

**EUCO PRECAST & SELF CONSOLIDATING CONCRETE  
ADMIXTURES & REPAIR MATERIALS**



## EUCO PRECAST CONCRETE PRODUCTS

The construction industry has relied on The Euclid Chemical Company to provide a wide variety of quality construction products. In fact, Euclid Chemical has become the largest single-source supplier with proven technologies in concrete admixtures, repair materials, synthetic fibers, epoxy adhesives and form-releasing agents.



## CURING COMPOUNDS

Concrete must have an internal relative humidity of at least 80% for the complete hydration of cement to occur. When the internal humidity of concrete drops below 80%, strength gain is stopped which could result in shrinkage cracking. The Euclid Chemical Company has an entire line of V.O.C. compliant curing agents that meet ASTM specifications.

## PRECAST ADMIXTURES

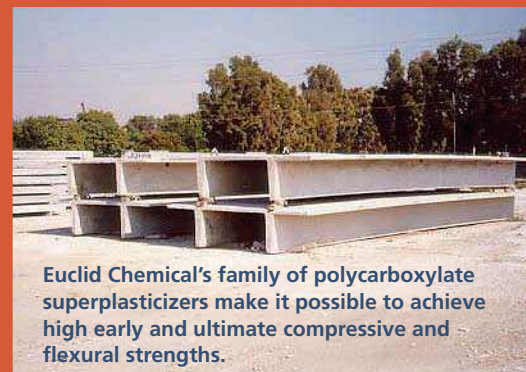
**Water Reducers**      **Superplasticizers**      **Accelerators**  
**Air Entraining Agents**      **Mineral Admixtures**      **Structural Fibers**

EUCO admixtures have played a key role in mix designs for projects of all sizes and under the most demanding conditions. Whether your application calls for water reduction, freeze/thaw durability, fast initial set times...you name it...our ability to pair technology, engineering and service gives you the precise formulation you need to optimize your precast concrete's function and performance.

### High Range Water Reducers

All Euclid Chemical High Range Water Reducers meet ASTM C-494, Type F Requirements.

- **Plastol 5000, Plastol 5500, Plastol 5700, Eucon SPJ, and Eucon SPQ** – The Euclid Chemical family of polycarboxylates use state-of-the-art technologies to make consistent self-consolidating concrete.
- **Visctrol and Eucon ABS** – These viscosity-modifying admixtures control bleeding and segregation in self-consolidating concrete. When materials are not an optimum gradation, viscosity modifiers maintain homogenous concrete.



Euclid Chemical's family of polycarboxylate superplasticizers make it possible to achieve high early and ultimate compressive and flexural strengths.

### Mineral Admixtures

- **Eucon MSA** – Microsilica is used for very high-performance mixtures in conjunction with high range water reducers. Mineral Admixtures are quite often specified for precast modular housing units and other products requiring high strengths.



### Air Entraining

A proper air void system is critical to the freeze/thaw durability of your concrete. The Euclid Chemical Company has a full line of ASTM and AASHTO certified air entraining agents.

**AEA 92 and AEA 92S**  
**Air Mix 200 and Air Mix 250**  
**Eucon Air 40 and Eucon Air 30**

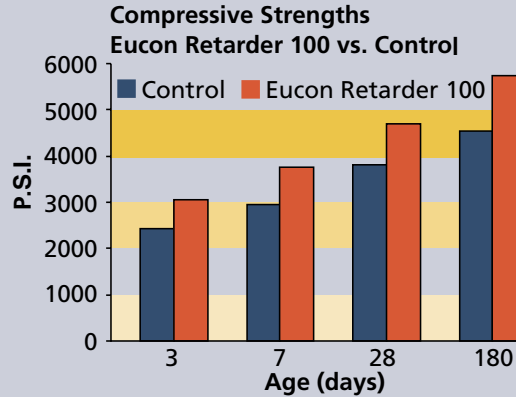
Consult your Euclid Chemical Representative to find the air entraining agents that work best with your materials.





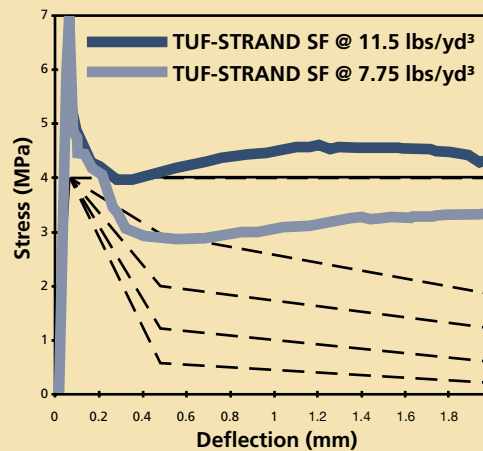
## Retarders

- **Retarder 75, Retarder 100 and Eucon LR** – These modified organic polymers will reduce water demand, extend working times and increase late age compressive strengths.



