DEGADUR® 332 and DEGADUR® 529

For elastic industrial floors, indoors and outdoors

General Description

Under the DEGADUR® trademark, Evonik Industries produces rapidly curing methacrylic resins that are used to formulate floor coatings, with the addition of fillers and pigments. Their rapid curing (even at temperatures as low as minus 30 °C) ensures very short interruptions in routine operations. The coatings can be used to provide smooth or textured surfaces. Seamless DEGADUR® industrial floor coatings are robust and resistant to many conventional chemicals such as acids and alkalis. The degree of mechanical strength and slip resistance can be precisely adjusted according to the specific requirements or relevant industrial regulations. Individual wishes can be met in terms of color or design. DEGADUR® coating systems can generally be applied on concrete and metal substrates, asphalt, indoor and outdoor areas as well as in wet and dry rooms.

Summary of benefits

- Rapid curing - floor can be used and exposed to normal loads after two hours, which means minimal downtimes
- Coating possible at ambient temperatures of -30 °C to +35 °C
- Good wear resistance
- Seamless and water-tight
- Good chemical resistance to acids, alkalis and many cleaning agents
- New DEGADUR® coatings can be applied to old DEGADUR® substrates

DEGADUR® 332/529

For custom-tailored system solutions

- Extremely elastic floor coating with high UV resistance
- Impact-resistant and crack-bridging
- For high mechanical loads on indoor and outdoor surfaces
- For application on substrates of low mechanical strength

Fields of application

- Warehouses
- Cold storage rooms and deep-freeze stores; combined with DEGADUR® 430, also in shock frosters
- Metalworking industry
- Multistory car parks
- Printing shops, workshops
- Loading ramps
- Bridge and road coatings

Functional systems for highly weather-resistant elastic floors

Coatings based on DEGADUR® 332, sealed with DEGADUR® 529, are especially suitable for elastic indoor and outdoor surfaces. This coating of at least 5 mm thickness must always be broadcast. The particle size and type of broadcast material determine the mechanical strength, field of application, color, texture and slip resistance of the coating.

Substrate Composition

The substrate must be correctly prepared for coating as described below. The primer must be allowed to cure properly on the substrate in order to guarantee a durable bond. This applies equally to concrete, asphalt and metal substrates and to old coatings.

The surfaces must be solid, dry, offer good grip and be capable of bearing loads. They must be free from laitance, loose particles, flakiness and substances like grease, oil, rubber fines, paint residues or other contaminants that would prevent bonding.

The best floor preparation is usually achieved by means of shotblasting or mechanical removal (grinding). For very soiled surfaces, these mechanical methods can be advantageously combined with flame paring. After preparing the substrate, its pull-off strength must be at least 1.5 N/mm². Tensile bond measurements can be performed using a Herion appliance, for example. A simple adhesive test patch with the chosen primer, e.g. DEGADUR® 112, may provide an indication of how well the floor has been prepared.

The floor-laying company must furnish proof of adequate adhesion!

Since it is very important to correctly prepare and assess the substrate, we recommend that you consult the Technical Information Sheet "Substrate Analysis and Floor Preparation for Coating Work with DEGADUR® Systems."

Adhesive test patch

Maximum substrate humidity

Substrate	Ambient humidity (before and after coating)
Reinforced concrete floor	2.0–3.0 %
Pumice concrete	3.0–5.0 %
Cementitious screed, depending on mixing ratio	1.5–3.0 %
Aerated concrete screed, cement-bound	2.5–3.5 %
Cold bitumen screed, cement-bound	1.5–2.0 %
Magnesia flooring	8.5–12.0 %
Anhydride and gypsum screeds	less than 0.5 %
Chipboard, hardboard, wooden floors	8.0–12.0 %

Primer

The primer DEGADUR® B 71 or DEGADUR® 112 is mixed with the corresponding amount of BPO hardener powder by stirring, distributed on the substrate using a rubber blade and rolled out in an evenly thin layer (400 - 500 g/m²). Highly absorbent substrates are coated with primer twice to ensure that a thin, continuous film exists over the entire surface to bind the broadcast material. The primer is lightly broadcast with quartz sand (Ø 0.4 - 0.8 mm). This process takes little time but guarantees an ideal bond between the primer and the coating.

BPO hardener quantities for DEGADUR® 112 primer

Temperature [°C]*)	Hardener [w/w %] **)	Pot life [min]	Curing time [min]
+5	5	appr. 8	appr. 30
+10	4	appr. 8	appr. 30
+15	3	appr. 7	appr. 30
+20	2	appr. 8	appr. 30
>30	1	appr. 6.5	appr. 30

*) The temperature refers to the resin, floor and air temperature

**) The hardener quantities refer to DEGADUR® 112; for DEGADUR® B 71, see data sheet

Note:
The stated values are based on laboratory tests. In practice, external influences may lead to deviations from these values.

