Batimix Range of Products for the Pre-Cast Industry

Precast concrete is widely used in the construction industry as it provides the distinct advantage of accelerating construction works. It refers to the production of concrete structures, which are delivered after hardening. It allows contractors to plan works better, meet deadlines and thus avoid costly penalties. It also provides an almost endless variety of products and design solutions and the advantage of consistent quality and uniformity being produced in a controlled environment where temperature, humidity and craftsmanship are monitored. It also provides better water tightness resistance particularly when used with watertight sealants specifically manufactured to adhere to precast elements. Precast elements can prove both functional and decorative and are often designed to resist corrosion in specific applications.

Precast elements can prove easier to install and require less maintenance in general thus significantly reducing total cost over the project's lifecycle. The strength of precast concrete increases over time with the load carrying capacity being derived from its own structural qualities rather than from the surrounding backfill.

The production of precast elements by traditional precast manufacturing methods consumes a great deal of energy. The challenge is to reduce such energy cost to the extent possible to remain competitive. This can to a large extent be achieved with Holderchem admixtures, which by accelerating the hydration process, significantly reduce the need for external heat sources and shorten production cycles.

Holderchem high range water reducing admixtures reduce the energy required for mixing and the wear and tear of mixing equipment. In concrete placement, by minimizing or eliminating the need for external vibration as a result of their impact on the rheology of the mix, they allow for the pouring of concrete in slender elements which would have proved otherwise hard to pour because of possible congestion from intricate areas. Reduced vibration yield improved production cycles and lesser needs for repair works and thus significantly lower manpower costs. In the curing phase, improved hydration kinetics from better dispersion and surface chemistry significantly reduce or even eliminate the need for accelerated heat curing while enhancing early strength development which in turn allows for fast de-molding and form stripping thus better equipment usage from reduced cycle times.

More importantly, the use of third generation high range water reducers enhances flowability and surface quality by reducing bleeding and segregation. It allows for the design of concrete mixes with significantly lower water cement ratios and for the use of fines and aggregates with grading that would have otherwise been deemed to be poor. Concrete mixes with lower water cement ratios have enhanced durability and by significantly enhancing strength allow for the reduction in cement content and thus a decrease in cost.

The manufacture of precast structures requires a good concrete mix design and continuous optimization. Speed and quality are essential to the precast producer.
To that effect, Holderchem offers precast concrete manufacturers a complete range of products for the pre-cast industry falling within the following product categories:

- High-Range Water Reducers
- Accelerators
- Air Entraining Agents
- Viscosity Modifiers
- Curing & Sealing Compounds
- Mineral Admixtures
- Fibers
- Form Release Agents

Batimix products are designed to meet both wet precast applications including fair-faced concrete, tunneling applications, self compacting concrete, fiber -reinforced concrete, and high early and/or late strength concrete. A full range of products is also available to cover the requirements of semi-dry precast like concrete paving stones, pavers, roof tiles and concrete pipes and manholes.

Batimix admixtures are designed to meet the requirements of quality precast concrete producers for projects of all sizes. Products supplied optimize production processes and/or enhance precast concrete performance, meeting the most stringent industry requirements under most demanding conditions. The following is a brief selection of batimix products designed for the pre-cast industry:

Batimix HWR 1500 is a polycarboxylate-based high-range water reducer designed to meet ASTM C494, Type F requirements. It is used to produce consistent high quality precast concrete with high early and ultimate compressive and flexural strengths. This product can be supplied under different levels of performance.

Batimix HWR 1400-A is a naphthalene-based high-range water reducer designed to meet ASTM C494, Type F requirements.

Batimix Accelerator 320 is a set-accelerator meeting ASTM C494 Type C requirements. It is essentially used to increase productivity, thus improving the producers and contractors profitability.

Batimix AEA-110 is an air entraining agents meeting ASTM C260 requirements. It is used to achieve a proper air-void system critical to the freeze-thaw durability of concrete

Batimix VMA 510 is a viscosity-modifying admixture formulated to help control bleeding and segregation of concrete, which mix design, does not have an optimum gradation of aggregates.

Batimix Cure 750 is a curing and sealing compound compliant with ASTM C309 requirements to enhance the concrete surface quality.

Batimix Silica Fume 710 is a mineral admixture silica fume meeting ASTM C1240 specifications, available in both densified and un-densified forms. It is primarily used in conjunction with high-range water reducers to produce precast concrete requiring high strength, low permeability, or high density.

Batimix Fiber 660 is a macro-synthetic fiber used to improve toughness and durability of precast elements. Its corrosion free properties makes it particularly suitable for various reinforced concrete applications such as septic tanks, burial vaults, manhole riser sections, and wall products.

Batimix Form Release 740 is an agent, which allows ease removal of cast concrete within steel, aluminum, fiberglass, wood, or rubber forms.

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