

Integral Waterproofing

Ketch Lake Dam



Ketch Lake Dam, built by the landowner Frank Ketch in the 1930's, was built of cobblestone and was a stock pond for cattle. Subsequently, it became a recreational pond. When the dam started giving way in 2010, the Army Corps of Engineers decided to build a new dam directly behind the existing dam. The new dam is 36 feet (11 m) high, 140 feet (43 m) wide and 6 feet (1.8 m) thick at the top and 80 feet (24 m) wide and 20 feet (6 m) thick at the bottom.

Project:

Ketch Lake Dam

Location:

Fort Sill, OK

Owner:

Army Corps of Engineers

Engineer:

Army Corps of Engineers

Contractor:

M.L. Young Construction

Concrete Producer:

Lawton Transit Mix

Products:

MasterLife[®] 300D
integral waterproofing admixture

MasterSet[®] DELVO
hydration-controlling admixture

MasterPolyheed[®] 1020
mid-range water-reducing admixture

Market Sector:

Ready-mixed concrete

Project Profile

Ketch Lake Dam



The Challenge

For this mass concrete application, the specifications required the concrete temperature at the point of delivery to be below 85 °F (29 °C). Additionally, the concrete had to be watertight.

The Solution

Concrete producer Lawton Transit Mix of Lawton, Oklahoma, supplied a total of 900 cubic yards (700 cubic meters) of concrete containing MasterLife 300D integral waterproofing admixture from Master Builders Solutions for the dam. Temperature control was critical for the hour-long haul covering 20 miles (32 km) and with over 90 °F (32 °C) ambient temperatures. Lawton Transit Mix used slag cement, Class C fly ash, chilled water, and MasterSet DELVO hydration-controlling admixture from Master Builders Solutions to reduce the heat of hydration of the concrete mixture. The concrete produced met the requirements specified by the Army Corps of Engineers and the concrete was placed successfully in 6 to 8 feet (1.8 to 2.4 m) lifts.

About Master Builders Solutions

Master Builders Solutions is a leading global manufacturer of concrete admixtures, as well as other sustainable solutions for the construction industry, focussed on delivering its vision: **Inspiring people to build better**. Master Builders Solutions provides value-added technology and market-leading R&D capabilities to improve the performance of

construction materials and to enable the reduction of CO2 emissions in the production of concrete. Founded in 1909, Master Builders Solutions has ca. 1600 employees operating 35 production sites globally, supporting their customers in mastering their building challenges of today – for a decarbonised future.

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