



## Material Certification Report

Brand: Skyway Cement  
 Material: Slag Cement  
 Grade: 100  
 Date Range: December 1-31, 2017  
 Lot Number: Multiple Lots

### Certification

This cement meets the requirements of ASTM specification C989 for Grade 100 Slag Cement.

### General Information

Supplier:	Skyway Cement Company LLC.	Source Location:	Skyway Cement Company LLC.
Address:	3020 East 103rd Street Chicago, IL 60617		3020 East 103rd Street Chicago, IL 60617
Telephone:	(872)302-5910	Contact:	Roberto Carrillo
Date Issued:	11-Jan-2018		

The following information is based on average test data during the test period.  
 The data is typical of slag cement shipped by Skyway Cement Company LLC.; individual shipments may vary.

### Test Data on ASTM Standard Requirements

Chemical			Physical		
Item	Limit <sup>A</sup>	Result	Item	Limit <sup>A</sup>	Result
Sulfide S (%)	2.5 max	0.98	+45 µm (No. 325) Sieve (%)	20 max	0.28
			Blaine Fineness (m <sup>2</sup> /kg)	-	613
Sulfate Ion - SO <sub>3</sub> (%)	-	0.03	Air Content (%)	12 max	4.65
			Slag Activity Index (%)		
			Avg 7 Day Index	75 min	82
			Avg 28 Day Index	95 min	116
			Compressive Strength - MPa (psi):		
			Slag + Reference Cement		
			7 Day	-	25 (3635)
			28 Day	-	43 (6337)
			Reference Cement <sup>B</sup>		
			7 Day	-	29 (4318)
			28 Day	-	37 (5477)

### Reference Cement Qualification Data

Chemical			Physical		
Item	Limit <sup>A</sup>	Result	Item	Limit <sup>A</sup>	Result
Total Alkalies as Na <sub>2</sub> O (%)	0.60 - 0.90	0.84	Blaine Fineness (m <sup>2</sup> /kg)	-	368
C <sub>3</sub> S	-	55.3	Compressive Strength - MPa (psi):		
C <sub>2</sub> S	-	16.6	7 Day	-	30.3 (4390)
C <sub>3</sub> A	-	7.9	28 Day	34.5 (5000) min	38.9 (5640)
C <sub>4</sub> AF	-	8.8			

### Notes

<sup>A</sup>Dashes in the limits columns means Not Applicable

<sup>B</sup>Reference cement results from procedure "Preparation of Specimens". Information on Reference Cement qualification available upon request.

Specific Gravity: 2.89

This data may have been reported on previous mill certificates. It is typical of the cement being currently shipped which was produced in December of 2017.