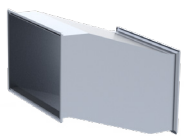
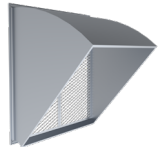
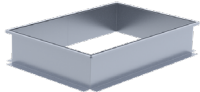
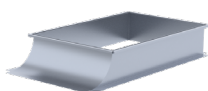




NORDrect
Rectangular ducting

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General

NORDrect - rectangular duct system's duct and part measurements are based on the standard EVS-EN 1505:2001 unless otherwise indicated.

Generally NORDrect system is used when round ducts are not suitable because of cramped spaces.

1. Duct connections

All ducts and parts have a joining Z-profile at the end. Components are joined with a sliding C-profile and two seal profiles (not included).

It is possible to order duct parts with europrofile connection (E20, E30).

2. Tightness

Different joinings give different tightness. According to standard EVS-EN 1507:2006 NORDrect duct system meets the following tightness class requirements:

- Z-profile, class C
- Europrofile (E20, E30), class D

This only applies on condition that the products are installed in accordance with the installation instructions.

3. Measurements and tolerances

Rectangular ducts and duct parts nominal dimensions are internal dimensions a and b (measured in millimetres), where a is the visible side. For a reducer, the smaller end's measurements are marked c and d, where c is the visible side. Standard dimensions for side lengths are given in the tabel.

Measures are given in millimetres, angles in degrees.

We use symbols:

- Side a, b, c, d
- Radius r
- Detail length L
- Part length of the detail l
- Angle k

| Measurements | | Tolerance, mm |
|--------------|--------------|---------------|
| a, b, c, d | | +0 -4 |
| l, r | ≤15 | +0 -2 |
| | > 15 ≤100 | +0 -5 |
| | >100 | +0 -10 |
| Angle k | | 2° |
| Length L | | 0,005L |

Standard sizes

| a \ b | 100 | 150 | 200 | 250 | 300 | 400 | 500 | 600 | 800 | 1000 | 1200 |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| 200 | | | | | | | | | | | |
| 250 | | | | | | | | | | | |
| 300 | | | | | | | | | | | |
| 400 | | | | | | | | | | | |
| 500 | | | | | | | | | | | |
| 600 | | | | | | | | | | | |
| 800 | | | | | | | | | | | |
| 1000 | | | | | | | | | | | |
| 1200 | | | | | | | | | | | |
| 1400 | | | | | | | | | | | |
| 1600 | | | | | | | | | | | |
| 1800 | | | | | | | | | | | |
| 2000 | | | | | | | | | | | |

4. Materials

Standard material for NORDrect ducts and parts is galvanized steel sheet coated with minimum thickness of zinc inside and out of 275 g/m² (material thickness 0,7-1,2 mm). Products can also be manufactured of zinc-magnesium coated and acid-proof steel.

Materials and standards:

- Galvanized steel (standard EVS-EN 10346:2015, DX51D+Z275)
- Zinc-magnesium coated steel (DX51D+ZM310), (standard EVS-EN 10346:2015)
- Acid-proof steel (standards EVS-EN 10088-2:2014, EN 1.4436 or AISI 316)

4.1 Material thickness

| Longer side length | Galvanized steel (s) | Zinc-magnesium coated steel (s) | Acid-proof steel (s) |
|--------------------|----------------------|---------------------------------|----------------------|
| a, b ≤ 800 | 0,7 mm | 0,7 mm | 0,7 mm |
| 800 < a, b ≤ 1400 | 0,9 mm | 0,9 mm | 1,0 mm |
| a, b > 1400 | 1,0 mm | 0,9 mm | 1,0 mm |

5. Product codes

Marking standard products, the type and dimensions of the product must be specified. All measurements are in millimetres.

5.1 Marking of materials

For standard material [Zn - galvanized steel (Z275)] no material code.

Other materials:

- H - acid-proof steel (AISI 316)
- ZM - zinc-magnesium coated steel (ZM 310)

Example: EKT-H 800x400/L=1250 Z/Z Rectangular duct

For standard products, when material thickness is different from point 4.1 the non-standard material thickness is marked with the letter "S" followed by material thickness

Example: EKT-S1.2 800x400/L=1250 Z/Z Rectangular duct

5.2 Duct connections

The duct connection method symbol is written on the marking after the dimensions.

| Marking symbol | Description |
|----------------|---------------------------------|
| - | without a duct connection |
| Z | Z-profile (standard connection) |
| Z+ | Z-profile unattached |
| E20/E30 | Europrofile |
| E20+/E30+ | Europrofile unattached |
| SKV mm | Rivet collar bent outside |
| SKS mm | Rivet collar bent inside |

Example:

EKP 800x400/800x400/90/r=125 Z/Z Rectangular bend - standard duct connection, both ends provided with a Z-profile (Z)

EKK 800x400/400x200-1/L=500 SKV25/Z Reducer for rectangular duct - one end rivet collar bent outside (SKV25), the other with Z-profile (Z)

EKT 800x400/L=1250 SKS25/Z+ Rectangular duct - one end rivet collar bent inside, the other (Z-profile) unattached

5.3 Insulated ducts

Ducts and parts can also be manufactured with insulation. Nominal size is the inner measurement. Flange profile is attached to the outer shell unless otherwise stated. Profile attached to inner core, is marked as LS.

Insulation codes:

S – thermal insulation 50 mm, 100 mm

M – sound insulation, 30 mm, 50 mm, 100 mm

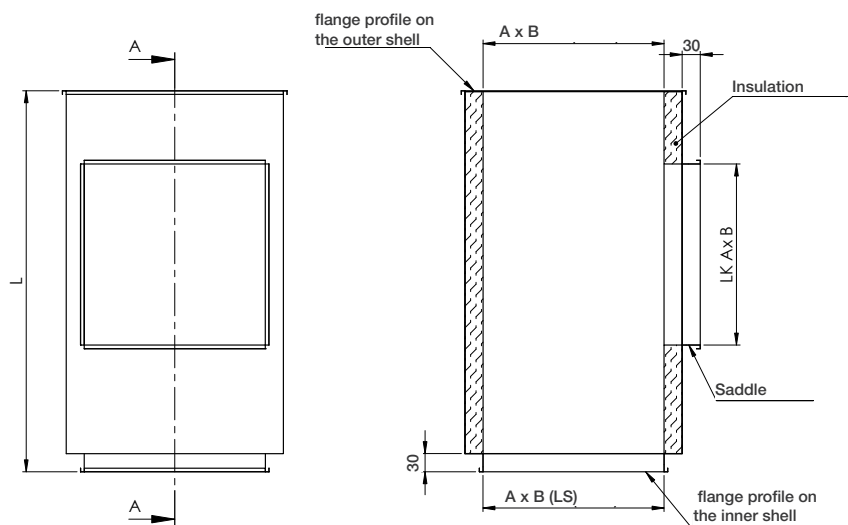
CL – sound insulation (wet cleanable) 30 mm, 50 mm, 100 mm

