



- 1 Collapsible cores before (l) and after (r) having been subjected to isostatic pressure
- 2 Basic principle of conventional (left) and collapsible (right) lost core technology, highlighting those components destroyed during the core removal process (marked with red crosses).

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INORGANICALLY BOUND COLLAPSIBLE CORES

The removal of conventional lost cores from castings is based on a weakening of the binder phase. In the case of collapsible cores, the filler material (hollow microspheres) is destroyed instead by means of isostatic pressure.

Functional principle of collapsible cores

Collapsible cores use an innovative approach for a complete and reliable removal of the core from the casting. Pressure-stable hollow micro-spheres serve as filler in the core material. After casting, the cast part is subjected to a defined level of hydrostatic pressure. This leads to the collapse of the microspheres and a complete loss of structural stability on the part of the core. The core remnants can subsequently be rinsed out. The collapse of the core is – in contrast to conventional core materials with compact fillers – linked to a significant reduction in volume. This simplifies the complete removal of any residues even through very small openings in the component surface.

Advantages and characteristics of collapsible cores

- Manufacture of filigree, complex and voluminous cores with high levels of geometrical accuracy, strength and surface quality
- Reliable demolding, even through small openings
- Adaptation of the core material to the casting process and metal alloy (filler and binder phase)

Our services

- Customer-specific development and optimization of cores and molds based on an inorganic binders
- Casting and demolding experiments (e.g., investment casting, low-pressure gravity die casting, high-pressure die casting)
- Characterization of the core materials (e.g., mechanical testing, thermo-physical characterization)