MICRON
COATINGS GROUP

OX-W
HARD ANODIZING

OX-W is a special aluminium hard anodizing treatment in compliance with MIL-A-8625 Type III, ISO 10074, and UNI 7796 standards.

Compared to conventional hard anodizing treatments, the OX-W treatment was developed to increase the characteristics of hard anodizing and obtain a more compact and uniform aluminium oxide film, with lower surface roughness and higher corrosion resistance.

It allows the achievement of high salt spray corrosion resistance with reduced anodizing thicknesses and on hard-to-process alloys such as series 2000 alloys and high-silicon content casting alloys.

It is also employed to treat parts for gas distribution and control (natural gas, hydrogen, and oxygen), in which properties of low surface roughness and high scratch and wear resistance are required.

FEATURES

HIGH CORROSION RESISTANCE

The compact OX-W film protects the substrate material from corrosion, exceeding 336 hours of salt spray exposure, with no trace of corrosion.

HIGH WEAR RESISTANCE AND HARDNESS

The hardness and compactness of the aluminium oxide layer allows the achievement of high abrasive and adhesive wear resistance, comparable to that of hard chrome.

SMOOTH AND COMPACT LAYER

The OX-W treatment creates a more compact and uniform layer of aluminium oxide with lower surface roughness than that of conventional hard anodizing treatments.

LIGHT COLOR

OX-W treatment has a light grey color with shades that depend on the treated aluminium alloy.

OX-W-PTFE LOW FRICTION VARIANT

To reduce the friction coefficient and impart non-stick properties, the OX-W treatment can be impregnated with PTFE nanoparticles.

Strada Oselin, 18/20
33047 Remanzacco UD, Italy
+39 0432667185
info@durox.it

AVAILABLE COLORS

OX-WN - BLACK COLOR

OX-W treatment can be colored in deep black. The deep black allows the color to be equalized on different aluminium alloys.

OX-WB - BLUE COLOR

OX-W treatment can be colored blue. The color shade depends on the treated aluminium alloy. The picture is an indicative representation of the color obtainable on alloy 7075 and alloy 6061.

OX-WR - RED COLOR

OX-W treatment can be colored red. The color shade depends on the treated aluminium alloy. The picture is an indicative representation of the color obtainable on alloy 7075 and alloy 6061.

TECHNICAL SPECIFICATIONS

COMPOSITION AND APPLICABLE STANDARDS

COMPOSITION

The OX-W treatment transforms the aluminium substrate into a compact layer of aluminium oxide. The coating composition is thus strongly dependent on the starting alloy.

Al	O	S	IMPURITIES
20÷40%	50÷70%	3÷5%	Depending on the alloy

TECHNICAL STANDARDS

ISO 10074

UNI 7796

MIL-A-8625 I Type III

ROHS COMPLIANCE

RoHS compliant. No restricted substances present in amounts greater than the maximum tolerated concentrations.

REACH COMPLIANCE

REACH compliant. No SVHCs present in amounts higher than 0.1% by weight.

Strada Oselin, 18/20
33047 Remanzacco UD, Italy
+39 0432667185
info@durox.it

ANODIZABLE ALLOYS

WROUGHT ALLOYS	CHARACTERISTICS	
Series 2000	Hardness	★★★☆☆
	Wear resistance	★★★☆☆
	Corrosion resistance	★★★☆☆
	Maximum thickness	★★★☆☆
Series 5000 (with >2% Mg) and 7000	Hardness	★★★★☆
	Wear resistance	★★★★☆
	Corrosion resistance	★★★★☆
	Maximum thickness	★★★★★
Series 6000 (except 6082, 6061)	Hardness	★★★★★
	Wear resistance	★★★★★
	Corrosion resistance	★★★★★
	Maximum thickness	★★★★★
6082, 6061	Hardness	★★★★★
	Wear resistance	★★★★★
	Corrosion resistance	★★★★★
	Maximum thickness	★★★★☆

CASTING ALLOYS	CHARACTERISTICS	
Alloys with Si>8% or Cu>2%	Hardness	★☆☆☆☆
	Wear resistance	★☆☆☆☆
	Corrosion resistance	★☆☆☆☆
	Maximum thickness	★☆☆☆☆
Die castings with Si<8% or Cu< 2%	Hardness	★★☆☆☆
	Wear resistance	★★☆☆☆
	Corrosion resistance	★★☆☆☆
	Maximum thickness	★☆☆☆☆
Other alloys	Hardness	★★☆☆☆
	Wear resistance	★★☆☆☆
	Corrosion resistance	★★★☆☆
	Maximum thickness	★★★☆☆

