BETEC® Verguss

Flowable joint filler approved in combination with PFEIFER-VS® -ISI and PHILIPP Power Duo System

Product Description

BETEC® Verguss is a flowable, cement based grout specifically designed for joint filling and structural connection of joints in combination with the PFEIFER-VS®-ISI and PHILIPP POWER DUO SYSTEM.

Advantages

- Approved (AbZ Nr. Z-21.8-1929 / AbZ Nr. Z-21.8-2028) in combination with the PFEIFER-VS® -ISI and PHILIPP POWER DUO system for structural joint connections.
- Effective installation by pumping with formwork, making a continuous grouting possible.
- Self compacting and controlled volume expansion, guaranteeing a structural joint connection.
- Flowable consistency for a complete and void-free filling of the joint.
- Certified according DAfStb guideline and CE performance declaration by EN 1504-6.

Certification

- Certificate of compliance according to DAfStb-guideline. „Production and application of cement-based grouting concrete and mortars"(edition November 2011).
- CE performance declaration according to EN 1504-6.
- German general construction approval (AbZ No. Z-21.8-2008) in combination with the PHILIPP POWER DUO system for structural connection of precast segments.

Field of Application

BETEC® Verguss is specifically designed for filling and structural connection of joints in combination with formwork for:

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

Product Properties

Technical Data/Properties(*)

		BETEC® VERGUSS
Parameter	Unit	Value*
Grain size	[mm]	0-4
Consistency	[-]	High flowable
Maximum water quantity - At 5 °C - At 20 °C - At 30 °C	[l /25 kg]	2.9 2.6 2.3
Open time	[min]	≥ 30
Application temperature (Powder, water and environment)	[°C]	+5 to +30
Expansion	[Vol-%]	≈ 0.1
Fresh mortar density	[kg/dm³]	≈ 2.2
Yield (25kg bags)	[dm³]	12 -13
Compressive strength (**) - 24 hours - 28 days	[N/mm2]	≈ 40 ≈ 90
Design values of the lateral force performance parallel to the joint (planned installation)	[kN/m]	90
Strength class	[-]	C 60/75
Exposure classes (***)	[-]	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	

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

(**) 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.

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.
- The mixture must be allowed to rest to release air entrapped during mixing.
- Once the grout is ready mixed, apply immediately. Do not prepare more material than can be used within the open time of the material.
- When the grout starts to set, remix but never add more water.

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 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.
- Formwork should not be removed for at least 48hours.

- 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

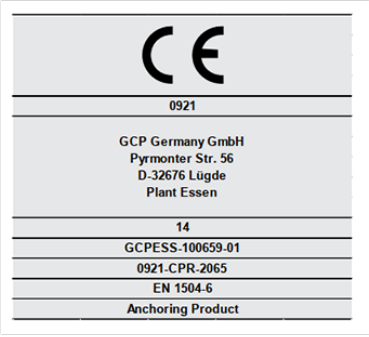
- Cementitious materials can lead to incompatibilities under certain conditions in combination with non-ferrous metals (such as aluminium, copper, zinc).
- Low temperatures reduce flow and delay the early strength development. High temperatures accelerate the strength development and decrease the open 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).

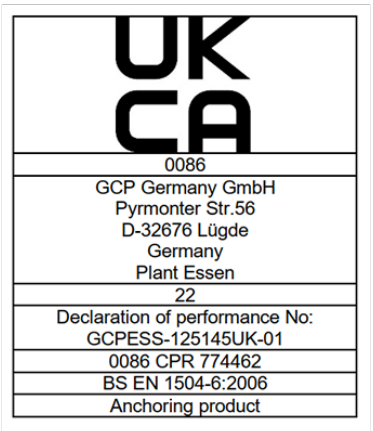
Health & Safety

BETEC® Verguss 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 Applied Technologies or from our website. GISCODE ZP1.

CE certificate

BETEC® Verguss





We hope the information here will be helpful. It is based on data and knowledge considered to be true and accurate, and is offered for consideration, investigation and verification by the user, but we do not warrant the results to be obtained. Please read all statements, recommendations, and suggestions in conjunction with our conditions of sale, which apply to all goods supplied by us. No statement, recommendation, or suggestion is intended for any use that would infringe any patent, copyright, or other third party right

BETEC® is a trademark, which may be registered in the United States and/or other countries, of GCP Applied Technologies Inc. This trademark list has been compiled using available published information as of the publication date and may not accurately reflect current trademark ownership or status.

© Copyright 2023 GCP Applied Technologies Inc. All rights reserved.

In Germany, GCP Germany GmbH, Alte Bottroper Str. 64, 45356 Essen.
This document is only current as of the last updated date stated below and is valid only for use in the United Kingdom. It is important that you always refer to the currently available information at the URL below to provide the most current product information at the time of use. Additional literature such as Contractor Manuals, Technical Bulletins, Detail Drawings and detailing recommendations and other relevant documents are also available on www.gcpat.uk. Information found on other websites must not be relied upon, as they may not be up-to-date or applicable to the conditions in your location and we do not accept any responsibility for their content. If there are any conflicts or if you need more information, please contact GCP Customer Service.