Expanding Concrete

Grouting concrete for concrete elements

Product description

Marlon Expanding Concrete is a factory-made dry mortar product that is manufactured on the basis of Portland cement, water-reducing and expanding additives, as well as oven-dried silica sand with a controlled grain curve. Marlon Expanding Concrete comes in the variants 45 MPa and 60 MPa and with grain sizes (D_{maks}) 0-2 mm. The variants also exist in a winter version (see separate data sheet). Marlon Expanding Concrete only needs blending with clean, measured water at the work site, and it hardens to a lowstress, stable, frost-tolerant and waterproof concrete. The product satisfies the material requirements for environmental class E (see DS/EN 206 DK NA:2020).

Benefits

- High-strength expanding concrete
- Well suited for grouting from 5 mm up to 60 mm
- Just add water

Applications

Marlon Expanding Concrete is well suited for grouting and jointing of, e.g. Leca clay and aerated concrete elements, grouting of machine foundations, stabilization of pylons, poles and similar projects requiring greater strengths, as well as various repair work.

Preparation

To ensure the best possible adhesion for old concrete, the surface must be cleaned of any cement slurry, oil, grease or other loose impurities through, e.g. chipping, sandblasting or high-pressure cleaning, and reinforcing iron must be cleaned of rust and chlorides. The cleaned surface must be watered, to produce a uniform, dull and slightly absorbent surface.

Mixing

Marlon Expanding Concrete is generally mixed with 3 l of cold water per 25 kg dry powder, followed by effective mixing in a suitable agitator mixer. Manual mixing can be done with a low-speed drill connected to a two-bladed mixer or by hand-mixing. First pour the water in the tub, then add the dry product and mix thoroughly until you achieve a workable consistency. The mixing time is min. 5 minutes. The opening time is approx. 30 minutes at +20°C. Higher temperatures will shorten, and higher temperatures will lengthen both the processing and hardening times.

Application

Marlon Expanding Concrete can generally be poured (depending on type) in layer thicknesses from 5 mm up to about 60 mm. Depending on the nature of the surface, large variations in the surface can result in contraction cracks.

Aftercare

In warm periods, newly laid concrete should be protected from rapid drying due to draughts, high temperatures, sunrays etc. In winter periods, the concrete should be protected (optionally, with winter mats) against frost, hard winds etc. in the first 24 hours of curing.

Limitations

Marlon Expanding Concrete should not be used at temperatures under +5°C or over +30°C. The product does not tolerate frost during the curing and cementation period.

Cleaning

Clean equipment, machinery and tools with water immediately after use. Hardened Expanded Concrete can only be removed mechanically

Inspection

Marlon Expanding Concrete is subject to internal inspection according to Marlon's quality assurance system. Subsequent measuring and mixing at the site of application is not included in quality control.

A solid solution

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Product information

Manufacturer
Marlon Tørmørtel A/S
Virkelyst 20
DK-8740 Brædstrup

Material type
Cement-based, expanding concrete.

Environmental class
Expanding Concrete 45: Aggressive
Expanding Concrete 60: Extra aggressive

Added water
Approx. 11-12% of the dry powder weight. (3 l per 25 kg)

Beginning cementation
Approx. 1-2 hours at +20°C.

Pouring temperature
+5 and +30°C.

Layer thickness
10-60 mm. Guideline.

Yield
Approx. 12 l per 25 kg.

Filler material
Oven-dried and sorted silica sand, cl. E.

Cement type
Portland cement, CEM I 52.5 N (LA).

Additives
Plasticizer and expanding additives.

Packaging
25 kg plastic sacks and big bags.

Storage
12 months in dry and suited conditions in unopened original packaging.

Technical data	**45 MPa**	**60 MPa**	**Method**
Typical internal values cf. EN 196-1 / DS/EN 1015-11 (40 x 40/160 mm prisms)			
Compressive strength, 1 day	> 17 MPa	> 20 MPa	DS/EN 1015-11
Compressive strength, 7 day	> 36 MPa	> 49 MPa	DS/EN 1015-11
Compressive strength, 28 days	> 50 MPa	> 65 MPa	DS/EN 1015-11
Bending tensile strength, 28 days	> 5.0 MPa	> 7.0 MPa	DS/EN 1015-11
Expansion of fresh mortar	0.5 %		
Density (wet)	Approx. 2280 kg/m^3		DS/EN 1015-6
Air content	Approx. 5 %		DS/EN 1015-7
Chromate content	< 2 mg/kg cement		
Chloride content	0.003 weight %		TI-B 15

Information

Item no. 45 MPa	10260
DB no.	1461159
Item no. 60 MPa	1000285
Pr no.	2172376
Version	07.18 replaces 04.14

Compressive strength cf. Bulletin no.5

Performance acc. to DS/EN 206 DK NA:2020 *Measured on 150 x 300 mm cylinders:*

Expanding Concrete 45	
Compression strength, 28 days	f_{ck} > 45 MPa
Correction building site uncertainty	f_{ck} > 40 MPa
Expanding Concrete 60	
Compression strength, 28 days	f_{ck} > 55 MPa
Correction building site uncertainty	f_{ck} > 50 MPa

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