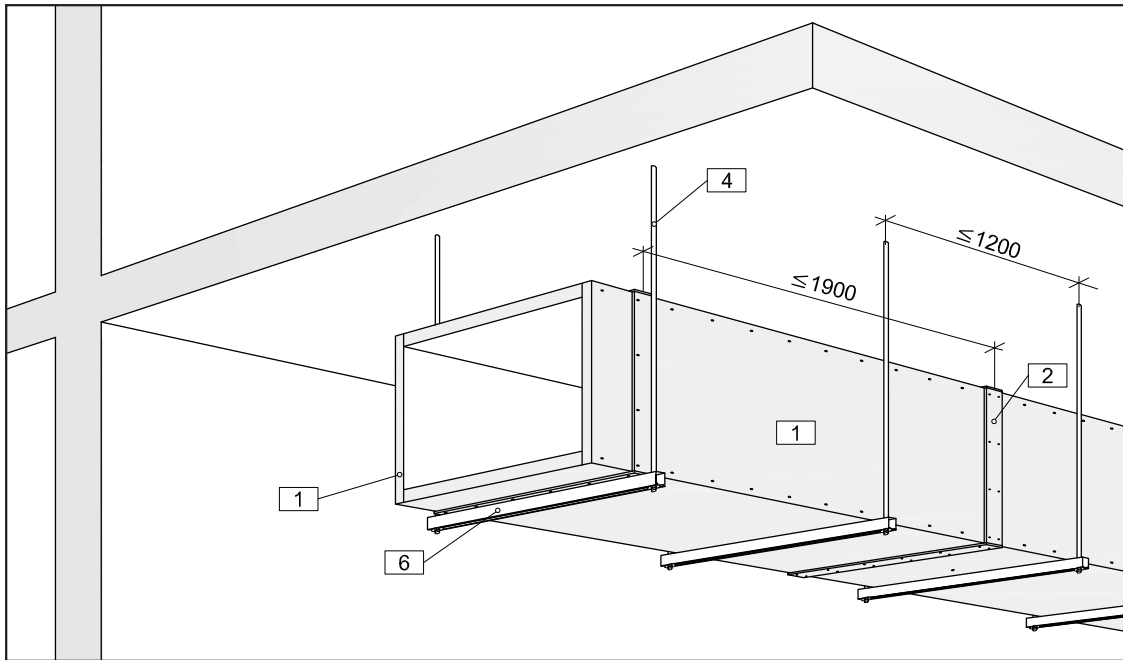


SMOKE EXTRACTION DUCT self-supporting EI 120-S

Fire Protection



CONSTRUCTION DESCRIPTION

Single-layered, 4-sided smoke extraction duct with a fire resistance period of 120 minutes.

Made by butt jointing of fire protection boards **THERMAX SL**, $d = 50$ or 55 mm, to be glued and screwed or stapled together.

The butt joints must be covered with a **THERMAX A** cover strips. The strip is glued and screwed or stapled.

In the case of a cross joint arrangement (distance between the upper/lower butt joint and the lateral butt joints = half the length of the board), the joints are connected by butt jointing and gluing. No cover strips are required.

Horizontal smoke extraction ducts are supported on traverses, which are suspended by threaded rods (tensile stress ≤ 6 N/mm², shearing stress ≤ 10 N/mm²). They are fixed to solid floors by means of dowels approved by the building authorities with a fire protection suitability certificate. Each duct segment ($L \leq 1900$ mm) must be provided with at least one suspension (distance ≤ 1200 mm). With cross joint board arrangements, the suspension system is placed at the vertical board joint.

Threaded rods over 1.50 m in length have to be covered with **THERMAX SL** for fire protection purposes.

In the case of penetration of components with at least the same fire resistance duration as the smoke extraction ducts, the remaining opening

[E] in solid walls ≤ 80 mm and walls in lightweight construction ≤ 50 mm must be stuffed with mineral wool (non-combustible, melting point ≥ 1000 °C) and covered on both sides with an L-angle made of **THERMAX SL**. The L-angles are fixed to the masonry with metal plugs and in lightweight walls with drywall screws.

Vertical smoke extraction ducts are to be supported on solid ceilings floor by floor, max. every 5 m.

