



CASE STUDY

MARKET APPLICATION FOCUS

New Construction

Precast Industry

Self Placing Concrete

Project: Modular Hotel Rooms
Andover, MA.
Owner: Oldcastle Rotondo (Rehobeth, MA)
Specifier: Town of Andover, MA.
Year: 1998

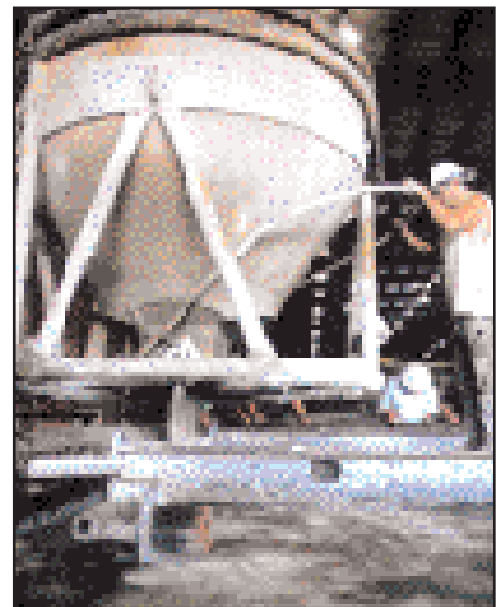
THE PROBLEM



Rotondo's Precast modular group manufactures the Oldcastle Hotel System. This modular hotel system is designed for ease of construction and consists of a series of prefabricated concrete components ranging from full size, pre-finished and equipped rooms to entire building systems. Traditional concrete design and construction practices dictate the use of steel reinforced concrete walls for support. These steel reinforced walls created design limitations due to their excessive weight. In order to reduce the overall weight of the system, thinner walls had to be used. Unfortunately, the thinner walls constricted the steel reinforcing and made the placing of standard super-plasticized concrete impossible.

THE SIKA SOLUTION

Self Placing Concrete using Sika ViscoCrete technology was selected to meet this challenging design application. Unlike traditional superplasticizers, Sika ViscoCrete produces a super fluid, cohesive concrete mix that moves smoothly through thin walled elements and high density reinforcing steel without segregation or bleeding. The finished elements achieve high strengths and an excellent surface appearance. This technology allows Oldcastle the design flexibility to continue their innovative approach to precast/pre-stressed construction. Reinforced thin walled elements of only 2³/₄" can now be produced. With over 30,000 precast building modules in place, the Oldcastle Hotel System continues to lead the industry in providing value and quality throughout the country.





Precast/Pre-stressed Concrete Industry

Sikament® 10 ESL - High Range Water Reducer (ASTM C-494 Type A & F). Its patented formaldehyde free formulation delivers up to 30% water reduction, increased strengths, and extended slump life.

Sikament® 86 - High Range Water Reducer (ASTM C-494 Type A & F). Its excellent water reduction capability allows the use of lowest water cement ratios.

Sikament® FF - High Range Water Reducer (ASTM C-494 Type A & F). Its superior high range water reduction delivers consistently high early strengths for early stressing and form release.

Sikament® HP - Mid Range Water Reducer (ASTM C494 Type A & F). Reduces water requirements while producing concrete with superior workability and placement characteristics.

Plastocrete® 161 FL - Set Accelerator (ASTM C494 Types C & E). Its non-chloride formulation protects concrete from cold and freezing weather conditions, suitable for steel reinforced construction.

Sika Rapid®-1 - Hardening Accelerator (ASTM C-494 Types C). Its unique non-chloride, hardening accelerator achieves very high early strengths without set acceleration.

Sikamix® PF - Finishing Aid. Allows excellent finishing of the concrete and reduces the evaporation of water.

Rugaso® Set Retarder - Its spray applied water-soluble formulation retards the set of concrete surfaces for exposed aggregate finishes.

FerroGard®-901 - Penetrating Corrosion Inhibitor (ASTM G-109) FerroGard 901 forms a protective layer around steel reinforcement to reduce the occurrence of corrosion.

SikaSwell®-S - Gunable Sealant. SikaSwell-S is a moisture sensitive waterproofing sealant for concrete structures. It will expand up to 100% in size in the presence of moisture.

Sika Grouts® - Expandable grouts, cementitious and epoxy, as well as grouting aids for ready mix grouts. Cementitious, epoxy and expandable grouts for a wide range of application. Grouting aids for ready mix grouts.



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