

Icosit® 255

Epoxy-binder for Screeds on Concrete and Steel

Icosit® 277

Thixotropic Epoxy-binder for High-build Coatings and Mortars

Product Description	Icosit® 255 and Icosit® 277 are two-component binders based on epoxy resins. Icosit® 277 is a thixotropic (sag-resistant) version. By adding appropriate aggregates (kiln dried quartz sand or similar), coating materials and synthetic mortars with high mechanical and chemical resistance are obtained. Suitable for use in hot and tropical climates.
Uses	Icosit® 255 : for smoothing and coarse mortars. Icosit® 277 : for levelling /fine mortars and high build coatings on concrete, cement mortar and steel. Protection against aggressive agents, e.g. protection of walls in sewage treatment works and bridge troughs.
Advantages	<ul style="list-style-type: none">■ Excellent bond to concrete, cementitious mortar, asbestos, cement, steel■ Tough, hard■ Abrasion and impact resistant■ Excellent chemical resistance.
Test Certificates	Icosit® 255 and Icosit® 277 are approved according to TL 918 300, page 84, by German Railways.

Product Data

Type	Epoxy Resin
Colour	Icosit® 255 : approximately RAL 7001; RAL 7016; RAL 7030; RAL 7032. Icosit® 277 : approximately RAL 1014; RAL 7010; RAL 7030; RAL 7032; RAL 7035. Slight colour shade deviations of the mentioned colour shades are unavoidable due to the raw material characteristics.
Packaging	Icosit® 255 : 10 kg net. components A+B Icosit® 277 : 10 kg net. components A+B Thinner K: 25 lt.; 10lt. and 3 lt. containers.
Storage Condition	Store in a dry and cool environment between 5°C and 35°C away from direct sunlight.
Shelf life	Minimum 2 years from production date if stored in original sealed containers.



Technical Data

Mixing proportion **Icosit® 255:** 80 : 20 in parts by weight: (component A : B)
Icosit® 277: 80 : 20

Density (25°C) **Icosit® 277** - approximately 1.40 kg/lit

Solid content **Icosit® 277** - approximately 97% by weight

Mechanical Strengths

	Icosit® 255	Icosit® 277
Flexural strength (N/mm ²) acc. to DIN 1164	25-30	25-30
Compressive strength (N/mm ²) acc. to DIN 1164	50-60	50

Pot life

	+ 10°C	+ 20°C	+ 30°C
Icosit® 255/277	approx. 70 min.	30 - 40 min.	15 - 20 min.

Coating system

Concrete:

a) Self-smoothing screed:

1 pbw **Icosit® 255** binder + 0,7 pbw well graded quartz sand 0,1 - 0,3 mm
Material consumption: 1,8 - 2,0 kg/m²/mm.

b) Coarse mortar:

1 pbw **Icosit® 255** binder + 3,5 pbw well graded quartz sand 0 - 4 mm
Material consumption: 2,0 - 3,0 kg/m² /mm

c) Levelling mortar (scraping mortar):

1 pbw **Icosit® 277** binder + 0,5 - 0,7pbw well graded quartz sand 0,1-0,3 mm
Material consumption: 1,8 - 2,0 kg/m²/mm

d) Repair mortar:

1 pbw **Icosit® 277** binder + 1 - 1,25 pbw well graded quartz sand 0,1-0,3 mm
Material consumption: 1,8 - 2,0 kg/m²/mm.

The quantity of quartz sand may be increased for filling holes, cavities etc.

e) Bonding bridge:

1coat **Icosit® 255** or **Icosit® 277** between old and new concrete or mortar.
Material consumption: 1,0 - 1,5 kg/m². Do not add thinner!

Apply wet on wet, i.e. fresh concrete onto the tacky bonding bridge.

If thick bonding bridges are required, fine kiln dried sand may be added.

f) High-build coating:

2 coats **Icosit® 277** onto PCC, ECC or PC-mortar.

Material consumption: 0,6 - 0,8 kg/m²

Steel:

a) Areas with chemical and mechanical exposure:

2 - 3 coats **Icosit® 277**

b) Trough bridges with ballast bed (German Federal Railways):

Coarse mortar on horizontal surfaces:

Priming coat:

1 coat **Icosit® 277**, DB material no. 684.24, 300 µm.

Broadcast evenly with quartz sand 0,1 - 0,3 mm. Remove excess sand after final curing.

or,

1 coat **Icosit® 255**, DB material no. 684.25, 400 µm wet.

