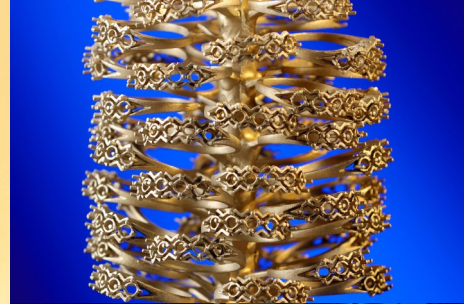




CASTING CONNECTION



Sandblasting 101: Premium Fused Alumina Abrasives

What is Sandblasting?

Sandblasting is the process of using compressed air to propel abrasive materials onto the surface of a casting at a high speed. This process occurs in a sandblasting cabinet that features a dust collector. Using compressed air, a blast gun shoots a stream of blasting media to effectively sandblast a casting. It is important to note that proper protective equipment, such as gloves, goggles, and a mask, should be worn while operating the sandblasting machine.

Why Sandblast?

The main purpose of sandblasting is to remove or clean a casting via a blasting medium. This process can also improve the condition and properties of a metal casting part, such as using the heat generated to refine the grain structure of the casting, therefore increasing its wear resistance and hardness. Sandblasting is also an efficient way to eliminate minor surface defects, such as burrs or finning.

Jewelers rely on sandblasting to efficiently remove phosphate-based investment material while minimizing the risk of damaging or distorting the casting. Artists commonly use sandblasting to achieve detailed surface textures and to quickly

prepare surfaces for adhesion, bonding, painting, and other surface changes. Dental labs use sandblasting after divesting to remove any investment from the casted appliance. Ceramic shell foundries use sandblasting to primarily remove leftover shell pieces from a casting.

Blasting Media

Blasting media is abrasive materials and can vary depending on the reason for sandblasting. Examples of blasting media include silica sand, crushed nut shells, starches, zinc shot, process byproducts, and more. A fine medium is desired for cleaning and polishing smaller pieces with intricate detail. A course medium is desired for removing defects and roughening the surface to prepare for adhesion.

Ransom & Randolph's BFA brown fused alumina and WFA white fused alumina abrasives stand out as top choices for a wide range of applications. These premium abrasives are not only effective in removing defects and preparing surfaces for adhesion, but they also offer exceptional durability and consistency. Unlike other abrasive materials, R&R's fused alumina products resist breakdown, meaning they can be reused multiple times, providing both cost savings ...continued on page 3...

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Serving: Albania, Armenia,
Azerbaijan, Belarus, Bosnia/
Herzegovina, Bulgaria, Croatia,
Czech Republic, Estonia, Georgia,
Hungary, Kazakhstan, Kosovo,
Latvia, Lithuania, Macedonia,
Moldova, Montenegro, Poland,
Romania, Russia, Serbia, Slovakia,
Slovenia, Turkey, Ukraine

Course Information

Course

EICF Investment Casting
Manufacturing Technology Course

When

September 8-14, 2024

Where

Brno University of Technology
Faculty of Mechanical Engineering
Technická 2896/2
616 69 Brno
Czech Republic

Information

Find more information [here](#).

Registration

Book your seat [here](#).

Meet the Team: Michal Kubis (Your EICF Technical Course Instructor)

Meet Michal

Michal Kubis has been with R&R for over 17 years and is known to be kind, hard working, & helpful. As Eastern European Technical Sales Manager (Ceramic Shell), Michal is responsible for maintaining relationships with current and potential customers, conducting field evaluations, and troubleshooting problems. His favorite part about being at R&R is being able to work with an amazing team.

Michal was born in Uherský Brod, Czech Republic. Behind closed doors, he is secretly a good cook and lives by the quote, "don't put off until tomorrow what you can do today." If Michael could give everyone one piece of advice, it would be to remember that when we all pull one rope we will win.

