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Shrinkage Reducing Admixture for Concrete

Purdue ECT Team
Purdue University, ectinfo@ecn.purdue.edu

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SHRINKAGE REDUCING ADMIXTURE FOR CONCRETE

THE NEED

Concrete shrinkage cracking is a common problem in all types of concrete structures, especially for structures and environments where the cracks are prevalent and the repercussions are most severe. Examples of these are bridge decks, parking garages, marine structures, containment structures, and high performance floors.

FIGURE 1 ECLIPSE ADMIXTURE

THE TECHNOLOGY

A liquid shrinkage reducing admixture for concrete, developed by GRACE Construction Products and ARCO Chemical Company, that reduces significantly the shrinkage during concrete drying and potentially reduces overall cracking over time. The product can be easily dissolved in concrete mix water or dispersed in concrete during mixing.

The admixture works by reducing the surface tension of the water, decreasing the force pulling in on the walls of the pores, resulting in a reduction of the shrinkage strain.

THE BENEFITS

Concrete containing ECLIPSE at a dosage of 2% by weight of cement has been shown to reduce shrinkage by as much as 80% at 28 days, and up to 50% at one year or beyond.

The mitigation of concrete shrinkage would result in increased usable life-span while decreasing life-cycle costs.

STATUS

This technology won the 1997 CERF Charles Pankow Innovative Applications Award. The admixture has been used already in more than 50 projects.

POINTS OF CONTACT

W.R. Grace & Co.-Conn.

Tel: (800) 443-6483, Fax: 888-443-6329, E-mail: techinfo@gemite.com, www.gemite.com

ARCO Chemical Company.

Tel: (610) 359-2000. Fax: (610) 359-2722

REFERENCES

1. 'Eclipse', Product Information, Grace Construction Products.
2. 'Emerging Technology', Design and Construction Innovations for Tomorrow. CERF publication. Vol. 4, No. 5, 1997.

REVIEWERS

Peer reviewed as an emerging construction technology

DISCLAIMER

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