

GROWCEM®

Description

GrowCem® is an expanding filling material with a high suspension density that is particularly suitable for sealing artesian groundwater leaks.

Properties

GrowCem is a ready-made powdery product that is based on a Portland cement with a high sulphate resistance in accordance with DIN EN 197-1 and DIN 1164. Furthermore the material contains a multi-component expansion system and inert fillers with a high specific density (e.g. barite). It is used to seal bore holes in areas with confined or artesian groundwater.

The expansion of the material is largely based on a crystallisation process and through the resulting expansion pressure the material is wedged in the bore hole. The maximum free expansion of the material is approx. 5 vol. % (see technical data) and is generally achieved after 24 hours, but no later than after 2 days. Both the high suspension density and the expansion increase the materials resistance against being flushed out by confined or artesian groundwater.

Processing instructions

To achieve a free-flowing consistency, a water/binder ratio of 0.31 must be adopted (7.75 litres water per 25 kg bag of GrowCem). The suspension must be mixed in a colloidal mixer (minimum mixing time of 2 minutes). It must be ensured that no lumps can form.

The working properties of the suspension have been tailored to the specific application. If the suspension is agitated by the stirrer in the store tank or during the compaction process, the processing time is approximately 1 hour. If the suspension flow is halted at the end of the compaction, the suspension quickly solidifies to prevent it from being flushed away by the confined groundwater.

Delivery / storage

25 kg bags on Europallet, shrink wrapped all around. Dry storage on pallets is required. If stored correctly, the material can be kept for at least 6 months.

Status: May 2023

Page 1 of 2

The above data relate to tests under laboratory conditions with the usual metrological tolerances. These along with records of other "suitability tests" are designed to obtain information about the basic suitability of our product in respect of the intended purpose. Even in the case of a project-specific test, the information should not be regarded as a promise of properties with the effect that we can be held responsible for damages resulting from the absence of features and/or properties. Our information therefore does not release customers from the obligation to carry out their own specific tests and take decisions on their own responsibility.

Heidelberg Materials AG

Zur Anneliese 7
59320 Ennigerloh
Germany
Telefon +49 2524 29-51700
Telefax +49 2524 29-51715



TECHNICAL DATA SHEET

GROWCEM®

Technical data

The following are **standard values** identified under laboratory conditions.

Water/binder ratio		0.31
Consistency range		flowable
Processing time¹	[min]	≈ 60
Free expansion²	[vol. %]	≈ 3
Compressive strength (in according with DIN EN 196)		
after 1 day	[MPa]	≈ 2
after 3 days	[MPa]	≈ 8
after 7 days	[MPa]	≈ 12
after 28 days	[MPa]	≈ 15
Formulation		
Water	[l/m ³]	505
GrowCem	[kg/m ³]	1,630
Suspension density	[kg/m ³]	≈ 2,135
Water per 25 kg bag	[l]	7.75

1) For permanent stirring

2) The free expansion is determined by measuring the maximum increase in prism volume (4x4x16 cm) following storage in humid air (20 °C / 95 % relative humidity).

Status: May 2023

Page 2 of 2

The above data relate to tests under laboratory conditions with the usual metrological tolerances. These along with records of other "suitability tests" are designed to obtain information about the basic suitability of our product in respect of the intended purpose. Even in the case of a project-specific test, the information should not be regarded as a promise of properties with the effect that we can be held responsible for damages resulting from the absence of features and/or properties. Our information therefore does not release customers from the obligation to carry out their own specific tests and take decisions on their own responsibility.

Heidelberg Materials AG

Zur Anneliese 7
59320 Ennigerloh
Germany
Telefon +49 2524 29-51700
Telefax +49 2524 29-51715

