

DEGADUR® 151 AND DEGADUR® 165 FOR HIGH MECHANICAL LOAD-BEARING INDUSTRIAL AND COMMERCIAL FLOORS

General Description

Under the DEGADUR® trademark, Röhm 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.

Decorative systems for dry areas

Coatings based on DEGADUR® 151, sealed with DEGADUR® 165, are especially suitable for easy-to-clean, decorative indoor surfaces on high-quality substrates. The DEGADUR® 165 seal coat shows particularly good resistance to chemicals and tire abrasion.

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® 151/165 – for custom-tailored system solutions

- Extremely hard-wearing with high compressive strength
- High resistance to gasoline and oil
- Good resistance to tire marks
- For application on substrates with high mechanical strength

Fields of application

- Storage rooms
- Salesrooms and exhibition rooms
- Bakeries, cafés, beverage stores
- Laboratories, pharmaceutical industry
- Printing shops, distributing centers, workshops
- Discothèques, gyms
- Changing rooms
- Zoo enclosures (indoors)
- Museums
- Banks

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.

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 shot blasting 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/m². 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.“

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 correct 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 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® 151 can be easily smoothed using a trowel. DEGADUR® 151 is the preferred choice for trowel-smoothed coatings of 4–6 mm thickness, due to its high resistance to abrasion, gasoline and oil as compared with other systems. Smooth or broadcast floors can also be obtained, according to the corresponding technical information sheets. The typical material consumption, according to filler type, is approx. 1.8 kg/m² per mm layer thickness.

Typical formulation for 4 – 6 mm coating

Quantity [pbw]	Product
21.6	DEGADUR® 151
62.7	Colored sand 0.7–1.2 mm
15.7	Colored sand 0.3–0.8 mm

BPO hardener quantities for DEGADUR® 151

Temperature [°C]*)	Hardener [w/w %] **)	Pot life [min]	Curing time [min]
+5	4.0	appr. 20	appr. 60
+10	3.0	appr. 25	appr. 55
+20	2.0	appr. 17	appr. 35
+30	1.5	appr. 14	appr. 30

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

**) The hardener quantities refer to DEGADUR® 151

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

The mixture for practical purposes is applied using a pin rake in the desired layer thickness and then smoothed with a suitable smoothing trowel.

Seal Coat

With trowel-smoothed colored sand coatings and smooth coatings based on DEGADUR® 151, it is **essential to apply an intermediate primer layer of DEGADUR® 112** before applying the DEGADUR® 165 seal coat. The entire quantity of DEGADUR® 165 mixed with BPO powder is poured onto the coating, distributed roughly using a serrated rubber blade and then evenly applied with a mohair roller (pile 4 mm).

BPO hardener quantities for DEGADUR® 165

Temperature [°C]*)	Hardener [w/w %]**)	Pot life [min]	Curing time [min]
+5	1.8	13 – 15	40 – 45
+10	1.5	13 – 14	30 – 35
+20	1.0	12 – 13	30 – 35
>20	0.8	10 – 12	20 – 30

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

**) The hardener quantities refer to DEGADUR® 165

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 ensure reliable curing throughout the coating, at least 300 g/m² of seal coat must be applied per layer.
- To ensure the required slip resistance and to prevent yellowing and detachment, the maximum layer thickness is 800 g/m².
- Applying two layers of DEGADUR® 165 seal coat prolongs the protective effect of the coating.
- The hardener powder must be thoroughly stirred in for at least one minute.
- Good ventilation during processing ensures good curing of the coating.

Properties of a coating system with DEGADUR® 151 and DEGADUR® 165

Property	Standard/Test Method	Unit	Result (according to typical formulation on page 3)
Tensile strength	DIN EN ISO 527	[MPa]	8.8
Compressive strength	DIN EN ISO 604	[MPa]	44
Elongation at break	DIN EN ISO 527	[%]	0.8
Elastic modulus	DIN EN ISO 527	[MPa]	2100
Tensile bond strength on concrete	DIN ISO 4624 ZTV-SIB	[MPa]	4.3
Impact strength	EN ISO 6272	[Nm]	4
Wear resistance according to BCA	prEN 13892-4	[µm]	10
Reaction to fire	EN 13501-1	[Class]	Efl
Physiological inoffensiveness	EU Regulation 1935/2004 of the European Parliament dated 27 Oct. 2004	Food Contact Declaration	(Test report No. 42964 U 16) The coating system is physiologically safe. Suitable for food processing companies.

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