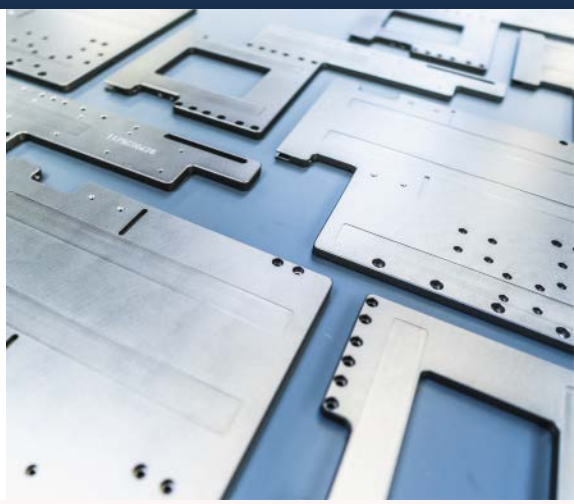
DUROX // MICRON

OX-W
Hard White Anodizing



OX-W is a special hard anodizing treatment of aluminium in conformity with MIL-A-8625 Type III, ISO 10074 and UNI 7796 standards.
Compared to traditional hard anodizing treatment, the OX-W treatment has been developed to increase hard anodizing characteristics and obtain a more compact and uniform aluminium oxide layer, with less roughness and greater corrosion resistance.

BEST CORROSION RESISTANCE

Improved corrosion resistance compared to OX-HS hard anodizing. Can withstand 1.000 hours of salt spray without corrosion on some alloys.

COMPACT AND SMOOTH LAYER

The OX-W treatment creates a more compact and uniform layer of aluminium oxides with less roughness compared to traditional hard anodizing treatment.

SEALING

The “hot sealing”, carried out in hot water without the use of heavy metals, allows to increase the resistance to corrosion and improve the resistance to stains and discolorations.

LIGHT COLOUR

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

COLOURED VARIANT, BLACK AND BLUE

OX-WN: deep black dye that allows to uniform the color in presence of different alloys.

OX-WB: blu dye that allows to uniform the color in presence of different alloys.

OX-W-PTFE LOW-FRICTION VARIANT

To lower the friction coefficient and provide anti-adhesion properties, the OX-W treatment can be impregnated with PTFE nanoparticles.

TECHNICAL SPECIFICATIONS

COMPOSITION

The OX-W treatment transforms base aluminium into a compact layer of aluminium oxide.
The composition largely depends on the initial alloy.

Al	O	S	Impurities
20-40%	50-70%	3-5%	Depending on alloy

APPLICABLE STANDARDS

PRODUCT TECHNICAL STANDARDS

ISO 10074 | UNI 7796 | MIL-A-8625 | Type III

ROHS CONFORMITY

✓ RoHS conform.
No restricted-use substances beyond maximum tolerated concentrations.

REACH CONFORMITY

✓ REACh conform. No SVHC in quantities greater than 0.1% by weight.

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ANODIZABLE ALLOYS

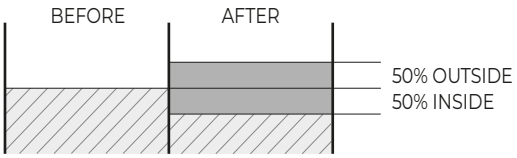
WROUGHT ALLOYS	HARDNESS	WEAR RESISTANCE	CORROSION RESISTANCE	MAX THICKNESS
Series 2000	★★★☆☆	★★★☆☆	★★★☆☆	★★★☆☆
Series 5000 (with >2%Mg) & 7000	★★★★☆	★★★★☆	★★★★☆	★★★★★
Series 6000 (except 6082, 6061)	★★★★★	★★★★★	★★★★★	★★★★★
6082, 6061	★★★★★	★★★★★	★★★★★	★★★★☆
CASTING ALLOYS				
Alloys with Si>8% or Cu>2%	★☆☆☆☆	★☆☆☆☆	★☆☆☆☆	★☆☆☆☆
Die-casts with Si<8% or Cu<2%	★★☆☆☆	★★☆☆☆	★★☆☆☆	★☆☆☆☆
Other alloys	★★☆☆☆	★★☆☆☆	★★★☆☆	★★★☆☆

COATING THICKNESS

STANDARD THICKNESS	TOLERANCE
30 µm	± 10 µm

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

Treatment thickness grows 50% outside and 50% inside the surface of the aluminium piece. The radial dimensionalincrease is therefore equal to half the treatment thickness.



AESTHETIC APPEARANCE

Slightly matt appearance with light grey colour. The colour tone depends on the base alloy and treatment thickness. Morphology similar to machined piece.

Black colour option in **OX-WN** version.

HARDNESS

The OX-W treatment features extra layer hardness. This depends on the type of treated alloy.

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

WEAR RESISTANCE

OX-W has very high abrasive and adhesive wear resistance.
This varies according to the type of treated alloy.

WEAR VALUE, TWI-CS17	ALLOY
<35 mg / 10.000 cycles	Series 2000
<25 mg / 10.000 cycles	Series 5000 (with >2% Mg) & 7000
<15 mg / 10.000 cycles	Other wrought alloys

A LOW NUMBER INDICATES A BETTER PERFORMANCE
MIL-A-8625F 3.7.2.2 AND ISO 10074 C.3 - TABER ABRASER WEAR TEST - ABRASIVE WHEELS CS 17 - LOAD 1 KG

FRICTION COEFFICIENT

The OX-W-PTFE variant consists of an impregnation treatment of the anodizing layer with PTFE nanometric particles. This impregnation permits obtaining a non-adhesion, self-lubricating surface with low friction coefficient.

CORROSION RESISTANCE

The OX-W treatment permits obtaining high corrosion and oxidisation resistance.
Brilliantly withstands 336 hours of exposure to salt mist without any sign of corrosion.

CORROSION RESISTANCE VALUE	
	≥ 336 hours without corrosion ≥ 1000 hours without corrosion on 6082 with low roughness

NSS ACCORDING TO ISO 9227 AND ISO 10074 10

CHEMICAL RESISTANCE

Approximate values of compatibility with the coating environment.
The actual resistance to the environment must in any case be tested in the field.

✓	Hydrocarbons (e.g. petrol, diesel fuel, mineral oil, toluene)
✓	Alcohols, ketones (e.g. ethanol, methanol, acetone)
✓	Neutral saline solutions (e.g. sodium chloride, magnesium chloride, brine)
✗	Diluted reducing acids (e.g. citric acid, oxalic acid)
✗	Oxidizing acids (e.g. nitric acid)
✗	Concentrated acids (e.g. sulphuric acid, hydrochloric acid)
✗	Diluted bases (e.g. diluted sodium hydroxide)
✗	Oxidizing bases (e.g. sodium hypochlorite)
✗	Concentrated bases (e.g. concentrated sodium hydroxide)

DENSITY according to ISO 10074

Series 2000 & alloys with >5% Cu	> 9,5 g/cm³
Series 5000 (with >2% Mg) & series 7000	> 9,5 g/cm³
Other wrought alloys	> 11 g/cm³
Casting alloys with Si<8% or Cu<2%	> 9,5 g/cm³
Other casting alloys	By agreement

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