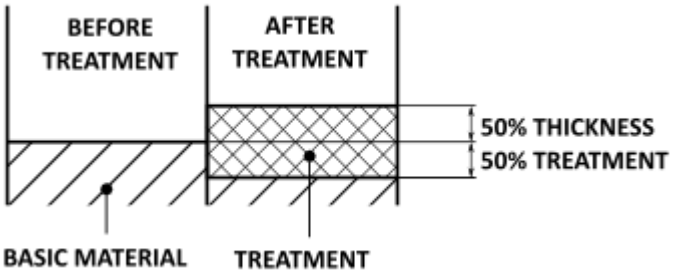
Strada Oselin, 18/20
33047 Remanzacco UD, Italy
+39 0432667185
info@durox.it

TREATMENT THICKNESS AND AESTHETIC APPEARANCE

COATING THICKNESS

STANDARD THICKNESS	TOLERANCE
30µm	±10µm

50% of the treatment thickness is due to external film growth and 50% is due to film growth in the surface of the aluminium part. The radial dimensional increase can thus be calculated as half the treatment thickness.



Uniform thickness over the entire external surface. Reduced thickness in holes.

AESTHETIC APPEARANCE

Slightly matt appearance with light grey color. The color depends on the base alloy and the treatment thickness. Reproduces the morphology of the machined part.

Possibility of black coloring in the OX-WC version

Possibility of blue coloring in the OX-WB version

Possibility of red coloring in the OX-WR version

TRIBOLOGICAL PROPERTIES

HARDNESS

The OX-W treatment features high film hardness. The value varies in accordance with the treated alloy.

HARDNESS VALUE	ALLOY
>280HV	Series 2000
>330HV	Series 5000 (with >2% Mg) and 7000
>400HV	Other wrought alloys

WEAR RESISTANCE

OX-W offers very high abrasive and adhesive wear resistance. The value varies in accordance with the treated alloy.

WEAR VALUE, TWI-CS17	ALLOY
THE LOWER THE NUMBER, THE HIGHER THE PERFORMANCE - MIL-A-8625F 3.7.2.2 AND ISO 10074 B.3- TABER ABRASER WEAR TEST - CS 17 ABRASIVE WHEELS - 1 KG LOAD	
< 35 mg / 10 000 cycles	Series 2000
< 25 mg / 10 000 cycles	Series 5000 (with >2% Mg) and 7000
< 15 mg / 10 000 cycles	Other wrought alloys

Strada Oselin, 18/20
33047 Remanzacco UD, Italy
+39 0432667185
info@durox.it

FRICTION COEFFICIENT

The OX-W-PTFE variant features an impregnation treatment of the anodized film with PTFE nanoparticles.
The impregnation process makes it possible to obtain a non-stick, self-lubricating surface with a low friction coefficient.

CHEMICAL PROPERTIES

CORROSION RESISTANCE

The OX-W treatment makes it possible to achieve high corrosion and oxidation resistance. The treated surface passes 336 hours of salt spray exposure, with no trace of corrosion.

CORROSION RESISTANCE VALUE		SUBSTRATE MATERIAL
NSS IN COMPLIANCE WITH ISO 9227 AND ISO 10074		
	≥336 hours without corrosion	6000 alloy

CHEMICAL RESISTANCE

Chemical compatibility values. The actual environmental resistance must anyway be tested in the field.

✓	Hydrocarbons (e.g. petrol, diesel, mineral oil, toluene)
✓	Alcohol, ketones (e.g. ethanol, methanol, acetone)
✓	Neutral saline solutions (e.g. sodium chloride, magnesium chloride, seawater)
✕	Dilute reducing acids (e.g. citric acid, oxalic acid)
✕	Acid oxidizing agents (e.g. nitric acid)
✕	Concentrated acids (e.g. sulphuric acid, hydrochloric acid)
✕	Dilute bases (e.g. dilute sodium hydroxide)
✕	Base oxidizing agents (e.g. sodium hypochlorite)
✕	Concentrated bases (e.g. concentrated sodium hydroxide)

Strada Oselin, 18/20
33047 Remanzacco UD, Italy
+39 0432667185
info@durox.it