



Ransom & Randolph

EST.

1872

*Ransom & Randolph
proudly offers
the following products
for your casting needs:*

Ultra-Vest®
investment

R&R® ADVANTAGE™
investment

R&R® Solitaire
investment

Astro-Vest™
investment

R&R® platinum
investment & binder

PreVest™ Americast™
investment

PreVest™ Stone-Brite™
investment

PreVest™ Econovest™
investment

PreVest™ Platinum Plus™
investment & binder

Debubblizer concentrate
HP Injection Wax

© & ™: Trademarks of
DENTSPLY International Inc.

Application Instructions R&R® Platinum Investment & Binder

JANUARY 2004

R&R Platinum Investment and Binder is ideal for casting platinum because of its ability to meet the ever increasing demands for consistency and quality. Unlike other available binders, R&R Platinum Binder will not settle out, thus giving more consistent results from mix to mix.

FLASK PREPARATION

Prepare the flask by cutting a non-asbestos absorbent liner ½" shorter than the height of the flask. Position the liner inside of the flask so ¼" of the flask edge extends beyond the liner at either end. Place a paper or rubber collar around the top of the flask, extending approximately 1" above the top of the flask.

For the flask base, cut non-asbestos material 1" larger in diameter than the flask. Cut a ½" diameter hole in the middle of the base and center the wax tree over hole. The flask should be 1" taller than the tree. Seal the wax tree to the base by using wax or hot glue. Position the flask around the tree and seal against the base with wax or hot glue. Place the entire setup on a metal plate or wooden board so the flask bottom will be supported when handled.

BINDER PREPARATION

R&R Platinum Binder is concentrated and therefore must be diluted before using. The dilution ratio is 1 part binder concentrate to 14 parts distilled water by volume. To prepare the investment binder solution, slowly add the concentrate to the water according to the chart(s) below.

Dilution in milliliters (ml)

Binder Concentrate + Distilled Water = Diluted Binder

25 ml	350 ml	375 ml
30	420	450
40	569	600
45	630	675
50	725	750
100	1400	1500
225	3150	3375
450	6300	6750
900	12600	13500

R&R®

DENTSPLY®

Ransom & Randolph

3535 Briarfield Blvd.
Maumee, OH 43537 USA
U.S. Toll Free: (800)800-7496
Phone: (419)865-9497
Fax: (419)865-9997
www.ransom-randolph.com



Ransom & Randolph

EST.

1872

Ransom & Randolph proudly offers the following products for your casting needs:

Ultra-Vest® investment

R&R® ADVANTAGE™ investment

R&R® Solitaire investment

Astro-Vest™ investment

R&R® platinum investment & binder

PreVest™ Americast™ investment

PreVest™ Stone-Brite™ investment

PreVest™ Econovest™ investment

PreVest™ Platinum Plus™ investment & binder

Debubblizer concentrate

HP Injection Wax

® & ™: Trademarks of DENTSPLY International Inc.

Dilution in fluid ounces (oz)

Binder Concentrate + Distilled Water = Diluted Binder

1 oz	14 oz	15 oz
4	56	60
8	112	120
16	224	240

CAUTION: The concentrate is a caustic material. Use OSHA defined personal protection. See Material Safety Data Sheet (MSDS) for more information.

INVESTMENT MIXING

Step 1: To determine the proper amount of binder and powder to use per flask, locate the volume of the flask you are using on the chart below.

CUBIC VOLUME BY FLASK SIZE					
Height — Diameter	2.5 inches (6 cm)	3.0 inches (7 cm)	3.5 inches (8 cm)	4.0 inches (10 cm)	5.0 inches (12 cm)
2.5 inches (6 cm)	12.3 in³ (201 cm³)	14.7 in³ (241 cm³)	17.2 in³ (281 cm³)	19.6 in³ (321 cm³)	24.5 in³ (400 cm³)
3.0 inches (7 cm)	17.7 in³ (290 cm³)	21.2 in³ (348 cm³)	24.7 in³ (405 cm³)	28.3 in³ (463 cm³)	35.3 in³ (579 cm³)
3.5 inches (8 cm)	24.1 in³ (395 cm³)	28.9 in³ (474 cm³)	33.7 in³ (553 cm³)	38.5 in³ (632 cm³)	48.1 in³ (790 cm³)
4.0 inches (10 cm)	31.4 in³ (514 cm³)	37.7 in³ (618 cm³)	44.0 in³ (721 cm³)	50.3 in³ (824 cm³)	62.8 in³ (1030 cm³)

Step 2: Using the volume located in the previous step, calculate the weight of powder and the volume of the diluted binder for your flask size using the following equations. The general mixing ratio is diluted binder (in volume)/ powder (in weight) = 30/100.

