

News Releases

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Taiheiyo Cement develops Silica Fume Premix Cement for very high-strength concrete

Taiheiyo Cement Corporation (president and representative director: Fumio Sameshima) announced today that it has developed cement for production of ultra high-strength concrete, Silica Fume Premix Cement (SFPC).

Ultra high-strength concrete with specified design compressive strength in excess of (F_c) 100N/mm^2 is increasingly being used in very high-rise structures in urban areas amid trends such as the ever-increasing height of buildings and slimmer structural members with longer spans. Consequently, a need has arisen for higher-strength cement with lower water content that is also easy to work with.

Taiheiyo Cement's newly developed SFPC uses as the base cement low heat cement, which has been used extensively in high-strength concrete for high-rise residential buildings. It is mixed with the optimum quantity of silica fume, which offers excellent dispersive properties and consists of low-surface-area particles, making it possible to produce concrete that is less adhesive and more fluid and achieves specified design compressive strength in the 80N/mm^2 – 120N/mm^2 range, as well as ultra high-strength concrete with even greater specified design strength. SFPC also improves durability of concrete by reducing autogenous shrinkage, concrete neutralization resistance and strengthening its resistance to freeze/thaw deterioration.

SFPC has been systematically performance-tested at our Research and Development Center, as well as undergoing plant testing at eight consolidated ready-mixed concrete plants for a year. Prototype full-size building materials have been examined for strength development and concrete pumpability. Plant tests confirmed that it is possible to manufacture ultra high-strength concrete that is easy to work with in a commercial setting.

Production of SFPC will begin at the Kumagaya Plant, Saitama Prefecture, in August 2006. It will initially be available mainly in the Kanto area, but supplying Chubu and Kansai areas with next-highest demand is also under consideration, including the use of local production

bases.