MATERIAL:

- Fire protection boards **THERMAX SL**, $th = 50$ or 55 mm
- Cover strips **THERMAX A**, $th \geq 10$ mm, $w \geq 100$ mm
- Brandschutzkleber **THERMAX** Fire protection glue

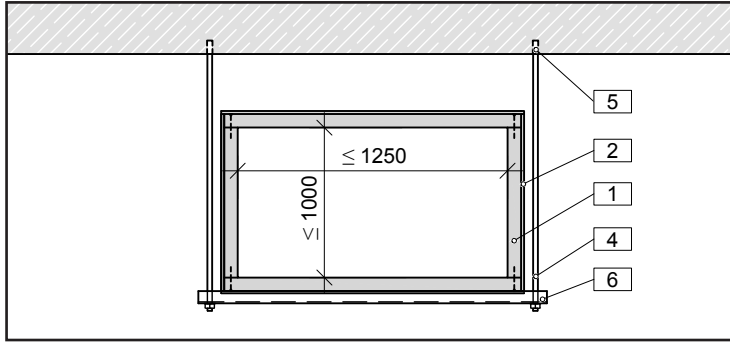
GENERAL INFORMATION:

- Classification: EI 120 (ve - ho) -S 1500 multi
- 4-sided smoke extraction duct, self-supporting, made of **THERMAX SL** fire protection boards, $th = 50$ mm
- Max. internal duct section: $\leq 1250 \times 1000$ mm (W x H)
- Operating pressure: $-1500/+500$ Pa

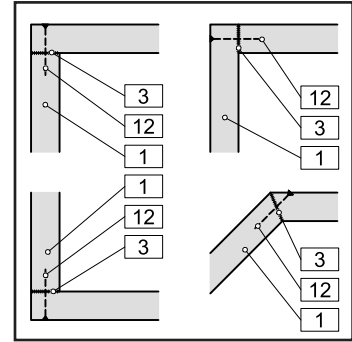
L3121 further possible duct sections:

- Fire protection boards **THERMAX SL**, $th = 55$ mm
- EI 120 (ho) S 500 multi $\leq 1410 \times 890$ mm (W x H), with one stiffener and
- EI120 (ve) S 500 multi $\leq 2200 \times 1000$ mm (W x H), with two stiffener
- Operating pressure: ± 500 Pa.

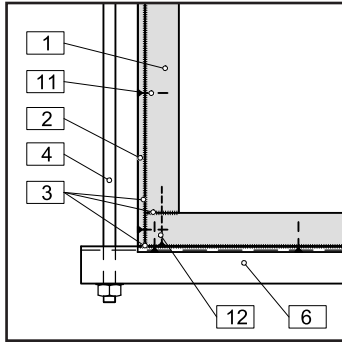
CONSTRUCTION DETAILS



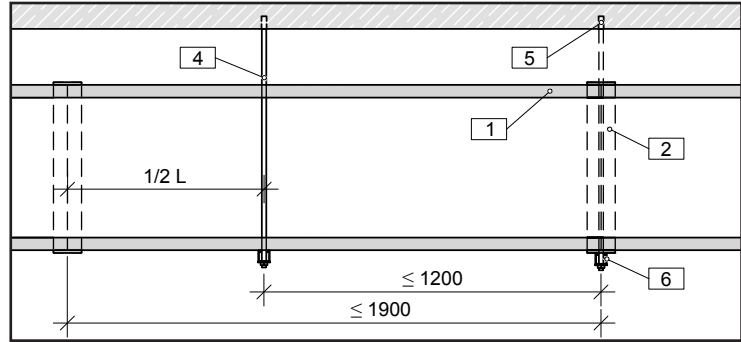
[1] Cross-section horizontal smoke extraction duct



