

DUROFLOOR 11

Two-component epoxy flooring

Description

DUROFLOOR 11 is a two-component, solvent-free, colored epoxy system, offering high strength and abrasion resistance. It is resistant to organic and inorganic acids, alkalis, petroleum products, wastes, water, sea water and a large number of solvents. It is resistant to temperatures from -30°C to +100°C in dry loading and up to +60°C in wet loading.

Certified according to EN 13813 and classified as SR-B2.0-AR0.5-IR4. CE marked.

Fields of application

DUROFLOOR-11 is used, with the addition of quartz sand with a particle size of 0.1-0.4 mm as a self-leveling epoxy flooring on cement-based floors that require extremely high mechanical or chemical resistance. It can also be used, without the addition of quartz sand, as a brushable coating on cement-based substrates, as well as for steel or iron surfaces. It is suitable for industrial areas, warehouses, stores, car workshops, super markets, laboratories, hotels, garages, gas stations, areas with heavy traffic, etc.

Technical data

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| Basis: | two-component epoxy resin |
| Color: | RAL 7032 (sand grey) RAL 7040 (grey) other colors by special order |

As a self-leveling epoxy flooring (with the addition of quartz sand (0.1-0.4 mm particle size) in the ratio 1:1 by weight

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| Viscosity: | approx. 10,000 mPa·s at +23°C |
| Density: | 1.70 kg/l |
| Pot life: | approx. 40 min at +20°C |
| Water absorption: (ASTM D 570) | 0.25% w/w after 24 h |
| Reaction to fire (EN 13501-1): | C _{fi} - s1* |

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| Minimum hardening temperature: | +8°C |
| Hardness according to SHORE D: | 80 |
| Walkability: | after 24 h at +23°C |
| Successive layer: | within 24 h at +23°C |
| Final strength: | after 7 days at +23°C |
| Abrasion resistance: (ASTM D 4060, TABER TEST, CS 10/1000/1000) | 79.0 mg |
| Compressive strength: (EN 13892-2) | ≥ 84 N/mm ² |
| Flexural strength: (EN 13892-2) | ≥ 49 N/mm ² |
| Adhesion strength: | ≥ 3 N/mm ² |

As a brushable coating

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| Viscosity: | approx. 1.400 mPa·s at +23°C |
| Density: | 1.35 kg/l |
| Mixing ratio (A:B): | 100:29 by weight |
| Pot life: | approx. 40 min at +20°C |
| Water absorption: (ASTM D 570) | 0.28% w/w after 24 h |
| Minimum hardening temperature: | +8°C |
| Hardness according to SHORE D: | 80 |
| Walkability: | after 24 h at +23°C |
| Successive layer: | within 24 h at +23°C |
| Final strength: | after 7 days at +23°C |
| Abrasion resistance: (ASTM D 4060, TABER TEST, CS 10/1000/1000) | 77.0 mg |
| Compressive strength: (EN 13892-2) | ≥ 53 N/mm ² |
| Flexural strength: (EN 13892-2) | ≥ 33 N/mm ² |

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Adhesion strength: $\geq 3 \text{ N/mm}^2$

*with DUOPRIMER-PRO epoxy primer as a system.
Report No 18/17898-1885, APPLUS Laboratories – LGAI, Spain, December 2018.

Cleaning of tools:
Tools should be cleaned with SM-25 solvent, immediately after use.

Directions for use

1. Substrate preparation

The flooring surface should be:

- Dry and stable.
- Free of materials that might impair bonding, e.g. dust, loose particles, grease, etc.
- Protected from underneath moisture attack.

Also, it should meet the following requirements:

a) Cementitious substrates:

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| Concrete quality: | at least C20/25 |
| Cement screed quality: | cement content 350 kg/m ³ |
| Age: | at least 28 days |
| Moisture content: | less than 4% |

b) Iron or steel surfaces:

It should be free of rust or any corrosion that might impair bonding.

Depending on the nature of the substrate, it should be prepared by brushing, grinding, sandblasting, water blasting, shot blasting, etc.

Then, the surface should be cleaned from dust with a high suction vacuum cleaner.

2. Priming

The surface is primed with DUROFLOOR-PSF or DUOPRIMER epoxy primers.

Consumption: 200-300 g/m².

After the primer has dried, any existing imperfections (cracks, holes) should be filled using DUROFLOOR 11 (A+B) mixed with quartz sand, with a particle size of 0.1-0.4 mm (or M32), in the ratio 1:1.5 up to 1:2 by weight or using DUROFLOOR-PSF mixed with quartz sand, with a particle size of 0-0.4 mm (or Q35) in the ratio 1:2 up to 1:3 by weight.

Metal substrates should be primed with EPOXYCOAT-AC anticorrosive epoxy coating. DUROFLOOR 11 should be applied within 24 hours from priming.

If DUROFLOOR 11 is to be applied after the first 24 hours, quartz sand (0.4-0.8 mm particle size) should be spread on the surface, while the primer is still fresh, in order to ensure good bonding. After the primer has hardened, any loose grains should be removed with a high suction vacuum cleaner.

Wet substrate

If the product is intended to be applied on a wet (moisture level higher than 4%) or fresh concrete floor (3-28 days), it should be primed with the three-component, water-based primer DUOPRIMER-W.

