

## FAQ TRIBOLOGICAL COATINGS

**Q: When choosing a coating solution, what needs to be looked out for?**

**A:** The application, the area of use, the environmental factors, the media contact, the assembly requirements and technical properties or operating requirements.

**Q: What tribological coating solution does Bossard offer?**

**A:** Increasingly, complete solutions with a coating concept for focused performance characteristics are being used. In particular, various base layers with topcoats are available (e.g. zinc flake coating systems). So-called anti-friction coatings with friction coefficient specifications are usefully applied by the same coating specialist. For friction coefficient windows with tribological coatings, it is essential to ask about the requirements in advance, especially for nominal dimensions >M12!

**Q: What is Bossard's strategy for "Coatings"?**

**A:** As part of a strategic realignment, Bossard has decided to discontinue offering the coatings under the brand name "ecosyn<sup>®</sup>-lubric". The marketing of the coatings is based on the expertise of the chemical manufacturers and their licensees or local coating service providers.

**Q: What change to Bossard ecosyn<sup>®</sup>-lubric Black/Silver needs to be considered?**

**A:** Bossard ecosyn<sup>®</sup>-lubric Black/Silver as a tribological coating has been marketed by CREDIMEX under the CresaCoat<sup>®</sup> brand since November 2022. CREDIMEX uses the same coatings as well as the same machines and production processes, so it is an equivalent applied coating. The change of the designations is documented by an equivalence confirmation from CREDIMEX. For friction coefficient windows with tribological coatings, it is essential to ask about the requirements in advance, especially for nominal dimensions >M12!

Bossard ecosyn <sup>®</sup> -lubric Black	CresaCoat <sup>®</sup> C 307 Black
Bossard ecosyn <sup>®</sup> -lubric Silver	CresaCoat <sup>®</sup> C 313 Silver

**Q: What are the lessons to be learned from coating practice?**

**A:** Coating technology is in transition and must adapt to the regulated framework conditions of the respective market region, whereby Bossard relies on the expertise of the chemical manufacturers, their licensees and local coaters. Increasingly, system solutions with matching base & topcoats for focused performance characteristics are preferred in coating technology.

**Q: What protection does an abrasion-resistant surface require?**

**A:** CresaCoat<sup>®</sup> C 702 (Code 559) is the right choice for demanding, abrasion-resistant requirements in process-safe thread-forming screw joints using synthetic solid lubricants.

**Q: Which coating can withstand high technical loads?**

**A:** CresaCoat<sup>®</sup> C 112 (code 573) stands for advanced friction-reducing conditions at high pressure loads and proven sliding function by means of MoS<sub>2</sub>.

**Q: Which coating makes a process-secure initial assembly easier?**

**A:** TopCoat CresaCoat® C 905 (Code 588) with its thin wax topcoat ensures good sliding properties for thread-forming screws and rust-resistant small screws without the risk of galling.

**Q: What other advantages do tribological coatings offer?**

**A:** No residual risk of hydrogen embrittlement, uniform coating distribution, low friction value dispersion and improved corrosion protection.

**Q: What are the operating temperatures to which coatings can be exposed?**

**A:** The respective solutions with the allowed operating temperatures can be found in the technical data sheet. The thermal load capacity of the base material must be taken into account when selecting the coating (e.g. polyamide ring for locknuts).

We refer to the information and expertise of the chemical manufacturers and their licensees or local coating service providers.

**Q: What are the technical limitations to be considered?**

**A:** The drives of smaller fasteners (<M5) are subject to sticking due to the coating. Due to the surface coating and the additional tribological coating, the thread pairing of fasteners may tend to clamp.

**Q: What technical limitations must be considered?**

**A:** The drives of smaller elements (<M5) tend to clog when coated. Due to the surface coating and the additional tribological coating, the thread pairing of fasteners may tend to seize.

**Q: Which specifications can be tested in test laboratory at Bossard?**

**A:** The Bossard test laboratory can test the friction values according to ISO16047 as well as the corrosion resistance.

**Q: What coating thicknesses are standard for the tribological coatings?**

**A:** The respective coating thicknesses vary depending on screw size and Coatings between 1 and 12 µm.

**Q: Which requirements for coefficient of friction values must be considered for economical assembly?**

**A:** Experience underlines a targeted monitoring of the surface coating by friction coefficient testing for defined lubrication conditions both for factory assembly and in repair and maintenance.

In practice, a friction coefficient class B according to VDI2230 sheet 1 with a friction coefficient range  $\mu_{ges} = 0.08$  to  $0.16$  is usually considered.

**Q: What should be specified for expected assembly safety for the tribological coatings?**

**A:** Product-specific requirements for the fasteners with expected coefficients of friction according to ISO16047 must always be validated. Friction value tests with customer-specific acceptance are a prerequisite for assured design parameters of the bolted joint.