



The old steel tool was replaced with MoldMAX XL due to its excellent machinability and balanced thermal conductivity engineered for large molds.



Example of one core insert used in the pallet container mold made of MoldMAX XL



The injection molding machine used to manufacture the pallet container in a 5,500 ton press.

MOLDMAX® APPLICATION: HIGH PRECISION INJECTION MOLDS PROFILE: MUNDIMOLD

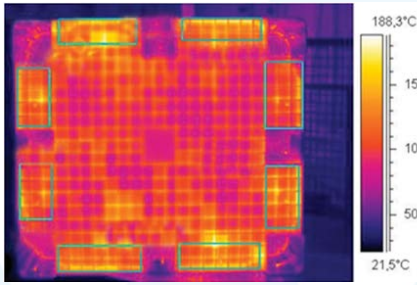
Mundimold, a Valencian firm specializing in the manufacture of high precision injection molds, was approached by one of their customers to build a mold that would increase efficiency in the manufacturing of a large pallet container. With more than 50 years of experience in offering global solutions for the plastics industry, especially to the packaging sector, producing bottle crates, agricultural boxes, pallets, top quality household accessories and big boxes, Mundimold was well-prepared for the challenge.

Their customer, a global container manufacturer with operations in more than 50 countries, provides reliable, high quality plastic packaging systems and services. The company is committed to helping customers reduce their overall logistics costs and enhance their product branding by offering a full range of products to assist with their materials handling needs. The packaging solutions for materials handling come in different shapes and sizes – ranging from foldable and stackable containers to dollies and pallets. The products are made from all types of plastics, and are used in a broad variety of industry segments, including beverage, automotive, agriculture, retail distribution, postal services and pool providers.

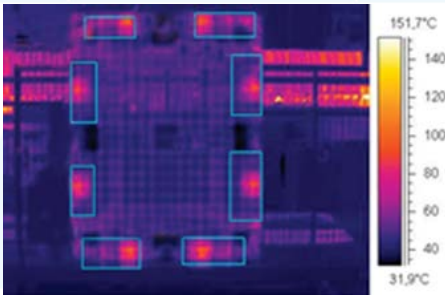
MOLDMAX® XL CHOSEN TO INCREASE PRODUCTIVITY

Mundimold's customer was looking to boost efficiency in the manufacturing of their pallet container (1200mm x 1000mm x 760mm). The container is a stable packaging system intended to be used again and again. The pallet containers are designed with rounded rims and corners for maximum capacity. The container has straight, smooth double-skinned walls giving it a large internal volume. It is typically used as an agricultural produce-shipping container.

To meet the challenge, Mundimold called on Renier, a mold designer based in Italy. Together, they created a mold in which they replaced the old steel tool with MoldMAX XL, Materion Performance Alloy's high performance copper-nickel-tin alloys specifically designed for the plastics processing industry. MoldMAX XL was chosen due to its excellent machinability and balanced thermal conductivity engineered for large molds. It offers a unique combination of conductivity, strength and hardness that provides important benefits for the molding process, including improved production rates and improved part quality. The machinability was demonstrated once again when very small mills (3-4 mm) were successfully used to cut ribs in the cavity side of the mold.



Infrared imaging technology can be used to identify hot spots. Shown is an infrared image from a steel tool.



Because of its high thermal conductivity, the MoldMAX tool removes heat faster, helping to ensure uniform cooling.

The injection molding machine used to manufacture the pallet container is a 5,500 ton press. The end product is made of polyethylene and weighs in at 72.6 lbs (33kg).

MISSION ACCOMPLISHED

The previous steel tool had a cycle time of 189 seconds and produced 19 parts per hour. The new tool with the MoldMAX XL inserts has a cycle time of 129 seconds and produces 28 parts per hour. The cycle time was reduced by 32 percent, resulting in a 47 percent increase in production.

Overall, the new tool with the MoldMAX XL inserts resulted in increased production of 50,000 more containers per year, and the return on investment was realized in less than one month.

ABOUT MOLDMAX XL

For more than 30 years, Materion Performance Alloys has been committed to bringing high thermal conductivity and uniform cooling to the plastics market. MoldMAX[®] XL provides an exciting combination of strength and thermal conductivity—the strength of prehardened tool steels and the high conductivity of copper—in larger cross sections for bigger molds. For large tools, this combination provides unbeatable economic value for the molder, and the excellent machinability means metal removal rates are high as well. Additionally, MoldMAX XL tools will provide durability as well as efficiency. It is available in large plate thickness up to 12” and in rounds up to 23.5”, and can be used as a direct replacement for P-20 tool steels.

MOLDMAX[®]

TECHNICAL INQUIRIES

P: 800.375.4205
F: 216.383.4005

PERFORMANCE ALLOYS

6070 Parkland Boulevard
Mayfield Heights, OH 44124 USA
P: 800.321.2076 +216.486.4200
www.materion.com/brushalloys

CS0001 06.15