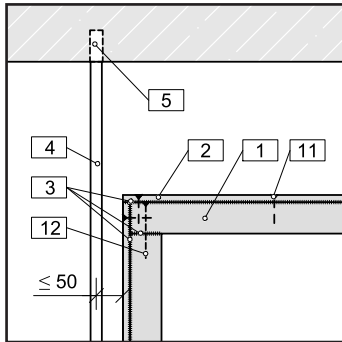
[2] Corner connection



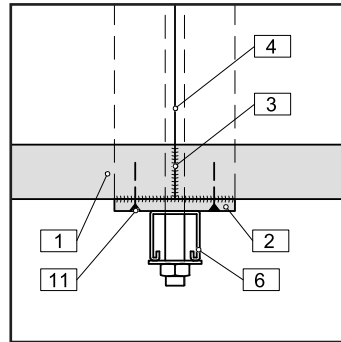
[3] Corner design bottom



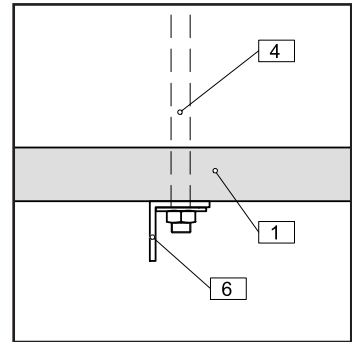
[4] Longitudinal section horizontal smoke extraction duct



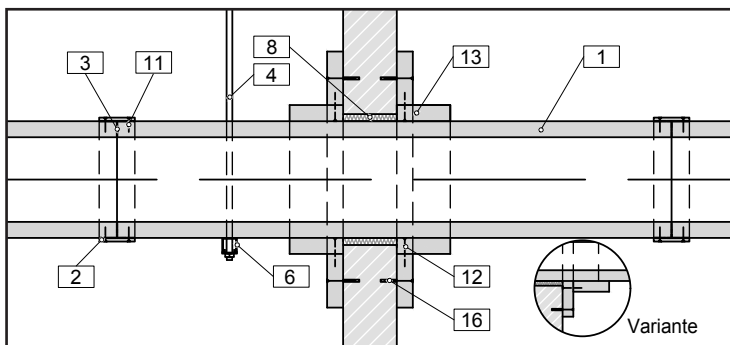
[5] Corner design above



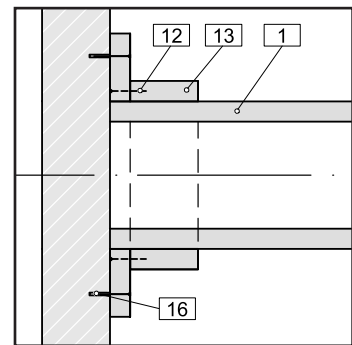
[6] Suspension at butt joint



[7] Suspension, Var. 1

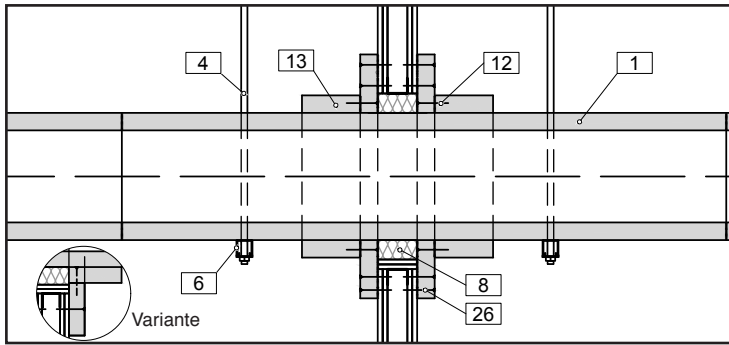


[8] Wall penetration in solid construction

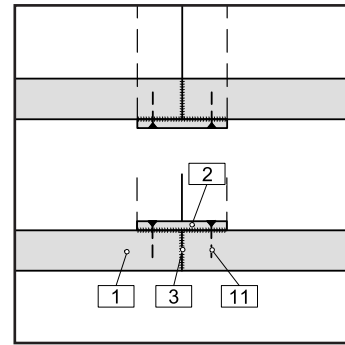


[9] Wall connection

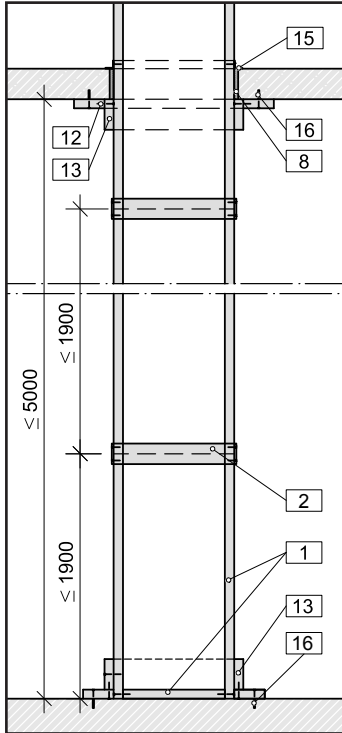
CONSTRUCTION DETAILS



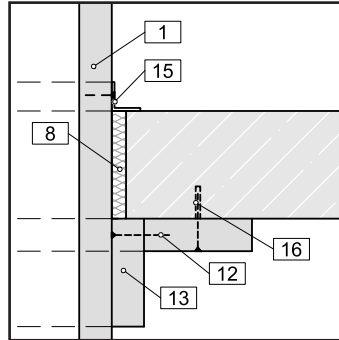
[10] Wall penetration in lightweight construction (installation option)



