

BETEC[®] FLEX

Flexible coating for sealing of concrete and masonry



Product Description

BETEC[®] Flex is a 2-component, flexible, crack bridging, cement based waterproofing coating for sealing and protection of concrete and masonry.

Advantages

- High adhesion, crack bridging and waterproofing performance for long-term waterproofing against positive and negative hydrostatic pressure.
- Comprehensive protection for concrete surfaces due to high carbonation and chloride diffusion resistance as well as resistance to freeze/thaw cycles.
- Fast setting for minimal downtime and rapid completion of application.
- Application by roller, notched trowel, or brush; large area coatings can also be applied using suitable spraying equipment.
- Declaration of performance according to EN 1504-2.

Certificate

- Declaration of Performance according to EN 1504-2, principle 1.3 – Ingress protection

Areas of Application

BETEC[®]Flex is suitable for:

- Concrete waterproofing according to EN 1504-2, principle 1.3 – ingress protection.
- Waterproofing of concrete and masonry in horizontal and vertical applications, such as: water reservoirs, tunnels, basements, etc.
- Horizontal/cross-sectional waterproofing of rising walls.
- Applicable indoors as well as outdoors, with and without permanent water contact.
- Sealing against positive or negative water pressure.

Product properties

Technical Data/properties

		BETEC [®] FLEX
PARAMETER	UNIT	VALUE ⁽¹⁾
Grading curve range	[mm]	0-0.5
Layer thickness per layer	[mm]	1

Fresh mortar density	[kg/dm ³]	≈ 1.5
Workability time	[min]	≈ 30
Application temperature range	[°C]	+5 bis +30
Consumption ⁽²⁾ - First layer - Second layer	[kg/m ²]	≈ 1.5 ≈ 1.5
Recoating time ⁽³⁾	[hours]	> 1
Adhesion on concrete - Dry concrete - Wet concrete	[N/mm ²]	>1.5 >1.5
Crack bridging - +23 °C - -10 °C	[-]	Class A4: >1.25mm Class A3: >0.50mm
Capillary absorption and water permeability	[kg/(m ² . h ^{0.5})]	< 0.1
Hydrostatic pressure resistance - Positive Pressure - Negative Pressure	[bar]	≈ 15 ≈ 15
Water vapor permeability - Diffusion equivalent air layer thickness S _D	[-] [m]	Klasse 1 4.8
CO ₂ permeability - Diffusion equivalent air layer thickness S _D	[m]	71 S _D > 50
Chloride diffusion resistance ⁽⁴⁾	[-]	No diffusion detected
Thermal compatibility - Freeze thaw cycling with/without de-icing salt immersion. - Resistance to thermal shock.	[N/mm ²]	>1.5 >1.5
Fire performance	[-]	B-s1, d0 Bfl-s1
Shelf life	12 months Stored under cover, clear of ground, protected from all sources of moisture and frost.	
Packaging	Kits of 32 kg Component A (liquid): 9 kg plastic drum 40 drums per pallet (360 kg) Component B (Powder): 23 kg bag with plastic liner 40 bags per pallet (920 kg)	

Appearance	Component A: White liquid Component B: Grey powder
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- 1) Typical values in production control. All tests were executed under a conditioned temperature of 21 °C and 65% RH.
- 2) Consumption needs to be estimated by the designer, since it depends on the surface roughness and porosity. For the application of the reinforcement mesh, an additional coverage of 0.5kg/m² is required.
- 3) Recoating time depends on ambient conditions and should be applied when the first layer is sufficiently cured.
- 4) According to guide G0008 (2002); 5.3.2 y 7.9

Application

1. Preparation of Substrate

- Substrate preparation has to be according EN 1504 part 10, section 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. The substrate should be damp, but not saturated and 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.
- Damaged areas need to be repaired with a suitable OMNITEK[®] or BETEC[®] cement-based repair mortar. When ascending salts or efflorescence is identified on the substrate, a pre-treatment with AQUATEK[®] Sulfablock and/or AQUATEK[®] Saltstop needs to be done. An analysis of the type of salt is required for the selection of the pre-treatment.

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 50% of the liquid component into the mixer and add the total quantity of powder. Mix for 2 minutes, then add the remaining liquid. 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.
- Always use the total volume of liquid and powder of a 32 kg kit to prevent colour variations and to obtain optimum coating properties.
- Once the mortar is ready mixed, apply immediately. Do not prepare more material than can be used within the open time of the material.

3. Application

- The material is applied in minimum 2 layers of 1mm by using a brush or roller. Alternatively suitable spray equipment can be used.
- Apply the first layer on the dampened substrate in a horizontal stroke and allow curing for minimum 1 hour depending on ambient temperature.
- Apply the second layer in a vertical stroke. Predamping the initial layer is only allowed in very dry conditions. Condensation on the first coat needs to be removed before application of the second layer.
- Spray applications require brushing of the first layer to properly fill voids and achieve uniformity.
- In substrate areas where cracking has occurred, or is likely to occur, REINFORCEMENT MESH should be applied. Apply REINFORCEMENT MESH in a minimum width of 20cm into the freshly applied first layer of BETEC® Flex. Roll down well and fix with an additional layer of 0,5mm BETEC® Flex. Let cure for >2 hours depending on ambient temperatures before application of the final layer.
- Do not apply the material if the ambient temperature is below 5 °C or expected to fall below 5 °C within 24 hours.

4. Curing

- After treatment has to be according EN 13610 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.

5. Hinweise

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

6. Special remarks

- Gypsum based plasters or water vapour impermeable coatings cannot be applied on BETEC® Flex when constant negative hydrostatic pressure is present.
- Negative water pressure must be removed during application to obtain a good adhesion of the material.
- As result of limited wear-resistance BETEC® Flex allows restricted pedestrian traffic on horizontal surfaces. In case of refilling soil, the surface needs to be suitably protected against mechanical damage.
- Condensation may occur after application of BETEC® Flex in poorly ventilated and damp areas. Increasing the ventilation and/or plastering with a lightweight cement plaster can alleviate this
- Cementitious materials can lead to incompatibilities under certain conditions in combination with nonferrous 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.
- If BETEC® Flex is used in potable water tanks or fish tanks, the materials should be cured for at least 7 days and the surface should be repeatedly washed with clean water before use.
- BETEC® Flex is not suitable for prolonged contact with hydrocarbons such as petrol, fuel oil, etc.

Healthy & Safety

BETEC®Flex 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.



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gcpat.uk/solutions/products/betec-grouts-and-cementitious-mortars/betec-flex