EI120 – fire insulation, 100 mm

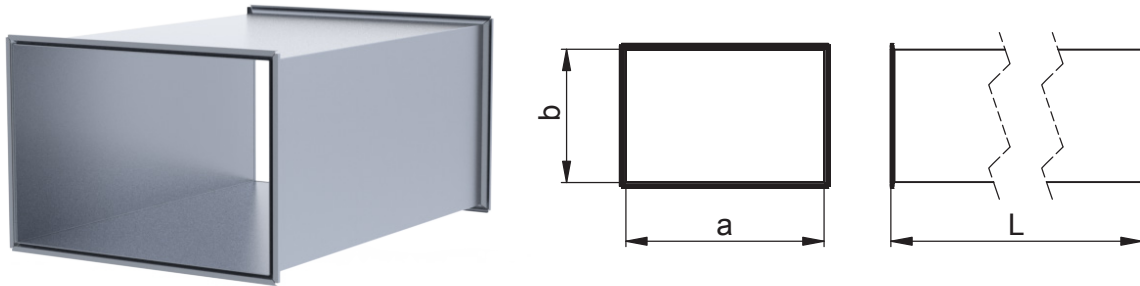
Used fire insulation meets the testing methods requirements according to EN1366-1 and is VTT certified. Fire insulation strengths in accordance with EN-13501-1.

The insulation code is marked at the end of the product marking.

Example: EKT 600x400/L=2000 Z/Z S50 Rectangular duct with 50 mm thermal insulation



EKT Duct



Rectangular duct, stiffened with transverse corrugations to reduce the risk of noise generation. Larger dimensions have stiffened with rods or U-profiles. Duct standard lengths are 1250 mm and 2000 mm, when a or b >1200, standard length L=1250. Duct is equipped with Z-profile.

Stiffening

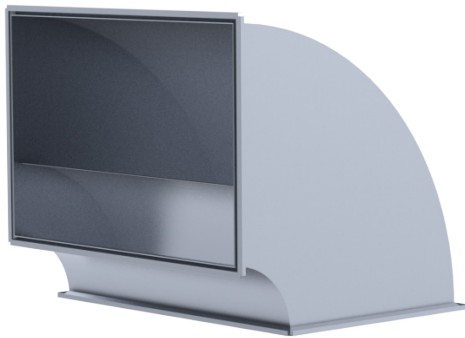
- a,b < 800 and L ≤ 2000 - without stiffening profiles
- 800 ≤ a,b < 1300 and 500 ≤ L ≤ 2000 - stiffened with rods
- a,b ≥ 1300 and 500 ≤ L ≤ 2000 - Reinforced with U-profile (25 x 80 x 1,2)

Product codes

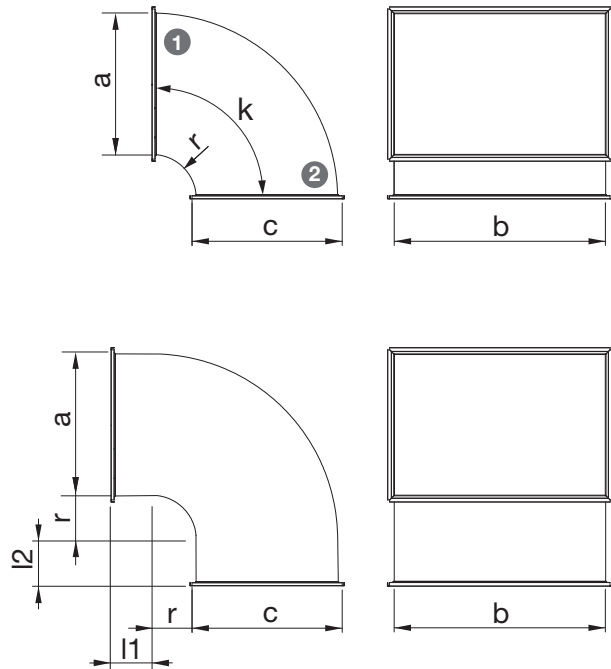
| | EKT | - | Material | - | A x B | - | L | - | Z | - | U |
|---------------------------|--|---|----------|---|-------|---|---|---|---|---|---|
| Product | | | | | | | | | | | |
| Material | | | | | | | | | | | |
| | Galvanized steel (DX51D+Z275), standard material ZM – Zinc-magnesium coated steel (DX51D+ZM310) H – Acidproof stainless steel AISI 316 | | | | | | | | | | |
| Dimensions A x B | | | | | | | | | | | |
| Length L | | | | | | | | | | | |
| Duct connection | | | | | | | | | | | |
| Reinforced with U-profile | | | | | | | | | | | |

Example: EKT-H 800x400/L=1250 Z/Z
 EKT-H 800x400/L=1250 Z/Z U

EKP Elbow



Elbow with rounded outer corner.
 Stiffened with a guide blade when side a > 400.
 When angle ≤ 45°, no guide blade.
 Standard radius is 125 mm.



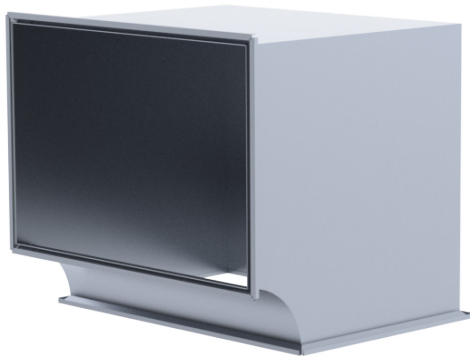
Product codes

EKP - Material - A x B - C x B - 90 - 125 - l1/l2 - Z

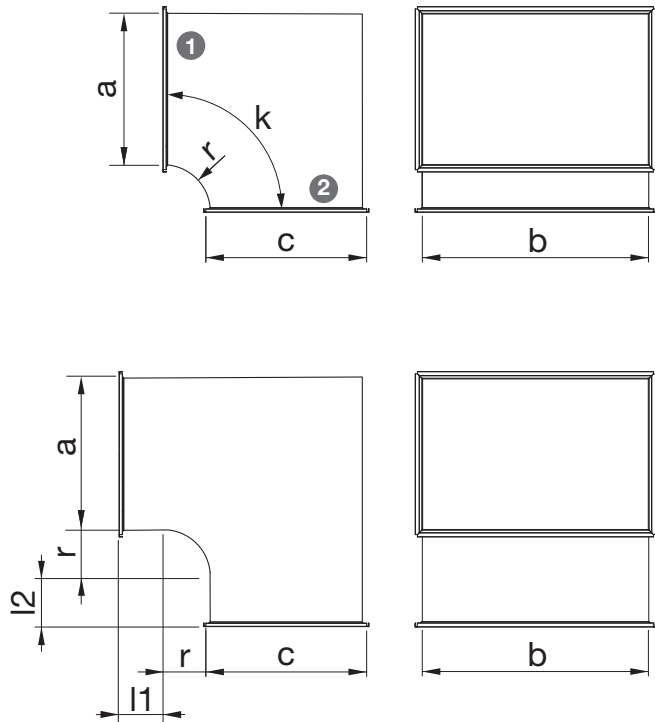
| | |
|--|-------|
| Product | _____ |
| Material | _____ |
| Galvanized steel (DX51D+Z275), standard material ZM – Zinc-magnesium coated steel (DX51D+ZM310) H – Acidproof stainless steel AISI 316 | |
| Dimensions A x B | _____ |
| Dimensions C x B | _____ |
| Angle k | _____ |
| Radius r | _____ |
| Extension l1/l2 (optional) | _____ |
| Duct connection | _____ |

Example: EKP-ZM 800x400/800x400/90/r=125/l1=1000/l2=250 Z/Z

EKPK Elbow



Elbow with sharp outer corner.
 Stiffened with a guide blade when side a > 400.
 When angle ≤ 45°, no guide blade.
 Standard radius is 125 mm.