## TUF-STRAND SF

TUF-STRAND SF synthetic macro-fibers are specifically designed to replace the use of conventional reinforcement, such as wire mesh and rebar, and steel fibers through a calculated dosage to provide the same strength capacity in concrete. TUF-STRAND SF is simply added to a concrete mixture, eliminating the need and cost for installation of conventional reinforcing, while providing a more durable and tougher concrete material.



TUF-STRAND SF fibers have been engineered to disperse evenly throughout the cement matrix allowing better impact resistance and flexural toughness.



## Form Release Agents

- **Eucoslip VOX** – V.O.C. compliant form release agent that can be applied in very cold and very hot temperatures.
- **Euco Super Slip** – This concrete form release agent produces smooth, flat surfaces free of voids and defects.
- **Formeze Natural** – New technology form release agent with ZERO V.O.C.s suitable for steel, aluminum, fiberglass, wood or rubber forms.
- **Surface Retarder Formula "F"** – This specially-formulated surface retarder can be painted on forms leaving an exposed aggregate surface.

## Accelerators

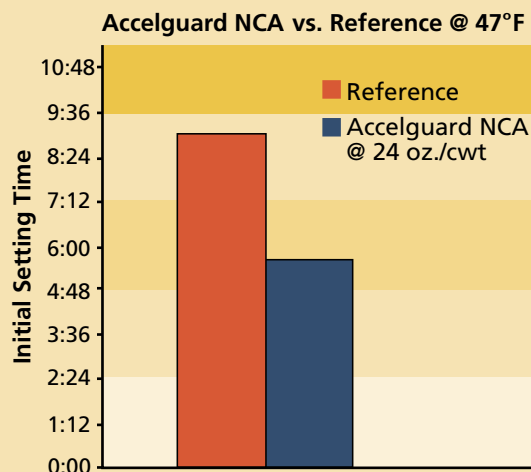
The Euclid Chemical Company has been an industry pioneer providing accelerators that meet ASTM C-494 Types C&E requirements.

Euclid Chemical offers a wide variety of formulated accelerators that increase productivity and improve the bottom line for producers and contractors.

