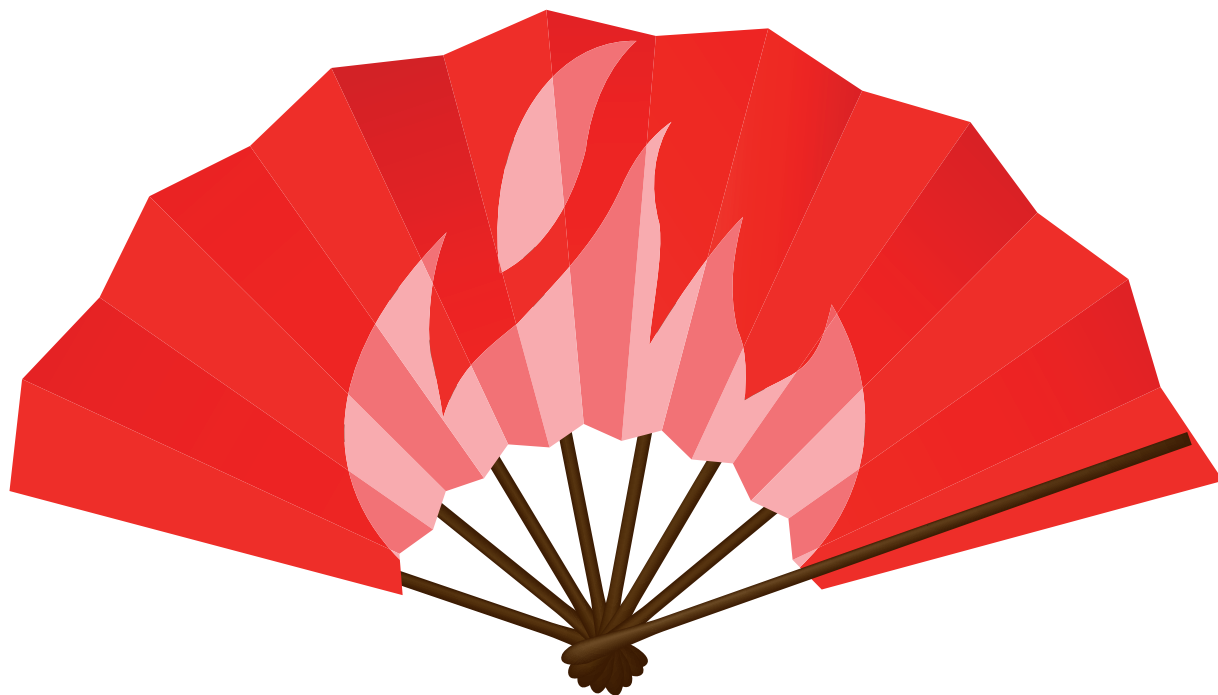


# NATURAL VENTILATION:

## FIRE RESISTANT GRILLS



### A RANGE OF CERTIFIED SOLUTIONS

The fire resistant transfer grills are mounted in the walls or the doors to prevent flame and heat propagation in the event of a fire. Situated at the intersection of the worlds of ventilation and passive fire protection, these grills must respond to the needs and regulatory standards inherent to these two domains.

- **A compliant range for all types of walls:** Rf-Technologies offers a wide range of fire resistant grills that meet the strictest European standards regarding the penetration of fire resistant walls, floors, ceilings, and doors.
- **Fire resistance:** Rf-Technologies grills are made of profiles in synthetic material filled with intumescent strips that expand in the event of fire in order to rapidly seal the opening and offer protection against flame and heat propagation during a guaranteed lapse of time.
- **Optimal air circulation:** Rf-Technologies grills are designed to allow a superior natural ventilation. The range is also characterized by the availability of an aesthetic model and by a wide choice of dimensions, up to 1200 mm x 800 mm.



## APPLICATIONS AND LEGISLATION

The fire resistant grills represent the ideal solution for:

- The natural ventilation of adjacent fire resistant compartments: grill built into a fire-resistant door or wall. This solution is recommended in hospitals or office buildings, for example. The grill finishing must retain the aesthetic qualities of the premises and the intimacy of each compartment.
- The natural ventilation of technical premises: grill built into fire-resistant walls or doors. The level of fire resistance and the dimensions of the grill take precedence over aesthetic qualities.