Product codes

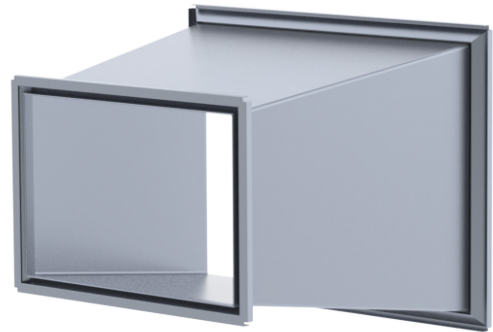
EKPK - Material - A x B - C x B - 90 - 125 - l1/l2 - Z

| | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|
| Product | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Material | _____ | | _____ | _____ | _____ | _____ | _____ |
| Galvanized steel (DX51D+Z275), standard material ZM – Zinc-magnesium coated steel (DX51D+ZM310) H – Acidproof stainless steel AISI 316 | | | | | | | |
| Dimensions A x B | _____ | | _____ | _____ | _____ | _____ | _____ |
| Dimensions C x B | _____ | | _____ | _____ | _____ | _____ | _____ |
| Angle k | _____ | | _____ | _____ | _____ | _____ | _____ |
| Radius r | _____ | | _____ | _____ | _____ | _____ | _____ |
| Extension l1/l2 (optional) | _____ | | _____ | _____ | _____ | _____ | _____ |
| Duct connection | _____ | | | | | | |

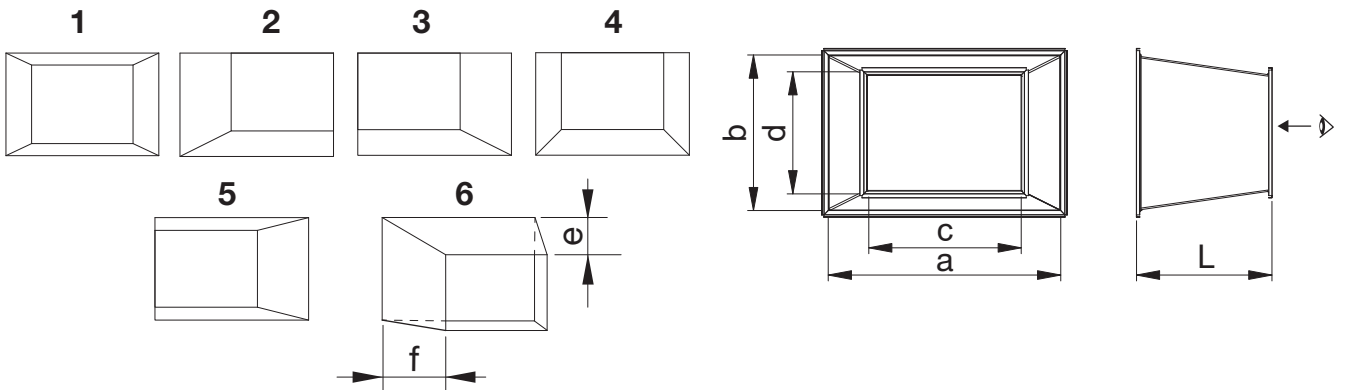
Example: EKPK-H 800x400/500x400/90/r=125 Z/Z

EKK Reducer

EKK educers are used to connect ducts with different sizes.
 When a and b < 800, then l = 300 mm
 When a or b ≥ 800, then l = 500 mm



Location



Product codes

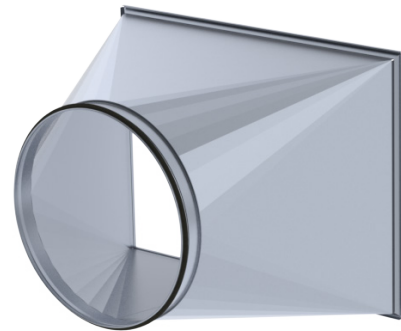
EKK - Material - A x B - C x D - 1 - L - Z

| | | | | | | |
|--|-------|-------|-------|-------|-------|-------|
| Product | _____ | _____ | _____ | _____ | _____ | _____ |
| Material | _____ | _____ | _____ | _____ | _____ | _____ |
| Galvanized steel (DX51D+Z275), standard material ZM – Zinc-magnesium coated steel (DX51D+ZM310) H – Acidproof stainless steel AISI 316 | | | | | | |
| Dimensions A x B | _____ | _____ | _____ | _____ | _____ | _____ |
| Dimensions C x D | _____ | _____ | _____ | _____ | _____ | _____ |
| Location | _____ | _____ | _____ | _____ | _____ | _____ |
| Lenght L | _____ | _____ | _____ | _____ | _____ | _____ |
| Duct connection | _____ | _____ | _____ | _____ | _____ | _____ |

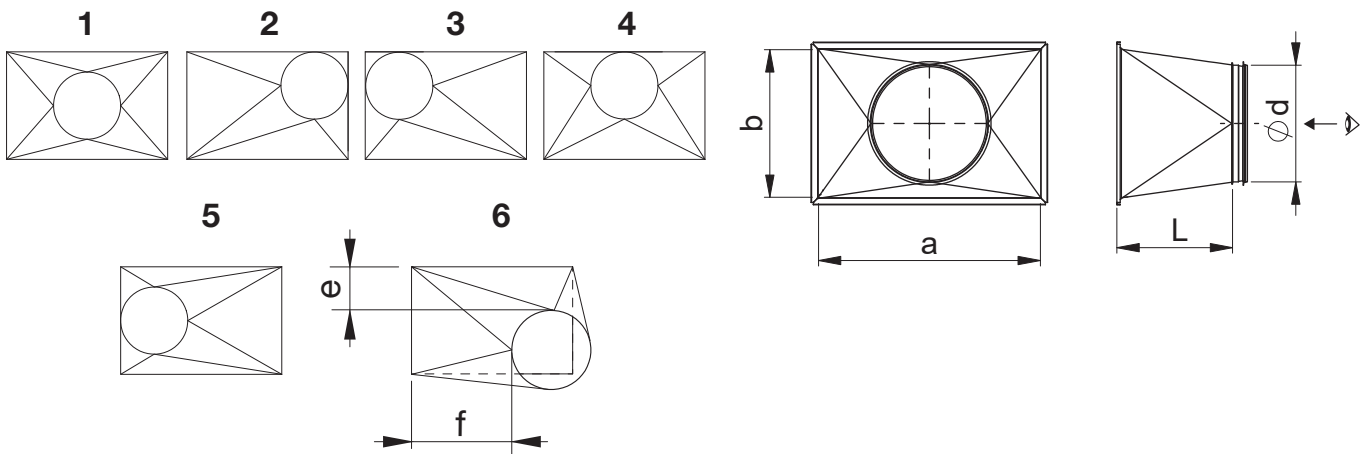
Example: EKK-ZM 800x400/400x200-1/L=500 Z/Z
 Marking location 6: EKK-ZM 800x400/400x200-6/E=200/F=100/L=500 Z/Z

