

Sulzer Metco Surface Technology (Shanghai) Co. Ltd.

Sulzer, a Swiss company founded over 170 years ago has nowadays over 10,000 employees worldwide. Over one hundred years ago, back in the 19th century Sulzer started to do business in China. Steam engines to produce electricity and soon afterwards Diesel engines to do the same or to drive irrigation pumps were among the first products Sulzer brought to China.

Sulzer opened its first representative office in Shanghai in 1929.

Today Sulzer is present with Sulzer Pumps in Dalian, Sulzer Chemtech (Distillation and separation technology) in Shanghai (Pudong) and Sulzer Metco in Shanghai, Minhang.

In 2004 Sulzer Metco started at 666 Min Bei Road with the production of coated synchronizing rings under the umbrella of Sulzer Chemtech.

Then on September 20th, 2005 Sulzer Metco Surface Technology (Shanghai) Co., Ltd. was officially founded as a fully foreign owned enterprise.

Sulzer Metco, in particular the Thermal Spray Business Unit is active in China for many years. Focus has been the thermal spray equipment, systems and materials mainly for aero, power generation and steel industry.

The vision for Sulzer Metco China is to be the operating platform for all Sulzer Metco activities here in China. Some of them are already here, others will come soon.



Sulzer Metco coats and enhances surfaces, produces materials, equipment and coating systems, develops machining processes for special components. Our state of the art products, solutions and services are supplied through a global sales, customer support and manufacturing network.

Our Products & Services

- Equipment and materials for thermal spray and thin film
- Coating services for thermal spray and thin film technology
- Plasma heat-treatment services
- Friction linings
- Customer support services

Our Market Focus

- Aerospace
- Power Generation
- Automotive
- Other specialized industries

Friction Systems

Sulzer Metco offers

High volume manufacturing and supply of synchromesh rings, friction discs, torque converter lockup clutches and gear shifting components. Complete design of synchromesh assemblies and multi-disc clutches. Design support for coating solutions. Preparation of drawings and calculation of components using state of the art CAD and FEM software (ProE Wildfire, ANSYS, etc.).

Complete evaluation and testing of component materials and entire systems in our in-house, automotive industry certified laboratories.

Sulzer Metco develops and produces systems and complete modules according to the customer's requirements for automatic, manual, automated-manual and dual clutch transmissions in passenger cars and utility vehicle applications.

Process Overview

Drive train components such as synchromesh rings, torque converter lockup clutches, friction discs and gearshift components all employ surfaces with very specific coefficient of friction and wear requirements. Besides time-tested brass or molybdenum friction linings, high performance, carbon friction linings are gaining more and more in importance due to their especially good performance. The technology applied in sheet-metal forming makes for innovative solutions in the production of components in respect of weight reduction and increased strength.

With Euroflamm technology coated **synchromesh rings**, with friction linings of molybdenum or the new carbons, ensure a more compact synchromesh architecture with higher performance and substantially improved gear-shift quality. In automated-manual and dual clutch transmissions, shifting times of less than 60 milliseconds are now possible. New sheet metal constructions offer significant weight and cost reductions compared to conventional cast or sintered components.

The design of today's state of the art **friction discs** minimize wear and offer constant coefficients of friction. They can be manufactured as laminated disc packs to meet the high demands of each type of application: limited-slip differentials, four-wheel drives, automatic power transmissions, etc.

Torque converter lockup clutches for automatic transmissions serve to transmit the engine torque directly to the power transmission, achieving a significant increase in fuel efficiency. The gear shifting process is optimized using carbon friction linings, which also reduces noise and vibration.



PVD (Physical Vapor Deposition and Heat Treatment

Sulzer Metco Services

Whether a customer requires in-house production facilities, or a reliable surface treatment sub-contractor, you can be confident with Sulzer Metco as your business partner. We are offering:

Expert surface treatment services, tailored to specific application requirements Systems designed and configured to fit your specific needs, from laboratory operations to large, high volume industrial installations, including initial consultation, design engineering, installation and commissioning, after sales system service and support and expert process consultation services.

Process Overview

Whether for wear resistance, low friction, decorative purposes or corrosion protection, thin film surface technology imparts desirable characteristics to surfaces with little increase in dimension. A family of thin film process technologies and flexibility in application technology assures excellent results for many application needs. The capability to batch process components makes processing economics very favorable in high-volume production.

Sulzer Metco brings years of experience in PVD surface coating and plasma-supported heat treatment technology with three distinct processes:

MAXIT® PVD surface coating process for high wear resistance and low surface friction.

IONIT® plasma nitriding and / or plasma nitro-carburizing for wear protection.

IONIT OX® gas nitriding and / or plasma nitro-carburizing combined with plasma activation



Thermal Spray

Sulzer Metco offers

With more than 70 years of expertise, Sulzer Metco is uniquely positioned to meet the needs of our customers in a wide range of industries, for both in-house production and with expert coating services.

Through our Thermal Spray business unit, Sulzer Metco offers:

- A complete portfolio of thermal spray equipment, materials, accessories and supplies;
- complete systems to suit every requirement, whether simple systems for occasional use, to fully automated systems integrated into high volume production facilities, with professional support at every phase of the project, from initial consultation through commissioning, and beyond.

- Coating services of the highest quality, including pre and post coat processing
- After sales system service and support, including field service, traceable calibration and spare parts
- Expert process consultation services

Process Overview

Thermal spray coating involves the use of a torch to heat a material, in powder or wire form, to a molten or near-molten state, and the use of a gas to propel the material to the target substrate, creating a completely new surface. The coating material may be a single element, alloy or compound with unique physical properties that are, in most cases, achievable only through the thermal spray process.

Thermal spray coatings are a highly cost-effective and straight-forward method for adding superior properties and performance qualities to a given engineering surface. The variety of products and coatings that can be enhanced by thermal spray are virtually limitless. The coatings are usually metallic, ceramic, carbides, or a combination of these materials to meet a range of physical criteria. As a family of related technologies, each thermal spray process brings distinct advantages. This provides a high degree of flexibility to meet a wide array of application and production requirements.

These processes include:

- Atmospheric Plasma Spray
- Champro® Controlled Atmosphere Plasma Spray
- HVOF (High Velocity Oxy-Fuel) Spray, using either gas or liquid as the combustion fuel
- Combustion Powder Thermospray®
- Combustion Wire Spray
- Electric Arc Wire Spray



Operation Capabilities on site

- Automated Molybdenum coating system for synchronizer rings
- IONIT® and IONIT OX® coating furnace
- MAXIT® PVD coating system
- Carbon Liner production line
- Metal graphic laboratory with facilities to check roughness, hardness, thickness and structure of coatings

Honeywell

SIEMENS

ABB



Location Map

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