

TEMPERATURE CONTROL OF CONCRETE AT EARLY AGES



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In Quest of Quality Concrete



PRESIDENT'S MESSAGE

Ready Mixed Concrete Manufacturer's Association is pleased to publish its new bulletin on "Temperature Control of Concrete at early ages". India is tropical country and ambient temperature in most parts of the country remains high during various times of the year. In addition, the constructions of massive concrete elements like Raft Foundations for High Rise Buildings, Pile Caps, Bridge Piers, Retaining Walls, etc., for infrastructure projects are increasing day by day. The temperature control of concrete under these conditions occupies important place for ensuring durability and sustainability of concrete structures.

The temperature control in early ages of concrete is required mainly due to two reasons. The first reason is the temperature gradient in concrete due to heat of hydration of cement which develops large variation in temperature within the body of the concrete. The second reason is when concreting is done at high ambient temperatures causing temperature differential due to high rate of evaporation of moisture from the concrete surfaces and drying of restrained surfaces resulting in development of shrinkage cracks adversely affecting performance of concrete.

Measures like use of chilled water, cement replacement/optimization, pre-cooling of aggregates, post cooling of concrete and operational management are some steps which can help in achieving the desired temperature control. In most of the recent and upcoming infra projects like Metros, Concrete Highways, Bridges, High rise buildings, etc. use of chilling plants / ice plants has become mandatory which shows the growing awareness and importance of temperature controlled concrete among government bodies and technocrats.

RMCMA is continuously endeavouring in educating the manufacturers and the consumers to use concrete with value additions for long term durability and sustainability. I am confident that the Bulletin will be found very useful in achieving this objective.

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(President, RMCMA)