Michal is very involved in the European Investment Casters' Federation (EICF). For years, Michal has been conducting research, teaching technical courses, & more. Once again, Michal will be sharing his technical expertise at the EICF Investment Casting Manufacturing Technology Course in Brno (Czech Republic) from September 8-14, 2024.

Investment Casting Manufacturing Technology Course

EICF, the Faculty of Mechanical Engineering of the Brno University of Technology, and several industry experts are working together to organize an educational course focused on the application of technology, processes, and materials in investment casting to industrial practice. The course consists of educational lectures, practical exercises, demonstrations, and visits to production plants to see the latest technology in practice.

The course is ideal for technicians, technologists, production engineers, quality

assurance workers, management roles within the industry, R&D engineers, materials supply chain workers, early career graduate engineers, materials scientists, or anyone wanting to improve gain knowledge on investment casting technology and process optimization.

Michal's Role in the Course

Michal will be giving presentations on the ceramic shelling process, slurry testing, shell material testing, and casting defects. See the schedule below for Michal's presentation times.

Wednesday, September 11

8:00am–10:00am: Ceramic slurry and shell development (entire shelling process)
2:30pm–6:00pm: Ceramic slurry testing, shell testing, and shelling- shell rapid prototyping by Cyclone (in collaboration with Imerys and the Brno University of Technology)

Saturday, September 14

10:00am–11:30am: Casting and shell defects evaluation



Sandblasting 101: Premium Fused Alumina Abrasives

... and reliable performance over time.

R&R WFA White Fused Alumina

R&R WFA white fused alumina is the perfect choice for dental professionals seeking reliable, high-performance abrasives. Its fine particle sizes ensure precise and efficient removal of materials, making it suitable for delicate and detailed work on dental appliances.

R&R WFA white fused alumina ensures high purity and hardness while providing an excellent finish without scratches or pitting. With a purity level of over 99%, this premium abrasive enhances productivity and efficiency in dental labs, delivering consistent and exceptional results every time.

R&R BFA Brown Fused Alumina

R&R BFA brown fused alumina is engineered for industrial and ceramic shell applications, offering high toughness and consistent particle size distribution and longevity.

R&R BFA brown fused alumina is a high-grade abrasive material known for its hardness, toughness, and excellent performance in various industrial applications. R&R BFA brown fused alumina is manufactured under strict quality control to ensure consistent particle size and purity, making it ideal for a range of uses like metal preparation, polishing, and use as a blasting media.

To learn more about R&R WFA white fused alumina, click [here](#). To learn more about R&R BFA brown fused alumina, click [here](#).



R&R's Tech Team

R&R's technical team of experts support customers with a focus on constant improvement.

If you have any questions regarding application, troubleshooting, feedback, or tips, do not hesitate to contact our technical team.



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R&R's Technical Expertise is Highlighted by the MJSA Journal

Ralph Carter, R&R's Product Development Manager, wrote and presented "*Improving Performance of Jewelry Investment Powder*" for The Jewelry Symposium.

Since its debut in May 2023, this technical paper has been recognized by The Jewelry Symposium and MJSA.

MJSA was inspired by the technical expertise of Ralph Carter's paper. This pushed the publishers to use the paper as a base for the MJSA Tech Sheet 29— Powder Power: Tips for Choosing Casting Investment, which was published July 31, 2023.

The MJSA journal highlighted this paper in the August 2024 issue of the MJSA Journal in an article called "*Powder Power—*

Improving Performance of Jewelry Investment."

The following is an excerpt from the MJSA article:

"It's easy to think that speeding up jewelry production will cut costs. However, if the quality of casting goes down and more time is needed to finish each piece, efficiency can actually decrease. Some parts of the jewelry investment process shouldn't be rushed or ignored... Let's look at the investment steps in jewelry casting to see how these factors affect the process."

Read the full MJSA article [here](#).
To read the complete paper, click [here](#).

