



Data sheet PCO[®] 13 – black / white (stated: 07/18)

Surface treatment of aluminium alloys

Goal: Creation of a black (white) corrosion-resistant surface

Procedure: Plasmachemical oxidation (PCO[®]) in calibrated electrolyte systems

Initial state demands:

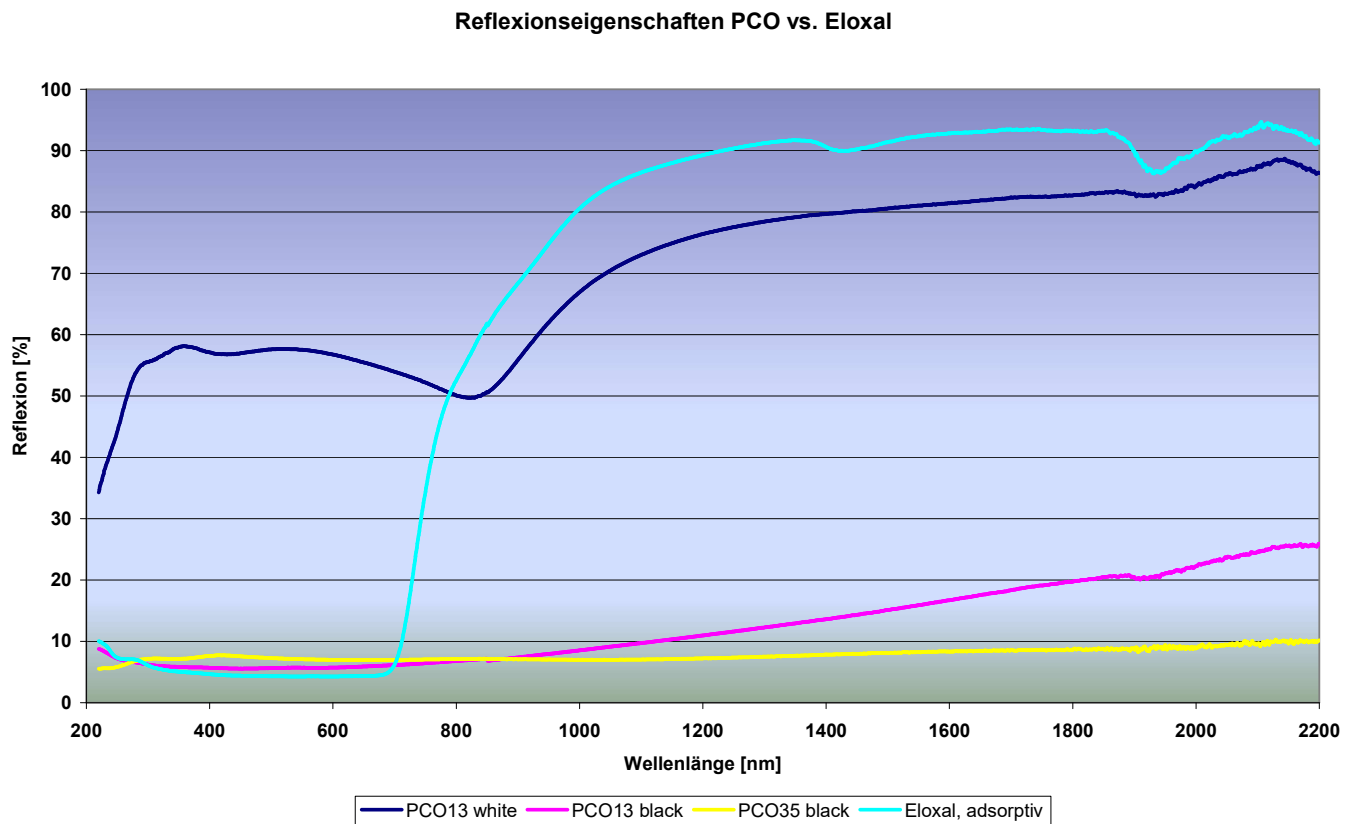
- Flash-free work pieces with oil-free and ungreased surfaces
- Free from separating agents and/or residual paint
- Signposting of contacting points on the engineering detail drawing

Alloys:

- Suitable for all aluminium alloys demanding a particular pre-treatment
- Examples: 2024, 5050, 5083, 6060

Layer properties:

- Reflectance plot (ultraviolet-/visible- / ir- radiation on AW6060)

