BETEC® 192 & 193

Joint filling and underfilling mortars

Product Description

BETEC® 192 & 193 are thixotropic mortars specifically designed for joint filling and structural connection of joints in horizontal and vertical applications. Because of their adjustable consistency the materials are easy to use in all conditions without formwork.

Advantages

- Easy, fast and efficient application by pumping, allowing continued application.
- Vertical joints can be filled over several meters in a single application step.
- Adjustable consistency and thixotropic for application in all conditions without formwork.
- High early strength development, allowing immediate modeling and smoothening.
- CE marked according EN 1504-3.

Certification

- BETEC® 192 – CE according EN 1504-3, concrete repair class R2.
- BETEC® 193 – CE according EN 1504-3, concrete repair class R4.

Field of Application

BETEC® 192 and 193 are specifically designed for filling and connection of joints in:

- Precast structures, concrete columns and beams.
- Steel girder and columns.
- Frames of doors and windows.

BETEC® 192 and 193 are used for underfilling of metal and concrete constructions, prefabricated structures, bridge supports, and void filling.

BETEC® 192 and 193 can be used for the creation of mortar beds for pavements and roads.

BETEC® 192 and 193 can be used for concrete repair in combination with (BETEC® 192) or without (BETEC® 193) an anti-carbonatation coating.

Product Properties

Technical data / Properties(*)

		BETEC® 192	BETEC® 193
Parameter	Unit	Value*	
Grain size	[mm]	0-1	0-0.5
Application thickness (**)	[mm]	5 - 60	
Consistency	[-]	Adjustable, stiff to light plastic.	
Water quantity	[l /25 kg]	3.5 – 4.0	3.7 - 4.2
Open time	[min]	≈ 45	
Application temperature	[°C]	+5 to +30	
Expansion	[Vol-%]	> 0.1	
Fresh mortar density	[kg/dm³]	≈ 2.0	
Yield	[dm³/25 kg]	≈ 14 - 15	
Compressive strength (***) - 24 hours - 7 days - 28 days	[MPa]	 ≈ 25 ≈ 45 ≈ 48	 ≈ 40 ≈ 65 ≈ 75
Strength Class	[-]	C 35/45	C 55/67
Exposure classes (****)	[-]	X0, XC1-XC3, XD1-XD2, XF1	X0, XC1-XC4, XD1-XD3, XS1-XS3, XA1-XA2, XF1-XF3
Moisture classes (****)	[-]	WO, WF, WA	
Shelf life	12 Months. Stored under cover, clear of the ground, protected from all sources of moisture and frost		
Packaging	Bags of 25 Kg with plastic liner. 40 bags per pallet (1000kg)		
Appearance	Grey powder		

(*)Typical values in production control. All tests were executed under a conditioned temperature of 21 °C and 65% RH.

(**) Thickness depends on modification of consistency of material and application conditions. For repair applications respect thickness of 5mm per layer.

(***) Compressive strengths measurements based on prisms of 4x4x16cm.

(****) According to EN 206-1:2001 in combination with DIN 1045-2.

Application

1. Preparation of Substrate

- Substrate preparation has to be according EN 1504-10 part 7.
- The substrate has to 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 pre-wetted with clean water until saturated. The substrate should be damp, but without free standing water.
- The substrate must be frost-free and have a cohesion of minimum 1.5 N/mm².
- Exposed or corroded reinforcement steel needs to be treated with OMNITEK® CPC.

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 4/5 of the required quantity of water into the mixer and mix for 2 minutes. Add the remaining quantity of water. The water content can be varied to obtain the desired consistency. Never use more than the maximum water quantity. Mix for an additional 2 minutes until a lump-free, homogeneous mixture is obtained.
- The mixing time depends on the type of mixer. 4 minutes is the minimum.
- Once the mortar is ready mixed, apply immediately. Do not prepare more material than can be used within the open time of the material.
- When the mortar starts to set, remix but never add more water.

3. Application

- The material is applied manually or by machine in a continuous operation using a suitable worm/screw pump.
- Press firmly into the application area to ensure proper adhesion and to compact the material. Take particular care in the areas around and behind reinforcement bars.
- The material can be applied in several layers. Especially when repairing large voids it is recommended to work in several application steps.
- Do not apply if ambient temperature is below 5 °C or expected to drop below 5 °C within 24 hours.

4. Curing

- After treatment has to be according EN 13670 in combination with DIN EN 1045-3.
- 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.

- The after-treatment should be at least 5 days.
- The after-treatment 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 aluminium, copper, zinc).
- Low temperatures delay the setting of the material. High temperatures accelerate the curing and decrease the open time of the material.

Health & Safety

BETEC® 192 and 193 are products 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 Applied Technologies or from our website. GISCODE ZP1.

CE Certification

BETEC® 192

CE

0921

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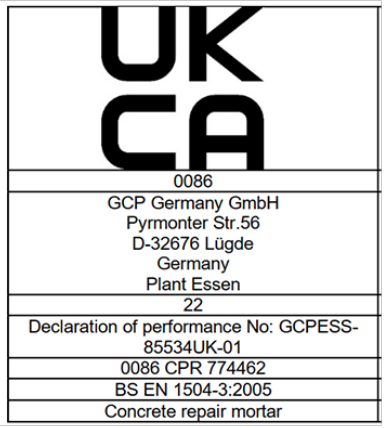
DOP No.: GCPESS-85534-01

0921-CPR-2064

EN 1504-3

Concrete repair mortar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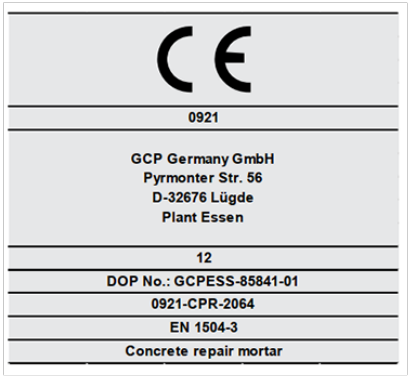
BETEC® 193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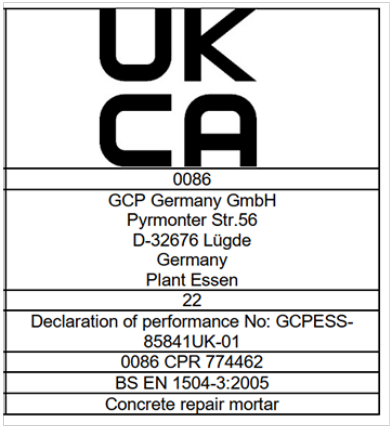
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