

SPECIFICATION IN NBS FORMAT

E11/435

## Kryton Hard-Cem

### DESCRIPTION

Hard-Cem® is an innovative Integral Hardening Admixture (IHA) that gives designers a better option for achieving abrasion and erosion resistance in their floors and other structures. The technology of Hard-Cem employs a unique mineral-metal microstructure that makes concrete extremely durable and long lasting without the need to use more cement or apply surface treatments. Hard-Cem is added to the concrete during batching and becomes an integral part of the concrete's cement paste. Hard-Cem fortifies the cement paste and overcomes its intrinsic weakness to physical wear, providing permanent protection against damage from abrasive and erosive forces.

### KRYTON HARD-CEM RECOMMENDED USES:

- Distribution centres and warehouses.
- Manufacturing facilities.
- Big box retail stores.
- Superflat floors.
- Storage facilities.
- Public transportation stations.
- Roads, bridges, and overpasses.
- Truck terminals.
- Water & wastewater infrastructure.
- Dams, spillways and power plants.
- Airport runways and aprons.
- Marine infrastructure.
- Mining infrastructure.
- Waste and recycling facilities.
- Agricultural, dairy and seafood facilities.

### FEATURES AND BENEFITS:

#### Performance:

- Unmatched protection against abrasion and erosion.
- Maximizes durability and service life.
- Doubles concrete wear life.
- Superior dustproofing.
- Maintains original finish and appearance over time.
- Enhances resistance to harmful chemicals.
- Compatible with air entrained concrete and suitable for exposure to freezing weather and de-icing salts.
- Suitable for wet environments (no surface rusting or staining like iron-based hardeners).

#### Cost savings:

- Provides cost savings as it replaces surface-applied hardeners;
- Eliminates application labour costs;
- Is added directly to the concrete (no specialized equipment needed);
- Shortens construction schedules;
- Eliminates high repair and replacement costs.

#### Health and environmental benefits:

- Contributes to LEED points - Zero VOC - reduces jobsite waste - recyclable.
- Mixer-ready bags allow dust free use - OSHA compliant.
- Reduces total lifecycle carbon footprint and environmental impact.



GENERAL INFORMATION

Colour	Grey
Finish	Mineral
Material	Calcium Silicate
Shape	Formless
Length	Bespoke
Width	Bespoke
Height	Bespoke
Warranty Description	20 Year
Uniclass	<a href="#">Pr_20_31_03_36 Hardening and accelerating concrete admixtures</a> Primary
Caws	E11/435 Proprietary admixture E10/418 Proprietary admixture

SPECIFICATION DATA - HARDENING AND ACCELERATING CONCRETE ADMIXTURES

General Requirements	Admixtures generally
Performance Requirements	ASTM C494. EN 934-2. ACI 212-Chapter 15 - Permeability Reducing Admixture for Hydrostatic Conditions (PRAH). REACH and UK REACH Registered.
Admixture	Kryton Hard-Cem Guidance for specification option: <ul style="list-style-type: none"> <li>• Appearance: Black Powder</li> <li>• Specific gravity: ~3.55</li> <li>• Bulk density: ~1650 kg/m<sup>3</sup></li> </ul> <b>Manufacturer Guidance:</b> Consult manufacturer’s literature for effects on hardened and plastic properties.
Standards	Compatible with all floor classifications in ACI 302. 1R - Guide to Floor and Slab Construction. Compatible with all Flatness and Levelness classes in ACI 117 - Specification for Tolerances for Concrete Construction and Minerals. Wear Classification: EN 13892-4 - Class ARO.5 (Severe Duty). Wear Resistance: BLY 7/by45, Bohme Abrasion - Class 1.

SUSTAINABILITY DATA

Contains red list materials	No
Country of material origin	Canada
Country of product manufacture	Canada
Embodied Carbon A1 - A3 (production stage) as defined in <a href="#">BS EN 15804</a>	312.74 Kg CO <sub>2</sub> eq/m <sup>3</sup> Guidance for specification option: For concrete class 0-25 MPa. Please see EPD for other concrete classes (up to 60MPa).
Recyclability	100%
Recycled content	As defined in clause 7.8 of <a href="#">BS EN ISO 14021</a> .