PROJECT PROFILE

WIS 441 TRI-COUNTY PROJECT

EUCLID CHEMICAL

PROJECT DATA

Location – Menasha, WI

Application – Highway Reconstruction and Expansion

Architect/Engineer – Daar Corporation

General Contractor – Lunda Construction Co.

Concrete Producer – MCC Inc.

Total Area – 60,000 yd³ (54,864 m³)

PRODUCTS FEATURED

EUCON™ AIR MIX 250
Air Entraining Admixture

EUCON™ WR
Water Reducing, Set Retarding Admixture

EUCON™ 37
High Range Water Reducing Admixture

SCOPE OF PROJECT

- Reconstruction and expansion of approximately 6 miles (9.7 km) of US 10 / WIS 441 from 4 to 6 lanes
- Reconstruction of five interchanges
- Reconstruction of the Roland Kampo Bridge

PROJECT SUMMARY

Approximately 60,000 yd³ (45,900 m³) or ~7,000 truckloads of concrete were placed on this WisDOT project over a 2.5-year timespan. The concrete mix included 30 percent slag cement, as well as 1.5 in (37.5 mm) top sized aggregate, with a w/cm ratio of 0.42. The admixtures utilized were EUCON AIR MIX 250, EUCON WR and EUCON 37. Most of the project required a 2-4 in (5–10 cm) slump, 4.5-7.5% air content at the point of placement, and a Rapid Chloride Permeability (RCP) rating of under 1,500 coulombs.

MCC Inc. was consistently able to supply concrete with the stated materials that met the WisDOT project requirements for High Performance Concrete. The majority of the 7-day compressive strengths exceeded the specified 28-day strength requirement of 4,000 psi (28 MPa), and Rapid Chloride Permeability ratings averaged less than 800 coulombs.

Although concrete was placed throughout the year in varying weather conditions, and multiple conveyors and pump trucks were necessary to facilitate placement, each of the ~1,400 concrete air tests confirmed the plastic air content was within the specification range of 4.5-7.5%. Since various placement methods can have an impact on the slump and air entrainment of the concrete, this proves how well the materials used on this project worked together to provide a very precise and consistent product and is a testament to the excellent quality control of MCC Inc.