



# **SKAPS INDUSTRIES**

## **CONCRETE MIX DESIGN**



## MIX DESIGN

Fine aggregate concrete consists of a mixture of Portland cement, fine aggregate (sand) and water, so proportioned and mixed as to provide a pumpable fine aggregate concrete.

The consistency of the fine aggregate concrete delivered to the concrete pump should be proportioned and mixed as to have a flow time of 9-12 seconds when passed through the 19 mm orifice of the standard flow cone.

The Contractor should demonstrate the suitability by placing the proposed fine aggregate concrete mix into three (3) 50-mm concrete cubes. The mix should exhibit a minimum compressive strength of 24.0 MPa at 28 days.

**Table 3.0: Typical Range of Mix Proportions**

Material	Mix Proportions, kg/m <sup>3</sup>	After Placement Mix Proportions, kg/m <sup>3</sup>
Cement	445 - 505	475 - 540
Sand	1255 - 1205	1355 - 1295
Water	320 - 325	270 - 275
Air	As Required	As Required

## MIXING AND DELIVERY

1. Central-Mixed Concrete is mixed completely in a stationary mixer and transported to the point of delivery in a truck agitator, or a truck mixer operating at agitating speed.
2. No water from the truck water system should or elsewhere should be added after the initial introduction of mixing water for the batch except when on arrival to the project site the flow rate of the fine aggregate concrete is less than 9 seconds. If the flow rate is less than 9 seconds, obtain the desired flow rate within 9 to 15 seconds with a one-time addition of water.
3. Discharge of fine aggregate concrete should be completed within 1 1/2 hours after the introduction of mixing water to the cement and fine aggregate. In hot weather, or under conditions contributing to rapid stiffening of the fine aggregate concrete, a time less than 1 1/2 hours is permitted to be specified by the contractor.



## **SAMPLING FOR UNIFORMITY**

The fine aggregate concrete should be discharged at the normal operating rate for the mixer being tested, with care being exercised not to obstruct or retard the discharge by an incompletely opened gate or seal. As the mixer is being emptied, individual samples should be taken after discharge of approximately 15% and 85% of the load.

## **TESTS AND EQUIPMENTS**

1. Flow Cone test at arrival of the Transit Mixer.
2. Concrete Compressive Strength by concrete cubes of 150x150x150 molds.