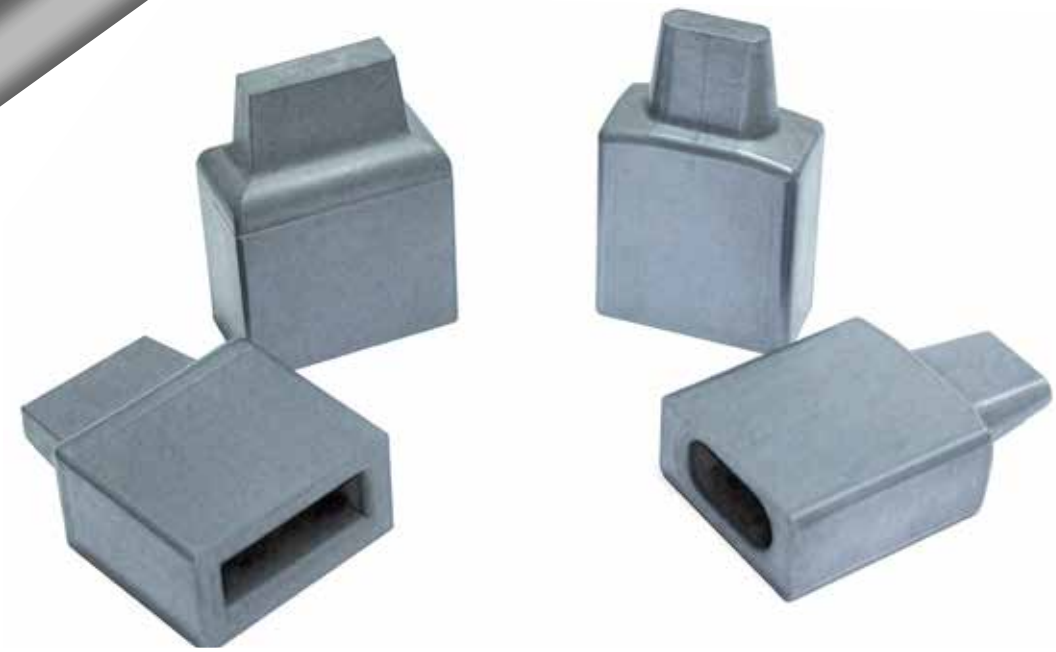
dMT ECOTECH

SPC®

SURFACE PROTECTIVE COATINGS FOR ROTATING EQUIPMENT



dMT-SPC® - SURFACE PROTECTIVE COATINGS FOR ROTATING EQUIPMENT

dMT-SPC®Surface Protection Coatings are well suited for use on rotating drums. For such equipment we have designed DRR-units to coat the support rollers and rings on rotating kilns and furnaces, dryers, mills and mixers. The DRR-units are custom-finished to fit to the dimensions of the equipment surfaces to be coated.

dMT-SPC® solid-products continually coat the metal surfaces with a fully dry film which bonds firmly to the surface, yet transfers also to the secondary contact surfaces. The coating does wear slightly between the two contact surfaces but is continually and instantly renewed as the rotating surface passes in contact with the **SPC®** unit. The result is a substantial reduction in metal surface wear as well as those costs related to expensive replacement parts and machinery down-times.

dMT-SPC® dry coatings are a blend of high-grade components resulting from years of research and field testing. Through "friction management", these coatings generate and maintain the ideal coefficient of friction between two interacting surfaces. Rough metal surfaces take on a smoother topographical structure and previous point-contacted surface pressure is distributed over a vastly increased contact surface.

dMT-SPC® solid-products are installed on surfaces on which conventional lubricants (pastes or oils) cannot be applied or where use of such lubricants is inconvenient or unsuccessful – for example very dusty environments. **SPC®** coatings are also applicable in high-temperature areas and very wet conditions.

dMT-SPC® solid-products can be supplied in a variety of dimensions with stainless-steel, spring-loaded applicators to fit. Installation to rotating equipment is relatively simple and inexpensive.