EKD Reducer

EKD reducers are used to connect rectangular and round ducts.
 When a and b < 800, then l = 300 mm
 When a or b ≥ 800, then l = 500 mm



Location

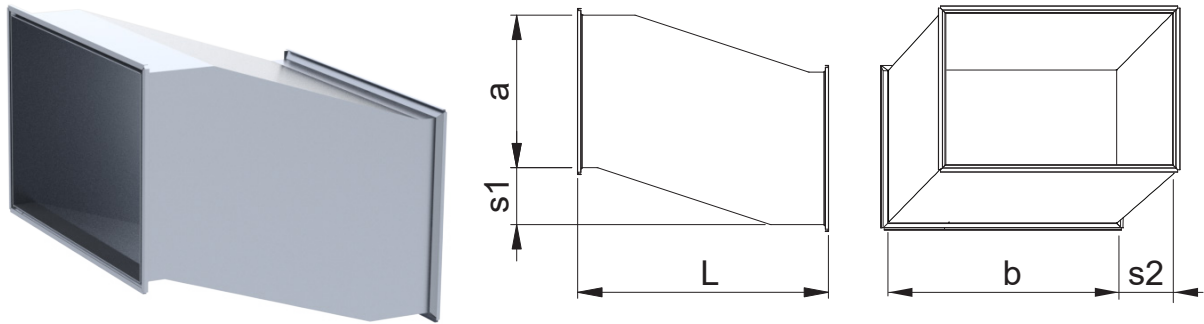


Product codes

| | EKD | - | Material | - | A x B | - | d | - | 1 | - | L | - | Z |
|------------------|--|---|----------|---|-------|---|---|---|---|---|---|---|---|
| Product | _____ | | | | | | | | | | | | |
| Material | _____ | | | | | | | | | | | | |
| | Galvanized steel (DX51D+Z275), standard material ZM – Zinc-magnesium coated steel (DX51D+ZM310) H – Acidproof stainless steel AISI 316 | | | | | | | | | | | | |
| Dimensions A x B | _____ | | | | | | | | | | | | |
| Diameter d | _____ | | | | | | | | | | | | |
| Location | _____ | | | | | | | | | | | | |
| Lenght L | _____ | | | | | | | | | | | | |
| Duct connection | _____ | | | | | | | | | | | | |

Example: EKD-H 800x400/315-1/L=500 Z
 Marking location 6: EKD-H 800x400/315-6/E=200/F=100/L=500 Z

EKN Offset

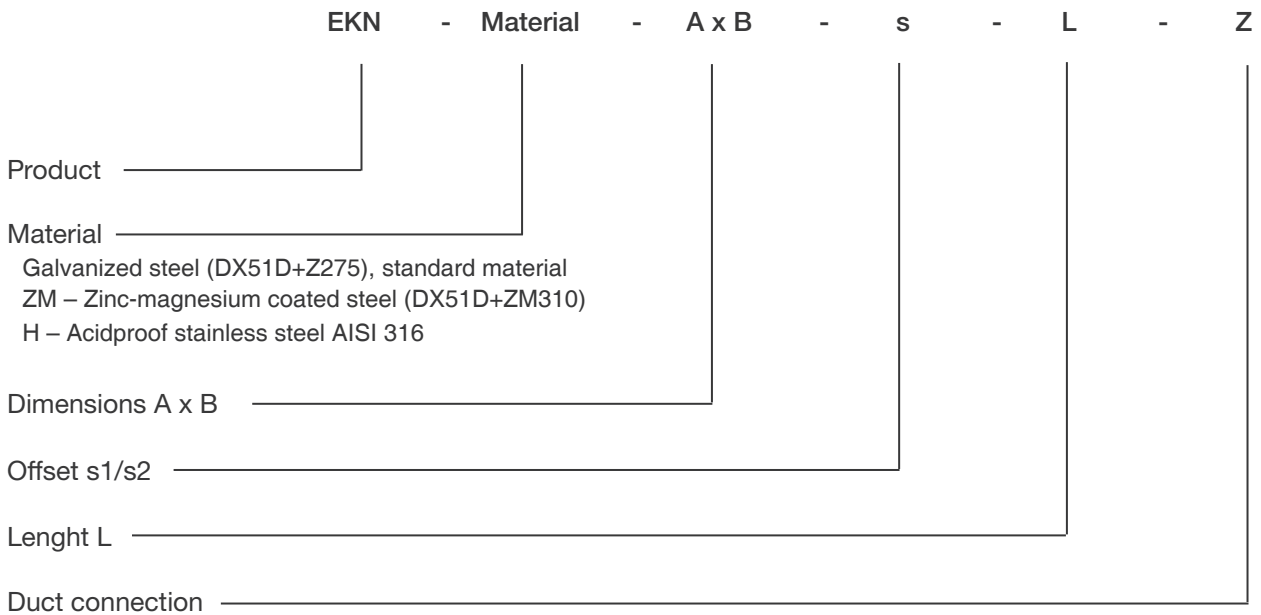


Offset is used for setting the ventilation system offset horizontally or vertically. The length of the offset depends on its size. The measures given in the table should be preferred, since ratio measures between height a, offset s and length l are important. Otherwise too sudden a drop may limit air flow movement.

| a | b | s | l |
|------|-----|--------------------|-----|
| 100 | 200 | 50,100 | 300 |
| | 300 | | |
| | 400 | | |
| | 400 | | |
| 150 | 200 | 50,100,150 | 350 |
| | 300 | | |
| | 400 | | |
| | 500 | | |
| | 500 | | |
| 200 | 100 | 50,100 | 300 |
| | 150 | | |
| | 300 | | |
| | 400 | 150, 200 | 400 |
| | 500 | | |
| | 600 | | |
| 300 | 100 | 50,100 | 400 |
| | 150 | | |
| | 200 | | |
| | 300 | | |
| | 400 | 150, 200, 250, 300 | 500 |
| | 500 | | |
| | 600 | | |
| | 800 | | |
| 400 | 100 | 50, 100 | 400 |
| | 150 | | |
| | 200 | 150, 200 | 500 |
| | 300 | | |
| | 400 | 250, 300, 350, 400 | 600 |
| | 500 | | |
| | 600 | | |
| | 800 | | |
| 1000 | | | |