New Product Promotion: B3G1 FREE

For a limited time, take advantage of our exclusive promotion. Buy 3 pails of Uniflex Blue duplicating material, get 1 Uniflex Blue duplicating material FREE!

No coupon code necessary.

The R&R item number for Uniflex Blue duplicating material—2 gallons (7.5l) is 021655.

Ordering from R&R's Online Store*

shop.ransom-randolph.com/uniflex

When purchasing three pails of Uniflex Blue duplicating material, a fourth pail will automatically ship with your order at no charge to you.

Ordering from R&R Customer Service*

Add a free box as a separate line item on your purchase order and we will add it to your order at no charge to you. Example:

PO 1234
Item N021655 Uniflex Blue duplicating material 2-gal pail - Qty 3 @ \$115.230
Item N021655 Uniflex Blue duplicating material 2-gal pail - Qty 1 @ \$0.00.

Ordering from an Authorized R&R Distributor*

For a list of authorized distributors near you, visit ransom-randolph.com/distributors or contact your region's R&R Customer Service Team.

*TERMS & CONDITIONS

Orders must be placed between 12:00am EST on August 1, 2024, through 11:59pm EST on August 31, 2024. No coupon code necessary. Please note that shipping charges for the free pail are not included and will apply.



Introducing a New Premium Dental Product: Uniflex™ Blue Duplicating Material

Uniflex Blue duplicating material is a premium, all-purpose, fully reversible duplicating hydrocolloid, designed specifically with you in mind.

Key Features

Exceptional Value with Premium Quality

Uniflex Blue duplicating material offers clarity and accuracy for precise duplications, combining high-end performance with an excellent price point.

Reliable Performance

Provides consistent and reliable performance that dental professionals can count on. Designed to meet the demanding needs of dental labs and practices, it ensures high precision and dependable results every time.

Trusted R&R Brand

Developed by Ransom & Randolph, a trusted brand known for its long-standing commitment to quality and innovation in the dental industry.

Technical Benefits

User-Friendly

Low melting temperature, minimal hold time, and easy cleanup streamline your workflow.

Fully Reversible

Reheat and reuse up to 20 times, providing cost-effective and sustainable usage.

Enhanced Visibility

The distinctive blue color simplifies visual mold inspection, ensuring precision and enhancing workflow efficiency.

Versatile Applications

Ideal for producing refractory and dental stone models, as well as molds for partial and full dentures using the fluid resin pouring technique. Compatible with stones, ethyl silicate investments, and phosphate investments.

More Information

Learn more about R&R's new premium hydrocolloid [here](#). Purchase Uniflex Blue duplicating materials directly through R&R [here](#). For a list of authorized distributors, click [here](#).

Uniflex duplicating material is formerly known as Polyflex® duplicating material.

Uniflex™ Blue is a trademark of Ransom & Randolph.

5-Star Product Review on R&R's Glass Casting Materials

Glass-Cast™ 101 BANDUST™ Investment



Real customer, Raymond Kwok, gave Glass-Cast 101 BANDUST investment a five star review, stating:

"I have taken a few glass casting workshops in the USA. All of them are using R&R's Glass-Cast 101 BANDUST investment to make their molds.

All the instructors highly recommend this product. I love the result too. The glass surface comes out clean after firing, making cleaning much easier after divesting."

To learn more about Glass-Cast 101 BANDUST investment, click [here](#). To



Investing in R&R's Future: Strategic Growth to Better Serve Our Customers

At R&R, "Investing with Innovation™" is more than just a tagline—it's a guiding principle that shapes our approach to understanding and anticipating the evolving needs of our customers. In a constantly changing marketplace, it's crucial to not only respond to customer demands but also proactively improve our capabilities. To better support our customers and ensure we continue to deliver exceptional service, R&R has taken a series of strategic expansions and improvements both domestically and internationally.

