

Kwik-Core™ Material

Ideal for Use with Ferrous Castings

The KWIK-CORE system is comprised of a powder and binder and is designed for hand packing cores to be used with ceramic shell. The KWIK-CORE system is for use primarily with ferrous castings. The KWIK-CORE system can be poured directly into the cavity of the wax due to its low exothermic reaction.

- Low-exothermic reaction – can be applied against most wax patterns.
- Pourable for easy application.
- Eliminates need for extra shell drying time on complicated parts.
- An alternative to shelling narrow slots and passageways.

Application Instructions

1. Kwik-Core™ powder must be mixed with Kwik-Core™ binder to be effective. Recommended binder to powder ratio is 32-35 parts binder to 100 parts powder by weight. In general, the higher the ratio of binder to powder, the better the material's fluidity and the longer the working time, but the weaker the core.

The following properties are based on a 32/100 binder to powder ratio:

Binder/Powder Ratio	32/100 by weight (or 29 ml of binder per 100 g of powder)
Pouring Time	12-15 minutes
Setting Time	50-60 minutes
2-hour Green Strength	120 psi
1600 °F (871 °C) Fired Strength	400 psi
Binder Density	1.11 g/ml
Volume of Mix	18.7 cubic inches per 1 lb of powder or 675 cubic centimeters per 1 kg of powder

Wax Pattern Preparation

1. Wash, rinse, and dry individual wax patterns to be packed. R&R® Wash-N-Etch pattern cleaner is recommended.
2. If the core in the wax pattern has multiple openings, seal all but one with pieces of masking tape.

Core Mix Preparation & Application

1. Weigh or measure the required amounts of powder and binder separately.
Note: you will have approximately 10 minutes of working time before the mix loses its fluidity. Ensure the total amount of the mix can be used within the working time. Multiple patterns can be filled with one mix.
2. Add the preweighed powder into a mixing container that contains the premeasured binder.
3. Wet out the powder by hand with a mixing paddle, wire whip or whisk. This should take no more than 45 seconds.



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Investing with Innovation™

Kwik-Core™ Material

4. Mechanically mix the investment at a moderate speed for about 1-½ minutes. If the total amount of the mix is manageable, the entire mixing can be done by hand.
5. Place the mixing container on a vacuum table and apply full vacuum until the investment rises in the bowl and collapses. Alternatively, the container can be placed on the top of a vibratory table and vibrated to get rid of air bubbles.
6. Pour the mix down the side of the core so that no air bubbles will be trapped within. To make pouring easier, use a rubber or paper pouring cup. The material may also be piped in with a syringe, pipette or pastry bag.
7. Vibrate the filled pattern to let possible entrapped air bubbles escape.
8. If core pins are necessary (depending on core configuration), insert pieces of ceramic rods into the mix at about the 20 minute mark (counting from step 1).
9. Leave the patterns undisturbed for at least 2 hours.
10. After 2 hours, peel off the masking tape (if any) and the filled patterns are ready to be assembled.
Note: do not wash the assembled trees, since the patterns have been previously washed.
Note: if dust-like particles are visible at the surface of the core at this point, it should be brushed or blown off prior to shelling. This is a product of the core mix reaction and may be visible depending on core size or core configuration.

Dewaxing Tips

For autoclave dewaxing it is important to release the pressure in the autoclave slowly to avoid rupturing the core. A minimum of 2 minutes from peak pressure to atmospheric pressure is recommended.

Burnout Tips

It is important to remember that when a complete-fill core material is used, you must allow extra time during burnout for the core to be completely burned out. Failure to burnout the core completely may lead to outgassing when metal is poured.

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