

## TYPICAL ANALYSIS CERTIFICATE

High Early-strength cement type

**HE**

### Physical tests

**Time of Set Vicat (minutes)**  
*Initial* ..... 90  
*Final* ..... 220

**Fineness**  
*Specific surface (Blaine) (m<sup>2</sup>/kg)* ..... 569  
*Retained on 45 µm sieve (%)* ..... 1

**False set (%)** ..... 100  
**Autoclave expansion (%)** ..... 0.08  
**Air content (%)** ..... 8

**Compressive strength (MPa)**  
*1 day* ..... 26.6  
*3 days* ..... 33.0  
*7 days* ..... 37.4  
*28 days* ..... 45.3

**Expansion of mortar bars at 14 days (%)** ..... 0.014

### Chemical analysis (%)

*SiO<sub>2</sub>* ..... 19.0  
*Al<sub>2</sub>O<sub>3</sub>* ..... 4.8  
*Fe<sub>2</sub>O<sub>3</sub>* ..... 3.6  
*CaO* ..... 60.4  
*Free Lime* ..... 1.4  
*MgO* ..... 2.6  
*SO<sub>3</sub>* ..... 4.4  
*Loss on ignition* ..... 1.8  
*Insoluble residue* ..... 0.5  
**Total alkali (Na<sub>2</sub>O equivalent)** ..... 0.94

**Mineralogical composition**  
*C<sub>3</sub>S* ..... 51.4  
*C<sub>2</sub>S* ..... 15.8  
*C<sub>3</sub>A* ..... 6.7  
*C<sub>4</sub>AF* ..... 10.9

We hereby certify that the cement delivered complies with the  
 CSA Standard A3000-13 requirements section A3001-13, Type HE.

For any information regarding this certificate, please contact our technical service at (418) 329-2100, ext. 3276.

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