

SUSPENDASLURRY® FS MATERIAL



Ready-to-Use Ceramic Shell Slurry

SuspendaSlurry FS material was developed to eliminate costs associated with continuous mixing and to simplify the initial mixing process as the pre-mixed, chemically suspended ceramic shell slurry eliminates the need to weigh and mix binder and refractory components.

Used for non-ferrous metals, SuspendaSlurry FS material is recommended for both initial and backup coats and is available in 60 pound (5 gallon) and 400 pound (30 gallon) slurries.

Simplify Slurry Makeup

SuspendaSlurry FS material is pre-mixed when it leaves the R&R manufacturing facility. The risk of operator error in adding the proper amounts of flour to a binder is eliminated, as are the labor time and costs associated with this step of the process. A standard slurry can take a day or more to wet-out before dipping can start. SuspendaSlurry FS material can be remixed in minutes, often by hand, and used immediately upon opening.

- Reduce expense and equipment maintenance - no propeller mixers required to wet-out refractory.
- Reduce labor costs associated with weighing and mixing flour and binder components.
- Eliminate time wasted waiting for a slurry to wet-out.

Eliminate Continuous Slurry Mixing

Many foundries experience the costly loss of slurries when electric supply fails over a weekend. Others have experienced the loss of teardrop tanks and slurries when the propeller mixer moves off-center and cuts through the tank wall or when the propeller and shaft uncouple from the motor while the foundry is closed. SuspendaSlurry FS material is formulated to maintain suspension for months without mixing; allowing the foundry to turn off mixers and tanks entirely - eliminating the risk of slurry loss due to uncontrollable, off-hour failures.

- Save electricity and lower costs by turning tanks off when not in use.
- Eliminate the risk of slurry loss and costly replacement due to electrical failure or a damaged tank.

Simplify Slurry Maintenance

Slurry maintenance is simplified for the operator. Slurry viscosity is the only test parameter required to control the slurry. If viscosity is too high, a simple water adjustment will bring the slurry back into control. Placing a tight sealing lid on the slurry tank after dipping helps preserve water in the slurry so additions are required less frequently.

- Reduce labor costs and time associated with intensive slurry testing.

Proven Casting Performance

SuspendaSlurry FS material is based on R&R's leading primary binder technology. This allows casters added benefits over standard colloidal silica shells. The primary coats of SuspendaSlurry FS material will result in stronger layers, reducing the potential for buckling, lifting or cracking defects. The slurry will flow, coat and drain in a fluid manner, eliminating any need for manual wax pattern application. SuspendaSlurry FS material also contains a color indicator. When the shell changes from yellow to orange, the shell is ready for another dip.



RANSOM & RANDOLPH

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Application Recommendations

1. Remix the SuspendaSlurry FS material prior to use to ensure a homogeneous blend of material. Remixing time will vary with the size of the slurry, but should take minutes. Small slurries may be remixed by hand, larger slurries may require a propeller mixer. Remix until the liquid at the top of the slurry is blended and the mixture is creamy in appearance.
2. Remove the propeller mixer from the tank after initial remixing.
3. Patterns must be clean and free from silicones or other contaminants before dipping.
4. It is not usually necessary to use a prewet between coats. If a prewet is needed, use deionized water only. Drain the pattern before dipping into the slurry.
5. **Once finished dipping shells, replace slurry tank lid to prevent evaporation.**
6. When using SuspendaSlurry FS material again, remix to a creamy consistency prior to dipping if there is a visual separation of liquid at the top of the tank. If there is no separation visible, dip without remixing.

Slurry Control Procedures

1. SuspendaSlurry FS material requires simple viscosity control. Target viscosity ranges for SuspendaSlurry FS material:

#4 Signature Series Zahn Cup	#5 Signature Series Zahn Cup
19-21 seconds	12-13 seconds

2. Control viscosity with water adjustments only. As the viscosity increases, add water to bring the slurry back into target viscosity range. Use distilled or deionized water as opposed to tap water; which can contain contaminants that can negatively affect slurry life.
3. Antifoam, wetting and bactericide agents are already formulated into SuspendaSlurry FS material and other additions may not be compatible. Contact R&R's technical team before making additions to the slurry.

Slurry Testing Frequency

R&R recommends running the following tests accordingly.

Slurry Test	Recommended Testing Frequency
Total Solids	Weekly
Slurry Viscosity	Start of each shift

Target Total Solids Range

- SuspendaSlurry FS material: 70-72%

Refractory Loading

SuspendaSlurry FS material is provided at 60% fused silica. It is not recommended to use a different refractory load level.

Safety

OSHA-approved respiratory protection should always be worn to avoid inhalation of respirable silica dust, which can result in an irreversible lung disease, silicosis. Such exposure includes shell building, casting, knockout and cleanup. Refer to SDS for specific details.

Storage & Handling

Always keep SuspendaSlurry FS material sealed tightly when not in use to prevent evaporation. Keep from freezing.

SuspendaSlurry FS material must be maintained above 35 °F (2 °C) to prevent the material from precipitating irreversibly and making the product unsuitable for use. Shelf life is 1 year from date (MMDDYY) in batch lot number on label. Rotate stock to maximize shelf life.



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Once per month, whether dipping parts or not, open the container of SuspendaSlurry FS material, gently remix and reseal container lid.

Settling will occur over time; if left for too long and unused, the settling process may be too difficult to reverse.

Technical Tips

For additional information and recommendations, refer to the Shell Building, Autoclaving and FlashFire Dewax Method Technical Tips available for download at www.ransom-randolph.com.

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Issue Date: March 11, 2021

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