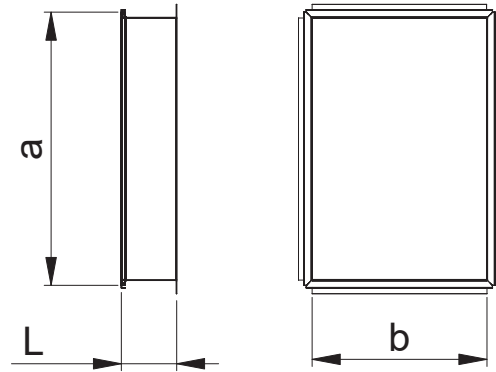
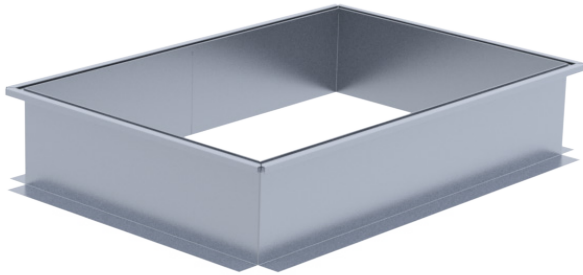
| a | b | s | l | | |
|------|--------------------|-------------------------|------|--------------|-----|
| 500 | 150 | 50,100,150 | 500 | | |
| | 200 | | | | |
| | 300 | 200, 250 | 600 | | |
| | 400 | | | | |
| | 600 | | | | |
| 600 | 800 | 300, 350, 400, 450, 500 | 700 | | |
| | 1000 | | | | |
| | 200 | | | 50, 100, 150 | 500 |
| | 300 | | | | |
| | 400 | | | 200, 250 | 650 |
| | 500 | | | | |
| 800 | 300, 350 | 700 | | | |
| 1000 | | | | | |
| 800 | 300 | 400, 450, 500, 550, 600 | 800 | | |
| | 400 | | | | |
| | 500 | | | | |
| | 600 | | | | |
| | 1000 | | | | |
| | 300 | | | 50,100 | 500 |
| | 400 | | | | |
| | 500 | | | 150 | 600 |
| | 600 | | | | |
| | 600 | | | 200, 250 | 700 |
| 1000 | | | | | |
| 1000 | 300 | 300, 350 | 800 | | |
| | 400 | | | | |
| | 500 | 400, 450, 500 | 900 | | |
| | 600 | | | | |
| | 800 | 600, 700 | 1100 | | |
| | 400 | | | | |
| | 500 | | | | |
| | 800 | | | | |
| | 50, 100 | 550 | | | |
| | | | | | |
| | 150, 200 | 700 | | | |
| | | | | | |
| | 250, 300 | 850 | | | |
| | | | | | |
| | 350, 400, 450, 500 | 1000 | | | |
| | | | | | |
| | 600, 700, 800, 900 | 1200 | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Product codes



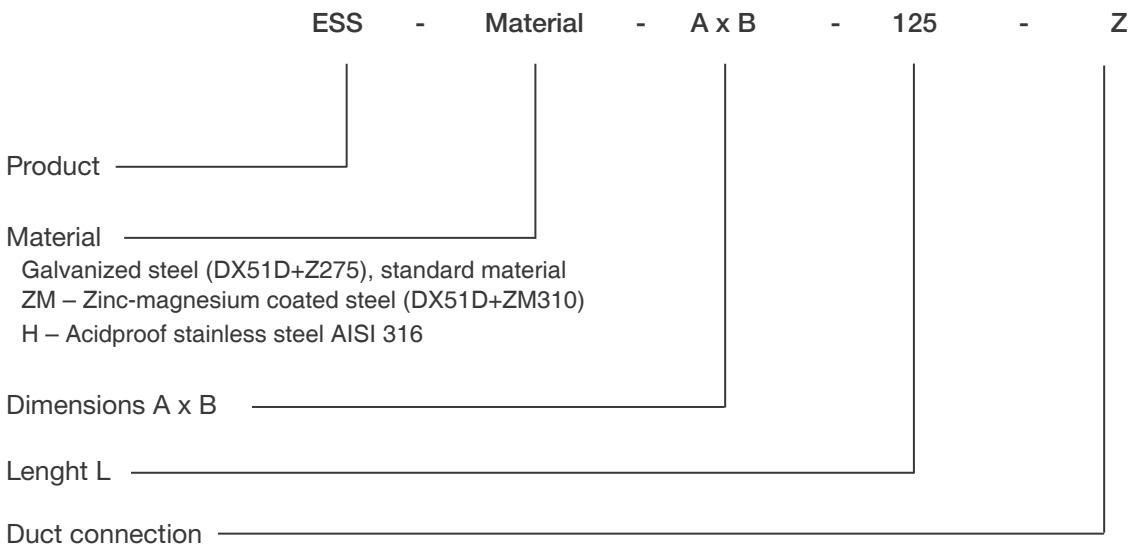
Example: EKN 800x400/s1=50/L=500 Z/Z

ESS saddle



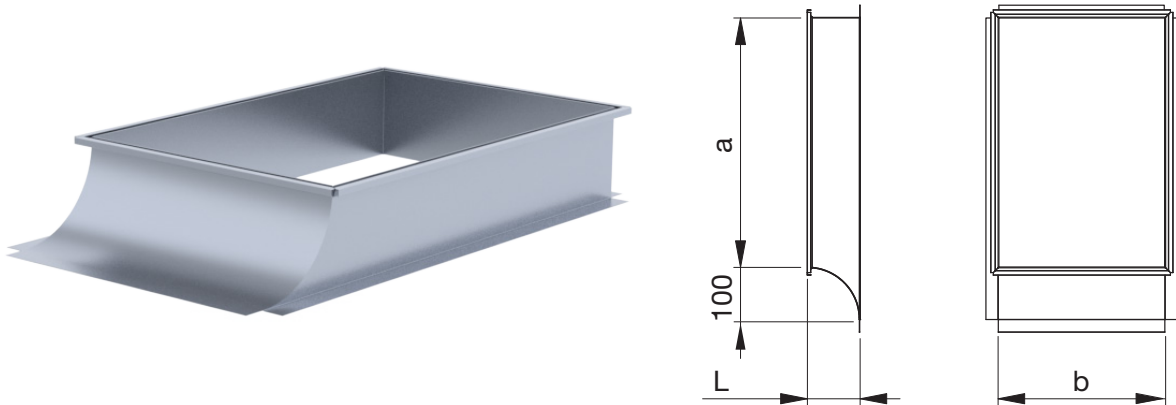
Straight saddle for a rectangular duct.
Standard length 125 mm.

