



# MARKET APPLICATION FOCUS

New Construction

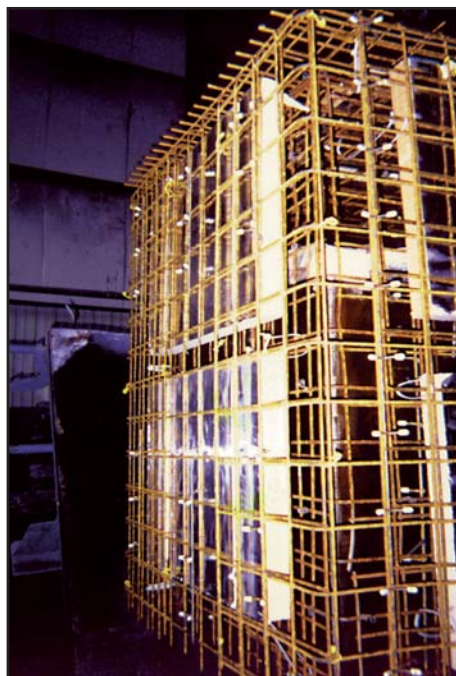
Precast Industry

Self Placing Concrete

# CASE STUDY

Project: Office Complex, Rehoboth, MA  
Owner: Oldcastle Rotondo (Rehobeth, MA)  
Specifier: Equus Design Group, Belmont, MA  
Year: 1998

## THE PROBLEM



Rotondo's Precast modular group manufactures the Oldcastle Channel Bay™ System. This modular multi-application building 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 and poor insulation values. Oldcastle designed a modular system that utilized a 2-inch foam insulation layer. The insulation was sandwiched between two concrete layers separated by fiber connector rods. The concrete layers consisted of a structural layer and a two-inch architectural layer. Unfortunately, the thinner walls and foam insulation 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 super plasticizers, 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. Self Placing Concrete does not require vibration for compaction or consolidation. The finished elements achieve high strengths and an excellent surface. With over 40,000 precast building modules in place, Oldcastle continues to lead the industry in providing value added quality products throughout the country.





# Precast/Pre-stressed Concrete Industry

**ViscoCrete® 3010** - Self-Placing Concrete Admixture. It's unique formulation allows to produce high performance concrete with low water cement ratios. Delivers consistency higher early and ultimate, compressive and flexural strengths.

**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.

**Sikament® 300** - High Performance Water Reducer (ASTM C-494 A&F). Efficient and cost effective means to obtain fluid, workable concrete with low water cement ratios. Delivers consistently higher early and ultimate, compressive and flexural strengths.

**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 pressure 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. Grouts aids for ready mix grouts.



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