English Measure:

Flask volume (in³) x 0.0527 = _____ lbs. powder

Flask volume (in³) x 0.2426 = _____ fl. oz. binder

Metric Measure:

Flask volume (cm³) x 1.4524 = _____ grams powder

Flask volume (cm³) x 0.4357 = _____ ml binder

INVESTING

At the beginning of the mixing cycle the investment is very thick and will put a lot of stress on a kitchen type mixer. Therefore, a planetary type mixer (Hobart) is required for mixing. As mixing continues, the investment will thin out and become very fluid.

R&R®

DENTSPLY®

Ransom & Randolph

3535 Briarfield Blvd.
 Maumee, OH 43537 USA
 U.S. Toll Free: (800)800-7496
 Phone: (419)865-9497
 Fax: (419)865-9997
 www.ransom-randolph.com



Ransom & Randolph

EST.

1872

*Ransom & Randolph
proudly offers
the following products
for your casting needs:*

Ultra-Vest®
investment

R&R® ADVANTAGE™
investment

R&R® Solitaire
investment

Astro-Vest™
investment

R&R® platinum
investment & binder

PreVest™ Americast™
investment

PreVest™ Stone-Brite™
investment

PreVest™ Econovest™
investment

PreVest™ Platinum Plus™
investment & binder

Debubblizer concentrate
HP Injection Wax

© & ™: Trademarks of
DENTSPLY International Inc.

Place the diluted binder in the mixing bowl. Do not add all the powder initially. Add the powder slowly while mixing. Once all the powder has been added, mix for another 15-20 minutes to optimize casting surfaces. A smooth, creamy slurry will result. Do not vacuum while mixing.

Place the mixing bowl on a vacuum table and apply full vacuum until the slurry rapidly boils. Do not exceed 2 minutes. If a longer time is required, the vacuum pump is undersized, is in need of repair, or there is an air leak in the vacuum system.

Pour the investment slurry down the side of the flask, allowing it to flow around and through the patterns. Completely cover the wax patterns. Place the invested flask on a vacuum table and apply full vacuum 1 to 2 minutes.

Set the flask aside, undisturbed, for 90 minutes. The flask is now ready for burnout. You may burnout the same day or overnight.

SAME DAY BURNOUT

Place the flask in a furnace at room temperature. Raise the temperature to 200°F (93°C) over 15 minutes and hold temperature for 1 hour. Raise the temperature to 350°F (175°C) during the next hour and hold at 350°F (175°C) for 30 minutes. Raise the temperature to 1600°F (871°C) over the next 2½ to hours. Hold at this temperature.

The holding time at 1600°F will depend on the size and number of flasks in the oven, as well as the type of pattern material being melted. A proper pattern burnout is confirmed by a pure white flask surface when you look down the sprue cavity. The flask is ready to cast when a proper burnout has been confirmed.

OVERNIGHT BURNOUT

Place the flask in a furnace at room temperature. Raise the temperature to 200°F (93°C) over a period of 30 minutes, then hold at this temperature for 2 hours. Raise the temperature to 350°F (175°C) during the next hour and hold at this temperature for another hour. Raise the temperature to 1600°F (871°C) over the next 5 hours. Hold at this temperature.

The holding time at 1600°F will depend on the size and number of flasks in the oven, as well as the type of pattern material being melted. A proper pattern burnout is confirmed by a pure white flask surface when you look down the sprue cavity. The flask is ready to cast when a proper burnout has been confirmed.

Ransom & Randolph's technical advice, whether verbal or in writing, is designed to assist the user in using Ransom & Randolph's product. Such advice does not expand Ransom & Randolph's limited warranty or relieve the user of testing Ransom & Randolph's products to determine their suitability for the intended uses and procedures. The user assumes all risk and liability for damages arising out of the improper use of Ransom & Randolph's product.

In the event of a defect in material or workmanship in Ransom & Randolph's product, Ransom & Randolph's liability is limited, at Ransom & Randolph's option, to replacement of the defective product or part thereof, or reimbursement of the actual cost of the defective product. In order to take advantage of the limited warranty, the defective product must be returned to Ransom & Randolph. In no event shall Ransom & Randolph be liable for any indirect, incidental, or consequential damages.

EXCEPT AS EXPRESSLY PROVIDED, THERE ARE NO WARRANTIES, BY RANSOM & RANDOLPH, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES WITH RESPECT TO DESCRIPTION OR FITNESS FOR A PARTICULAR PURPOSE.

R&R®

DENTSPLY®

Ransom & Randolph

3535 Briarfield Blvd.
Maumee, OH 43537 USA
U.S. Toll Free: (800)800-7496
Phone: (419)865-9497
Fax: (419)865-9997
www.ransom-randolph.com