

# CASTING CONNECTION

• Your Link to Investment Casting News from Ransom & Randolph •

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## Avoid Adhesion Related Defects

Are you experiencing casting defects related to shell buckling or lifting? Try introducing a pattern cleaner into your process to improve slurry adhesion on your primary coats.

Pattern cleaners remove silicone oil or other release agents from wax patterns before the primary ceramic coat is applied.

R&R Wash-N-Etch pattern cleaner, a biodegradable product, cleans wax patterns and contains naturally occurring d-limonene, derived from citrus fruits, as the active ingredient.

### R&R Wash-N-Etch pattern cleaner



It also acts as an etching material for the wax pattern while it cleans off the release agent. This process allows for better slurry adhesion during application of primary coats.

Better adhesion of the primary coats reduces opportunities for casting defects related to shell buckling or lifting.

### R&R Wash-N-Etch Application Recommendations

Patterns cleaned in R&R Wash-N-Etch pattern cleaner can be dipped in water-based primary slurries after they have dried.

After the wax patterns are cleaned and rinsed with water, an acclimation period of at least 1 hour is recommended in the primary slurry area of the shell room to ensure wax

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## Calling All Art Casters!

Have you tried our new **SculptaCast™ waxes** yet?

Available in five formulas to meet all your application requirements from hand forming to

slush casting.

All SculptaCast waxes are naturally clean burning with very low ash residue and undergo stringent quality control testing in a state-of-the-art laboratory

to ensure the highest level of quality.

Whether you are a sculpture artist or a foundry making sculpture castings, SculptaCast waxes have been designed to meet your specific needs.

Contact R&R to place your order today!



Learn More: <http://ransom-randolph.com/cs-sculptacast-waxes.html>

*Investing with Innovation™*



# PKI Equipment For Sale



## Pacific Kiln New Generation Double Door Wax Burnout Furnace

This completely new furnace was built in June 2016. The afterburner is a CAT III with air injection. All components are new. Unit was completely factory tested and adjusted. Factory guarantee of condition and operation. Available for delivery 3-4 weeks from order date.

Contact your R&R Regional Sales Manager for a quote today!

Learn More: [http://ransom-randolph.com/PDFs/Equipment For Sale PKI PBF-352NG-DD.pdf](http://ransom-randolph.com/PDFs/Equipment%20For%20Sale%20PKI%20PBF-352NG-DD.pdf)

Model No.: PBF-352NG-DD

## PKI Kiln Korner



Source:  
Pacific Kiln & Insulations,  
Degrees ° Newsletter,  
March 2017, Vol. 19 No. 1

### Foundry Facts

Dear PKI,  
We have the proper temperature and time, but our shells are not burning out clean. There is a lot of carbon left after the cycle.  
~ What's Wrong

Dear What's Wrong,  
You probably do not have enough oxygen in the atmosphere to combust the carbon and burn it away. Increase

the air-to-gas ratio until you have 8-10% oxygen in the atmosphere. This can be checked with an oxygen analyzer. Your gas company might check it for free.  
~ The Pyro Maniac

### Hot Tips

As doors open and close, ceiling fans start and stop, storms come and go, ambient pressures within a foundry can fluctuate wildly and rapidly. This can have a dramatic effect on the performance of your furnace equipment. These effects include heat distribution, heat recovery, atmosphere control and smoke, along with containment and many others problems. Testing for the cause is easy, correcting the problem may not be.



If you have questions about FlashFire dewax, burnout, or preheat, PKI would like to hear from you.

Contact PKI for help:

- Phone: 951.697.4422
- Fax: 951.697.4442
- [info@pacifickiln.com](mailto:info@pacifickiln.com)
- [www.pacifickiln.com](http://www.pacifickiln.com)

# Binder Remixing

In certain cases, it may be necessary to remix a binder prior to using (e.g., binder is old or requires remixing). Remixing a drum or Intermediate Bulk Container (IBC) is typically thought to be a cumbersome task. However, there is a simple and inexpensive way to do it.