According to European legislation concerning the fire resistance of construction products, the fire resistant grills are destined for the natural ventilation of premises and cannot be used for mechanical ventilation applications. Specifically, this means that a fire-resistant grill cannot, for example, be installed into a mechanical ventilation shaft. In this situation, only a fire damper would respond to requirements such as environmental pressure.

The fire resistant grills do not constitute an adequate solution for preventing the dispersion of smoke and cold gases as the functioning of the grill is heat-activated.

## FUNCTIONING

The functioning of a fire resistant transfer grill is based on the dilatation properties of the intumescent materials in the profiles. When the room temperature reaches 100°C, the material expands to attain several times its original thickness. The slats then melt together to constitute a non-combustible mass that procures a fire resistance similar to that of the construction penetrated. This way, it impedes the passage of the flames, heat, and gases.

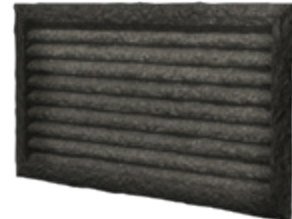
The following images show how the intumescent grills behave to fire.



The intumescent grill is made of horizontal profiles filled with intumescent material



The fire breaks out and the temperature reaches 100°C



The intumescent material expands to attain several times its original thickness and thus prevent the passage of smoke and flames

## FIRE RESISTANCE

The fire resistance of a product is measured in time units (60 = 60 minutes). Some basic criteria are applied in the European fire test and classification systems in order to measure the performance of the transfer grills in terms of fire resistance:

**E** **E – integrity:**  
the period of time during which no flames pass through to the non-exposed side of the wall. During this lapse of time, no opening (such as cracks, splits, joint openings...) may appear in the construction elements, through which flames are able to propagate.

**W** **W – radiation:**  
limitation of heat radiation through the construction element, measured at a distance of one metre from the element (maximum 15 kW/m<sup>2</sup>).

**I** **I – insulation:**  
this criterion defines the capacity of a construction element to resist fire exposure on one side, without significant heat transmission to the side that is not exposed to the fire. For this criterion, heat transmission is measured on the element itself.

**I→O** **Indication - (i→o) (o→i) (i↔o)**  
this complementary indication specifies if the element tested fulfils the criterion from the interior (i= inside) towards the exterior (o=outside), the opposite or both, in which case the direction of the fire is irrelevant.

**V<sub>e</sub>** **v<sub>e</sub> or h<sub>o</sub>**  
refers to the direction in which the element is positioned, either vertically or horizontally in the construction element, that is to say respectively in a wall or in a ceiling.







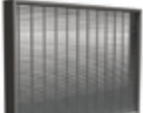



The specifications table allows you to determine which product corresponds best to your specific needs, for example, in terms of fire resistance, air flow, and aesthetic.

## RANGE SPECIFICATIONS

The Gz60 grill is an aesthetically finished non-vision model approved for mounting into any type of wall, as well as into fire resistant wooden door panels. In order to satisfy architectural preferences, the grill is available in three standard RAL colours. A fixed or variable frame finishing ensures a perfect result for the opening effected in the wall. This grill offers a harmonious architectural solution for the natural ventilation of hospitals or office buildings.

### Fire resistant grills






hEN 13501-2; 1364-1, 1364-2, 1634-1

|                 |   |   | dimensions<br>see table | mm  |  |  |  |
|-----------------|---|---|-------------------------|---|---|---|---|
| <b>Gz60</b>     |    | Aesthetically finished non-vision grill for wooden door panels and all types of walls | ●                       | W 100 → 800<br>H 100 → 400<br>T 55 mm     |   | ✓   | ✓   |
| <b>Ge60</b>     |   | Technical vision grill with a fire resistance of 60'                                  | ●                       | W 100 → 800<br>H 100 → 400<br>T 50 mm     | ✓   |   |   |
| <b>Ge90</b>     |  | Technical vision grill with a fire resistance of 90'                                  | ●                       | W 100 → 800<br>H 100 → 400<br>T 50 mm     | ✓   |   |   |
| <b>Ge60-XL</b>  |  | Technical vision grill 60' in large dimensions  | ○                       | W 200 → 1200<br>H 200 → 800<br>T 100 mm   | ✓   |   |   |
| <b>Ge120</b>    |  | Technical vision grill with a fire resistance of 120'                                 | ●                       | W 150 → 800<br>H 100 → 400<br>T 100 mm    | ✓   |   |   |
| <b>Ge120-XL</b> |  | Technical vision grill 120' in large dimensions                                       | ○                       | W 200 → 1200<br>H 200 → 800<br>T 100 mm   | ✓   |   |   |
| <b>Gb90</b>     |  | Modular ventilation block   |                         | W 100<br>H 100<br>T 80 mm                 | ✓   |   |   |
|                 |   |   |                         | W100 x H800<br>W800 x H100<br>W200 x H200 |   |   |   |

The Ge grill is available in various degrees of fire-resistance (60, 90 or 120 minutes). The XL models also dispose of a reinforced frame in HDF, which ensures their rigidity, even for the largest dimensions. This complete family of products is ideal for ventilating technical premises, for example.

