

WRDA[®] 90 HSR

Mid-Range Concrete Plasticiser

Product Description

WRDA[®]90 HSR is a liquid concrete plasticiser, or water-reducing agent which exhibits moderate retarding properties in concrete. It can be used to improve workability in cement based mixes, and provides for effective workability retention even at high ambient temperatures.

WRDA[®]90 HSR is an extremely powerful deflocculating agent and operates by dispersing cement into its primary particles, dramatically increasing the flow characteristics of the cement paste. WRDA[®]90 HSR is a multi-dosage material, performing as a normal plasticiser at low dosages and at moderate addition rates will provide medium to high slump concretes. When used at high dosage rates, large water reductions can be made or extremely high workabilities can be achieved. It is formulated from selected raw materials and is manufactured under controlled conditions to give a consistent product. It is based on an aqueous solution of modified organic polymers and meets the requirements of ASTM C-494 Type A and D and BS EN 934-2.

Advantages

- Harsh mixes can be improved in both the plastic and hardened state using WRDA[®] 90 HSR.
- Effective plasticising action
- Allows lower w/c ratios to be used with moderate cement contents.
- Improved permeability by reducing capillary pores in the hardened matrix.
- Extends the placement time of concrete even at high ambient temperatures.
- WRDA[®] 90 HSR improves the surface finish of concrete.
- Multi-dosage function, universal application

Method of Use

WRDA[®]90 HSR is supplied ready for use. It should be added to concrete mixes during the mixing process at the same time as the water.

Typical Properties

WRDA [®] 90 HSR	
Appearance	dark brown liquid
Specific Gravity	1.20 at 20°C
Air Entrainment	Air content will normally be increased by 1% to 2%.
Chloride Content	Nil
Freezing Point	0°C

Compatibility with Cements

WRDA[®]90 HSR can be used with all types of Portland, Pozzolanic and blast furnace cements. It can also be used in mixes containing fly ash and silica fume.

Compatibility with other Admixtures

WRDA[®]90 HSR should not be premixed under any circumstances with other admixtures. While some admixtures can be usefully combined within the same mix the performance of this product may well be affected by the presence of other chemicals and we recommend that GCP Applied Technologies be contacted for advice in all such circumstances.

Addition Rates

Range: 0.4%–1.2% volume by weight of cement

The performance of WRDA[®]90 HSR is best assessed after preliminary tests on site, using the actual concrete materials under consideration to determine optimum dosage levels and effect on properties such as ultimate compressive strength, early rate of gain when these are of consequence.

WRDA[®]90 HSR should be used at an addition rate of 400 ml– 1200 ml per 100 kg of cement, the rate of addition will vary according to the nature of the constituent ingredients in the mix, however, dosage levels of 0.4%–0.75% by weight of cement should be used for normal plasticising effect and 0.75%–1.2% for high slump concretes, superplasticising effect.

Effects of Overdosing

Overdosing WRDA[®]90 HSR will generally produce a considerable increase in workability and in certain circumstances increase in air content.

Depending on the degree of overdosing the initial and final set of the concrete may be affected and delay may be noticed. The effects of overdosing will also be exaggerating when sulphate resisting cement is used.

Dispensing

It is preferable that liquid admixtures for concrete should be introduced into a mixer by means of automatic dispensing equipment, details of which can be supplied upon request.

Health and Safety

For further information see the WRDA[®]90 HSR SDS (Safety Data Sheet)s or consult GCP.

Packaging

WRDA[®]90 HSR is supplied in 210 litre, non-returnable containers. Alternatively, 1000 litre IBCs or bulk deliveries can be arranged.

Storage

WRDA®90 HSR should be stored in original containers or suitable closed tanks, preferably out of direct sunlight and protected from extremes of temperature.

Storage Life in Manufacturer's Drums:

12 months from the date of manufacture

Storage Life in Bulk Storage: 12 months from the date of delivery

Technical Service

The Technical Service Department of GCP is available to assist you in the correct and best use of our products. These resources and advice are at your disposal entirely without obligation. Please contact:

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