

HYDRAMIX - Utilization In Portland Cement Concrete

Here are some reasons for utilizing HydraMix in your portland cement concrete mixes.

1. HydraMix significantly aids with concrete placement/finishability, generally saving about 25% finishing time, i.e., concrete pours / spreads easier since it becomes extraordinarily homogenous and non-segregating during its mixing process, plus, volume of surface bleed water production becomes reduced and efflorescence potential eliminated, etc.
2. HydraMix, a colloidal, custom-mineralized, pozzolanistic liquid which provides concrete the maximum possible degree of hydration during its curing process, and at the same time, HydraMix is simple and easy to use, as an alternative to micro-silica, silica fume, or costly specialty-blends of cement, i.e., slag cement, etc.
3. HydraMix utilized in portland cement concrete, effectively provides extraordinary durability. The concrete becomes self-compacting, self-leveling, more cohesive, and with lower permeability. All this while increasing surface abrasion resistance, plastic cracking resistance, naturally (not chemically induced) shrinkage compensated. HydraMix reduces or eliminates slab-curl potential, has improved aesthetic appeal, improved workability, compatibility, pumpability / lowered pumping pressures, effectively lowering rebound volume in spray applications, etc.
4. HydraMix utilization provides adequate pozzolanicity to a mix to consistently and effectively convert conventional portland cement concrete to high-performance concrete. This evidenced by its ultimate performance characteristics, durability, impermeability, surface abrasion resistance, etc. As an example, if you produce and place a conventional 3500 psi concrete, without HydraMix, you would receive a 3500 psi concrete with conventional-performance characteristics, i.e., durability, permeability, surface abrasion resistance, etc. However, with HydraMix added to a conventional 3500 psi mix you would receive a high-performance 3500 psi concrete that reflects 7000 to 8000 psi performance characteristics, i.e., increased durability, lower permeability, and improved surface abrasion resistance. This, without the expense and complexity of utilizing extra cement, silica fume, or micro-silica.
5. HydraMix contains natural ingredients that effectively increase the volume of calcium hydroxide ($\text{Ca}(\text{OH})_2$) produced during mixing, subsequently, HydraMix's natural ingredients convert significantly higher than normal amounts of the internally-produced calcium hydroxide into beneficial calcium silicate hydrate (C-S-H), which among many other things, benefits flexural strength, reduces or eliminates delayed ettringite formation potential, and more.
6. HydraMix does not require special handling, safety equipment, storage procedures, or curing techniques as does other pozzolan products, yet consistently works to ensure, that each and every time, both of concrete's cement pastes (paste-aggregate zone cement paste / bulk cement paste), produced during mixing, is of the highest attainable quality, thus, microcracking (invisible internal cracking significantly effecting permeability) potential is virtually eliminated, and modulus of elasticity, flexural strength, and impermeability become significantly enhanced.
7. HydraMix utilization generally lowers concrete's air-void percentages by 35% to 50%. And this will provide extraordinary freeze-thaw damage resistance, scaling, spalling, and chloride ion penetration resistance, while significantly increasing concrete's density. Laitance, honeycombs, dusting, and reinforcement steel corrosion potential become virtually non-existent.