

# WRDA<sup>®</sup> 82 Data Sheet

Water-reducing and retarding admixture ASTM C494 Type A and D

## Product Description

WRDA<sup>®</sup>82 is an aqueous solution of modified lignosulfonates containing a catalyst which promotes more complete hydration of Portland cement. It does not contain calcium chloride. WRDA<sup>®</sup>82 is manufactured under rigid control which provides uniform, predictable performance. It is supplied as a dark brown, low viscosity liquid, ready-to-use as received. One gallon weighs approximately 10 lbs (1.2 kg/L).

## Product Advantages

- Superior water reduction and set times
- Consistent set time
- Improves performance concrete containing supplementary cementitious materials
- Produces concrete that is more workable, easy to place and finish
- High compressive and flexural strengths

## Uses

WRDA<sup>®</sup>82 makes a workable mix and yields a stronger, less permeable and more durable concrete. It is used in ready-mix plants, job site plants and concrete pavers, for normal weight and light weight concrete, in block, precast and prestressed concrete plants.

## Performance

WRDA<sup>®</sup>82 is a chemical admixture meeting the requirements of *Specification for Chemical Admixtures for Concrete*, ASTM Designation: C494 as a Type A and D admixture.

As a dispersing agent, WRDA<sup>®</sup>82 lessens the natural interparticle attraction between cement grains in water. It does this by colloidal action, by adsorption on the cement particles thus reducing their tendency to clump together and makes the mix more workable with less water. As a cement catalyst, WRDA<sup>®</sup>82 effects a more complete hydration of the cement, beginning immediately after the cement and water come together at the lower additions of WRDA<sup>®</sup>82 or immediately after a period of designed and controlled hydration at the higher additions. WRDA<sup>®</sup>82 increases the gel content of the concrete, the paste or binder that “glues” the concrete aggregates together. The increased gel content adds to the water retention and internal cohesiveness of the mix, reducing bleeding and segregation as it increases workability and placeability.

## Packaging & Handling

WRDA<sup>®</sup>82 is available in bulk, delivered by metered tank trucks, totes and drums.

WRDA<sup>®</sup>82 will freeze at about 28°F (-2°C) but will return to full strength after thawing and thorough agitation.

## Dispensing Equipment

A complete line of accurate, automatic dispensing equipment is available. WRDA®82 may be added to the concrete mix on the sand or in the water.

## Addition Rates

The addition rate range of 3 to 5 fl oz/100 lbs (195 to 326 mL/ 100 kg) of cement or cementitious is typical for most applications. However, addition rates of 2 to 10 fl oz/100 lbs (130 to 652 mL/ 100 kg) of cement or cementitious may be used if local testing shows acceptable performance. In some cases it may be necessary to slightly modify the addition rate due to variations in cement, aggregate or other job conditions.

## Compatibility with Other Admixtures and Batch Sequencing

WRDA®82 is compatible with most GCP admixtures as long as they are added separately to the concrete mix, usually through the water holding tank discharge line. In general, it is recommended that WRDA®82 be added to the concrete mix near the end of the batch sequence for optimum performance. Different sequencing may be used if local testing shows better performance. Please see GCP Technical Bulletin TB-0110, *Admixture Dispenser Discharge Line Location and Sequencing for Concrete Batching Operations* for further recommendations.

Pretesting of the concrete mix should be performed before use, as conditions and materials change in order to assure compatibility, and to optimize dosage rates, addition times in the batch sequencing and concrete performance. For concrete that requires air entrainment, the use of an ASTM C260 air entraining agent (such as DARAVAIR® or DAREX® product lines) is recommended to provide suitable air void parameters for freeze-thaw resistance. Due to a synergistic effect of WRDA®82, the quantity of air-entraining admixtures added to WRDA®82 admixed concrete may be reduced by 25%–50%. Please consult your GCP Applied Technologies representative for guidance.

## Specifications

Concrete shall be designed in accordance with *Standard Recommended Practice for Selecting Proportions for Concrete*, ACI 211.1.

The water-reducing admixture shall be WRDA®82 as manufactured by GCP Construction Products, or proved equal. The admixture shall not contain calcium chloride. It shall meet the requirements of *Specification for Chemical Admixtures for Concrete* ASTM Designation C494 as a Type A and D admixture when used at an addition rate of 3 to 5 fl oz/100 lbs of WRDA®82 (195 to 326 mL/ 100 kg) of cementitious materials. Certification of compliance shall be made available on request. The admixture shall be considered part of the total mixing water.

The admixture shall be delivered as a ready-to-use liquid product and shall require no mixing at the batching plant or job site.

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Last Updated: 2024-06-21

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