3. Mixing of the components

Components A (resin) and B (hardener) are packed in two separate containers, having the correct predetermined mixing ratio by weight. At first, component A must be stirred well and poured into a clean container. Then, the entire content of component B is added to component A under continuous stirring. The two components should be mixed for about 5 minutes with a low speed mixer (300 rpm). It is important to stir the mixture thoroughly near the sides and bottom of the container, to achieve uniform dispersion of the hardener.

If DUROFLOOR 11 is to be used as a self-leveling epoxy flooring, quartz sand with 0.1-0.4mm particle size (or M32) is gradually added to the mixture under continuous stirring, in the ratio 1:1 by weight [epoxy resin (A+B):sand], until a uniform epoxy mortar is formed.

4. Application - Consumption

Depending on the required type of the epoxy floor and the form of the final surface, there are four cases of application:

a) Self-leveling flooring - Smooth final surface

The epoxy mortar is poured on the floor and spread (dragged) at a thickness of 2-3 mm, using a notched trowel.

Consumption of DUROFLOOR 11 (A+B):
0.85 kg/m²/mm.

Consumption of quartz sand: 0.85 kg/m²/mm.

The self-leveling layer should be rolled with a special spiked roller, to help entrapped air escape, and thus avoid bubbles.

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b) Self-leveling flooring - Slip-resistant final surface

At first, the epoxy mortar is applied in the same way as in the smooth surface case.

While the layer is still fresh, quartz sand is broadcast (0.1-0.4 mm or 0.4-0.8 mm particle size, depending on the required anti-slip effect.)

Consumption of quartz sand: approx. 3 kg/m².

After DUROFLOOR 11 has hardened, any loose grains should be removed with a high suction vacuum cleaner.

Finally, a finishing sealing layer of DUROFLOOR-11 (A+B) is applied by roller.

Consumption: 400-600 g/m².

c) Brushable coating - Smooth final surface

DUROFLOOR 11 (A+B) is applied by roller in two layers. The second layer is applied after the first one has dried, but within 24 hours.

Consumption: Approx. 250-300 g/m²/layer.

d) Brushable coating - Slip-resistant final surface

DUROFLOOR 11 (A+B) is applied by roller in one layer.

Consumption: approx. 250-300 g/m².

While the layer is still fresh, quartz sand is broadcast (0.1-0.4 mm or 0.4-0.8 mm particle-size, depending on the desired anti-slip effect).

Consumption of quartz sand: approx. 3 kg/m².

After DUROFLOOR 11 has hardened, any loose grains should be removed with a vacuum cleaner.

Finally, a finishing layer of DUROFLOOR-11 (A+B) is brushed.

Consumption: 400-600 g/m².

Packaging

DUROFLOOR 11 is supplied in containers (A+B) of 16 kg and 30 kg, with components A and B having a fixed predetermined ratio by weight.

M32 quartz sand is supplied in bags of 25 kg.

Shelf life – Storage

12 months from production date if stored in original sealed packaging, in areas protected from humidity and direct sunlight. Recommended storage temperature between +5°C and +35°C.

Remarks

- The workability of epoxy materials is affected by temperature. The ideal temperature of application is between +15°C and +25°C, for which the product obtains optimal workability and curing time. Room temperature below +15°C will expand the curing time, while temperatures above +30°C will reduce it. It is recommended to mildly preheat the product in the winter, and store the product in a cool room before application in the summer.
- Bonding between successive layers may be severely affected by moisture or dirt trapped between them.
- Epoxy layers should be protected from moisture for 4-6 hours after application. Moisture may whiten the surface or/and make it sticky. It may also disturb hardening. Faded or sticky layers in parts of the surface should be removed by grinding or milling and laid again.
- In case recoat time (between successive layers) is longer than predicted or in case old floors are to be overlaid again, the surface should be thoroughly cleaned and ground before applying the new layer.
- After hardening, DUROFLOOR 11 is totally safe for health.
- Please consult the safety instructions written on the packaging before use.

Volatile Organic Compounds (VOCs)

According to Directive 2004/42/CE (Annex II, table A), the maximum allowed VOC content for the product subcategory j, type SB is 500 g/l (2010) for the ready-to-use product.

The ready-to-use product DUROFLOOR-11 contains a maximum of 500 g/l VOC.

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| ISOMAT S.A. 17 th km Thessaloniki – Ag. Athanasios P.O. BOX 1043, 570 03 Ag. Athanasios, Greece 08 |
| EN 13813 SR-B2,0-AR0,5-IR4 Synthetic Resin screed material for use internally in buildings DoP No.: DUROFLOOR-11/1827-01 Reaction to fire: C _{fl} - s1 Release of corrosive substances: SR Water permeability: NPD Wear resistance: AR0,5 Adhesion: B2,0 Impact resistance: IR4 Sound insulation: NPD Sound absorption: NPD Thermal resistance: NPD Chemical resistance: NPD |

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| 2032 |
| ISOMAT S.A. 17 th km Thessaloniki – Ag. Athanasios P.O. BOX 1043, 570 03 Ag. Athanasios, Greece 18 |
| 2032-CPR-10.11 DoP No.: DUROFLOOR 11 / 1861-01 EN 1504-2 Surface protection products Coating Permeability to CO ₂ : Sd > 50m Water vapor permeability: Class I (permeable) Capillary absorption: $w < 0.1 \text{ kg/m}^2 \cdot \text{h}^{0.5}$ Adhesion: $\geq 0.8 \text{ N/mm}^2$ Reaction to fire: C _{fl} - s1 Dangerous substances comply with 5.3 |

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