Product codes



Example: ESS-H 800x400/L=250 Z

ESK Saddle



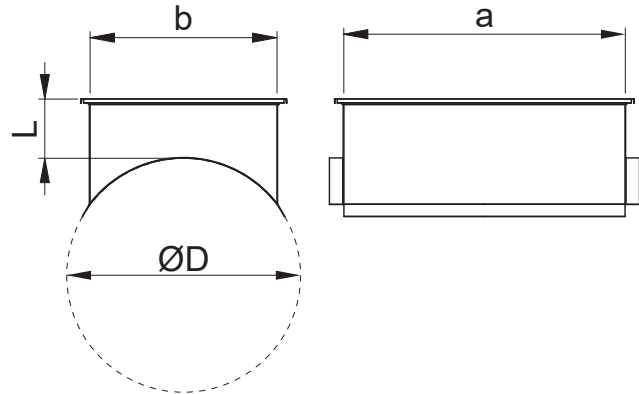
Flat saddle for a rectangular duct. One edge of the saddle is provided with a connection bar and larger end with flange for riveting into duct side. Standard length is 125 mm.

Product codes

| | | | | | | | | | |
|------------------|-------|---|--|---|-------|---|-------|---|-------|
| | ESK | - | Material | - | A x B | - | 125 | - | Z |
| Product | _____ | | _____ | | _____ | | _____ | | _____ |
| Material | _____ | | _____ | | _____ | | _____ | | _____ |
| | | | Galvanized steel (DX51D+Z275), standard material | | | | | | |
| | | | ZM – Zinc-magnesium coated steel (DX51D+ZM310) | | | | | | |
| | | | H – Acidproof stainless steel AISI 316 | | | | | | |
| Dimensions A x B | _____ | | _____ | | _____ | | _____ | | _____ |
| Length L | _____ | | _____ | | _____ | | _____ | | _____ |
| Duct connection | _____ | | _____ | | _____ | | _____ | | _____ |

Example: ESK-ZM 800x400/L=200 Z

ESD Saddle for a round duct



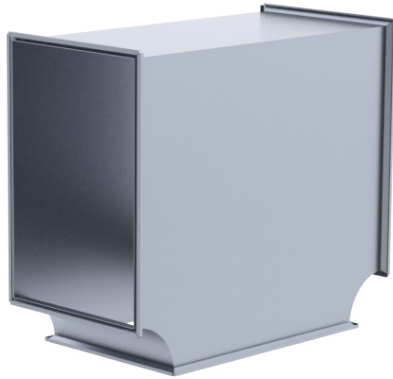
Saddle for connecting with a round duct. The rectangular end is provided with joining profile. The rounded end has an edge for fixing with round duct. Standard length is 125 mm.

Product codes

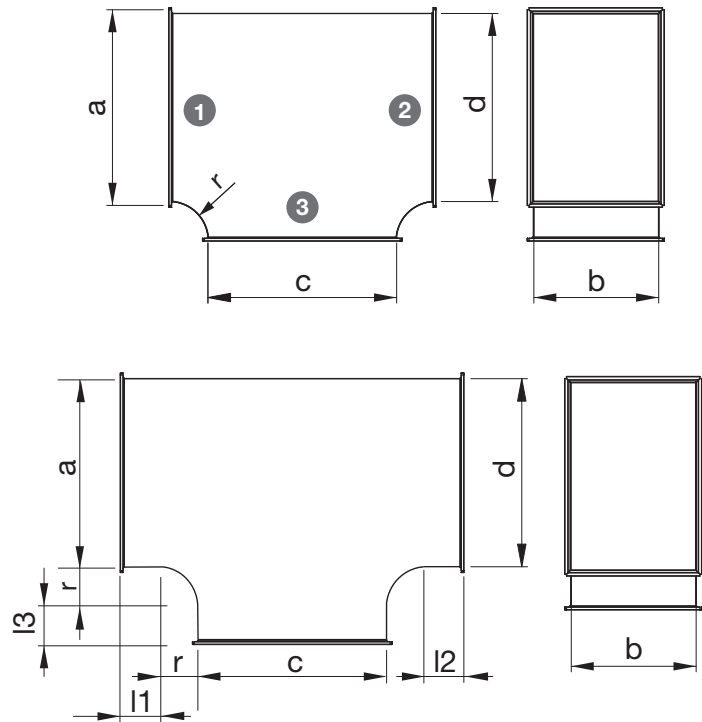
| | ESD | - | Material | - | A x B | - | D | - | 125 | - | Z |
|------------------|-------|---|--|---|-------|---|-------|---|-------|---|-------|
| Product | _____ | | _____ | | _____ | | _____ | | _____ | | _____ |
| Material | | | _____ | | _____ | | _____ | | _____ | | _____ |
| | | | Galvanized steel (DX51D+Z275), standard material ZM – Zinc-magnesium coated steel (DX51D+ZM310) H – Acidproof stainless steel AISI 316 | | _____ | | _____ | | _____ | | _____ |
| Dimensions A x B | | | | | _____ | | _____ | | _____ | | _____ |
| Diameter D | | | | | | | _____ | | _____ | | _____ |
| Length L | | | | | | | | | _____ | | _____ |
| Duct connection | | | | | | | | | | | _____ |

Example: ESD-H 800x400/1600/L=200 Z

EKM T-piece



T-pieces are used to direct the conduit in two different directions. Side dimensions (a, c, d) of the T-piece may differ. Standard radius is 125 mm.



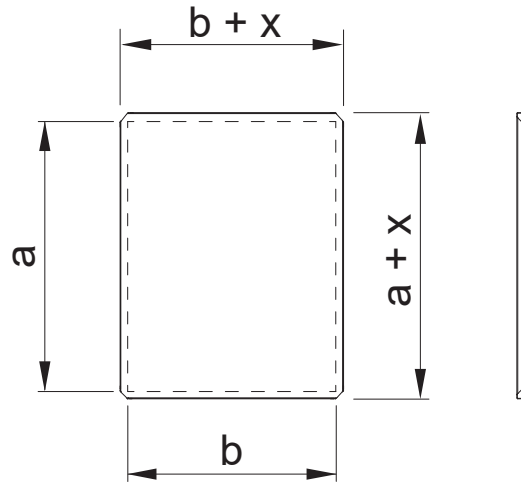
Product codes

EKM - Material - A x B - C x B - D x B - 125 - l1/l2/l3

| | |
|--|--|
| Product | |
| Material | |
| Galvanized steel (DX51D+Z275), standard material | |
| ZM – Zinc-magnesium coated steel (DX51D+ZM310) | |
| H – Acidproof stainless steel AISI 316 | |
| Dimensions A x B | |
| Dimensions C x B | |
| Dimensions D x B | |
| Radius r | |
| Length l1/l2/l3 (optional) | |

Example: EKM-ZM 500x800/600x800/400x800/r=125/l1=1000/l2=500/l3=400 Z/Z/Z

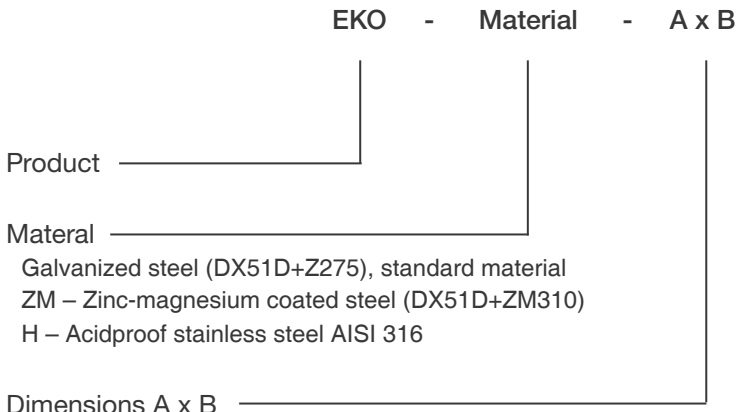
EKO End cap



Ventilation cap used at the end of the duct.