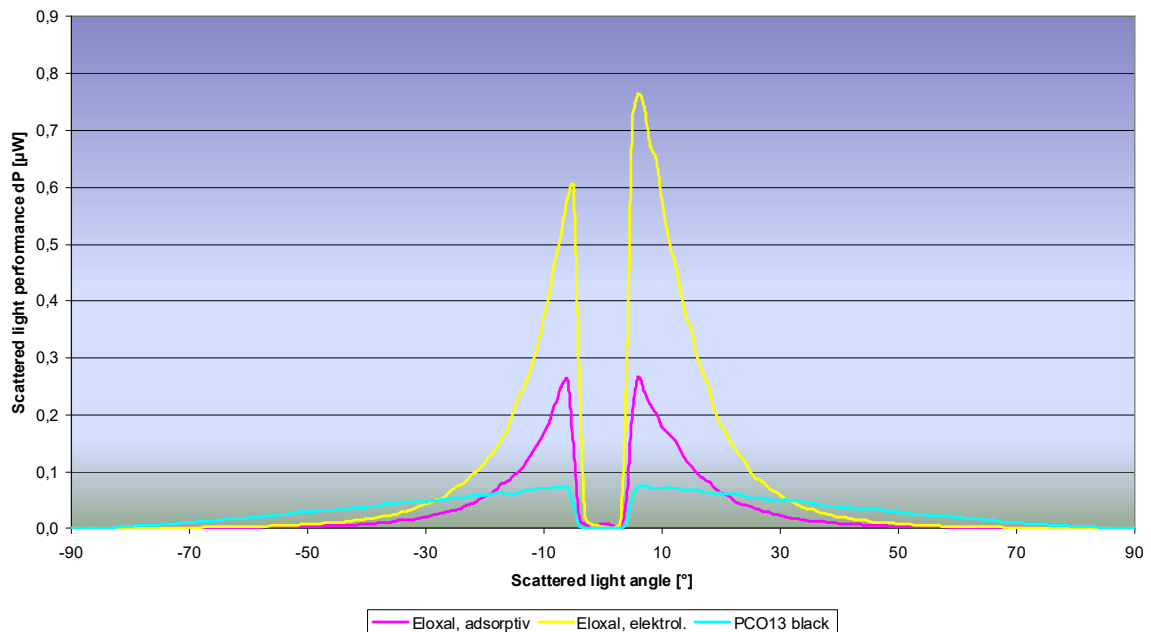




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- Scattered light properties (compared to anodic coatings)

Light scattering measurements compared to anodic coatings



Layer composition:

- Anorganic layer character, formed by specific oxides and spinels, as well as embedded subgroup elements, comply with the directive 2002/95 / EG of 27.01.2003 (RoHS) and the REACH Regulation (EC No. 1907/2006) without exceptions

Layer thickness:

Adjustable between 5 µm and 20 µm
Preferred range: 7 µm +/- 3 µm
¼ anchoring ratio and ¾ epitaxial ratio

Roughness:

Based on initial state roughness properties and layer thickness desires R_a values between 0,5 µm to 3,5 µm were observed.

General properties:

- Visual beamless surface
- Electrically isolating
- Resistant against constant temperature up to 423 K
- UV - resistant
- Wiping-proof



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- Machinable
- Possibility of partial deposition
- Constant layer development, coatable through-holes with diameters up to 1 mm and a length of 5 mm
- Reconstruction coatings possible
- Non-resistant versus ultra-sonic treatment

Maximally possible construction unit size:

- 150 x 300 x 500 mm³

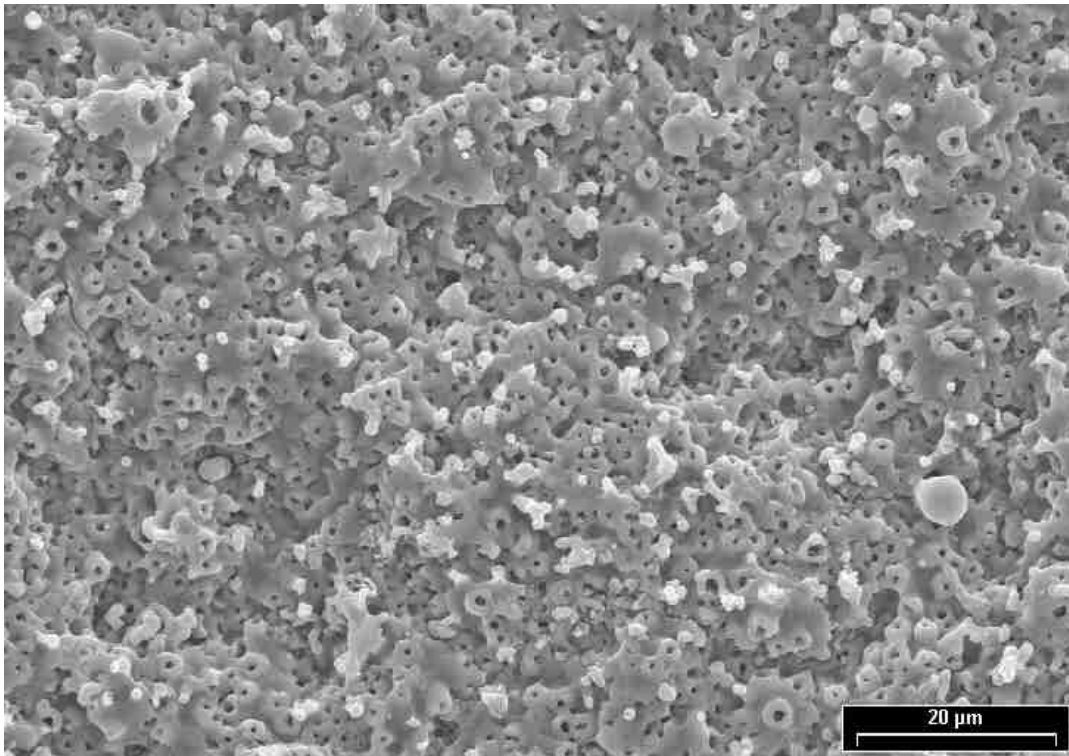


Figure 2: Typical morphology (SEM) of a PCO13 – coated surface on AW 6082