



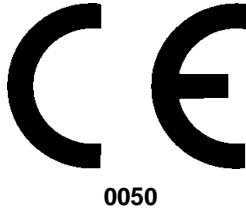
## Cement Data Sheet

Manufactured in: - Lansdown, Killaskillen, Kinnegad, Co. Westmeath, Ireland.

Date: 20/02/2020

### Portland - limestone Cement

I.S EN 197-1:2011	<b>CEM II/A-L 42,5 N</b>	12/09/2005
	Certificate of Conformity No: 0050 - CPR - 0023	
CE	<b>CEM II/A-L 42,5 N</b>	12/09/2005



### Declared Composition (%)

<u>Constituents</u>	<u>Calcium Sulfate</u>
Portland Cement Clinker (K).....	Gypsum.....
Granulated blastfurnace slag (S).....	Other source of Calcium Sulfate.....
Natural pozzolana (P).....	
Natural calcined pozzolana (Q).....	
Siliceous fly ash (V).....	<u>Additives</u>
Calcareous fly ash (W).....	Grinding Aid.....
Burnt Shale (T).....	Ferrous Sulphate.....
Limestone (L).....	

**80 - 94**      **3.0 - 6.0**  
 -      -  
 -      -  
 -      -  
 -      **< 0.1**  
 -      **< 0.3**  
 -      -  
**6 - 20**

### Compressive Strengths (MPa)

<u>Time</u>	<u>Test Method</u>	<u>Mean Values</u>	<u>Range of Values</u>		
2 Day	IS EN 196 - 1	<b>31.0</b>	<b>27.0</b>	-	<b>32.0</b>
7 Day	IS EN 196 - 1	<b>47.7</b>	<b>44.5</b>	-	<b>49.5</b>
28 Day	IS EN 196 - 1	<b>58.3</b>	<b>54.0</b>	-	<b>60.0</b>

### Physical Properties

<u>Property</u>	<u>Test Method</u>	<u>Mean Values</u>	<u>Range of Values</u>		
Specific density (Kg/M <sup>3</sup> )	IS EN 196 - 6	<b>3075</b>	<b>3000</b>	-	<b>3200</b>
Specific surface (M <sup>2</sup> /Kg)	IS EN 196 - 6	<b>397</b>	<b>360</b>	-	<b>430</b>
Initial setting time (min)	IS EN 196 - 3	<b>114</b>	<b>100</b>	-	<b>200</b>
Soundness (mm)	IS EN 196 - 3	<b>0.6</b>	<b>0.0</b>	-	<b>4.0</b>

### Chemical Properties

<u>Property</u>	<u>Test Method</u>	<u>Mean</u>	<u>Range</u>	<u>Property</u>	<u>Test Method</u>	<u>Mean</u>	<u>Range</u>
LOI (%)	IS EN 196 - 2	<b>5.5</b>	<b>3.0 - 7.5</b>	SO <sub>3</sub> (%)	IS EN 196 - 2	<b>2.6</b>	<b>2.0 - 3.5</b>
IR (%)	IS EN 196 - 2	<b>0.2</b>	<b>0.1 - 2.0</b>	K <sub>2</sub> O (%)	IS EN 196 - 2	<b>0.50</b>	<b>0.40 - 0.80</b>
SiO <sub>2</sub> (%)	IS EN 196 - 2	<b>18.4</b>	<b>17.5 - 20.5</b>	Na <sub>2</sub> O (%)	IS EN 196 - 2	<b>0.23</b>	<b>0.15 - 0.35</b>
Al <sub>2</sub> O <sub>3</sub> (%)	IS EN 196 - 2	<b>4.8</b>	<b>4.5 - 5.5</b>	Cl (%)	IS EN 196 - 2	<b>0.07</b>	<b>0.01 - 0.09</b>
Fe <sub>2</sub> O <sub>3</sub> (%)	IS EN 196 - 2	<b>2.4</b>	<b>2.0 - 3.5</b>	FCaO (%)	ISO 29581 - 2	<b>1.4</b>	<b>1.0 - 3.0</b>
CaO (%)	IS EN 196 - 2	<b>66.0</b>	<b>63.5 - 68.0</b>	Na <sub>2</sub> O <sub>eqv</sub> (%)	IS EN 196 - 2	<b>0.57</b>	<b>0.45 - 0.75</b>
MgO (%)	IS EN 196 - 2	<b>1.2</b>	<b>1.0 - 2.0</b>	C <sub>3</sub> A	IS EN 196 - 2	<b>8.6</b>	<b>6.0 - 9.5</b>
Cr(VI) (ppm)	IS EN 196 - 10	<b>0.6</b>	<b>0.0 - 2.0</b>				