Application Examples on Rotating Drums

dMT-SPC®-DRR-Unit 5.0 mounted on support roller

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dMT OFFERS SUPERIOR SOLUTIONS FOR REDUCING SURFACE WEAR

SPC®-MSB-DRR-Units for gear-driven support rollers (not with sprocket system)

- Metal possesses a negative characteristic of losing traction as speed increases. Containing an innovative traction enhancer, the block type MSB improves the traction between two surfaces and simultaneously reduces wear and metal flaking.
- With a much higher coefficient of friction, ca. 0.35, traction is increased and slippage between roller and ring prevented, resulting in increased usage lives of rollers and rings.

SPC®-TSB-DRR Units for support to rollers and rings (with sprocket system)

The block type TSB reduces friction between two surfaces to a very low 0,05, converting a rubbing action into a sliding action. These coatings are considered a dry lubricant and applied to increase the usage lives of rollers and rings.

COMPARISON OF METAL SURFACES BEFORE AND AFTER COATING WITH DMT-SPC®

Left side: A microscopic image shows the rough surface of an uncoated surface with its "summits and valleys". Therefore, the "summits" must support the full weight of the opposite metal surface (i.e. the drum ring).

Right side: with a strong-bonding SPC® protective coating, the valleys disappear and the surface structure smooths out. The optimal friction level is created, and the surface pressure of the drum rings is more evenly distributed over a much larger surface.

CASE HISTORY ON CALCIUM FLUORIDE DRYER

INITIAL SITUATION

This rotating dryer with two shell rings and four support rollers operates nearly non-stop (8.000 – 8.500 h/year). Calcium Fluoride dust particles are extremely abrasive and the main cause of the very short operating lives of the support rollers.

Lubricant paste had been used but ineffectively due to agglomeration of the dust particles within the paste, converting the lubricant paste into a grinding paste!

The support rollers needed to be changed-out approx. every three months, resurfaced and then remounted. This caused high costs and expensive production stoppages for a machine needing to work full-time.

The objective was to find a protective lubricant that would protect the rollers and rings from severe surface wear and also not absorb the excessive and very fine abrasive dust particles in the area.

SOLUTION

dMT-DRR-T.2.0 units were installed onto newly resurface support rollers. The dryer started back into operation immediately.
These pictures were taken after eight months of continual operation (approx. 5.750 h).

RESULT

According to the customer, **dMT-SPC®** protective coating has performed to his complete satisfaction
The two support rollers and drum rings are being continually coated with the SPC® dry lubricant film, without any additional maintenance input.
The support rollers show very slight wear and the floor area remains clean (dripping grease had previously caused much floor and machinery contamination).

The dryer operates more quietly and without production interruption.
Last information showed that the support rollers had next change-out only after 24 months of non-stop production – 7 fewer change-outs than previously.

