

	<h1>Buntrock Industries, Inc.</h1> <p>Investment Casting Supplies</p>	Document#: 7.34
		Rev#: 0
	Title: BI 2010C Slurry Process Control	Page#: 1 of 2

Rev	Description of Change	Author	Date
0	Initial Release	Joe Norvell	3/7/14

1.0 Scope:

- 1.1 The slurry control tests in this procedure are considered a minimum level of tests and frequency for reasonable process control of back up slurry.

2.0 Purpose:

- 2.1 The intended use for these tests is to provide the foundry with the tools needed to control its back up slurry process. Each foundry needs to establish the frequency and the operating tolerance of each test they choose to implement to control their process.

3.0 Hazard and Safety:

- 3.1 Consult the Material Safety Data Sheet (MSDS) for required handling procedures and Personal Protective Equipment (PPE) required.

4.0 Equipment:

- 4.1 Equipment for the Slurry Viscosity- Flow Cup Method test as per document 7.1.
- 4.2 Equipment for the Slurry Binder Specific Gravity and Silica Content test as per document 7.16.
- 4.3 Equipment for the Slurry Density – Graduated Cylinder Method as per document 7.31.
- 4.4 Equipment for the Slurry Bacteria test as per document 7.15.
- 4.5 Equipment for the slurry pH test as per document 7.7.

5.0 Procedure:

- 5.1 Check the viscosity frequently using a BI Brass Cup and referring to document 7.1. Maintain a range of +/- 0.75 seconds. Frequency depends on amount of dipping relative to the size of the tank and environmental factors like airflow and temperature.
  - 5.1.1 Thin the slurry with a 50/50 mixture of binder and water during production dipping.
  - 5.1.2 Use only water if slurry is not in use. Overnight as an example.
  - 5.1.3 If possible add water before leaving slurry idle for extended periods of time to account for evaporation.

	<h1>Buntrock Industries, Inc.</h1> <p>Investment Casting Supplies</p>	Document#:
		7.34
		Rev#: 0
	Title: BI 2010C Slurry Process Control	Page#: 2 of 2

5.2 For TMM30 binder check binder silica level as necessary to maintain a silica level of 26-28% referring to Slurry Binder Specific Gravity and Silica Content document 7.16. Find % SiO<sub>2</sub> on TMM30 density chart. Note that the centrifuged binder will still be somewhat dark in color.

5.3 Check the slurry density according to document 7.31. The result should be 1.59 – 1.67 grams/ml. The result depends on individual circumstances like type of binder, intensity of mixing, whether or not surfactant is used, and slurry viscosity. The above range covers that normally encountered in the field. Once established a tighter range is possible.

5.4 Check bacteria levels every two weeks referring to document 7.15. Use Stepanquat to kill bacteria. Use bleach to rinse tanks, pumps, and hoses for good hygiene.

5.5 Check the pH of the slurry weekly using the procedure in document 7.7. Usually the first sign of bacteria is a drop in slurry pH. Acceptable range is 9.4 – 10.5. Use TEAH to adjust slurry pH upward, if needed.

#### 6.0 Results:

6.1 See section 5.0 Procedures for recommendations on how to interpret the results of the tests in this document.

#### 7.0 References:

7.1 None.