

ROVALMA



**innovation through
die material**

ROVALMA, S.A.

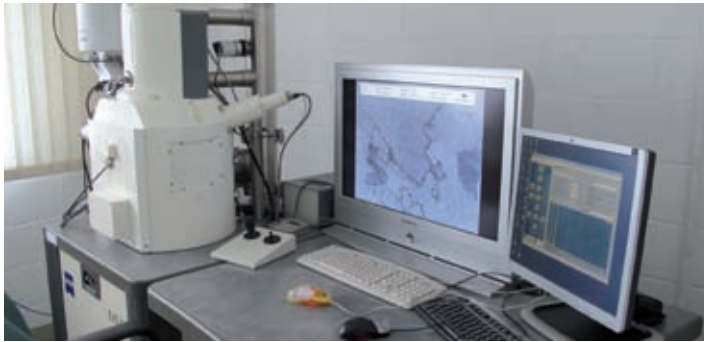
Specialized in steels and special alloys for tools and machinery, ROVALMA has differentiated itself by providing a customer service based on an exceptionally profound knowledge in metallurgy, particularly with regard to materials' properties and their usage. Since ROVALMA's foundation in 1977, the number of satisfied customers that have been provided with solutions by ROVALMA has been growing continuously.

ROVALMA's mission is to give competitive edge and technological lead to its cooperation partners by generating solutions to current industrial needs and anticipating future technological solutions. At the same time ROVALMA strives at contributing substantially to create societal, environmental and economic benefits with its technological solutions.



Own Materials

In the early 90s ROVALMA decided to establish an R&D unit of its own in order to provide material solutions to applications for which the industry had not been able to offer any solutions yet. Since then, with its broad knowledge in materials and applications and highly qualified and dedicated staff, ROVALMA has been developing high performance materials with outstanding physical and mechanical properties that have enabled a broad range of industrial sectors to make a qualitative leap in production process productivity as well as regarding product properties and quality.



International Markets

In recent years, ROVALMA has expanded its distribution network to match the worldwide growing demand for its products. With STM Stahl, Ellwood Specialty Steel (ESS), MDT, WADIM PLAST and ORSA, ROVALMA has teamed up with strong, technically experienced and customer service dedicated partners for the distribution of ROVALMA products in the German speaking countries, the NAFTA region, South Korea, Poland and Turkey respectively.



Increasing Supply Capacities

To accommodate the strongly growing demand for ROVALMA products and services ROVALMA has been continuously increasing its supply capacities. Recently, ROVALMA has acquired a new building with more than 6000 square meters to increase its stocking and distribution capacities for Southern Europe. These additional supply capacities allow responding to customer orders with even more speed.

High Thermal Conductivity Steels

The most outstanding materials developed by ROVALMA up to date are its High Thermal Conductivity Steels, HTCS®. HTCS® are tool steel grades with very high thermal conductivity values of up to 70 W/mK, which is more than double the thermal conductivity of conventional tool steels like Mat. Nr. 1.2344 / AISI H13 / X40CrMoV51 / SKD 61 or Mat. Nr. 1.2343 / AISI H11 / X37CrMoV51 / SKD 6. HTCS® feature similar or even higher alloying degrees than other high quality hot work tool steels, such that almost any combination of mechanical and tribological properties attainable with conventional hot work steels can be achieved with HTCS® grades. Different grades of HTCS® have been designed to optimize mechanical and physical properties for different engineering applications. In particular, HTCS® are applied for tooling applications in diverse material forming processes which involve heat transfer between produced parts and tool elements, such as hot stamping, die casting, plastic injection moulding and hot forging processes. HTCS® allow to significantly improve the cost effectiveness of these processes compared to conventional hot work steels especially by reducing the cycle time, providing high resistance to heat checking and wear and improving the thermal management of dies / tools.



HTCS®

Low Thermal Conductivity Materials



GTCS®

The GTCS® grades have very low thermal conductivity values (5 - 8 W/mK) combined with good hardenability and wear resistance. This combination of properties of GTCS® grades has shown to be very advantageous for the production of components with high ductility requirements as for instance in press hardening processes, specifically for soft flanges. In this process, GTCS® tool segments have provided particularly great advantages in combination with parts of segments made of HTCS® in the same die to produce tailored press hardened components.

Tool Materials for Advanced High Strength Steels

HWS® materials combine high hardness with exceptional levels of wear resistance and fracture toughness. HWS® provide a very good substrate to coatings. They have been specially designed for cold work applications and have been used very successfully in tools for drawing and cutting of thick UHSS and AHSS, cold forging and other demanding processes which require high wear resistance and toughness from the tool material.



HWS®

High Strength Materials



ICO

ICO grades are maraging tool steels with exceptional levels of mechanical resistance and toughness. These grades have been designed for hot and cold work applications that require high levels of toughness and resistance to plastic deformation, such as, for instance, thin and long pin cores, cutting tools, segments of die casting dies, etc. ICO grades provide a very good substrate for different types and application methods of coatings, such as PVD, CVD, cold spray coating, etc.

Extreme Wear Resistance Materials

WOV and EWRA materials are steels of high carbide content, which provide very high hardness levels, up to 70 HRC, and exceptional resistance to abrasive and adhesive wear. These materials allow high degree polishing, provide good substrates for coatings, and can provide important advantages for applications in which high wear resistance and hardness levels are required.



WOV

Stainless Steels



FECRONI®

FECRONI® grades are stainless tool steels that provide very high mechanical resistance and corrosion resistance. The high surface polishability and corrosion resistance of FECRONI® materials make these grades a high performance material for different plastic injection molding processes and for other applications in which the above mentioned combination of properties is required.

Real Time Innovation

To constantly improve the cost-effectiveness of material forming processes and to respond to new challenges in material applications, ROVALMA is focused on continuous innovation counting on its highly qualified scientists, engineers, technicians and a very well equipped R&D center. The R&D Unit tackles the diverse challenges that have been emerging in the tooling area and other engineering applications in a multi-modal manner, comprising tool materials, their processing and applications. This approach has allowed ROVALMA to develop highly innovative tool materials, advanced test equipment and methods for process optimization that are unique. In pursuing innovation, ROVALMA has not restricted its research to improvements of the tool materials themselves, but broadened it to analyze and optimize every single element that contributes to the tool performance including surface treatments, tool design, process optimization and the concept of tool productivity. This philosophy and approach are the guiding principles for the R&D team and its activities. Its objective is to increase the competitiveness of the end user through the most cost effective tooling material and technologically optimized approach for its usage.



Customer Support

ROVALMA's Application Engineering Unit is dedicated to supporting users of ROVALMA products to fully realize the advantages and benefits of ROVALMA's high performance materials, based on its broad expertise and through additional services such as:

- advanced cost analysis from a tool performance point of view
- advanced thermo-mechanical analysis of the tool in industrial applications
- tool surface treatment and coating optimizations
- advanced damage mechanism analysis of the tool
- advanced welding solutions
- other customer support services to increase tool material and tool performance

Rovalma, S.A.

HT

C / Apol·lo, 51

08228 Terrassa (Barcelona)

SPAIN

Tel. (+34) 935 862 949

Fax (+34) 935 881 860

Rovalma, S.A.

Head Office

C / Collita, 1 - 3

08191 Rubí (Barcelona)

SPAIN

Tel. (+34) 935 862 949

Fax (+34) 935 881 860

Rovalma GmbH

German Office

Geibelstraße 5

12205 Berlin

GERMANY

Tel. +49 (0)30 810 59 717

Fax +49 (0)30 810 59 715

www.rovalma.com

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