

4 - Ventilation and smoke extraction ducts

2 hours fire resistant, self-bearing, horizontal and vertical configuration

Tested under UNE EN 1366-1 standard. Fire resistance tests in service facilities. Part 1. Ducts. Classification according to UNE EN 13501-3: EI-120 (ve, ho i↔o) S (Type A and B horizontal and vertical configuration).

Tested under UNE EN 1366-8 standard. Fire resistance tests in service facilities. Part 18. Smoke extraction ducts (multi compartment) classification according to UNE EN 13501-4: EI-120 S 1500 (Type C).

The regulatory requirements demand the compartment of elements when traversed by installations, such as pipes or extraction and ventilation ducts.

The Technical Building Code states in its Basic Document in Case of a Fire SI 1, Interior Propagation, Section 3, Point 3:

Fire resistance required to the fire compartment elements must be kept on the points where such elements are traversed by installation materials, such as cables, pipes, ducts, ventilation ducts, etc. To that end, a choice can be made between the following alternatives:

a) Put an element which, in case of a fire, automatically blocks the cross section and guarantees in such point a fire resistance at least equal to that of the traversed element, for example, an automatic firewall damper. The $t_{i↔o}$ being the fire resistance time required to the traversed compartment element, or a blocking intumescent device.

b) Crossing elements which provide a resistance at least equal to that of the traversed element, for example, EI ventilation ducts $t_{i↔o}$ being t the fire resistance time required to the traversed compartment element.

From the previous paragraph follows that the fire resistant ducts which pass through fire compartments must have the compartments from within and from the outside to it.

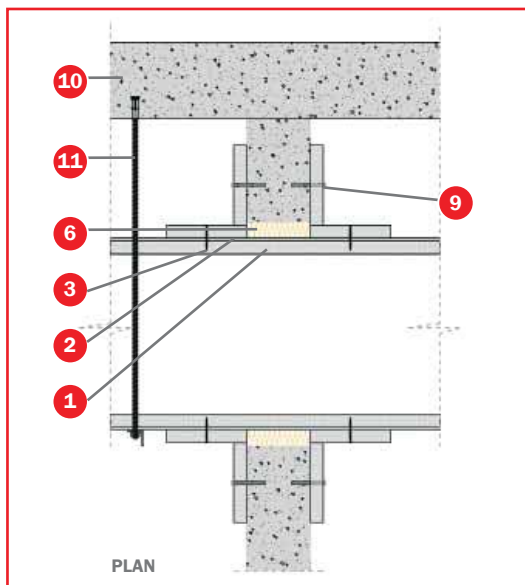
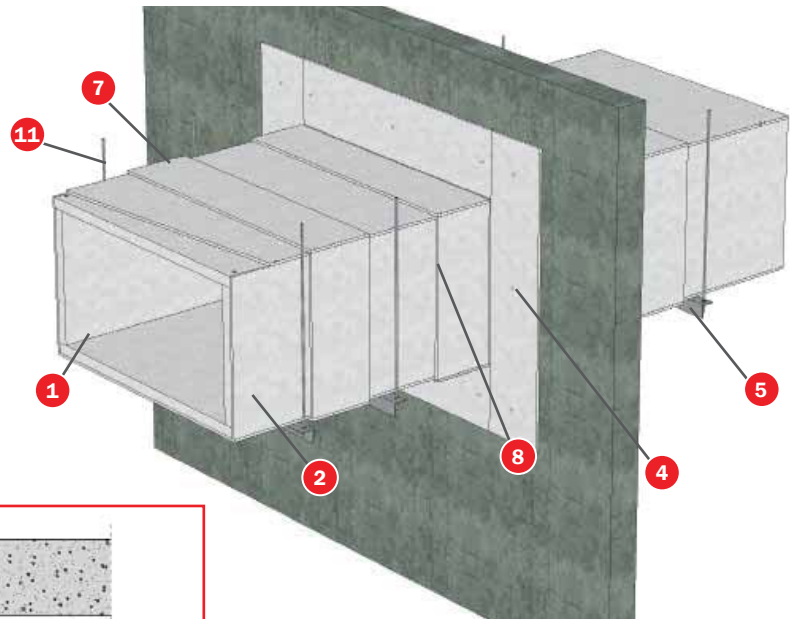
RSCIEI describes in its annex II Article 5.7:

