

Celbex 653

Thixotropic Stabilizer for Cement Grouts

Uses

Celbex 653 is ideal for stabilizing cement grouts and cement grout blends, for pumping into cavities or fissures subject to water flow, or for pumping wherever grout has to remain in position without formwork. Typical uses include grouting secondary tunnel cavities and grouting fissures and cavities of all types, including granular fill and instances when “stop and stay” grouting is required.

Advantages

- Enables cement grouts to be used in moving water conditions
- Reduced washout saves cement
- Increased productivity in tunnel ring grouting
- Open-ended fissures can be grouted
- Gelation is almost instantaneous. This is a major contributing factor for rapid tunnel excavation

Description

Celbex 653 is a blend of water-soluble, high molecular-weight polymers supplied as a white powder. It is designed to provide a stable polymer matrix enveloping every cement particle, which functions as a protective coating and thus prevents water washout.

Packaging

A 40-lb standard unit (18.2kg) is placed in bag, 48 bags per pallet.

Mixing Instructions

Mix grout by adding cement into the mixing water. Agitate until completely mixed, and then add Celbex 653 as a slow stream into the mixer. Mix for 30 seconds to disperse admixture throughout the grout. The grout will thicken within 2 to 5 minutes, so discharge should take place before this time. Holding tanks will require a discharge port of at least 3 inches in diameter (75 mm.) to facilitate increased passage of the thickened grout.

Mixes containing Celbex 653 may be blended in standard grout mixing equipment. The mixed grout is highly thickened; only non-valved pumps are recommended for placement.

Suitable pumps would be hopper-fed Moyno pumps and double- or single-drum mixer pumps.

Celbex 653 is added to the grout at the rate of:
¼ lb per 94 lbs of Portland cement
113 grams per 42.6 kilograms of Portland cement

Note: This addition rate must be applied only to the Portland cement fraction, when Portland cement is batched with fly-ash, for example.

Shelf Life

Unused quantities may be stored for up to 24 months. Material deteriorates in the presence of moisture and should be stored in dry areas.

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Physical Properties

The addition of Celbex 653 will not significantly alter the initial hardness of cement grout but rather the gelation, which occurs almost immediately after pumping has stopped. This makes the grout appear to have reached its initial set instantaneously.

Setting Times: The following are typical results for a neat cement grout:

Admixture	w/c	Setting Time
Neat Cement	0.45	7 Hours
Celbex 653	0.45	8 Hours

Typical Compressive Strengths: These are slightly reduced by the introduction of Celbex 653.

Admixture	18 Hrs	24 Hrs	7 Days	28 Days
Neat Cement	580 psi	1015 psi	4640 psi	7540 psi
Celbex 653	435 psi	725 psi	3625 psi	6380 psi

Caution

Refer to product MSDS for health and safety as well as handling precautions.

Cleaning

Use water to clean material from skin and clothing.

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