

Case Study



PROJECT INFORMATION

Project name: Masjid Al Haram Expansion Project

Client: Binladin Concrete Solutions

Consultant: Dar Al Handasah Shair & Partners Co.

Contractors: Saudi Binladin Group

Location: Makkah

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PROJECT REQUIREMENT

Task at Hand

The project aims to increase the visitor capacity at Masjid Al Haram in Makkah. The focus of the Al Haram Expansion project was to develop a high strength concrete mix design that achieves 85 MPa at 28 days and 100 MPa at 56 days and is a cylinder sample for the columns.

DCP SOLUTION

DCP studied available raw material characteristics to adopt sources then optimize a concrete mix design and carry out lab trials to verify the results.

Mix Proportions

Binder content:	670 kg/m ³
PFA:	22.5%
M.S:	7.5%
NMAS:	10 mm
Admixture:	Hyperplast PC600
Initial slump flow:	780 mm
@ 30 min	750 mm
@ 60 min	730 mm
@ 90 min	690 mm
Temperature:	28°C
Strength @ 7 days	99.6 MPa
Strength @ 28 days	108.8 MPa
Strength @ 56 days	121.3 MPa

Concrete Quantity

80 000 m³

Supply Period

2013 to 2016

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