The Gb90 is a modular fire resistant ventilation block made out of graphite. It can be used alone or several blocks can be assembled together, depending on the required air flow rate and fire resistance.

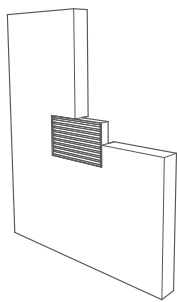
In case of fire, the graphite expands and closes off the opening against fire.

|  |  |  |  |  | Sn (%)  | RAL                    | Grill frame                           | Fixing                             |
|--|---|---|---|---|---------|------------------------|---------------------------------------|------------------------------------|
| EI60<br>EW90   | EI 60 EW90<br>(v <sub>e</sub> i↔o)  | EI 60 EW60<br>(h <sub>o</sub> i↔o)  | EI 60 EW60<br>(v <sub>e</sub> i↔o)  | EI 60 EW60<br>(v <sub>e</sub> i↔o)  | 49 → 58 | 9022,<br>7024,<br>9016 | PS                                    | Depending<br>on its<br>application |
| EI60<br>EW60   | EI 60 EW60<br>(v <sub>e</sub> i↔o)  |   |   |   | 52 → 59 | 7035                   | PVC                                   | Silicone<br>mastic BCM             |
| EI90<br>EW90   | EI 90 EW90<br>(v <sub>e</sub> i↔o)  |   |   |   | 52 → 59 | 7035                   | PVC                                   | Silicone<br>mastic BCM             |
| EI60<br>EW60   | EI 60 EW60<br>(v <sub>e</sub> i↔o)  |   |   |   | 41 → 55 | 7035                   | Treated<br>High-Density<br>Fibreboard | Mortar                             |
| EI120<br>EW120   | EI120<br>EW120<br>(v <sub>e</sub> i↔o)  |   |   |   | 23 → 51 | 7035                   | Treated<br>High-Density<br>Fibreboard | Gypsum or<br>Ytocol                |
| EI120<br>EW120   | EI120<br>EW120<br>(v <sub>e</sub> i↔o)  |   |   |   | 43 → 55 | 7035                   | Treated<br>High-Density<br>Fibreboard | Gypsum or<br>Ytocol                |
| EI120<br>EW120   | EI 120<br>EW120<br>(v <sub>e</sub> i↔o)   |   |   |   | 67      | -                      | -                                     | Silicone<br>mastic BCM             |
| EI90<br>EW120  | EI 90 EW120<br>(v <sub>e</sub> i↔o)   |   |   |   |         |                        |                                       |                                    |

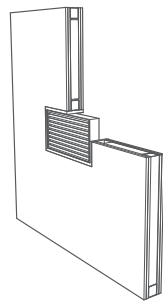
# AVAILABLE DIMENSIONS

| HW [mm] | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 900 | 1000 | 1100 | 1200 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| 100     | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | -   | -    | -    | -    |
| 150     | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | -   | -    | -    | -    |
| 200     | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ○   | ○    | ○    | ○    |
| 250     | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | -   | -    | -    | -    |
| 300     | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ○   | ○    | ○    | ○    |
| 350     | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | -   | -    | -    | -    |
| 400     | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ○   | ○    | ○    | ○    |
| 500     | -   | -   | ○   | -   | ○   | -   | ○   | -   | ○   | -   | ○   | -   | ○   | -   | ○   | ○   | ○    | ○    | ○    |
| 600     | -   | -   | ○   | -   | ○   | -   | ○   | -   | ○   | -   | ○   | -   | ○   | -   | ○   | ○   | ○    | ○    | ○    |
| 700     | -   | -   | ○   | -   | ○   | -   | ○   | -   | ○   | -   | ○   | -   | ○   | -   | ○   | ○   | ○    | ○    | ○    |
| 800     | -   | -   | ○   | -   | ○   | -   | ○   | -   | ○   | -   | ○   | -   | ○   | -   | ○   | ○   | ○    | ○    | ○    |

