

CERA-MET PREPARES TO ENTER THE “SOLID MOLD” MARKET

WHAT IS SOLID MOLD?

From the ancient Egyptians to the mid-1950's, Investment Castings were made by pouring a ceramic mixture around the wax patterns within a flask. The result was a solid block of ceramic from which the wax was removed to create an internal void into which molten metal was poured. It was not until the 1950's when foundries developed the “shell” process characterized by multiple layers of ceramic slurry with stucco applied over the wax cluster. The thin shell allowed the metal to cool faster for improved mechanical strength. For some parts with complex internal geometries, the solid mold process continues to be used.

HOW HAS THIS TECHNOLOGY CHANGED IN THE PAST 50 YEARS?

For most aerospace investment casting companies, the basic solid mold technology has changed very little. Most of the attention and process development was limited to the shell process. It is interesting to note that the Jewelry Manufacturing Industry never embraced the conversion to shell molding. They were much more interested in producing thin, delicate parts with extremely fine detail and excellent surface finish, caring little about mechanical properties. Companies providing equipment to the Jewelry industry continued to advance the state-of-the-art in solid mold technology. One such company is Schultheiss, located in Frielzheim, Germany.

WHY IS CERA-MET INTERESTED IN SOLID MOLDING TODAY?

As a major supplier of Investment Castings to the aerospace industry, we are committed to business growth and customer satisfaction. A number of our customers have expressed interest in having Cera-Met enter the solid mold market. This is the preferred casting technology for complex pumps and housing used in turbine engine fuel and lubrication systems. We also believe solid molding offers distinct advantages in terms of “speed” to reduce cycle times for prototype castings.

Cera-Met is committed to advancing the state-of-the-art in Solid Mold castings by purchasing the latest computer controlled molding equipment from Schultheiss. This equipment is currently being fabricated and will be installed in December '09.

For more information and the latest status of this initiative, please contact Keith Chamberlain, General Manager at 610-266-0270.