On September 1, 2023, we proudly announced the grand opening of Ransom & Randolph GmbH, our new European headquarters located in Rötha, Germany, near Leipzig. This location has been established to better serve our European and UK customers, providing faster and more efficient order and shipping support. The creation of R&R GmbH represents a strategic step in our global growth, enabling us to address the needs of these important markets with increased efficiency.

Continuing our growth efforts, in early 2024, we completed a 50% expansion of our primary manufacturing facility in Maumee, Ohio. This significant investment was driven by our commitment to meeting the rising global demand for our products, which are now shipped to over 50 countries worldwide. The expansion not only increases our production capacity but

also strengthens our ability to maintain consistent quality across all product lines, ensuring that customers everywhere receive the high quality products they expect from R&R.

In addition to these major expansions, R&R has invested in a series of infrastructure improvements to enhance our operational efficiency and sustainability. These projects include upgrading our corporate offices, acquiring electric forklifts to reduce our carbon footprint, installing safety cameras across all Maumee facilities, and increasing utilization of R&R's rail spur for more efficient transportation of key materials.

Our commitment to R&R's future continues with the construction of a new state-of-the-art quality testing laboratory at our Maumee facility. This expanded lab, more than twice the size of our current lab, will feature modern fixtures and advanced technology, enhancing our ability to thoroughly test every batch of material before it leaves our facility. By increasing our quality testing capabilities and lab personnel, we are reinforcing our dedication to delivering consistent, reliable products that meet the highest industry standards.

As we move forward, these investments in our infrastructure, capabilities, and global presence are not just about growth—they are about ensuring that R&R continues to lead the industry in innovation, quality, and customer satisfaction.



The construction phase of the upgraded quality testing laboratory in R&R's Maumee, OH production facility



Providing Customer Support
Ransom & Randolph GmbH



Completing R&R's 50% Expansion
Maumee, OH production facility



Ensuring the Best Quality
Upgrading R&R's quality testing lab



Achieving Sustainability
Replacing gas forklifts with electric

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R&R International Sales Meeting

Recently, the R&R headquarters in Maumee, OH hosted R&R's international sales meeting, bringing the R&R team together both virtually and in person from all over the world, including the Netherlands, UK, and Czech Republic, to strategize on upcoming initiatives and strengthen our global collaboration.



L to R: Daniel Nixon, Scott Todd, Carel Wegman, Mark Ries, Chris Matej, Anna Wasko, Darin Wise, Katie Elco, Mike Hendricks, Ute Leppelt, Bastian Schulte, Dave Berta, Vasko Popovski, Allie Richard, Doug Smalley

ICI Technical Conference & Expo Agenda: All Things R&R

Sunday, October 20

5:30pm-7:30pm | Welcome Reception

- Meet the team at this casual networking event

Monday, October 21, 2024

11:00am-11:30am | Paper Presentation

- *Slurry Formulation and the Impact They Have on Drying Times & Cost*
- Written by Mike Hendricks, Dave Berta, Carel Wegman, and Bastian Schulte
- Presented by Carel Wegman

2:30pm-6:00pm | Expo

- Meet the Team at booth #212!

Tuesday, October 22, 2024

8:10am-9:00am | Paper Presentation

- *The Investment Casting Conversion Process: An Industry Consensus*
- Written and presented by Vasko Popovski, PE

2:30pm-5:00pm | Expo

- Meet the Team at booth #212!

Wednesday, October 23, 2024

11:30am-12:00pm | Award Ceremony

- Best Paper Award
- Casting Contest Award
- University Casting Contest Award
- Root for R&R's recipient, University of Toledo student Joseph Boorum

Investment Casting Institute's 71st Technical Conference & Expo

WHAT'S BREWING

IN INVESTMENT CASTING

OCTOBER 20-23, 2024

Visit us at Booth #212

Click [here](#) for information and registration.