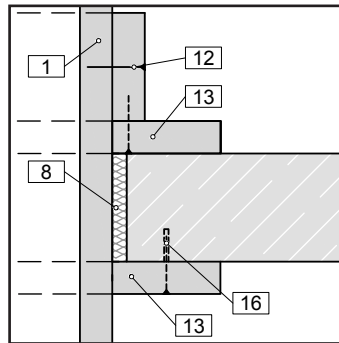
[12] Cover strip horizontal, outside and inside



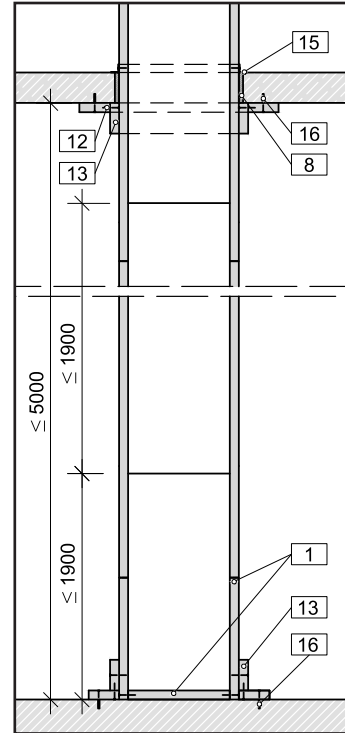
[13] Vertical smoke extraction duct



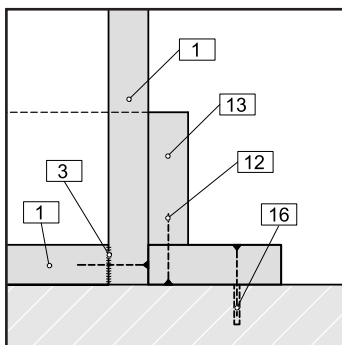
[14] Deckendurchführung



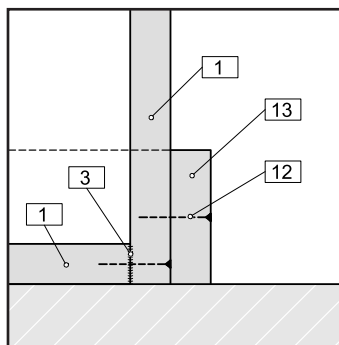
[15] Ceiling penetration, Var. 1



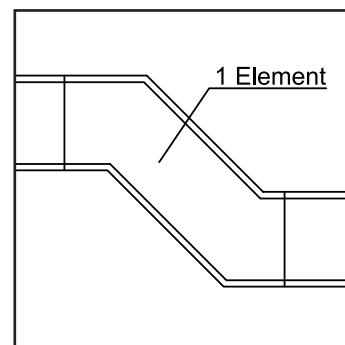
[16] Vertical duct cross jointed



[17] Floor connection



[18] Floor connection, Var. 1



[19] Principal design



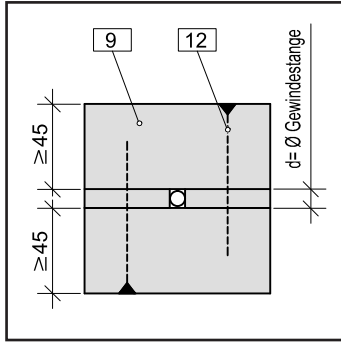
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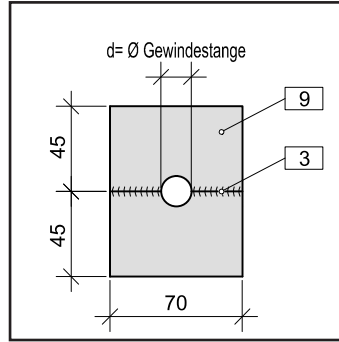
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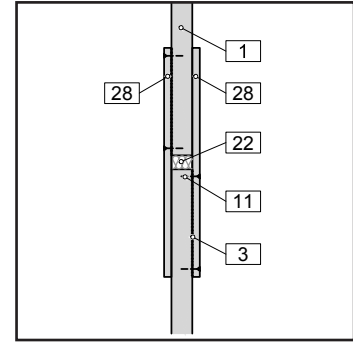
CONSTRUCTION DETAILS



