

ECLIPSE[®] Floor AN

Shrinkage-reducing admixture

Product Description

ECLIPSE[®] Floor AN is a liquid admixture for concrete that dramatically reduces drying shrinkage and the potential for drying shrinkage-induced cracking and curling. Rather than functioning as an expansive agent, ECLIPSE[®] Floor AN acts by reducing the surface tension of pore water. ECLIPSE[®] Floor AN is specifically formulated for use in non air-entrained concrete applications. ECLIPSE[®] Floor AN is a clear liquid admixture that weighs approximately 0.92kg/L.

Product Advantages

- ECLIPSE[®] Floor AN reduces drying shrinkage and curling. Depending on the shrinkage characteristics of the concrete mixture containing the product, it enables joint spacings to be increased.
- ECLIPSE[®] Floor AN contains no expansive material, but chemically acts to significantly reduce the primary internal forces that cause shrinkage and curling.
- Reducing drying shrinkage, curling and resultant cracking helps reduce maintenance costs over the service life of the structure.

Chemical Action

Drying shrinkage of concrete is a complicated phenomenon, widely acknowledged to be the function of several mechanisms. The driving factor causing shrinkage for internal relative humidity in excess of 40% is the surface tension of water. As water-filled pores in the size range of 2.5 to 50nm (nm or nanometre, is one billionth of a metre) lose moisture, curved menisci are formed and the surface tension of water pulls the walls of the pores. ECLIPSE[®] Floor AN reduces the surface tension of water, thereby reducing the force pulling in on the walls of the pores – and the resultant shrinkage strain is reduced.

Applications

ECLIPSE[®] Floor AN can be used in slab-on-grade construction, and any structure where it is important to control drying shrinkage cracks. For slab-on-grade construction, ECLIPSE[®] Floor AN can be used to increase joint spacings, providing for flatter, more durable and lower maintenance floors.

Mixture Adjustment

ECLIPSE[®] Floor AN is a clear liquid admixture. It contains no water, but is added at high dosages and should be accounted for in the mix design. For a conventional concrete mix with 7.5L / m³ of ECLIPSE[®] Floor AN, an equivalent volume of water should be reduced from the mix design.

Dispensing Equipment

A complete line of admixture dispensers is available. The dispensers are accurate and easy to maintain, and easily adapted to new or existing batching plants.

Addition Rates

Typical dosage rates of ECLIPSE® Floor AN in concrete flooring mixes will be in the range from 2.5 to 7.5L / m³, although doses as low as 1L / m³ and as high as 12.5L / m³ have been used. Since ECLIPSE® Floor AN works primarily to reduce the surface tension of pore water, its effectiveness is primarily a function of the concentration as a percent by weight of the mix water. Therefore, if the total water content of a concrete mix is reduced, less ECLIPSE® Floor AN is required to obtain optimum results.

Compatibility with Other Admixtures

ECLIPSE® Floor AN is fully compatible with the complete line of admixtures from GCP Applied Technologies. In mixtures containing mid or high range water reducers, it is recommended that ECLIPSE® Floor AN be used with polycarboxylate based MIRA® mid range water reducers and ADVA® high range water reducers. In general, ECLIPSE® Floor AN may be added to the concrete batch sequencing at any time, however preferably after the dry materials and most of the water. Different sequencing may be used if local testing shows better performance.

ECLIPSE® Floor AN may cause slight retarding properties (set times are extended less than one hour) and aid in extending slump life.

Health and Safety

Please refer to ECLIPSE® Floor AN Material Safety Data Sheet or consult GCP Applied Technologies.

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