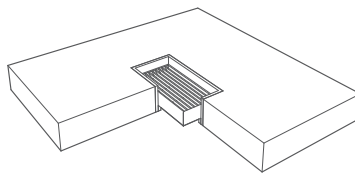
- Ge60-XL, Ge120-XL
- Ge60, Ge90, Gz60
- Ge120



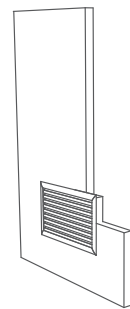
Rigid wall



Light wall



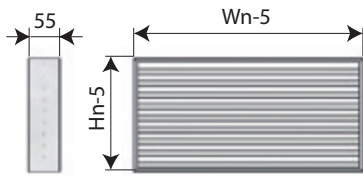
Rigid floor



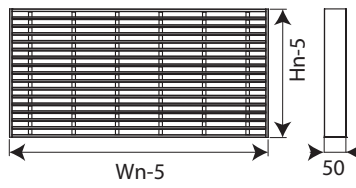
Wooden door panel

## DIMENSIONS OF THE FIRE RESISTANT GRILLS

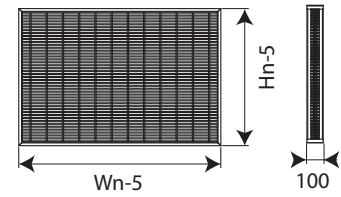
Gz60



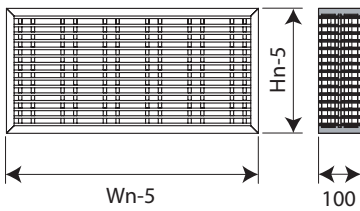
Ge60/Ge90



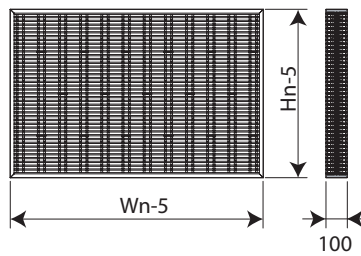
Ge60-XL



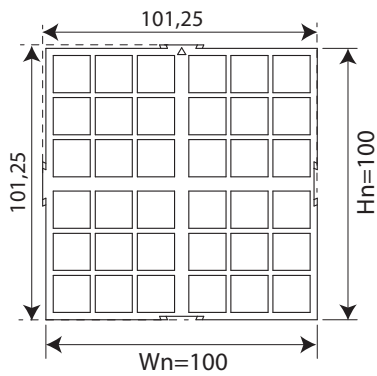
Ge120



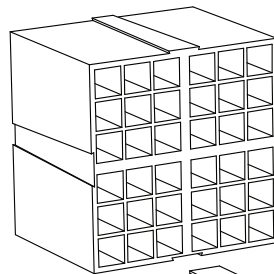
Ge120-XL



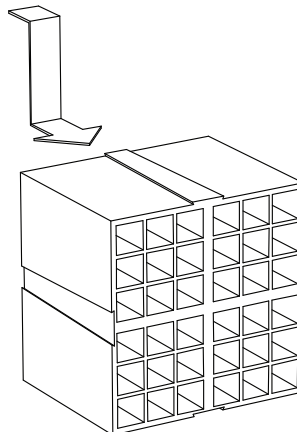
Gb90



The modular block Gb90 has the dimensions of a standard brick (100 x 100 x 80 mm).



It can be used alone or several blocks can be assembled together, depending on the required air flow rate and fire resistance.





RF-TECHNOLOGIES OOSTERZELE

## RF-TECHNOLOGIES

Rf-Technologies is a leading European manufacturer of specialist solutions for compartmentation and smoke evacuation. The company sells its products via a vast network of partners in more than fifteen European countries.

Rf-Technologies was founded in 1985. It employs 170 people on two sites; one in Belgium (where its company headquarters are located) and the other in Slovakia. Ongoing investment in research and development testifies to a desire to continually develop and improve the range of products.

Ref : C-FD-EN-C-2018-01

**RF-TECHNOLOGIES**

Lange Ambachtstraat 40 • B-9860 Oosterzele

T: +32 9 362 31 71 • F: +32 9 362 33 07 • E: [info@rft.be](mailto:info@rft.be)

