

Conplast Sprayset*

Powder accelerator

Uses

Conplast Sprayset is used to provide a rapid set to sprayed concrete. This improves overhead spraying, permits thicker build in one pass and provides early support strength.

Advantages

- Rapid set - Allows faster build and permits rapid overhead spraying
- Economic - Minimizes rebound loss
- Tolerant - Can allow spraying on surfaces subject to water ingress

Standards and specifications

Concrete Society Specifications for Sprayset concrete.

Description

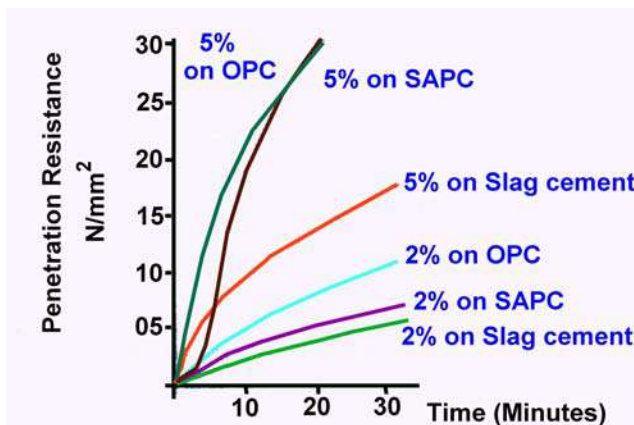
This product is a fine chloride free white powder which when added to a cement/aggregate dry mix and with the addition of water gives an accelerated set to the sprayed concrete.

Properties

Development of penetration resistance using BS 4551 method

| | | |
|-------------|-------------|--------------------------|
| BS | Initial set | : 0.5 N/mm ² |
| | Final set | : 3.5 N/mm ² |
| ASTM | Initial set | : 3.5 N/mm ² |
| | Final set | : 27.6 N/mm ² |

The information on this graph should be taken together with the data in the two tables. The actual performance and properties required will determine the dose level of Conplast Sprayset to be used. Low dosages should be used where long term strengths are the primary requirement. High dosages should be used where early age stiffening is the major consideration.



Instructions for Use

Rate of addition

Typical rate of addition is 2 kg of Conplast Sprayset powder/100 kg of cement. The optimum rate should be found by site trials.

Application

Conplast Sprayset powder is added direct to the blending hopper containing mixed cement & aggregate. Accelerator only begins to work once water is added at the nozzle.

Caution

If moisture content of aggregate is above 3%, Conplast Sprayset should be added & blended immediately prior to spraying.

Overdosing

Conplast Sprayset powder can be used at rates up to 6 kg per 100 kg cement. Overdosing may lead to setting before the concrete reaches the surface the long term strength of an accelerated mix may not attain control strength if high dosage is used.

Estimating

Supply

Conplast Sprayset is supplied in 14 kg bags.

Coverage

At 2% dos. by Wt on cement, 3:1 aggregate cement ratio 100 kg powder is needed for 100 m² at 100 mm thickness.

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Set time rate of early strength gain

| Cement | Dosage of CS% Wt/Wt on cement | BS initial set | | BS final set / ASTM initial set | | ASTM final set | | |
|---------------|-------------------------------------|----------------|---------|---------------------------------|---------|----------------|----------|----|
| | | minutes | seconds | minutes | seconds | minutes | seconds | |
| Type A OPC | 2 | 1 | 45 | 6 | 00 | 16 | + 90 min | 30 |
| | 5 | 0 | 30 | 4 | 00 | | | |
| SRPC | 2 | 1 | 00 | 10 | 00 | 16 | + 90 min | 00 |
| | 5 | 0 | 30 | 1 | 00 | | | |
| Slag cement | 2 | 1 | 30 | 17 | 30 | 65 | + 90 min | 00 |
| | 5 | 0 | 30 | 1 | 00 | | | |

Mix 3.1 sand:cement by wt. 0.45 water/cement ratio

| Cement | Dosage % Wt/Wt | 8 hours | 24 hours | 3 days | 7 days | 28 days | Cement characteristics | | |
|----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------------|--------------------|--------------------------------|
| | | N/mm ² | N/mm ² | N/mm ² | N/mm ² | N/mm ² | C ₃ S % | C ₂ S % | Fineness m ² /kg |
| Type A OPC | 0 | 1 | 11 | 21 | 32 | 45 | | | |
| | 2 | 1 | 14 | 24 | 33 | 36 | 58 | 8 | 350 |
| | 5 | 2 | 13 | 24 | 33 | 35 | | | |
| Type B OPC | 0 | --- | 6 | 21 | 31 | 40 | | | |
| | 2 | 1 | 8 | 18 | 25 | 34 | 56 | 8 | 330 |
| | 5 | 1 | 10 | 20 | 24 | 30 | | | |
| Type C OPC | 0 | 4 | 23 | 36 | 45 | 60 | | | |
| | 2 | 8 | 29 | 29 | 34 | 41 | 63 | 11 | 315 |
| | 5 | 8 | 32 | 27 | 31 | 38 | | | |
| Slag cement | 0 | --- | 3 | 9 | 13 | 24 | | | |
| | 2 | 1 | 7 | 12 | 16 | 23 | 53 | 4 | N/A |
| | 5 | 2 | 5 | 8 | 13 | 17 | | | |

Precautions

Health and safety and fire

Conplast Sprayset powder is alkaline in saturated solution PH 13. Gloves and goggles must be worn. Prolonged contact with skin should be avoided and any material washed off with water immediately. Any accidental eye contamination should be washed with plenty of water and immediate medical attention should be sought. It swallowed drink plenty of water followed by diluted vinegar or lemon juice. The treatment should be completed by drinking milk or olive oil. Medical attention should be sought. For spillages, wash with water. Conplast Sprayset powder is non-flammable.

Storage

Shelf life is 12 months in original unopened package.

Additional Information

In the range of sprayed concrete materials, separate data sheets are available on Sprayset HBL and Conplast HB.

Fosroc can also supply a range of associated products to the mining, tunneling and construction industries. Details are available on request.

* Denotes the trademark of Fosroc International Ltd.



Important note

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard Conditions for the Supply of Goods and Service.

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