



forbo

MARMOLEUM[®] fr
fire retardant



MARMOLEUM® fr



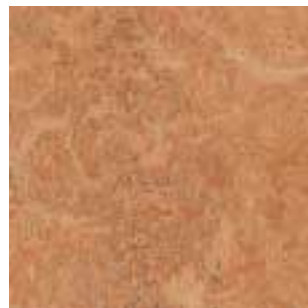
63038

caribbean



63173

van gogh



63174

sahara



63120

rosato



63163

opera



63164

indian summer



63182

lapponia



63055

fresco blue



63030

blue



63032

mist grey



63146

serene grey





63048


graphite


Same colours as in the Marmoleum global 1 collection


EN 548 Marmoleum fr meets the requirements of EN 548.


-  Length full roll approx. 27 m²


-  Thickness 2.5 mm


-  Width 2 m


-  Fire resistance and smoke behaviour in accordance with EN 13501-1: class B_{fl}.


-  EN 1399: Marks left on linoleum as a result of stubbed-out cigarettes can be easily removed. Sandpaper gently and apply a new coat of polish. Linoleum does not melt.


-  Castor resistance in accordance with EN 425: suitable for office chairs with castors.


-  Antistatic: static charge on persons remains under 2 kV, measured in accordance with EN 1815. Test material adhered normally to a standard subfloor. Safety resistance: measured in accordance with VDE 0100/T610: >5·10⁴ Ω.


-  Impact sound reduction in accordance with ISO 717-2: 5 dB.

-  Colour fastness in accordance with ISO 105-B02, method 3: minimum blue scale 6. Depending on the colour, the colour fastness is usually higher, often being 8 (blue scale maximum is 8). The samples may differ slightly from the material supplied.

-  Indentation resistance in accordance with EN 433 (req.: ≤ 0.15 mm): typical value 0.08 mm


-  Flexibility in accordance with EN 435: ø 40 mm


-  Chemical resistance in accordance with EN 423: Marmoleum fr is resistant to diluted acids, oils, fats and to the conventional solvents, such as alcohol, white spirit etc. Not resistant to prolonged exposure to alkalis.


-  Suitable for underfloor heating. Heat resistance in accordance with DIN 52612: ± 0,014 m²·K/W Thermal conductivity coefficient: 0.17 W/m·K.


- Measured at 23°C-50% relative humidity.


EN 685 Application areas Marmoleum fr according to EN 685.

-  class 23

-  class 34

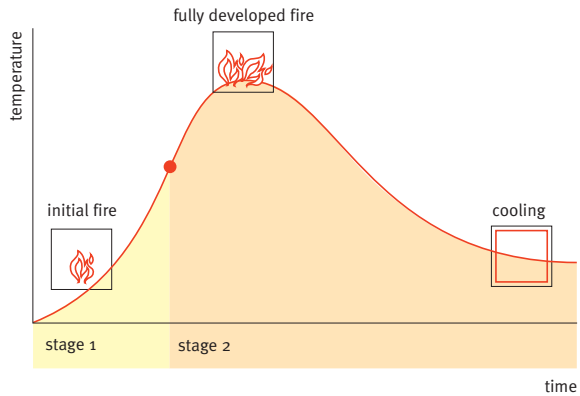
-  class 42

-  Marmoleum fr is provided with an ETC-finish. It is not necessary to strip the floor covering after installation and apply another finish.

-  Marmoleum fr has bacteriostatic properties, which are confirmed by famous laboratories such as TNO (The Netherlands) and NAMSA (USA), even against the bacteria MRSA.

Role of a floor covering in the stages of fire

For the fire safety in buildings there are two main stages in the development of a fire. The first is the initial fire in which the building interior is important. The second is the fully developed fire in which the building and separating structures are essential to limit the fire to the compartment of origin.

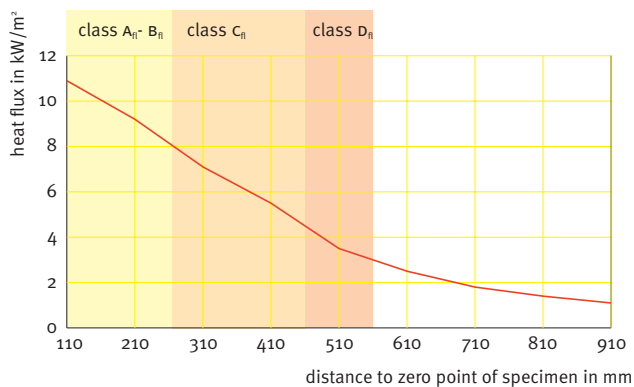


Floor coverings have a limited contribution to the development of a fire. The EU Fire Regulators developed a special test method and classification system for floor coverings within the building regulations. The radiant panel test is used to measure the reaction of a material to a fire.

Standards and test methods

The new European fire classification standard is the EN 13501-1:2002 for construction products and building elements. This classification is using test data from the EN ISO 9239-1: 2002: Determination of the burning behaviour of a floor covering using a radiant heat source.

The specimen of a floor covering is heated by a radiant panel for 10 minutes. After 30 minutes from the start of the test, the flame is extinguished. The size of the burned area within this period determines the classification.



Marmoleum fr is specially developed to meet Class B_{fl} for areas with specific safety requirements for floor coverings. Most commercial applications will need floor covering products from Class C_{fl} or D_{fl}, to which all Marmoleum products comply.

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Marmoleum fr is the first linoleum flooring collection in the world which meets class B_{fl} of the EN 13501-1 fire classification standard for buildings. This special collection consists of 12 attractive colours from the Marmoleum collection.

Application areas

In most commercial application areas the world's leading Marmoleum collection is the preferred floor covering with regards to its environmental performance and product properties. Some specific commercial areas however can have additional fire regulations. Forbo developed the Marmoleum fr collection in order to ensure the safety in those areas with supplementary fire requirements. These specific areas are not generally formulated and can differ per country.

Building regulations

For fire regulations in buildings a new system with Euroclasses has been adopted in the European Union. In all countries the national building regulations will be adjusted to these new Euroclasses. The new European fire classification standard is the EN 13501-1:2002 for construction products and building elements. This classification is using test data from reaction to fire tests.

The advantages of Marmoleum

- Natural ingredients*
- Durable*
- Hygienic*
- Antistatic*
- Bacteriostatic*
- Cigarette burn resistant*
- Easy to clean and maintain*



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