

WRDA[®] 51

Water-reducing admixture

Product Description

WRDA[®]51 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 51 is manufactured under rigid control which provides uniform, predictable performance.

WRDA 51 is a chemical admixture meeting the requirements of the following chemical admixture specification for concrete: GB 8076-1997.

One litre weighs approximately 1.09kg ± 0.02kg.

Applications

WRDA 51 makes a workable mix with up to 15% less water 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.

Compared to other water reducers, WRDA 51 will typically impart the following additional benefits:

- More controlled set time (minimal retardation over a wide range of dosages)
- Higher ultimate compressive and flexural strengths
- Improved workability

Chemical Action

As a dispersing agent, WRDA 51 lessens the natural interparticle attraction between cement grains in water. It does this by colloidal action, by absorption 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 51 effects a more complete hydration of the cement, beginning immediately after the cement and water come together at the lower additions of WRDA 51 or immediately after a period of designed and controlled hydration at the higher additions. WRDA 51 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.

Dispensing Equipment

Please contact your local GCP representative for further information regarding the dispensing equipment for this product.

Packaging

WRDA 51 is available in bulk, and 205L drums. WRDA 51 contains no flammable ingredients. It will freeze at about 0°C but will return to full strength after thawing and thorough mechanical agitation.



Addition Rates

WRDA 51 will provide water reduction with no retardation, or mild retardation with increased dosage. After a period of initial retardation at the higher addition rates, hydration continues rapidly and completely

The amount of WRDA 51 to be used will typically range from 400 to 600mL / 100kg of cementitious material depending upon job requirements. However, high addition rates may be used due to variations in cement, aggregate or other job site conditions.

Compatibility with Other Admixtures WRDA 51 is compatible with all air-entraining mixtures. Due to a synergistic effect of WRDA 51, the quantity of air-entraining agent added to WRDA 51 admixed concrete may be reduced by 25-50%. By combining the separate effects of air entrainment and dispersion, the water requirement of concrete may be reduced up to 20%. Each admixture should be added separately. WRDA 51 contains no calcium chloride but is compatible in concrete with calcium chloride. Again each admixture should be added separately.

Health and Safety

See WRDA 51 Material Safety Data Sheet or consult GCP Applied Technologies.

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