Donplast SR100

Shrinkage reducing admixture (Formerly known as Flocrete SR100)

DESCRIPTION

Donplast SR100 is a liquid shrinkage reducing admixture specially formulated to provide a significant reduction in drying shrinkage and subsequent potential cracking, therefore, reducing the risk of subsequent cracks.

The addition of Donplast SR100 can reduce the drying shrinkage in cementitious mixes up to 80% at 28 days, and as much as 35 - 50% long term. This result is achieved due to Donplast SR100 reducing the surface tension and internal tensile stresses in the pores that cause shrinkage of the cement paste.

APPLICATIONS

- Floors and foundations.
- Silos and concrete pipes.
- Walls.
- Bridge decks and parking garages.
- Watertight construction (i.e. water tanks, swimming pools, reservoirs, sewage treatment plants, etc.).
- Underground construction.
- Can be used in ready mix, precast and pre-stress concrete; in addition to mortar, grout and wet mix shotcrete.

ADVANTAGES

- Can be used in air entrained concrete.
- Minimize the risk of cracking caused by drying shrinkage.
- Increases the service life of the structure.
- Does not impact the w/c ratio.
- One component liquid, ready and easy to use.
- Improves appearance, watertight qualities, and durability.
- Reduces maintenance and repair costs.
- Reduces stress-induced one-dimensional surface drying on concrete slabs and floors.
- Reduces curling.

STANDARDS

Donplast SR100 complies with the requirements of the Specification for Chemical Admixture for Concrete ASTM C494 as a Type S admixture.

COMPATIBILITY

Donplast SR100 is compatible with other DCP admixtures used in the same concrete mix. If more than one type of admixture is to be used, they must be dispensed into the mix separately.

TECHNICAL PROPERTIES @ 25°C:	
Colour:	Clear liquid
Specific gravity:	0.94 ± 0.02
Freezing point:	≈ 0°C
pH:	4 - 6
Chloride content:	< 0.05%

METHOD OF USE

Donplast SR100 should be added after all admixtures have been introduced into the mix. It is also recommended to allow enough mixing time of all other admixtures before the addition of Donplast SR100 to ensure concrete homogeneity.

The water in the concrete mix should be adjusted to account for volume of Donplast SR100 added in order to maintain required water:cement ratio. An automatic dispenser should be used to dispense the correct quantity of Donplast SR100 to the concrete mix.

When an air entraining admixture is used, it should be introduced within the first 50% of water and aggregate addition (before the introduction of the cement). This will allow the air void system to develop before the addition of Donplast SR100.

DOSAGE

Given that the product's performance is affected by used materials, mix design and site conditions, It is recommended that trial mixtures with different addition rates are evaluated for shrinkage reduction according to ASTM C157 before commencing with a specific dosage.

The typical dosage range of Donplast SR100 is 0.5 – 2 % of cement or cementitious materials in the mix including GGBFS, PFA or micro-silica.

CONCRETE PHYSICAL PROPERTIES

Figure 1 shows the drying shrinkage results according to ASTM C157 when using Donplast SR100 against a reference concrete mix:

DCP Saudi Co.
Sulay, Industrial Area, Istanbul St., Riyadh
Industrial City 3, Jeddah
Saudi Arabia
info.saudi@dcp-int.com
www.dcp-int.com

Donplast SR100

REFERENCE MIX:

Cement content: 307 kg/m³.
W/C: 0.6
Air content: 2%
Slump: 100 mm

REMARKS

- Donplast SR100 may increase the time and speed of bleeding (10% more)
- Donplast SR100 can delay the setting time for 1 - 2 hours depending on dosage and temperature. This effect can be reduced by adding accelerating or hardening admixtures.
- Loss of compressive strength is minimal.
- Drying shrinkage will be reduced using Donplast SR100, yet it will not fully eliminate cracking. The reduction of cracking is dependent on well-designed, strategically placed shrinkage control joints, and good engineering design.

CLEANING

Clean Donplast SR100 with fresh cold water.

PACKAGING

Donplast SR100 is available in 1000 litre IBC.

STORAGE

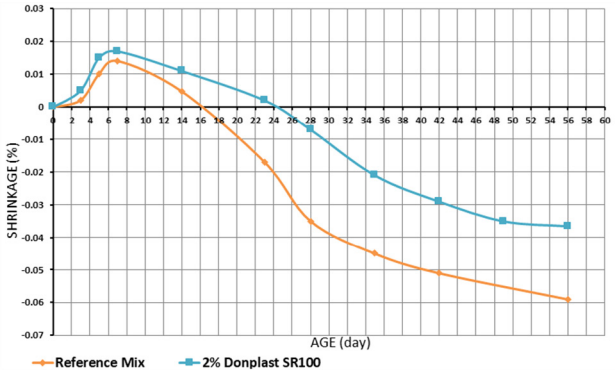
Donplast SR100 has a shelf like of 12 months from the date of manufacture when stored at temperatures of 5°C to 50°C.

Below 10°C, Donplast SR100 might form small crystals, but these do not affect the properties. If the product has been frozen, it should be thawed out and remixed.

To avoid discoloration of the liquid and to minimize the risk of deterioration of properties, the product should be stored in plastic tanks or plastic-coated steel tanks.
Storage tanks should be cleaned annually.

If these conditions are exceeded, contact DCP Technical Department for advice.

Figure 1



CAUTIONS

HEALTH AND SAFETY

Donplast SR100 is not classified as a hazardous material. Donplast SR100 should not come into contact with skin and eyes.
In case of contact with eyes, immediately flush with plenty of water and seek medical attention.

Drums must be rolled before use. Bulks must have a recirculation pump.

Extended high temperature storage may cause pressure build-up in the containers, caution should be exercised when opening packages.

For further information, refer to the Material Safety Data Sheet.

FIRE

Donplast SR100 is nonflammable.

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- Concrete admixtures.
- Surface treatments
- Grouts and anchors.
- Concrete repair.
- Flooring systems.
- Protective coatings.
- Sealants.
- Waterproofing.
- Adhesives.
- Tile adhesives and grouts.
- Building products.
- Structural strengthening.

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Sulay, Industrial Area, Istanbul St., Riyadh
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Saudi Arabia
info.saudi@dcp-int.com
www.dcp-int.com