

Are you in demand of high-quality technological equipment which will enable you and your products the best possible surface protection and extend the lifetime of your products?
Do not hesitate to contact us!

We will be more than happy to find the best solution to meet your individual needs!
SOP-INTERNATIONAL d.o.o., Cvetkova ulica 27, 1000 Ljubljana, Slovenia
Factory Krško, Vrčina 14, 8270 Krško, Slovenia



Specialists for surface protection of metals

High level of automation of the surface protection process



Electrophoretic coating (cataphoresis and anaphoresis)

Electrophoretic coating is appropriate for protection of all types of metal workpieces. It ensures excellent surface protection, as well as an aesthetic appearance of the product. The most modern electrophoretic coating lines are equipped with surface pre-treatment systems, systems for application of coating, curing ovens, and systems for cooling of workpieces. The whole line is completely automated, which is achieved with an appropriate conveyor system. The company SOP - International is characterized by an individual approach to every customer and it customizes the whole technology to the customer's desires and requirements. Each line is therefore adapted and optimized according to the production programme. This enables us the optimal use of space, energy and time. Efficient designing of equipment ensures great savings in consumption of energy, while the automatization enables savings in labour costs.

Electrophoretic coating ensures high quality of surface protection of the workpieces at very low coating costs. During the cataphoretic coating, an electrical current is used to apply the coating. The whole process is very similar to the principle of a functioning of a magnet: »the opposites attract«.

Conveyor systems

Reliable conveyor systems are extremely important for a smooth functioning of the painting line. The company SOP - International specialises in all types of conveyor systems (hanging P&F conveyor systems, ground P&F conveyor systems, hanging single conveyors, conveyor tables and hoisting equipment). Our conveyor systems are known as extremely reliable and of high quality, as we are well aware of the fact that a smooth functioning of the paint line is of key importance for every single customer.

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Application of electrophoretic coating

Electrophoretic coatings are used for surface protection of all types of metals. In practice, we distinguish between cathodic and anodic application of coating. The electrophoretic application of coating is a process that involves passing of a direct current, in which the workpiece is connected as the cathode (negative charge) and the positive particles of the cathodic coating are deposited on to the metal part with a help of the anode cells. In the case of the anodic application, the two poles are changed, the workpiece being an anode (positive charge) and the cells work as cathodes. The fundamental principle in both processes is that materials with opposite charges attract. The thickness of the coating layer is determined with a help of voltage, which enables formation of an even continuous film on each of the workpieces. The cathodic coating deposits on to the workpiece until the latter is completely covered with the desired thickness of an even continuous film.

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Consolidation or curing

Once the electrophoretic coating is applied, the workpiece has to be cured, which is done in a curing oven. The curing is usually done at the temperatures around 170°C and lasts for approximately 25 to 30 minutes. However, the curing temperature and time depend on the requirements of the paint suppliers. Once cured, the conveyor transports the objects into the cooling tunnel where they are cooled to temperature, which is appropriate for their unloading.

Cooling tunnel

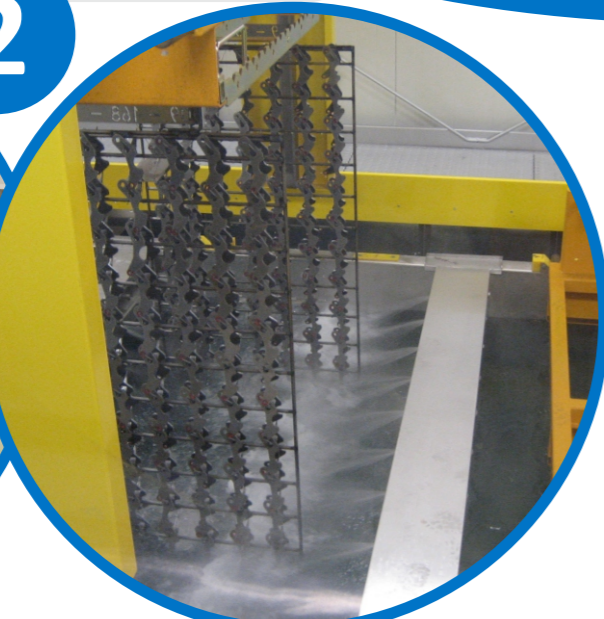
The cooling tunnel is intended for cooling of the workpieces after the curing of the KTL paint. Prior to further technological procedures, the workpieces have to be cooled to temperature around 35°C.



Surface pre-treatment of the workpieces

The pre-treatment process and the preparation of the products to be treated are the two most important factors for the qualitative surface protection. The pre-treatment process takes place in a tunnel, which is designed in a way that enables the degreasing, activation, and zinc-phosphating agents, as well as the rinsing water to reach the whole surface of the product to be treated. The pre-treatment process is usually done by dipping of the objects to be treated; however, individual zones can be pre-treated by the spraying method as well.

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Ecology

- Minimum waste solution;
- Reduced fire hazard;
- In accordance with the environmental protection regulations;
- Recycled water.

Advantages of electrophoretic coating

- Complete coverage of complex shapes and sharp edges, as well as hollow parts;
- Covers all electro-conductive materials, including stainless steel, aluminium, copper, etc.
- Excellent protection against corrosion, resistance to chemicals and stone impacts;
- In comparison to powder coating: thinner layers but the same level of protection against corrosion;
- Coating of pre-assembled workpieces, which reduces the possibility of damage during their assembly;
- Excellent chemical protection;
- Excellent appearance and very thin film, even continuous application of coating throughout the whole surface of the product;
- Automated process;
- High productivity;
- High efficiency of the application (closed rotational system with ultrafiltration; close to 100%)



The nature will appreciate it!