



630 Oakmont Lane ♦ Westmont, IL 60559 ♦ 1-800-323-6863 ♦ ha-international.com

Mixing Procedures

Water-Based Paste Coatings

Unless otherwise indicated, the following procedures are based on the preparation of coating in a 55 gallon open head drum. When mixing in smaller or larger tanks, the procedures are still valid, except for references to specific amounts of coating, specific measurements, or specific distances, etc. For assistance in preparing coating in containers other than a 55 gallon drum, contact your HA International representative.

For best results, paste coatings should be prepared the day before they are to be used and be allowed to “age” 16 to 24 hours.

A. Starting with an Empty 55 gallon Open Head Drum

Step 1: Calculate approximately how many gallons of water are required for 45 gallons of coating at the working baume’ and/or viscosity. Starting with a clean, empty drum, fill drum with approximately one-half of the calculated amount of water required for dilution.

If this amount of water does not cover mixing blade, add additional water until blade is covered.

Step 2: Turn mixer to moderate speed. Add paste until volume in drum is approximately 2 to 2 ½ times the volume of the starting water. As the mixture thickens, increase mixing

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speed. Mix at highest possible speed without forming a major vortex. A slight vortex is acceptable.

Step 3: If mixture becomes too thick for mixer, add small amounts of water until mixing motion is regained.

Step 4: Mix until all paste is dispersed. Make sure there is no material on bottom of drum on which the mixer is mounted. The area between the side of the drum on which the mixer is mounted and the mixing blade is highly prone to a build-up of undispersed material. If after 15 to 30 minutes of mixing, this area still contains undispersed material, change position of mixer (if it is portable) to other side of drum. Continue mixing 15 to 30 minutes.

If mixer is not portable, a garden hoe or other tool can be used to break up the undispersed material.

Step 5: If necessary, add additional product or water to maintain a heavy slurry during this stage of coating preparation.

Step 6: Mix approximately ½ to 1 hour for paste coating or until slurry is homogeneous and free of lumps and undispersed material.

Step 7: Reduce mixer speed, gradually add approximately 90% of the remaining amount of calculated dilution of water. Adjust mixer speed until only a slight vortex is formed, then gradually reduce speed until vortex just disappears. Mix 30 minutes. Check Baume' and viscosity.

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Step 8: Gradually add small amounts of water. At this stage of coating preparation, add water in ½ to 1 gallon increments. Mix 5 to 10 minutes and recheck Baume' and viscosity.

Step 9: Repeat Step 8 until coating is within desired Baume' and viscosity range.

Step 10: When coating properties are within desired range, mix an additional 15 minutes. Recheck Baume' and viscosity.

Step 11: When desired Baume' and viscosity range is definitely established, mixing intensity should be reduced to a gentle roll and coating is ready to be used.

Step 12: When coating is ready to be used, HA International recommends that the time, Baume', viscosity, coating density, and coating temperature be determined and the data be recorded.

Step 13: The Baume', viscosity, coating density, and coating temperature should be checked at least once and preferably twice per shift. Changes in these properties will indicate a potential problem before it becomes serious and results in scrapped castings.

B. Adding to the Drum which Already Contains Coating

The preferred practice is to use two drums for coating preparation and to always start with an empty container. However, this may not always be possible. If circumstances require that additional coating be prepared for use while mixing drum still contains coating, the following procedure is recommended:

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Step 1: Do not allow coating level in drum to become less than six inches above the mixing blade. Increase the mixing speed until a slight vortex is formed. At this stage of coating preparation a slight vortex is desirable and facilitates the dispersing of powdered coatings.

Step 2: Add paste until coating becomes a heavy slurry. To obtain a heavy slurry, a typical water-based coating requires that material be added until the level in the drum is approximately 1 to 1 ½ times the original level of coating.

Steps 3-6: Same as procedure A.

Step 7: Reduce mixer speed. Gradually add the remaining amount of calculated dilution water until level in the drum is approximately 6 to 8" from top of the drum. The exact amounts of product and water required to obtain a full drum of diluted coating will vary and will have to be determined by trial and error.

Adjust mixer speed until only a slight vortex is formed. Then gradually reduce speed until vortex just disappears. Mix 15 to 30 minutes. Check Baume' and/or viscosity. Baume' and viscosity should be slightly higher than desired Baume' and viscosity.

Steps 8-13: Same as procedure A

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