- **Accelguard 80**
- **Accelguard NCA**
- **Eucon AcN**
- **Eucon AcN200**

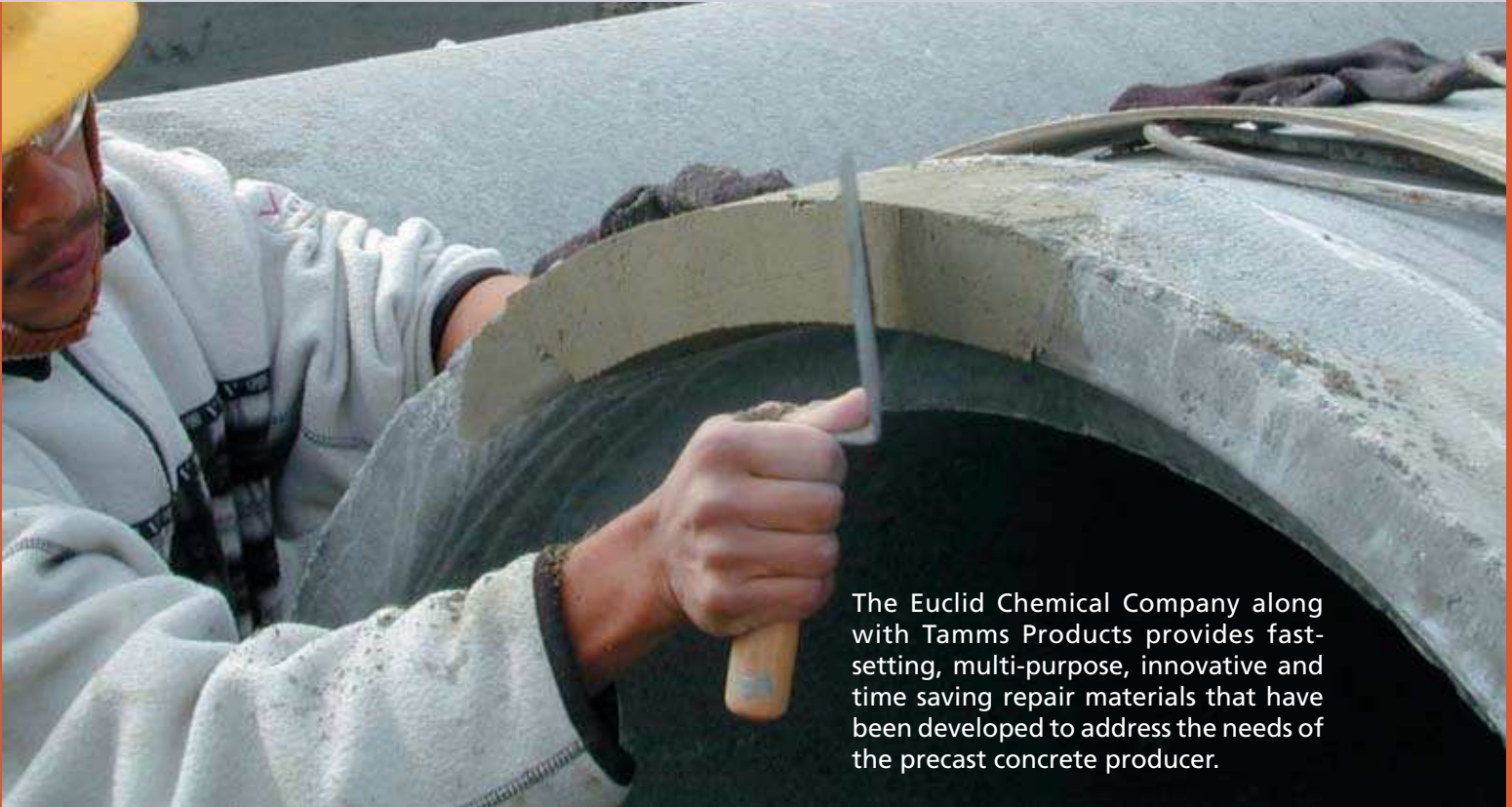
Calcium chloride has been used for years to accelerate the hydration of cement. Euclid Chemical has liquid calcium chloride based accelerators that are effective and economical.

- **Accelguard HE**
- **Eucon Ac**





## REPAIR PRODUCTS



The Euclid Chemical Company along with Tamms Products provides fast-setting, multi-purpose, innovative and time saving repair materials that have been developed to address the needs of the precast concrete producer.

### **Euco Rapid Patch HE**

- Polymer-modified
- Widely used for precast repairs
- Repair pipe, tanks or walls
- Place 1/16-1 inch depths
- Very high early strengths

### **Euco Seal**

- Latex-modified
- Heavy duty cementitious coating
- Seals voids
- Stops moisture penetration

### **Euco Patch**

- Fast-setting
- Just add water
- Suitable for vertical and overhead repairs
- Final set in about 30 minutes

### **Verticoat and Verticoat Supreme**

- Polymer-modified
- Ideal for vertical and overhead repairs
- Repair honeycombed surfaces
- Can go up to 4" thick
- Easy to use

### **Speedcrete Red Line**

- Vertical, overhead or horizontal repairs
- Outstanding repair material for concrete pipe, formed and precast concrete
- Initial set in 8-10 minutes
- Final set within 20 minutes

### **Tammscrete**

- Polymer-modified for excellent bond
- Low shrinkage
- Long working time
- Fill in bugholes and honeycombs





## EUCO SELF-CONSOLIDATING CONCRETE

Since its inception in the 1980s, the use of Self-Consolidating Concrete in the precast industry has grown tremendously. The development of high-performance polycarboxylate polymer products like PLASTOL 5000, EUCON SPJ, EUCON SPC, PLASTOL 5500, PLASTOL 5700, and EUCON SPQ make it possible to create "flowing" concrete without compromising compressive strength or long term durability.

Labor and time drive up costs for concrete producers and contractors. Self-Consolidating Concrete places quickly and easily with little or no vibration to give a smooth surface finish. Save money by reducing the wear and tear of equipment and improve the working environment for employees. Achieve very high early stripping strengths that will yield a quicker turnaround on your forms. The smooth surface finish minimizes or eliminates the need for time consuming cosmetic repairs.



## IT'S ALL ABOUT PERFORMANCE

High performance concrete requires high-performance admixtures. The Euclid Chemical Company has a full-line of concrete additives to make durable and cost effective Self-Consolidating Concrete. Placement efficiencies can increase 300% and labor costs can be reduced by 70%. Architects and engineers benefit from increased design flexibility without sacrificing performance or increasing placement costs.