By using collapsible propellers with a standard shaft with a standard 1/2" chuck or larger power drill, remixing is easy.

For 55 gallon drums, attach one

collapsible propeller to the end of a shaft. Remove one of the bungs and remix the binder for at least 5 minutes. Remove the propeller and thoroughly clean it before the binder dries.

For an IBC, attach two collapsible propellers to the shaft. The propellers should be placed so that one is at the end of the shaft and the other is 12-15" up the shaft. Remove the top from the IBC and remix for at least 5 minutes. Remove the propeller and thoroughly clean it before

the binder dries.

This procedure should be done each time, prior to using a binder, to ensure that any binder that is removed is homogeneous.



**Have questions?**  
Contact R&R's  
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## Follow Us on LinkedIn!

### We've Gone Social!

Be sure to check out our new R&R company page on LinkedIn!



The page will feature product launches, company announcements, upcoming

events, relevant industry-related content, breaking news and more!

Check it out at: <https://www.linkedin.com/company/ransom-and-randolph>

Look for our ceramic shell and jewelry showcase pages too!

**Follow us on LinkedIn today!**



## Avoid Adhesion Related Defects

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patterns are not expanding or contracting from changes in temperature.

R&R Wash-N-Etch pattern cleaner can be used full strength, as packaged, for difficult to release patterns that

require a heavy coat of release agent. It may also be used full strength for patterns that have difficult part geometry.

R&R Wash-N-Etch pattern cleaner can be diluted to 75% concentration for normal use, making it more economical to use.





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*Investing with Innovation™*



Founded in 1872, Ransom & Randolph is dedicated to advancing the investment casting industry. R&R has provided foundries with extensive process knowledge, exceptional technical expertise and innovative product technology since the 1800s. By coupling revolutionary product developments with experienced staff, manufacturing and warehousing facilities, R&R successfully helps customers become casting industry leaders. R&R is a wholly owned subsidiary of DENTSPLY International (NASDAQ: XRAY).

R&R's core businesses are composed of Ceramic Shell, Industrial Mold, Jewelry and Dental Investment Casting.

R&R takes great pride in providing customers with a pleasant procurement experience. R&R's Maumee, Ohio based customer service team services North America and US export customers. Our UK-based agent, HTM Tradeco, Ltd., provides service for the European Union. From initial order placement through delivery, R&R's customer service team takes responsibility for accurate and efficient processing of your material needs. As a result, R&R's customer service team is unmatched in the industry.



## Avoid Volumetric Flask Flaws

Controlling binder solids is an integral part of every foundry's slurry control program. For years, foundries have been measuring the density of slurry supernatant with a conventional volumetric flask. But, if you're like most of us, you have likely struggled with some, if not all, of these volumetric flask flaws:

- Difficulty judging the bottom of the meniscus of an opaque liquid (as we know, most binder samples are opaque, especially when polymers and/or ReDip™ indicator are added)
- Flasks are not calibrated or operators fail to fill the flasks with water to calibrate them
- Operators fail to weigh the volumetric flask with calibrated scales or scales with enough digits for accuracy

- There is no correction for temperature fluctuations and the density of water is highly dependent on, and sensitive to, temperature changes (even as small as 1 or 2 °F)

Did you know there was an alternative solution? You can remove the guess work and avoid these pesky flask flaws with an Anton-Paar EasyDens.

The EasyDens is quick and easy to use, it syncs to your phone via Bluetooth and offers incredible improvement in accuracy when compared to the conventional volumetric flask method.

It requires only a very small sample (1-3 ml is sufficient) and can greatly

improve a foundry's ability to accurately measure their slurries. This, in turn, will help them determine how to appropriately control binder solids within specification.

Plus, the EasyDens offers a drastic cost savings when compared to the standard DMA 35 density meter.

Learn more at: <http://www.anton-paar.com/corp-en/products/details/density-and-concentration-meter-easydens/>



Photo courtesy of: [www.anton-paar.com](http://www.anton-paar.com)