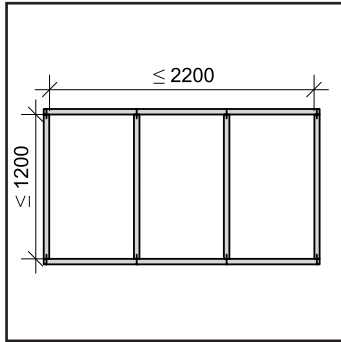
[20] Threaded rod protection



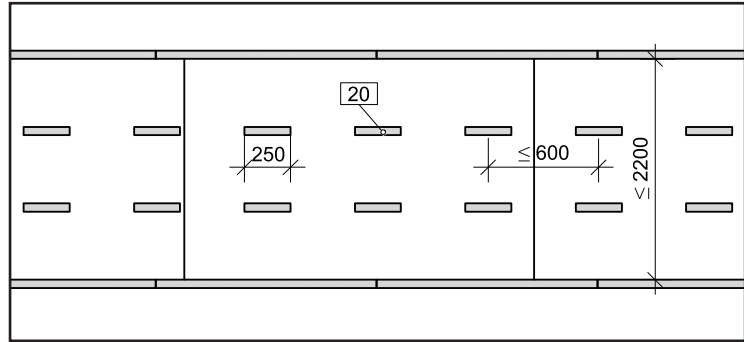
[21] Threaded rod protection, Var. 1



[22] Expansion joint



[23] Big section, L3121



[24] Big section with two rows of stiffeners, L3121

MATERIAL LIST

- | | | |
|---|--|--|
| <p>1 THERMAX SL
Fire protection board,
th = 50 or 55 mm</p> <p>2 THERMAX A
Cover strip
th ≥ 10 mm, w ≥ 100 mm glued
and screwed or stapled</p> <p>3 THERMAX Brandschutzkleber
Fire protection glue</p> <p>4 Threaded rod ≥ M8 with nut
and washer
Tensile stress ≤ 6 N/mm² and
shearing stress ≤ 10 N/mm²
acc. to static calculation</p> <p>5 Metal dowel/ steel expansion
dowel ≥ 8 mm
(with fire protective technical suitability
approval)
acc. to static calculation</p> <p>6 Mounting rails/ traverse as
suspension device,
distance ≤ 1200 mm
e.g. L-angle ≥ 50/50/5 mm or
≥ 60/60/6 mm, Hilti ≥ MQ41 or
Würth Varifix C ≥ 41/41/2,5 mm
or statically equivalent</p> | <p>8 Mineral wool A1,
melting point ≥ 1000 °C,
density ≥ 50 kg/m³
Solid construction:
E ≤ 80 mm
Lightweight construction:
E ≤ 50 mm</p> <p>9 THERMAX SL
threaded rod protection at
height of hangers > 1500 mm</p> <p>11 Steel wire staples or
drywall-/ chipboard screws
for cover strips
38/10/1 mm,
distance ≤ 100 mm or
4 x 40 mm,
distance ≤ 200 mm</p> <p>12 Steel wire staples or
drywall-/ chipboard screws
90/11,2/1,2 mm,
distance ≤ 100 mm or
5 x 90 mm,
distance ≤ 200 mm</p> <p>13 THERMAX SL
board strips
th = 50 or 55 mm, w ≥ 100 mm</p> | <p>15 Steel angle ≥ 40x40x4 mm at
ceiling penetration with drywall
screws 4x40 mm
(distance ≤ 100 mm)</p> <p>16 Steel expansion dowel
≥ M6, distance ≤ 250 mm
(with fire protective technical suitability
approval)</p> <p>20 THERMAX SL
stiffener
th = 50 or 55 mm, w ≥ 250 mm</p> <p>22 Expansion joint with mineral
wool and covering on both
sides with THERMAX A board
strips, which are glued and
screwed on both sides in an
offset manner.</p> |
|---|--|--|