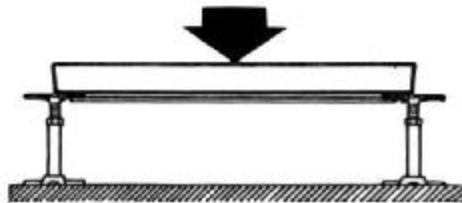


# The Choice Criteria

## Mechanical resistance

The ultimate load is the main criterion for classification of access flooring according to the European Standard EN 12825.



“The raised access floor shall be designed and manufactured in such a way that it provides mechanical resistance and stability and that the loading that it is liable to act upon it during its intended use will not lead to deformation or collapse.”<sup>1</sup>

According to the previous mentioned standard, when subjected to the test procedures the raised access floor shall meet two criteria related to static loading requirements:

“a) Before the element collapses it shall have withstood the relevant ultimate load for its class as given in the following table”<sup>2</sup>

### **Classification according to European Standard EN 12825, 4.1 :**

<b>Class</b>	<b>Ultimate load *</b>
<b>Class 1</b> – Light duty and environments where traffic is limited	≥ 4 KN
<b>Class 2</b> – Medium duty and environments with normal traffic	≥ 6 KN
<b>Classes 3 - 4</b> – Environments where heavy static loads are required, such as schools, conference rooms, technical offices, surgeries, etc.	≥ 8 KN /9 KN
<b>Class 5</b> – High duty areas: libraries, industrial flooring for plants, storehouses, etc.	≥ 10 KN
<b>Class 6</b> – Extra heavy duty	≥ 12 KN

\* The ultimate load is expressed in KN (1 KN = 102 Kg)

b) “when the load applied is equivalent to the working load which is the ultimate load divided by the safety factor, the measured deflection shall not exceed the stated value in accordance to the table” of the Classes of deflection:

### **Classes of deflection according to European Standard EN 12825, 4.2.2 :**

<b>Class</b>	<b>Maximum deflection</b>
A	2,5 mm
B	3,0 mm
C	4,0 mm

<sup>1</sup> European Standard EN 12825:2001, 4.2.1, pag. 6

<sup>2</sup> European Standard EN 12825:2001, 4.2.2, pag. 7

Because of its removability, the raised floor is not a permanent barrier which can protect the space above from fire. Raised floors must be planned, produced and installed in a way that, in case fire:

- the load bearing of the Raised Floor panels is preserved long enough to enable people to abandon the rooms safely;
- the spreading of the fire and the smoke are limited, according to the valid norms.

The tests to which a raised floor is subject are two:

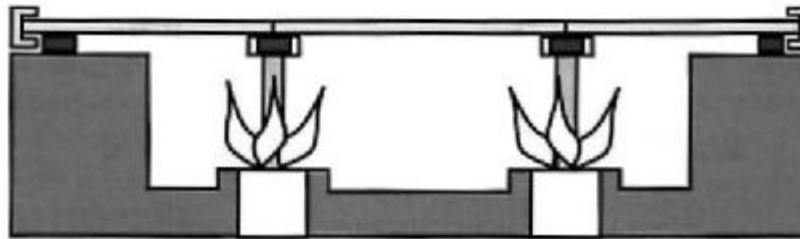
FIRE RESISTANCE

FIRE REACTION

## **Fire resistance:**

It is effected by simulating a fire in an oven under the raised floors.

It is expressed in:



- mechanical stability (R)
- flame resistance (E)
- heat proofing (I)

The tests show how long these three factors endure (according with the Ministry Protocol nr 91 - September 1961).

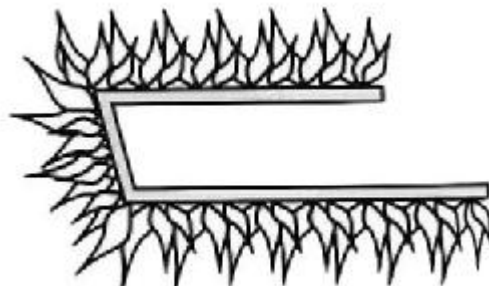
Fire resistance is expressed in minutes: REI 30, REI 45, REI 60.

"If required, the standard fire resistance is to be REI 30". (2)

## **Fire reaction:**

The sample is subject to a flame spreading from outside.

According to the spreading of the flame over time, the material is classified under the Norm CSE/RFI.



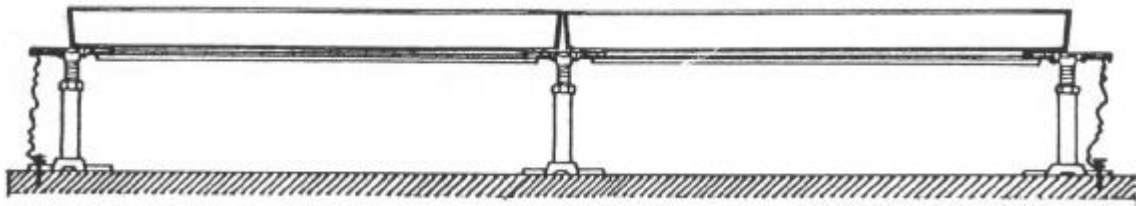
## Electrical characteristics

A raised floor can be antistatic, conductive or insulating. To be considered antistatic, it will have electrical resistance values between  $1,5 \times 10^7$  ohm and  $2 \times 10^{10}$  ohm. The level of antistaticity, which is the capacity of a material not to produce strong electrical discharges on people, is mostly provided by the top finish.

To be considered as conductive, a raised floor will have values between  $1,5 \times 10^3$  ohm and  $1,5 \times 10^7$  ohm.

Conductive raised floors are generally used in rooms containing heavy-duty and hi-tech electronic equipment. In such an installation, all of the components (panel, edge trim, top finish, etc.) must be conductive. There must be electrical continuity throughout the raised flooring system and a proper grounding to earth (fig. below).

A raised floor with values higher than  $2 \times 10^{10}$  ohm will be considered insulating.



## Soundproofing

The sound level in a room caused primarily by pedestrian foot traffic, varies according to three factors:

- panel density
- type of top finish
- height of the structure

The ISO Norm No. 140 expresses, by testing at 500 Hz, the resulting dB values.

Any estimate of the soundproofing level of a raised floor must refer to test data relating to the same height of structure with the same top finish.