Coating

Coatings with DEGADUR® 332 are characterized by their good self-leveling properties. Owing to its high mechanical strength, DEGADUR® 332 is the preferred choice for coatings with layer thicknesses of 5-8 mm. Mixed with DEGADUR® 430, it is also suitable for coating floors in deep-freeze stores, according to the relevant technical information sheets. The typical filler consumption, depending on type, is approx. 1.8 kg/m² per mm layer thickness.

Typical formulation for 5–8 mm coating

Quantity [pbw]	Product
30.0	DEGADUR® 332
30.0	Quartz powder, barite, calcite
40.0	Quartz sand 0.4–0.8 mm

BPO hardener quantities for DEGADUR® 332 mortar

Temperature [°C]*)	Hardener [w/w %] **)	Pot life [min]	Curing time [min]
+5	5.0	appr. 25	appr. 70
+10	4.0	appr. 25	appr. 60
+20	2.0	appr. 20	appr. 45
+30	1.5	appr. 25	appr. 50

*) The temperature refers to the resin, floor and air temperature
**) The hardener quantities refer to DEGADUR® 332

Note:
The stated values are based on laboratory tests. In practice, external influences may lead to deviations from these values.

The mixture for practical application is distributed using a pin rake. The wet film thickness must be at least 4 mm.
The coating is then broadcast with quartz sand of particle size 0.7–1.2 mm or 0.4–0.8 mm, depending on the required surface texture.

Seal Coat

The entire quantity of DEGADUR® 529 mixed with BPO powder is poured onto the coating, distributed roughly using a rubber blade and then evenly applied with a polyamide roller (pile 12 mm). It is advisable to pigment the top coat.

BPO hardener quantities for DEGADUR® 529 seal coat

Temperature [°C]*)	Hardener [w/w %] **)	Pot life [min]	Curing time [min]
+5	4.5	appr. 40	appr. 70
+10	3.5	appr. 35	appr. 75
+20	2.0	appr. 15	appr. 35
+30	1.0	appr. 25	appr. 70

*) The temperature refers to the resin, floor and air temperature
**) The hardener quantities refer to DEGADUR® 529

Note:
The stated values are based on laboratory tests. In practice, external influences may lead to deviations from these values.

Important points to bear in mind for the seal coat

- To prevent yellowing, it is important to precisely observe the hardener quantities stated in the table.
- For outdoor coatings it is recommended to pigment the top coat.
- Owing to the thermoplastic nature of MMA resins, forklift traffic may leave black abrasion marks (tire marks).
- The hardener powder must be thoroughly stirred in for at least one minute.
- Good ventilation during processing ensures good curing of the seal coat.

Properties of a coating system with DEGADUR® 332 and DEGADUR® 529

Property	Standard/Test Method	Unit	Result (according to typical formulation on page 2)	Class according to EN 13813
Tensile strength	DIN EN ISO 527	[MPa]	6	F 6
Compressive strength	DIN EN ISO 604	[MPa]	12	C 12
Elongation at break	DIN EN ISO 527	[%]	2.3	-
Elastic modulus	DIN EN ISO 527	[MPa]	920	E 1
Tensile bond strength on concrete	DIN ISO 4624 ZTV-SIB	[MPa]	4.1	B 2.0
Impact strength	EN ISO 6272	[Nm]	4	IR 4
Wear resistance according to BCA	prEN 13892-4	[µm]	< 10	AR 0,5
Slip resistance/displacement volume	BGR 181 and DIN 51130	[R/V]	R11 to R13 and V4 to V10, depending on system composition	-
Fire rating	prEN ISO 11925.2 exposure = 15 s	[Class]	Fs ≤ 150 mm within 20 s	E_{fl}
Physiological inoffensiveness	EU Regulation 1935/2004 of the European Parliament dated 27 Oct. 2004	Food Contact Declaration	(Test report No. 26053 U 08) The coating system is physiologically safe. Suitable for food processing companies.	-

According to §9 of the German Construction Product Act (implementing Construction Products Directive 89/106/EEC), the described system complies with the provisions of EN 13813:2002 and meets the prerequisites for CE marking according to Annex ZA 1.5 of EN 13813:2002.

® = registered trademark
DEGADUR is a registered trademark of Evonik Röhm GmbH, Darmstadt, Germany

Evonik Röhm GmbH is certified to DIN EN ISO 9001:2008, DIN EN ISO 14001:2004 and BS OHSAS 18001:2007.

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