“Systems including ducts, both verticals and horizontal, which traverse compartment elements and whose function doesn't allow the use of dampers (smoke exhaust, ventilation of evacuation routes, etc.), must be fire resistant or adequately protected throughout its route with the same level of fire resistance than the traversed elements, and tested according to the applicable UNE-EN standards”.

UNE EN applicable standards, as they appear in Annex DB SI G of the TBC are:

- UNE EN 1366 Part 1 for ventilation ducts.
- UNE EN 1366 Part 8 for multi-sector extraction ducts.

4.2 VENTILATION DUCT TYPE A AND B TECBOR® B 40+10 EI-180



TEST

Standard: UNE EN 1366-1

Laboratory: CIDEMCO

Test N°: 20529, 19967, 20330-a-M1 y 19966-1/-2-a-M1

SOLUTION

- 1 Tecbor® B 40 mm boards
- 2 Tecbor® A 10 mm boards
- 3 5x80 mm self-tapping screw
- 4 3,9x35 mm self-tapping screw
- 5 50x50x5 mm L-shaped
- 6 50 mm and 145 Kg/m³ density rock wool
- 7 Tecbor® B 40 mm plate to cover joints
- 8 Tecbor® joint paste ready to use
- 9 10x100 mm metal plug
- 10 Mansory
- 11 M16 rod

DESCRIPTION OF ASSEMBLY

The duct comprises a **Tecbor® B** de 40 mm layer and a **Tecbor® A** de 10 mm layer. First layer boards are fastened with 5x80 mm self-tapping screws. The 10 mm board is fastened to the first layer through 3,9x35mm screws. Duct sections are connected covering the joint with 250-300 mm wide **Tecbor® B** 40 mm plates fastened to the duct with 5x80 mm self-tapping screws every 250 mm.

The duct is supported on 50x50x5 mm L-shaped horizontal supports and hung from the slab through the rod, whaser and M16 nut set. Distance between hangs is 1 m.

Joints between boards, other joints and screw heads should be sealed with **Tecbor® joint paste ready to use**.

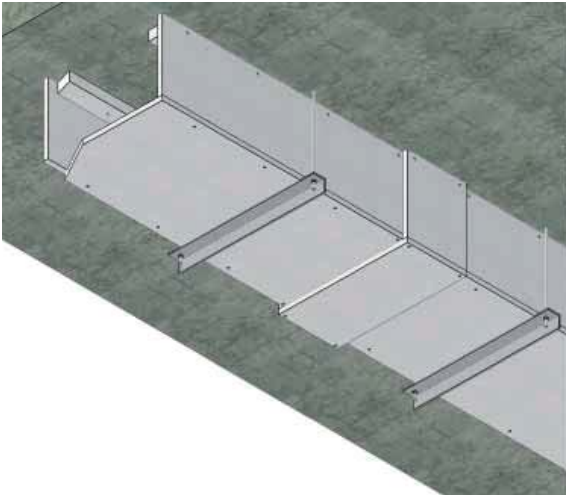
Crossing fire sectors:

The space between the duct and the structural work is filled with rock wool 145 kg/m³ density. Then, 250 mm wide **Tecbor® B** 40 mm board strips are placed around the duct and anchored to the structural work with 10x100 mm plugs on both sides. Afterwards, a ring surrounding the duct is made with 250 mm strips fastened with 5x80 mm self-tapping screws.

