

# emdin | instructions

## TOTALCAST

### PHOSPHATE BONDED HIGH HEAT CROWN AND BRIDGE CASTING INVESTMENT

#### Instructions for use

*TOTALCAST is an excellent all-purpose high heat casting investment for Crown and Bridge castings in Non-precious Nickel-Chrome alloys and Gold-Silver-Palladium alloys.*

*When used according to instructions, Totalcast will yield most consistent castings in semi-precious and non-precious alloys of all types. Totalcast is designed to provide you with consistency from batch to batch.*

#### **1. Properties At 100% Liquid:**

Liquid to Powder Ratio: 17 to 18 /100

Working Time: 4 to 6 minutes

Setting Time: 7 to 10 minutes

Setting Expansion: 2.0 to 2.5 %

Thermal Expansion: 1.6 %

Compression Strength at 60 minutes: 1500 PSI (105 Kg/cm<sup>2</sup>)

#### Recommended Liquid Dilution:

Semi-precious alloys: 2 part liquid to 1 part water

Non-precious alloys: 4 part liquid to 1 part water

#### **ADJUSTING EXPANSION:**

**To INCREASE expansion:** Use one or more of the following:

Increase use of liquid. Example 4 parts liquid to 1 part water or even 100 % liquid.

Use High expansion GREEN liquid.

Use softer wax.

**To DECREASE expansion:** Use more water and/or harder wax.

#### **IMPORTANT**

**High temperatures and high humidity may shorten the working and setting time. In these instances you may refrigerate the liquid, which will increase the working and setting times.**

#### **2. DIRECTIONS**

**Spruing:** Follow instructions of the alloy manufacturer with respect to the spruing technique. Leave at least 1/4-inch space between the top of the pattern and the top of the casting ring. Also leave enough space between patterns and also from ring.

**Mixing:** Mix investment mechanically under vacuum for 30 to 45 seconds at 400 rpm. Hold the mix under vacuum for 30 to 45 seconds and then pour into the casting ring from its sides under gentle vibration.

Paint the patterns with **MAXIFILM**, the finest debubblizer for vacuum mixing and investing, to reduce the surface tension on the patterns.

**Metal Casting Rings:** Line the casting ring with a suitable liner. Use thicker or double liner when casting a longer span bridge. Allow casting ring to bench set for 30 minutes.

**Ring-less Investing:** Invest as described above. Separate the mold from the plastic ring after 20 minutes.

**Burnout:** Scrape away investment skin at the top of the ring to allow gases to escape freely during burnout procedure.

After bench set or within 5 to 10 minutes from mold separation from the ring place the casting ring into a burnout oven.

**Slow Burnout:** Raise temperature to 1400 F (760 C) to 1700 F (930 C) degree slowly over at least 60 minutes, longer for larger molds. Use a burnout temperature recommended by the alloy manufacturer.

**Fast ONE-HOUR Burnout:** Place the mold in the oven preheated to a temperature from 1000 F to 1500 F and then raise to the final temperature.

**Casting:** Heat soak the flask for 30 minutes, longer if there are several flasks in the oven, before casting. Add 15 minutes soaking time for each additional flask in the burnout oven. Cast as usual.

In general semi-precious alloys should be cast at 760 to 840 degrees C, whereas the non-precious alloys should be cast at 850 to 930 degrees C.

Manufactured by:

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