



## Agglomeration Test

Project: 50269-001 Operator: Bruce

Sample ID: Master Comp -1/4" Date: 27-Aug-12

Test ID: AG-MC-1

### Procedure:

- 1 Obtain four 1-kg test charges that were previously stage-crushed to -1/4"
- 2 Record tare weight of four jars. Place each sample into its corresponding labeled jar
- 3 Record the starting weight, before the reagents are added
- 4 Add 75% of the coarse bottle roll test lime consumption in each jar
- 5 Add cement at 5 kg/t, 10 kg/t and 15 kg/t to three of the four jars. The remaining jar is considered as 0 kg/t
- 6 Roll the jars for 5 - 10 minutes to mix
- 7 Add water to the sample gradually using a spray bottle. Spray a fine mist every 2 minutes then roll at 20 rpm to mix, continuing until agglomerates are formed (normally approximately 30 minutes)
- 8 Record the final weight and let the samples sit 48 hours in the closed jar to allow the cement to cure
- 9 After curing, place the samples from each bottle into a percolation column
- 10 Record the height of the sample in the column
- 11 Water is recirculated through the column from the top to bottom. Record observations regarding changes in sample height, pellet degradation, percolation problems and fines accumulating in the feed water
- 12 After 48 hours of solution application, tap the sides of the column until the sample height remains stable.
- 13 Record the final height and observe the conditions of the pellets
- 14 Test the integrity of the pellets by crushing them by hand and noting the relative amount of force required to break the agglomerates
- 15 Record the concentration of cement that produced the best agglomerates

	AG-MC-1-A	AG-MC-1-B	AG-MC-1-C	AG-MC-1-D
Tare Weight	335.7 g	338.3 g	334.9 g	336.5 g
Starting Weight	1336.1 g	1339.8 g	1337.3 g	1337.9 g
Lime Added	3.42 kg/t	3.42 kg/t	3.42 kg/t	3.42 kg/t
Cement	5 kg/t	10 kg/t	15 kg/t	0 kg/t
Final Weight	1473.1 g	1487.7 g	1481.1 g	1470.4 g
Initial Sample Height	28.5 cm	29.4 cm	28.5 cm	30.5 cm
Flowrate	1.3 mL/min	1.3 mL/min	1.3 mL/min	1.3 mL/min
Final Sample Height	23.5 cm	25.3 cm	27.3 cm	21.8 cm
Observations	No fines accumulating in the feed water	No fines accumulating in the feed water	No fines accumulating in the feed water	Fines accumulating in the feed water
	Slight change in sample height during test	Slight change in sample height during test	No change in sample height during test	sample height changed to 26.0 cm from 30.5 cm
	Maintained agglomerated samples	Maintained agglomerated samples	Maintained agglomerated samples	Sample partially dis-agglomerated
	No percolation issues	No percolation issues	No percolation issues	No Percolation issues
	Sample wet thoroughly	Sample wet thoroughly	Sample wet thoroughly	Sample wet thoroughly
	Easily squished (2)	Required a little bit of strength to break (2)	Requires a good amount of strength to break (5)	Integrity rating of (1)
Best Agglomerate	x	v	v	x

Feed Weight 1000 g 0.001 tonne  
Lime Consumed 4.55 kg/tonne  
CaO Consumed 3.37

Integrity rating: 1 being the weakest, 5 being the strongest