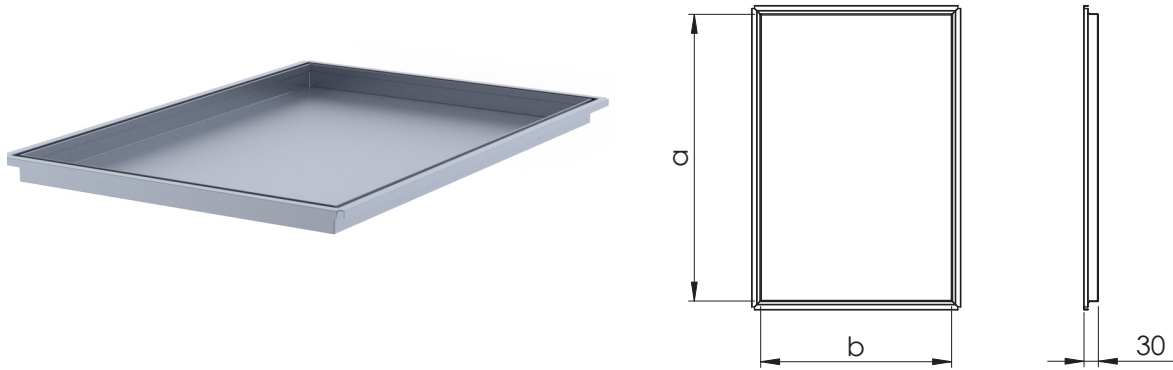
| Duct connection | x |
|-------------------|-------|
| Z and E20 profile | 40 mm |
| E30 profile | 60 mm |

Product codes



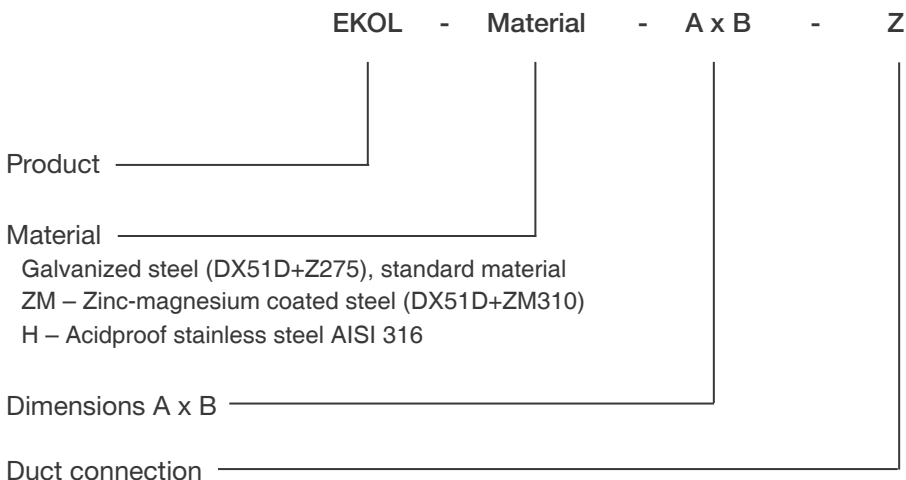
Example: EKO-H 800x400

EKOL End cap



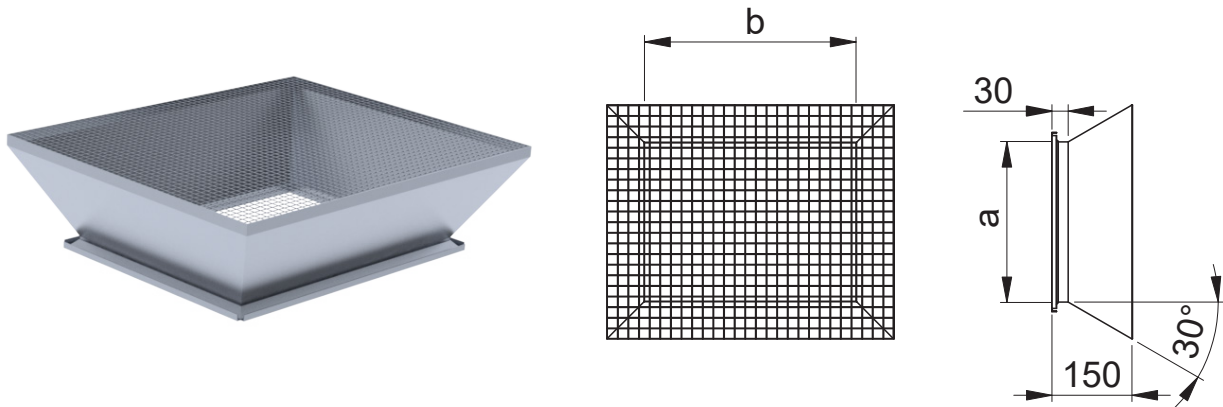
Ventilation cap with joining profile used at the end of the duct.

