BETEC® R-800.5

Very fast setting grout with high early strength

Product Description

BETEC® R-800.5 is a custom engineered high performance grout with very fast setting properties for manhole restoration and fixations in traffic zones, where a very fast initial strength development is required to allow fast reinstatement of the road.

Advantages

- Ultra fast setting and very fast initial strength development of ≈5MPa after 30 minutes, allowing fast reinstatement of the road for traffic.
- Flowable consistency for easy, fast and cost-effective installation by pouring.
- Self compacting and volume stable.
- Declaration of performance according to EN 1504-6

Field of Application

BETEC® R-800.5 is specifically engineered for:

- Manhole elevation and leveling.
- Fixation and re-bedding of manhole frames.
- Fixation of curbs, poles and other elements in traffic zones.
- Underfilling of voids.

Product Properties

Technical Data/Properties (1)

PARAMETER	EINHEIT	BETEC® R-800.5 WERTE(1)
Grain size	[mm]	0-1
Consistency	[-]	Flowable
Maximum water quantity	[l /25 kg]	3,8
Open time	[min]	≈ 5
Application temperature (Powder, water and envionment	[°C]	+5 to +30
Fresh mortar density	[kg/dm^3]	≈ 2,2
Yield (25kg bags)	[dm^3]	≈ 13
Calculation quantity	[kg/m^3]	1920
Strength development	[-]	Fast
Compressive strength(2) - 0,5 hour - 1 hour. - 2 hour - 24 hour - 7 days - 28 days	[MPa]	 ≈ 5 ≈ 7 ≈ 10 ≈ 15 ≈ 30 ≈ 40
Stength class	[-]	C 35/45
Exposure classes (3)	[-]	X0, XC1-XC4, XD1-XD3, XS1-XS3, XA1-XA2, XF1-XF3
Moisture classes (3)	[-]	WO, WF, WA
Shelf life	6 Monate Trocken und frostfrei gelagert in original verschlossenem Gebinde.	
Packaging	Bags of 25kg with plastic liner 40 bags per pallet (1000 kg)	
Appearance	Grey	

(1) Typical values in production control. All tests were executed under Laboratory conditions (21°C and 65% relative humidity).

(2) Compressive strengths measurements based on prisms (40 x 40 x 160 mm) according to EN 196-1.

(3) According to EN 206:06-2021 in combination with DIN 1045-2:08-2023.

Application

1. Preparation of Substrate

- Substrate preparation has to be according to EN 1504-10 section 7.
- The substrate must be free from dirt, grease, laitance, loose concrete, loose particles or layers which could adversely affect adhesion.
- Remove all damaged concrete and prepare substrate by sand or grid blasting, high pressure water jetting, or other methods until base concrete is exposed, offering sufficient roughness (bond) and open pores.
- The substrate must be moistened with clean water. The substrate should be damp, but without standing water. The substrate must be frost-free and have surface tensile strength of at least 1.5 MPa.

2. Mixing

- The product has to be mixed using a suitable forced action mixer (400-600rpm). The mixing head must be completely immersed in the powder.
- Add the required quantity of water into the mixer mix and mix until a lump-free, homogeneous mixture is obtained.
- The mixing time depends on the type of mixer. 1 minute is the minimum.
- The mixture must be allowed to rest to release air entrapped during mixing.
- Once the grout is mixed, apply immediately. Do not prepare more material than can be used within the open time of the material.

3. Application

- The material is always poured or pumped from one side or corner in one continuous application. A dense and non-absorbent formwork is necessary. To prevent air entrapment, sufficient ventilation holes must be provided.
- Do not vibrate.

4. Curing

- After treatment has to be according to EN 13670 in combination with DIN 1045-3:08-2023.
- In warm or windy conditions protect the applied material from dehydration by mist-spraying with clean water or protective tarpaulins until the initial set has taken place.
- In cold conditions cover with insulated tarpaulin, polystyrene or other insulating material. Protect surfaces against frost and rain until final set has taken place.
- In cold, humid or unventilated areas it can be necessary to allow for a longer curing period, or to introduce forced air movement to avoid condensation. Never use dehumidifiers during the curing period or within 28 days after application.
- Formwork should not be removed for at least 2 hours.
- The curing should be at least 5 days, or until the material is covered and protected, e.g. with asphalt.
- The curing should take place as soon as possible, at the latest when the material surface starts to set.
- As an alternative to the conventional treatment methods, suitable curing agents can be used to prevent rapid water loss.

5. Cleaning and maintenance

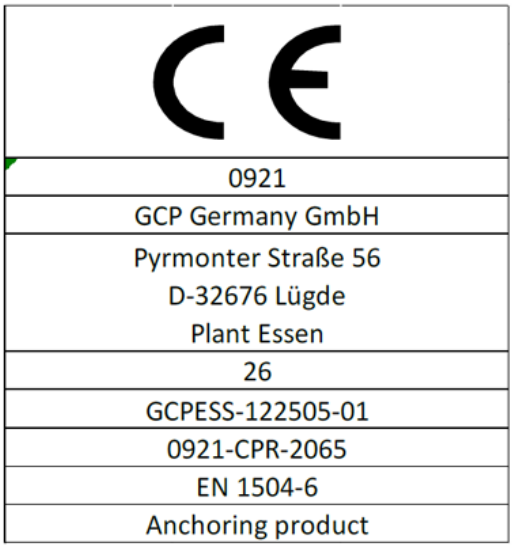
- Mixing and application equipment should be cleaned immediately with clean water. Hardened material needs to be removed mechanically.

6. Special remarks

- Cementitious materials can lead to incompatibilities under certain conditions in combination with non-ferrous metals (such as aluminum, copper, zinc).
- Low temperatures reduce flow and delay the early strength development. High temperatures accelerate the strength development and decrease the open time of the material.
- Depending on geometry and application thickness, reinforcement steel can be necessary.
- Lateral grouting overhang should be kept as low as possible (approx. 20-50mm).

Health & Safety

BETEC® R-800.5 is a product based on cement and can therefore cause burns to skin and eyes, which should be protected during use. Wear gloves and protective eye shields. Wearing a dust mask is advised. Treat splashes to eyes and skin immediately with clean water. Consult a doctor when irritation continues. If accidentally ingested, drink water and consult a doctor. Users must comply with all risk and safety phrases. MSDS's can be obtained from GCP Germany GmbH. GISCODE ZP1.



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GCPESS-122505-01
0921-CPR-2065
EN 1504-6
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Last Updated: 2026-04-23