

## TYPE 50 (TYPE HS)

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### DESCRIPTION:

In certain areas of Western Canada, concrete can sometimes be damaged if it is exposed to high sulphate content in soil or ground-water. For areas with high sulphate content Lehigh Inland Cement produces Type 50 (Type HS) Cement, which is designed specifically to combat the destructive effects of sulphates on concrete.

### USES:



The uses of Type 50 (Type HS) Cement is strongly recommended in soils when sulphate content exceeds 0.2 percent in soil samples, or 1,000 parts per million in water samples. Type 50 (Type HS) Cement is ideal for concrete projects involving foundations and basements or structures such as canal linings, culverts and siphons that will ultimately contact soil or water that contain sulphates.

Lehigh Inland's Type 50 (Type HS) Cement is available in bulk or in 40 kg bags.

### TECHNICAL DATA:

<u>Compressive Strength (MPa)</u>	<u>Lehigh Inland</u>	<u>CSA Minimum</u>
<u>Age at test:</u>	<u>Average</u>	
3 Days	23.5	10.5
7 Days	30.5	16.0
28 Days	40.0	28.5
Setting Time (minutes)	110.0	60.0

The table above compares the properties of Lehigh Inland's Type 50 (Type HS) Cement with the requirements of the Canadian Standards Association.

Due to Lehigh Inland's rigid production standards, Type 50 (Type HS) Cement surpasses existing CSA specifications. The very latest methods, equipment and techniques, as well as constant and strict controls maintained during the manufacturing process, produces a consistently reliable product.

For further information on Type 50 (Type HS) Cement, please contact your nearest Lehigh Inland Cement representative.

### SULPHATE ACTION:

Sulphates of sodium, magnesium and calcium (in combination with water) can cause a progressive deterioration of concrete – depending on factors such as the concentration of salts and the porosity and exposure condition of the concrete.

Sulphate attack on concrete is usually recognizable by random surface cracking, which is followed by surface scaling. A danger signal to watch for is a white deposit called efflorescence on the concrete surface that may accompany or precede cracking and deterioration.

**Combat the Problem:** To effectively achieve high quality concrete, here are a few simple steps to follow when building in sulphate-bearing soils.

1. Have the soil water checked by a testing laboratory.
  2. Examine existing concrete structures in the area for signs of sulphate attack.
  3. Discuss your proposed project with local construction officials.
  4. Where sulphates exist or are suspected, follow all the rules for quality concrete and use Lehigh Inland's Type 50 (Type HS) Cement.
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**SAFETY PRECAUTIONS:** Because of the chemical properties of all types of cement, it is important to be aware of the following:  
**Freshly mixed cement, mortar, concrete or grout may cause skin injury. Avoid contact with skin where possible. In the event of contact, wash exposed skin areas promptly with water. If any cement or cement mixtures come into contact with the eyes, rinse immediately and repeatedly with water and get prompt medical attention.**

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