New Tech Tip: Cracking and Flashing in Jewelry Molds

TECH TIPS



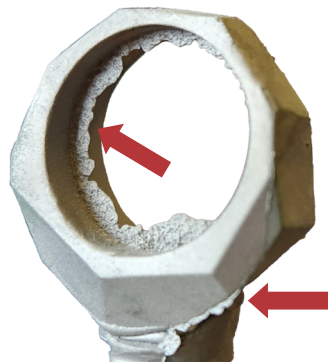
One of the most common issues investment casters face is mold cracking and flashing defects on jewelry castings. However, understanding the science behind jewelry investments and the process can help you to overcome these defects.

What is Flashing?

Flashing, also known as finning, presents as sharp metal fins that appear perpendicular to the surface of the casting. These defects vary in severity from superficial (about 1 mm high) to heavy (several mm high). Flashing occurs when the mold cracks, allowing the metal to overfill some areas of the casting.



Heavy flashing defect



Superficial flashing defect

Understanding Jewelry Investment Ingredients

Jewelry investments are a mixture of three main ingredients: a binder, refractories, and controlling chemicals.

- **Binder** – For casting precious and other low temperature alloys, this is typically gypsum, which shrinks during burnout.
- **Refractories** – Typically some form of silica that can withstand the burnout and alloy temperatures. Silica also expands during burnout to counteract the shrinkage of gypsum.
- **Controlling chemicals** – These ingredients control working time, set time, and the fluidity of the mixed investment.

Understanding the Jewelry Investment Process

The jewelry investment is mixed with water and thoroughly blended before being poured into the flask, a process known as investing. This is followed by bench curing, burnout, and casting. Cracking and flashing defects can result from several factors in this process such as improper water to powder ratio, inadequate bench curing, or issues within the burnout cycle. By reviewing these key areas of your process you may be able to eliminate any mold cracking and flashing defects.

Read More

To learn more about how to overcome mold cracking and flashing defects, read the tech tip available on the [R&R Academy](#).

Subscribe

Perks of subscribing to R&R include:

- **Exclusive Early Access:** Be among the first to receive our Casting Connection newsletter
- **Stay Ahead of the Curve:** Get priority alerts on new product launches and promotions
- **Never Miss an Update:** Reminders of upcoming closures and other key events
- **Gain Insider Knowledge:** Exclusive expert tips, tricks and technical insights only available to subscribers
- & more!



[Subscribe](#) today!



R&R Calendar of Events



Labor Day (US)

R&R (US) will be CLOSED for the holiday and will reopen the following day under regular operating hours.

R&R GmbH (EU & UK) will remain open.



EICF Investment Casting Manufacturing Technology Course

September 8-14 | Brno University of Technology | Czech Republic
Learn from R&R's EU Technical Sales Representative, Michal Kubis!

Click [here](#) for information and registration.



German Unity Day

R&R (US) will remain open.

R&R (EU & UK) will be CLOSED for the holiday and will reopen the following day under regular operating hours.



LMT® LAB DAY® East Dental Expo

October 5 | Tarrytown, NY, USA

Visit R&R at booth #TBD at this dental trade show!

Click [here](#) for show information and tickets.



ICI Technical Conference & Exhibition

October 20-23 | Milwaukee, WI, USA

Visit R&R at booth #212 at this ceramic shell trade show!

Click [here](#) for show information and tickets.

Stay Up to Date!

For more information on closures, trade shows, and other important events, visit R&R's online calendar of events by clicking [here](#).

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RANSOM & RANDOLPH



At R&R, *Investing with Innovation™* is more than just a slogan, it's a way of life. Dedicated to advancing the investment casting industry, we take pride in providing foundries with extensive process knowledge, exceptional technical expertise and innovative product technology. By coupling our revolutionary product developments with our experienced staff, manufacturing and warehousing facilities, we successfully help you become a casting industry leader.

R&R's core businesses are comprised 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. Ransom & Randolph GmbH, based in Rötha, Germany, provides service for the European Union and United Kingdom. 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.

Investing with Innovation™

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