BETEC® Thixo

Joint filling and underfilling mortars

Product Description

BETEC®Thixo is a thixotropic, cement based mortar specifically designed for joint filling and structural connection of joints in horizontal and vertical applications in combination with the PFEIFER-VS®-ISI, PHILIPP Power Duo System and the new Peikko WILORA®System.

Advantages

- Approved in combination with the :
  PFEIFER -VS-ISI System (AbZ Nr Z-21.8.-1929)
  PHILIPP POWER DUO system (AbZ Nr. Z-21.8-2028)
  Peikko WILORA® System (AbZ Nr. Z-21.8-2146)
  for structural joint connections.
- Easy, fast and efficient application by pumping, allowing continued application.
- Vertical joints can be filled over several meters in a single application step without formwork.
- Adjustable consistency and thixotropic for application in all conditions.
- High early strength development, allowing immediate modeling and smoothening.
- CE marked according EN 1504-3.

Certification

- CE according EN 1504-3, class R4
- German general construction approval
  PFEIFER-VS® -ISI (Z-21.8-1929) PHILIPP POWER DUO System (Z-21.8-2028) Peikko WILORA® System (Z-21.8-2146)
  system for structural connection of precast segments.

Field of Application

BETEC®Thixo is specifically designed for filling and structural connection of joints in:

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

BETEC®Thixo is used for tamping under metal and concrete structures, precast elements, bridge girders and void fill. BETEC®Thixo can be used for the creation of a mortar bed and coving.

Product Properties

Technical data / Properties(*)

		BETEC® THIXO
Parameter	Unit	Value*
Grain size	[mm]	0-0.5
Consistency	[-]	Adjustable, stiff to light plastic.
Water quantity	[l /25 kg]	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]	≈ 12 - 13
Compressive strength (**) - 24 hours - 7 days - 28 days	[MPa]	≈ 40 ≈ 65 ≈ 75
Strength Class	[-]	C 55/67
Exposure classes (***)	[-]	X0, XC1-XC4, XD1-XD3, XS1-XS3, XA1-XA2, XF1-XF3
Moisture classes (***)	[-]	WO, WF, WA
Shelf life	12 months. Stored dry and frost-free in original sealed container	
Packaging	Bags of 25 kg with plastic liner. 40 bags per pallet (1000 kg)	
Appearance	Grey powder	

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

(**) The compressive strengths shown are compressive strengths measured on cubes of edge length 150 mm3 according to DIN EN 206-1. The conversion factor between prisms according to DIN EN 196-1 and cubes with an edge length of 150 mm³ is 1:1 (correlation factor).

(***) 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.
- 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.
- 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®Thixo 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.

CE Certification

BETEC® Thixo