### Regular concrete with vibration

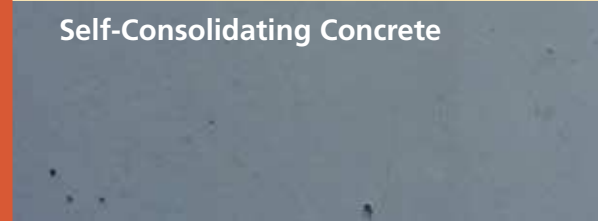


This picture demonstrates the "bugholes" on the surface of conventional concrete that has been placed into a form and vibrated. Precasters spend valuable time and money "rubbing out" surface imperfections when using conventional concrete.

## WHAT IS SELF-CONSOLIDATING CONCRETE?

Self-Consolidating Concrete is defined as a concrete mixture that can be placed purely by means of its own weight with little or no vibration. Adjustments to traditional mix designs and the use of polycarboxylate superplasticizers like PLASTOL 5000, EUCON SPC, PLASTOL 5500, PLASTOL 5700, EUCON SPJ, and EUCON SPQ create self-consolidating concrete that meets tough performance and production requirements. Eliminate unwanted bleeding and segregation with low dosages of viscosity modifiers like VISCTROL or EUCON ABS without sacrificing quality or durability.

### Self-Consolidating Concrete



The surface of this Self-Consolidating Concrete has been improved tremendously when placed at a 28-inch flow diameter with no vibration.

## APPLICATIONS

Precast Concrete  
Architectural Concrete  
Pumped Concrete  
Residential Structures  
Civil Projects

## BENEFITS

SCC will increase:

- Early stripping strengths
- Productivity
- Design flexibility
- Pumpability

SCC will reduce:

- Overall production costs
- Wear and tear on equipment
- Concrete discharge and placement time
- Noise levels
- Time consuming cosmetic repairs



## QUALITY IS IN THE MIX

SCC looks very different than conventional concrete while mixing. Concrete producers must "re-train their eyes" for this very fluid concrete as it turns corners and fills forms. Traditionally, concrete that had the fluidity of SCC had a very high water-to-cement ratio that lowered compressive strengths and compromised durability. Properly designed Self-Consolidating Concrete can save time and labor without sacrificing performance.





## SCC PUT TO THE TEST

One way to quantify the flowing characteristics is to conduct a "slump flow" test. Traditionally, a slump test (ASTM C-143) is used to judge plasticity. The unique properties of Self-Consolidating Concrete require some modifications to the slump test. No rodding is required and the subsequent flow of concrete is measured by the diameter of the spread.

ASTM Committee C09.47 has developed standards for testing Self-Consolidating Concrete.

ASTM C 1611 covers the slump flow test.

ASTM C 1621 describes the J-Ring procedure.

ASTM C 1610 describes the column segregation test to measure static stability of SCC.

The committee continues to develop procedures and standards on SCC.



This test demonstrates how conventional concrete with an 8.5 inch slump does not find its way through dense rebar.



The "slump flow" test shows diameters greater than 22" are considered self-consolidating concrete.



Self-Consolidating Concrete with a 28 inch spread flows easily through dense rebar.



ASTM C 1621 describes the J-Ring procedure which measures the passability of SCC.



The "L" box is being considered as a testing apparatus to judge the passability and stability of SCC to flow through rebar.



The "V" Funnel is a test that shows how quickly SCC passes through a restricted area.

## EUCO ADMIXTURES TO USE FOR SELF-CONSOLIDATING CONCRETE

### Polycarboxylates

- PLASTOL 5000
- EUCON SPJ
- EUCON SPQ
- EUCON SPC
- PLASTOL 5500
- PLASTOL 5700

Polycarboxylate based superplasticizers offer the best performance and highest technology in admixtures. Euclid Chemical's wide variety of admixtures ensure the most cost-effective self-consolidating mix in the industry today.

### Viscosity Modifiers

- EUCON ABS
- VISCTROL

Viscosity modifiers control bleeding and segregation in your concrete. These admixtures are not always required.



### The Euclid Chemical Company

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An RPM Company

*The Euclid Chemical Company serves the global building market as an ISO 9001:2000 supplier of specialty products and support services for the concrete and masonry construction industry. Marketed under the EUCO name, we offer a full line of admixtures, repair and maintenance products based on the latest technologies. We provide complete specification assistance and laboratory support as well as on-site service for guidance on proper product usage. EUCO materials are warehoused in over 200 locations in the USA and are available world-wide through international affiliates.*

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