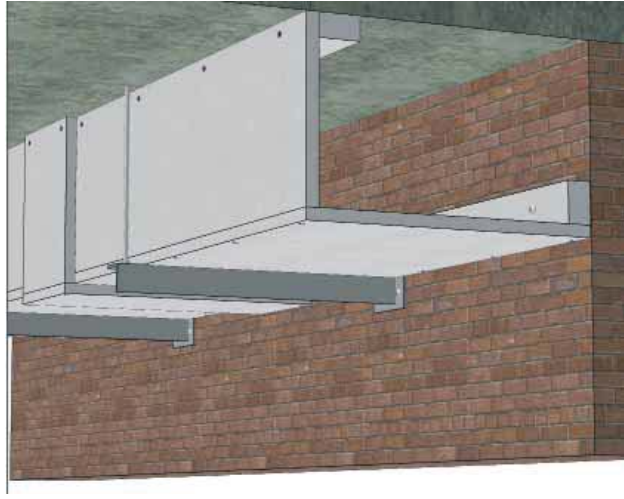
Consult the installation manual for further information.



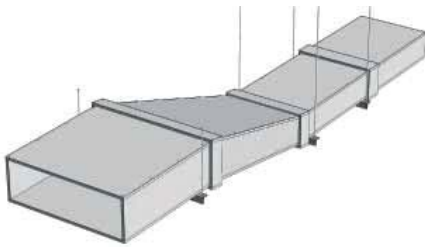
SOLUCIONES CONSTRUCTIVAS PARA CONDUCTOS*



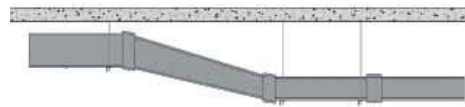
1. Horizontal duct 3 faces



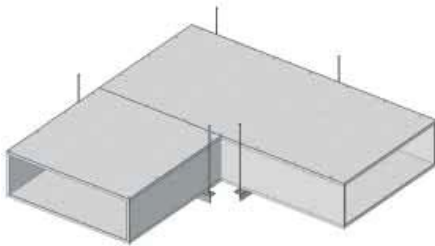
2. Horizontal duct 2 faces



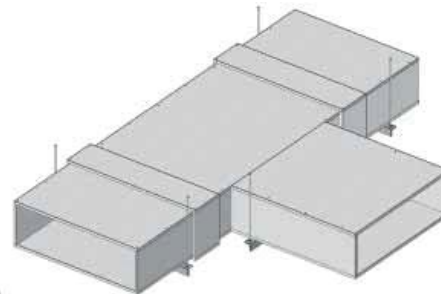
3. Section changes



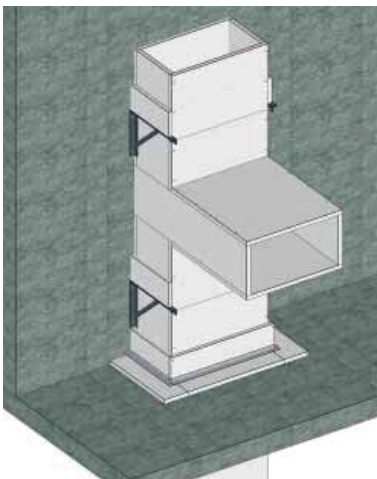
4. Unevenness



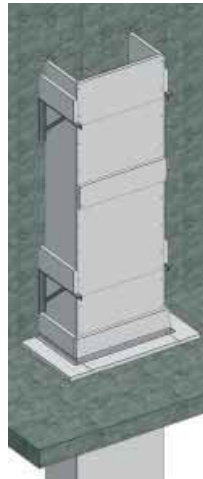
5. L-shape



6. Branches



7. Vertical anchorage and horizontal splicing



8. Vertical duct 3 faces



9. Vertical duct 2 faces

* Please, contact the commercial department for constructive details of conexions

TECBOR® A & B



Ventilation ducts