

## TYPICAL CEMENT CERTIFICATE

Portland Cement type

<b>I/II</b>
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### Physical tests

#### Time of Set Vicat (minutes)

Initial..... 120

Final..... 245

#### Fineness

 Specific surface  
(Blaine) (m<sup>2</sup>/kg)..... 386

 Retained on 45 µm  
sieve (%)..... 4

False set (%) ..... 67

Autoclave  
expansion (%) ..... 0.12

Air content (%)..... 7

#### Compressive strength (MPa[psi])

3 days..... 26.2 [3800]

7 days..... 30.7 [4450]

28 days..... 37.5 [5440]

#### Expansion of mortar bars

at 14 days (%)..... 0.014

### Chemical analysis (%)

 SiO<sub>2</sub>..... 19.1

 Al<sub>2</sub>O<sub>3</sub>..... 4.9

 Fe<sub>2</sub>O<sub>3</sub>..... 3.7

CaO..... 60.5

Free calcium oxide..... 1.4

MgO..... 2.6

 SO<sub>3</sub>..... 3.8

Loss on ignition..... 1.9

Insoluble residue..... 0.4

#### Alkalies

 (Na<sub>2</sub>O equivalent)..... 0.92

 Carbon dioxide (CO<sub>2</sub>)..... 1.7

Limestone..... 4.5

 Calcium carbonate (CaCO<sub>3</sub>)  
in limestone..... 84

#### Mineralogical Composition (Potential)

 C<sub>3</sub>S..... 48

 C<sub>2</sub>S..... 17

 C<sub>3</sub>A..... 7

 C<sub>4</sub>AF..... 11

 Sum C<sub>3</sub>S + 4.75 C<sub>3</sub>A..... 79

We hereby certify that the cement delivered complies with the ASTM Standard C 150 and AASHTO M 85, Type I/II.
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For any information regarding this certificate, please contact our technical service at (418) 329-2100, ext. 3276.

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