Technical Datasheet

DUROFLOOR

Two-component, self-leveling epoxy flooring

Description

DUROFLOOR is a two-component, colored, self-leveling epoxy system offering high strength and abrasion resistance. It shows resistance to organic and inorganic acids, alkalis, petroleum products, waste, water, seawater, and numerous solvents. It is resistant to temperatures ranging from -30°C to +100°C in dry loading and up to +60°C in wet loading.
Certified according to EN 1504-2 and classified as coating for surface protection of concrete. Certificate No: 2032-CPR-10.11.
Also certified according to EN 13813 and classified as SR-B2,0-AR0,5-IR4. CE marked.
DUROFLOOR has received an Environmental Product Declaration (EPD) following an assessment of its life-cycle environmental impacts. Registration No: EPD-IES-0016841, The International EPD® System.

Fields of application

DUROFLOOR is used as a pourable, self-leveling floor coating on cement-based floors requiring high mechanical strength or chemical resistance.
Suitable for industrial facilities, warehouses, shopping malls, supermarkets, hotels, parking garages, heavy-traffic areas, gas stations, auto repair shops, slaughterhouses, laboratories, hospitals, wineries, canning factories, etc.
Also suitable for food contact surfaces according to W-347, ISO 8467.
It complies with LEED requirements (Rule 1113 – SCAQMD) regarding Volatile Organic Compound (VOC) Limits, categorized as Industrial Maintenance (IM) coatings, Code 19, VOC limit: <100 g/l.

Technical data

Base:	two-component epoxy resin
Colors:	RAL 7032 (pebble grey) RAL 7035 (light grey) RAL 7040 (window grey) RAL 3009 (oxide red) RAL 1015 (light ivory) RAL 1013 (oyster white) RAL 6021 (pale green), other colors on order
Viscosity:	~ 500 mPa·s at +23°C
Density (A+B):	1.11 kg/l
Solid content:	~ 100%
Mixing ratio (A:B):	100:48 by weight
Density (A+B+Q35 quartz sand):	1.74 kg/l
Mixing ratio of DUROFLOOR (A+B): Q35 quartz sand:	1:2 by weight
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):	B_{fl} - s1*
Minimum hardening temperature:	+8°C
Hardness according to SHORE D:	80
Walkability:	after 24 h at +23°C
Recoat time:	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)	80.5 mg (with Q35 quartz sand, 1:2 ratio by weight)
Abrasion resistance: (EN 13892-4)	< 50 μm
Compressive strength: (EN 13892-2)	≥ 95 N/mm^2
Flexural strength: (EN 13892-2)	≥ 63 N/mm^2
Adhesion strength:	≥ 3 N/mm^2

* Report No: 17/14153-884, APPLUS Laboratories.

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.

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It should also meet the following requirements:

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

Depending on the nature of the substrate, it should be prepared by brushing, grinding, sandblasting, water blasting, shot blasting, etc. Following this, the surface should be cleaned from dust with a high-suction vacuum cleaner.

2. Priming

The surface is primed with DUROFLOOR-PSF or DUROPRIMER epoxy primers with a consumption of 200-300 g/m^2 or with DUROPRIMER-PRO epoxy primer with a consumption of 250-400 g/m^2.
After the primer has dried, any existing imperfections (cracks, holes, etc.) should be filled with DUROFLOOR-PSF or DUROPRIMER-PRO mixed with 0.1-0.4 mm particle size quartz sand (or M32 sand) or 0-0.4 mm particle size quartz sand (or Q35 sand) at a ratio of 1:2 up to 1:3 by weight.
DUROFLOOR should be applied within 24 hours from priming.
In case DUROFLOOR is to be applied after the first 24 hours, quartz sand of 0.1-0.4 mm particle size (or M32 sand) or 0.3-0.8 mm particle size should be spread on the surface while the primer is still fresh 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 to a wet (moisture content > 4%) or fresh concrete floor (3-28 days), then it should be primed with the two-component epoxy primer DUROPRIMER-SG.

3. Mixing of the components

Components A (resin) and B (hardener) are packaged in two separate containers, at the correct predetermined mixing ratio by weight. Before mixing, component A is stirred mechanically for 1 min. Then, all of component B is added to component A and the two components are mixed continuously for about 3 min with a low-speed mixer (300 rpm) until a uniform mix is obtained.

It is important to thoroughly stir the mixture near the sides and bottom of the container to achieve uniform dispersion of the hardener. Next, the mixture is poured into a clean container where quartz sand of 0-0.4 mm particle size (or Q35 sand) is slowly added under stirring, at a 1:2 ratio by weight [epoxy resin (A+B):sand]. Mixing should continue for about 3 min until the resin mortar is fully homogeneous.

4. Application - Consumption

Depending on the required finish of the final surface, there are two cases of application:

a) Smooth finish

The resin mortar is poured on the floor and spread (dragged) with a notched trowel at a thickness of 2-3 mm.
Consumption of DUROFLOOR (A+B):
0.60 kg/m^2/mm.
Consumption of quartz sand: 1.2 kg/m^2/mm.

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

b) Slip-resistant finish

First, the resin mortar is applied in the same way as in the smooth finish case.
On the still fresh layer, quartz sand (Ø 0.1-0.4 mm or 0.3-0.8 mm) is spread, depending on the slip-resistance required.
Consumption of quartz sand: approx. 3 kg/m^2.

After DUROFLOOR has hardened, any loose grains should be removed with a high-suction vacuum cleaner.
Finally, a finishing sealing layer using DUROFLOOR-11 is applied by roller.
Consumption: 400-600 g/m^2.

Packaging

DUROFLOOR is supplied in 9 kg containers (A+B), with components A and B at fixed predetermined ratio by weight.
Q35 quartz sand is supplied in 18 kg bags.

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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.
- In case DUROFLOOR is to be used on vertical or inclined surfaces, an epoxy flow regulator should be added at a ratio of 0.5% by weight.
- After hardening, DUROFLOOR is totally safe for health.
- Please consult the directions for safe use and precautions 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 contains 60 g/l VOC.

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CE

2032

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2032-CPR-10.11

DoP No.: DUROFLOOR / 1860-02

EN 1504-2

Surface protection products

Coating

Permeability to CO_2: Sd > 50 m

Water vapor permeability: Class I (permeable)

Capillary absorption: w < 0.1 kg/m^2·h$^{0.5}$

Adhesion: ≥ 2.0 MPa

Reaction to fire: B_{fl} - s1

Dangerous substances comply with 5.3

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EN 13813 SR-B2,0-AR0,5-IR4

Synthetic Resin screed material for use internally in buildings

DoP No.: DUROFLOOR/1828-02

Reaction to fire: B_{fl} - s1

Release of corrosive substances: SR

Water permeability: NPD

Wear resistance: AR0,5

Bond strength: B2,0

Impact resistance: IR4

Sound insulation: NPD

Sound absorption: NPD

Thermal resistance: NPD

Chemical resistance: NPD

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