Product codes



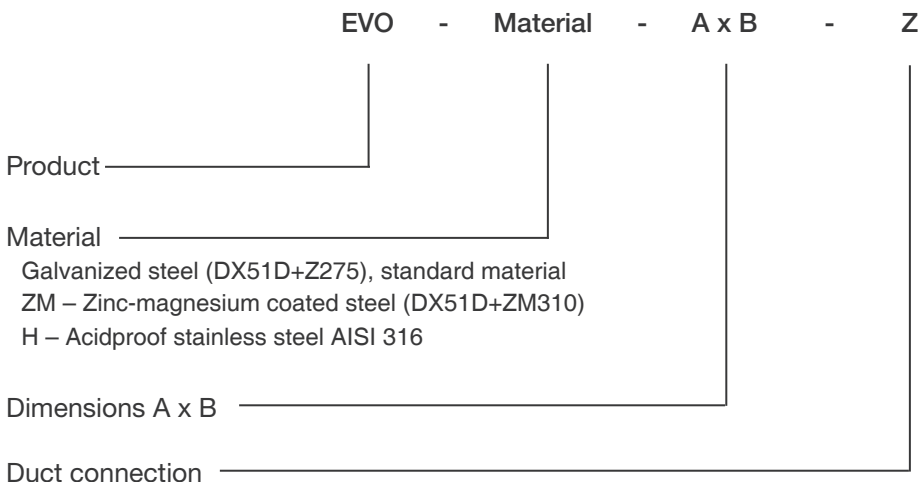
Example: EKOL-ZM 800x400 Z

EVO Air intake with mesh



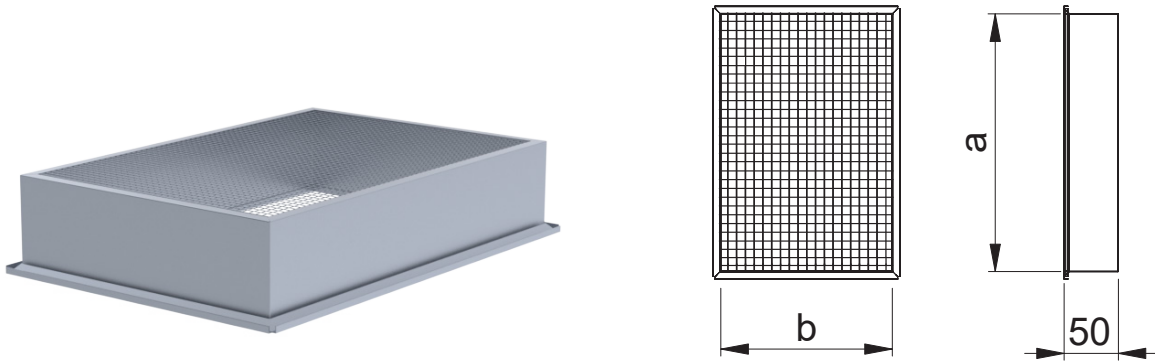
EVO air intake with mesh is suitable for use at the end of both the supply and exhaust duct.

Product codes



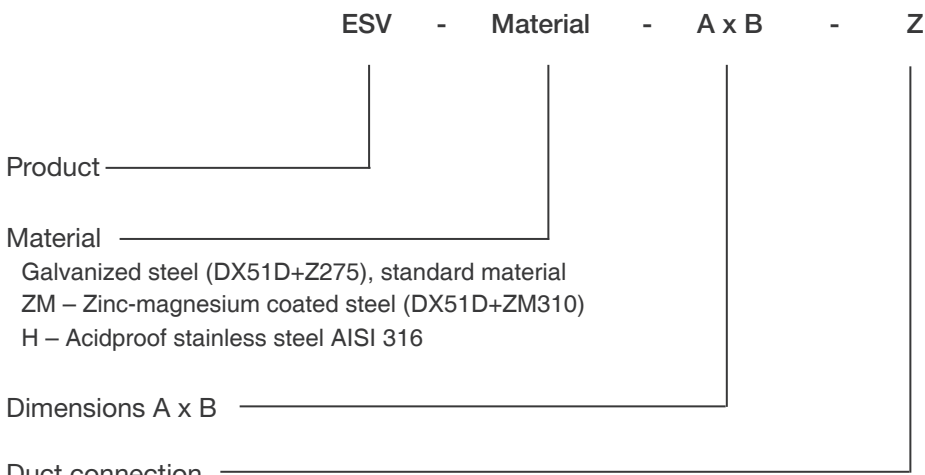
Example: EVO-ZM 800x400 Z

ESV Air intake with mesh



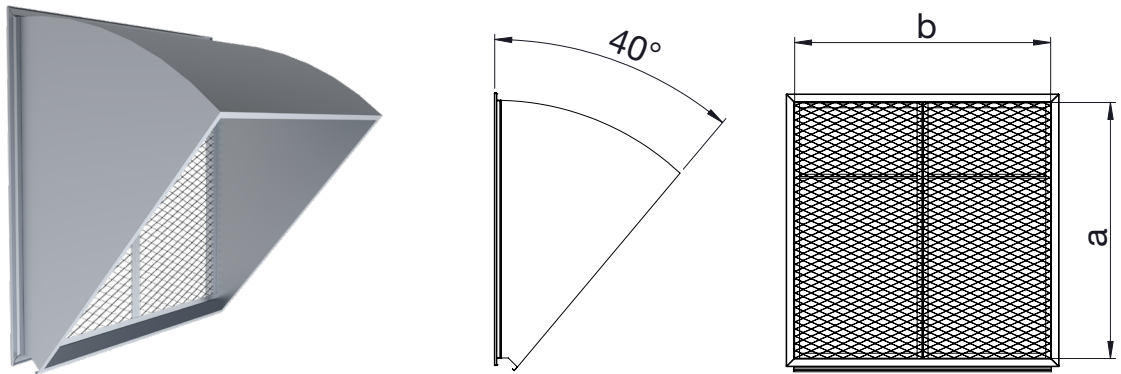
ESV straight air intake with mesh is suitable for use at the end of both the supply and exhaust duct.

Product codes



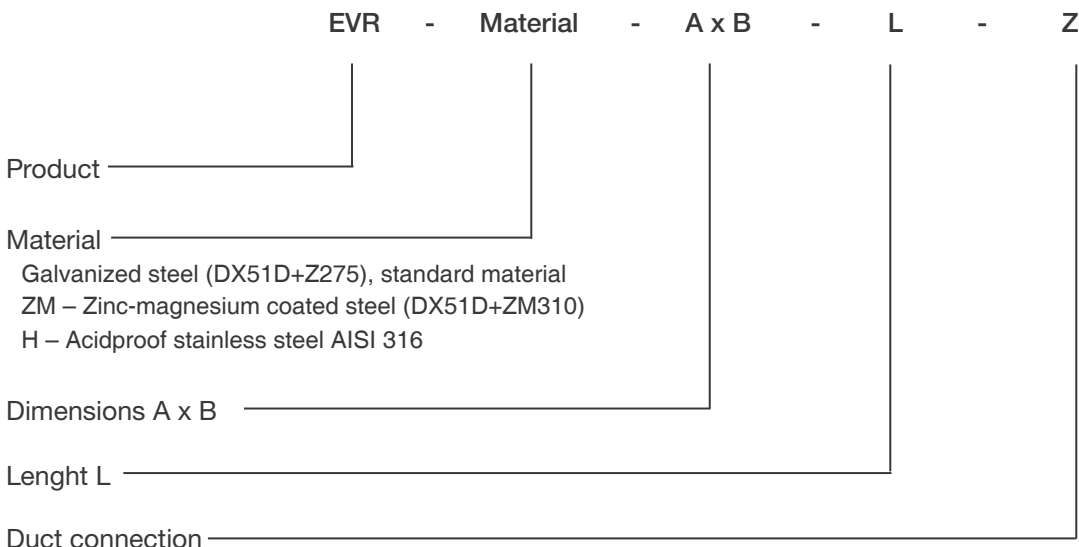
Example: **ESV-H 800x400 Z**

EVR Air intake with mesh



EVR is a diagonal air intake with mesh is suitable for use at the end of both the supply and exhaust duct.

Product codes



Example: EVR-ZM 800x400/L=100 Z



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Let's move the air together!