



Hard-Cem[®]

Product Code: K-801

DESCRIPTION

Hard-Cem[®] is an integral hardening admixture used to increase abrasion and erosion resistance of concrete. Hard-Cem is added to the concrete at the time of batching to increase the abrasion resistance of the concrete and extend concrete wear life. It outperforms and overcomes deficiencies of labor-intensive surface applied hardeners and can be used to enhance durability of both air-entrained and non-air-entrained concretes. Since it is integral, Hard-Cem can be used to harden horizontal, vertical or inclined concrete and shotcrete surfaces.



FEATURES & BENEFITS

- Extends concrete wear life up to 6 times under harsh conditions.
- Lowers installed cost*
- Expedites construction schedules*
- Reduces maintenance costs and improves concrete sustainability.
- Improved work site safety and conditions (dust free) *
- Improved quality control*
- Only hardener that can be used on air-entrained concrete*
- No side effects on concrete water demand, workability, set time, strength development or shrinkage.
- Full depth concrete hardening*
- Can be used in horizontal, vertical, or inclined concrete.
- Easy to use; added to the concrete.

*Compared to surface applied (dry shake) hardeners

RECOMMENDED USES

Hard-Cem can be used in any ready mix, shotcrete or precast concrete to improve abrasion and erosion resistance and extend the wear life of the concrete.

PROPERTIES

| Physical Properties | |
|--|---|
| Appearance | Black Powder / Granular Material |
| Particle Size | 50% < 100 microns |
| Specific Gravity | ~3.55 |
| Bulk Density | 1,650 kg/m ³ (103 lb/ft ³) |
| Plastic Properties | |
| Slump, ASTM C143 | No change |
| Setting Time, ASTM C403 | No change |
| Bleed Water, ASTM C232 | Approximately 45% reduction |
| Entrained Air Content and Stability, ASTM C231 | No change |





| Hardened Properties | |
|--|---|
| Compressive Strength, ASTM C39, C192, (28 Days) | No change |
| Drying Shrinkage | No change |
| Freeze / Thaw Durability, ASTM C666 | No change |
| Deicing Chemical Resistance (Mass Loss), ASTM C 672, (50 cycles) | No change |
| Abrasion Resistance, ASTM C627 (Robinson Type Floor Tester 5,000 revolutions) | 66% reduction in mass loss compared to control (28 days curing) |

APPLICATION

Hard-Cem is fully compatible with commonly used admixtures and sealers. Dosage is 40 kg/m³ (66 lb/yd³), displacing approximately 30 kg/m³ (50 lb/yd³) of conventional sand in the original concrete mix to maintain design yield.

Unopened bags can be added into the wet concrete only if sufficient wetting, mixing and dispersion within the concrete mix is ensured. Observe concrete discharge to verify full bag disintegration and no visible sign of bag fragments in the concrete. Test prior to use if in doubt. A suitable dust mask, eye protection, gloves and coveralls are recommended when manually dispensing bagged product.

When used in bulk, pneumatic unloading and dispensing of Hard-Cem is like that of Portland cement.

LIMITATIONS

The addition of Hard-Cem will not replace good concreting practices – especially those related to mix proportioning, placing, finishing, and curing. Concrete treated with Hard-Cem may be darker than normal Portland cement concrete.

SAFETY

Read the Safety Data Sheet (SDS) for this product. For professional use only. Avoid contact with skin or eyes. Avoid breathing dust. Wear a dust mask, long sleeves, safety goggles and impervious gloves.

PACKAGING

Hard-Cem is available in 20 kg (44 lb.) mixer ready bags, 1,600 kg (3,527 lb.) super bags and bulk pneumatic.

SHELF LIFE

Hard-Cem is shelf-stable when stored in its original packaging and protected from sources of moisture.

