

Viscosity Control for Primary Slurries

For primary slurries, the key slurry test parameters are binder solids and viscosity. Other slurry tests, such as density and pH are important and provide a more complete representation of a slurry's composition. However, basic slurry control can be accomplished with viscosity and binder solids.

In most cases, binder solids tests are not available at every viscosity test. When water additions are made to bring the binder solids range into control, it should be assumed that binder solids are OK. A good rule of thumb is that all liquid additions to the slurry between binder solids tests will be water, unless binder solids are in range and viscosity is still high.

Use a slurry log to record all test results and additions to a slurry. By carefully analyzing this log, you can determine the proper daily water addition. This is done by determining the viscosity and water/refractory addition effect on slurry properties.

The following chart can be used to determine what additions are required to bring a slurry back into a workable range.

Test Results		Required Additions		
Viscosity	Binder Solids Test	Water Required?	Binder Required?	Refractory Required?
Low	OK	No	No	Yes
Low	High	Yes*	No	Yes
Low	Low	Evaporate	No	Yes
OK	OK	No	No	No
OK	Low	Evaporate	No	No
OK	High	Yes	No	Maybe**
High	OK	No	Yes	Maybe**
High	High	Yes	Maybe**	Maybe**
High	Low	Evaporate	Yes	No

*Add water to bring binder solids in range and then add refractory to bring viscosity into range.

**Maybe indicates that this addition may be required based on the effect that the addition marked as a Yes has on the slurry.



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