

Master X-Seed[®] 55

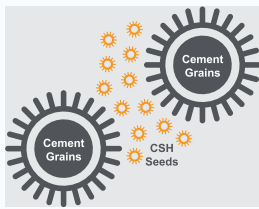
Strength-Enhancing Admixture

Precast Concrete Production

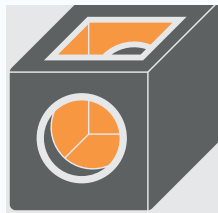
Technology

Master X-Seed 55 strength-enhancing admixture is based on a proprietary Master Builders Solutions technology that ensures a stable suspension of synthetically-produced crystalline calcium silicate hydrate (CSH) nanoparticles. These nanoparticles facilitate the growth of CSH crystals between cement grains and improve the overall hydration in a concrete mixture, thereby increasing early- and late-age strength development with minimal changes in the time of setting of concrete.

CSH Seeding



Improve Concrete Strength



Cost Optimizer



Environmental Sustainability



Benefits of Master X-Seed 55 strength-enhancing admixture:

- Required strengths can be achieved faster (Fig. 1) with Type II cement, leading to faster shipping of units and increased operational efficiency.
- Ability to match strength performance of Type III cement with Type II cement (Fig. 2).
- Enhanced strength performance at early ages, which enables the use of increased replacement levels of supplementary cementitious materials (Fig. 3).
- Reduction in total cementitious materials content while meeting the required strength, thus, reducing the overall environmental impact of the concrete mixture.
- Extending the performance space of existing concrete mixtures.
- Lowering energy costs by either reducing or eliminating heat- or steam-curing, while meeting early-age strength requirements.



Strength Enhancement

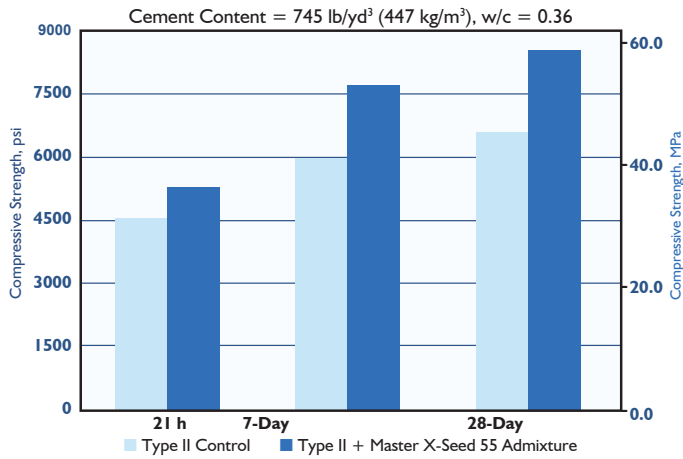


Fig. 1 Strength development of concrete mixtures with Type II cement compared to Type II cement + Master X-Seed 55 admixture

Flexibility to Increase SCMs

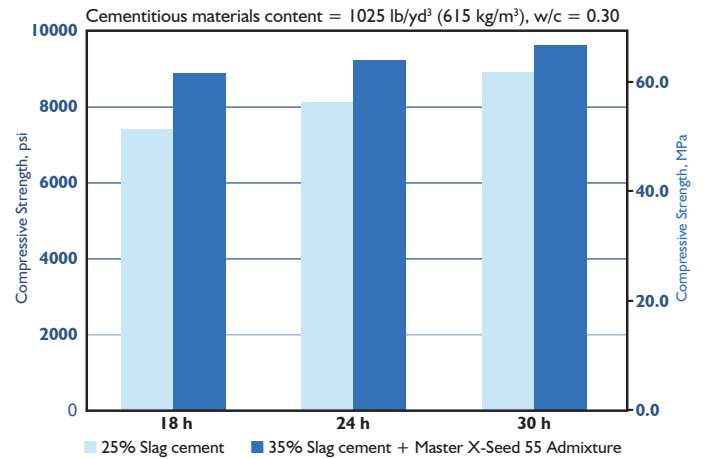


Fig. 3 Early-age strength development of concrete mixtures with 25% slag cement compared to 35% slag cement + Master X-Seed 55 admixture

Ability to Match Cement Performance

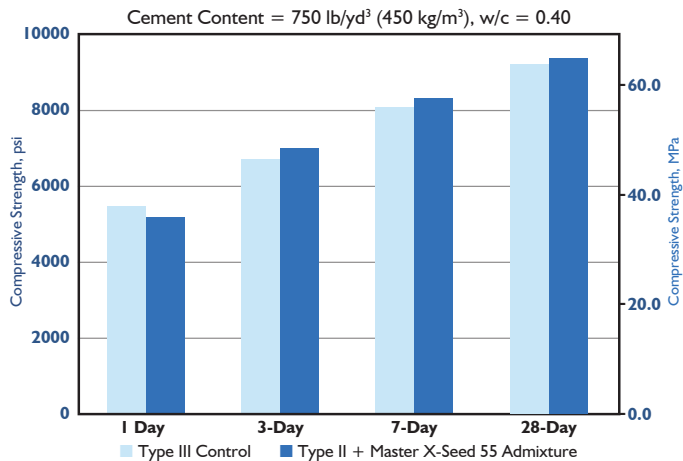


Fig. 2 Strength development of concrete mixtures with Type III cement compared to Type II cement + Master X-Seed 55 admixture

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