Top coat:

Wet on wet: 1 coat **Icosit® 255** coarse mortar.

Coarse mortar, 4 mm, material no. 684.27: 1 pbw Icosit 255 binder + 4 pbw quartz sand 0,1 - 2,0 mm, supplied in 40 kg bags.

c) Fine mortar on vertical and inclined areas:

Priming coat:

1 coat **Icosit® 277**, material no. 684.24, 300 µm.

Broadcast evenly with quartz sand

0,1 - 0,3 mm. Remove excess sand after final curing.

Top coat:

1 coat **Icosit® 277** fine mortar.

Fine mortar, 2 mm, material no. 684.26: 1 pbw **Icosit® 277** binder + 1,25 pbw quartz sand 0,1 - 0,3 mm.

Consumption

Product	Theoretical layer thickness with a consumption of 100gm/m ²		Theoretical consumption for medium dry film thickness of	
	Wet microns	Dry microns	microns	Approx kg/m ²
Icosit® 277	68	65	250	0.370

Apart from small areas the dry film thickness should not exceed 500 microns per layer and 1000 microns for the complete coating system.

Resistance

Mechanical:

Abrasion resistant, tough, hard and weather resistant.

Chemical:

Permanently resistant against water, seawater, diluted acids and lyes, salts, crude and fuel oils, detergents etc.

Short time resistant against phenols and phenol containing materials, acids with higher concentrations, formic acid, acetic acid, lactic acid.

Thermal:

Dry heat up to approximately 120°C. Damp heat and warm water up to approximately 60°C.

Only occasional exposure to warm water up to maximum 80°C.

Icosit® 277 high-build coating is not resistant to fluctuating temperatures of high differentials.

Application

Surface preparation

The substrate must be of sufficient strength (minimum compressive strength 30 N/mm²). Pull-off strength not below 1,5 N/mm²

Concrete:

The surface must be dry, firm, fine gripping, free from loose and friable particles, cement laitance, dust and other contaminations.

Adhesion can be improved by blast cleaning. In case of submerged exposure later on, blast cleaning or high-pressure water jetting is absolutely necessary.

Holes, cavities as well as blasting roughness can be levelled up with **Icosit® 277** mortar.

Steel:

Blast cleaning to Sa 2½ as per ISO 12 944, part 4. Free from dirt, grease and oil.

Mixing

Prior to mixing, stir component A well. Add hardener and mix base component and hardener thoroughly by means of an electrical stirrer (approximately 300 - 400 rpm).

Mixing time at least 3 minutes until a homogeneous mixture is achieved.

Fill mixed material into clean container and mix again shortly.

Application

The method of application has a major effect on achieving uniform thickness and appearance. Spray application will usually give the best results. The indicated dry-film thickness is easily achieved by airless spray and usually also achievable by brush. Adding solvents reduces the sag resistance and the dry film thickness. In case of application by roller, sometimes also by brush, additional applications may become necessary to achieve the required coating thickness, depending on type of construction, site conditions, colour shade etc.

Before starting major coating operations, it may be useful to check with a test application on site whether the selected application method with the specified product will provide the requested results.

Icosit® 277 high-build coating:

By brush, roller:

At low temperatures add maximum 5 % by weight Thinner K.

Airless spraying:

Airless spraying equipment with high output (minimum 9 ltr/min). Pressure in spray gun minimum 200 bar, nozzle 0,61 - 0,66 mm. Spraying angle 40° - 80°, diameter of hoses minimum 8 mm.

Temperature of material and equipment: minimum 30°C (the use of a flow heater is recommended).

Coarse mortar application on horizontal areas (by trowel):

In order to achieve a uniform and dense substrate, apply **Icosit® 255** mortar onto the still wet **Icosit® 255** priming coat in the provided layer thickness of 4 - 5 mm (+ 1 mm).

Application temperature (material and surface)	Minimum + 10°C, Maximum + 35°C.
Waiting Times	Minimum 1 day. In case of exposure to chemicals later on, the subsequent coat must be applied within 2 days.
Final drying time	Ready for foot traffic after approximately 24 hours. Full mechanical and chemical resistance is achieved after 7 days.
Compatibility	Broadcasted areas can be over coated even after longer waiting times.
Cleaning of implements	Clean all tools and equipment immediately after use with Thinner K Once hardened, the material can only be removed mechanically.
Notes	All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.
Safety	For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.

Legal Notes

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