Corrosion Protection Concept for Brake Disks

Material and Process Technology Included

A new, cost-saving coating system is now available for brake disks. The coating system can be cured at room temperature, thus saving time and energy costs.

In an increasingly competitive market environment, the efficiency of coating systems is becoming more and more important. This is not only a question of the economic efficiency of the coating material itself, but also of the entire process technology. Against this background, Dörken MKS-Systeme has presented a complete concept consisting of an innovative corrosion protection system and fully coordinated equipment and process technology. The aim of this package solution is to ensure that materials are used as efficiently as possible and to minimise processing costs.

At the core of this package is a corrosion protection system (Delta-Protekt KH 250) for brake disks and brake drums that completely fulfils the specifications of the EU End of Life Vehicles Directive. It offers the high-performance corrosion protection required for these safety-relevant components and at the same time provides a high-quality appearance. The coating can also be cured very economically at room temperature, thus saving time and energy costs.

Reduction in investment and operating costs

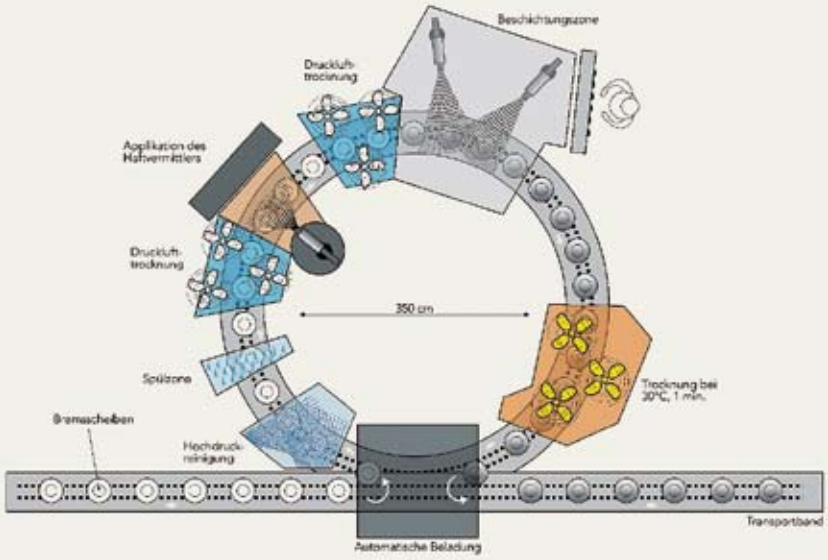
The specially adapted process technology for flow-through spray application, which has been developed in close cooperation with equipment manufacturers, guarantees low investment costs for the system. What is more, the operating costs are substantially reduced due to the optimised process cycle, thus achieving a highly favourable price/performance ratio per coated part.

Water-based coating

Brake disks and brake drums are highly susceptible to corrosion, and can become covered with a layer of rust within a very short time. This impairs the high value appearance of the vehicle and, what is more, the customer may start to have doubts about the vehicle's safety.

The corrosion protection system Delta-Protekt KH 250 solves this problem due to its cathodic protection. The coating is completely solvent-free and contains no harmful heavy metals such as lead, cadmium, chromium or nickel.

The water-based coating system in the colours silver grey and black has particularly good adhesion on cast iron substrates. In addition to its high corrosion resistance of up to 600 hours



The arrangement of the individual stations in a kind of Ω shape ensures that the coating line takes up very little space. It can also be easily integrated into an existing line.

without red rust in the salt spray test (DIN EN ISO 9227-NSS), the coating also has excellent chemical and temperature resistance – key advantages for these components, which are subject to very high loads due to their exposed position on the vehicle.

Integrated process

The parts are coated in a fully automatic, integrated process in which they pass through all stations one after another in a continuous flow, thus making it a particularly economical and time-saving process.

After the brake disks have been automatically delivered to the conveyor belt in 15-second cycles, they are first of all cleaned in a high-pressure washer and then rinsed and air-dried. An adhesion promoter is then applied and the disks are once again air-dried, after which the actual coating is applied.

The material is sprayed on with a film thickness of between 10 and 20 µm. The coating is then cured for one minute at about 30 °C in a hot air stream. This means that, with this process, there is no need for the usual shock-like heating of the disk, which in some cases may lead to structural changes in the material and therefore to damage. The entire process takes about six minutes.

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