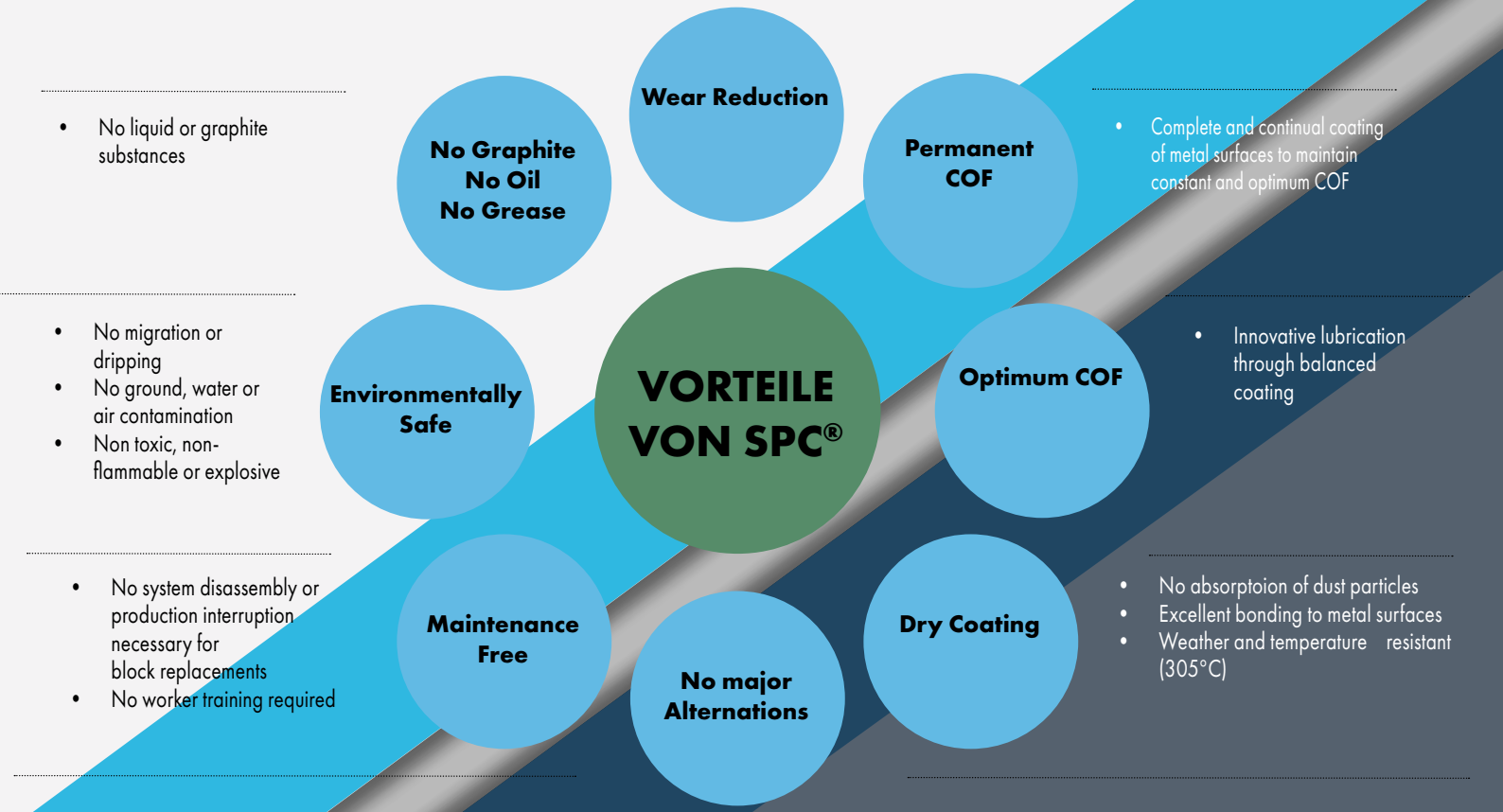
INSTALLATION ON A ROTATING FURNACE IN A GYPSUM PLANT

The previous oil drip-feed system was removed and **dMT-DRR-T** units installed.
The oil feed system had caused extreme maintenance input and messiness.
Maintenance has been reduced to a minimum and gypsum dust can no longer be captured and agglomerated by the oil, increasing metal surface wear.
SPC® coats the metal surfaces continually without any additional maintenance input

INSTALLATION ON A ROTATING KILN IN A CEMENT PLANT

With SPC® the down-times can be reduced to a minimum

- **Substantial reduction of surface wear (50-80%)**
- **Increasement of the operating life of metal parts 3-5 times**



- No liquid or graphite substances

- Complete and continual coating of metal surfaces to maintain constant and optimum COF

- No migration or dripping
- No ground, water or air contamination
- Non toxic, non-flammable or explosive

- Innovative lubrication through balanced coating

- No system disassembly or production interruption necessary for block replacements
- No worker training required

- No absorptoion of dust particles
- Excellent bonding to metal surfaces
- Weather and temperature resistant (305°C)

- No negative influence on the operation of the machinery

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