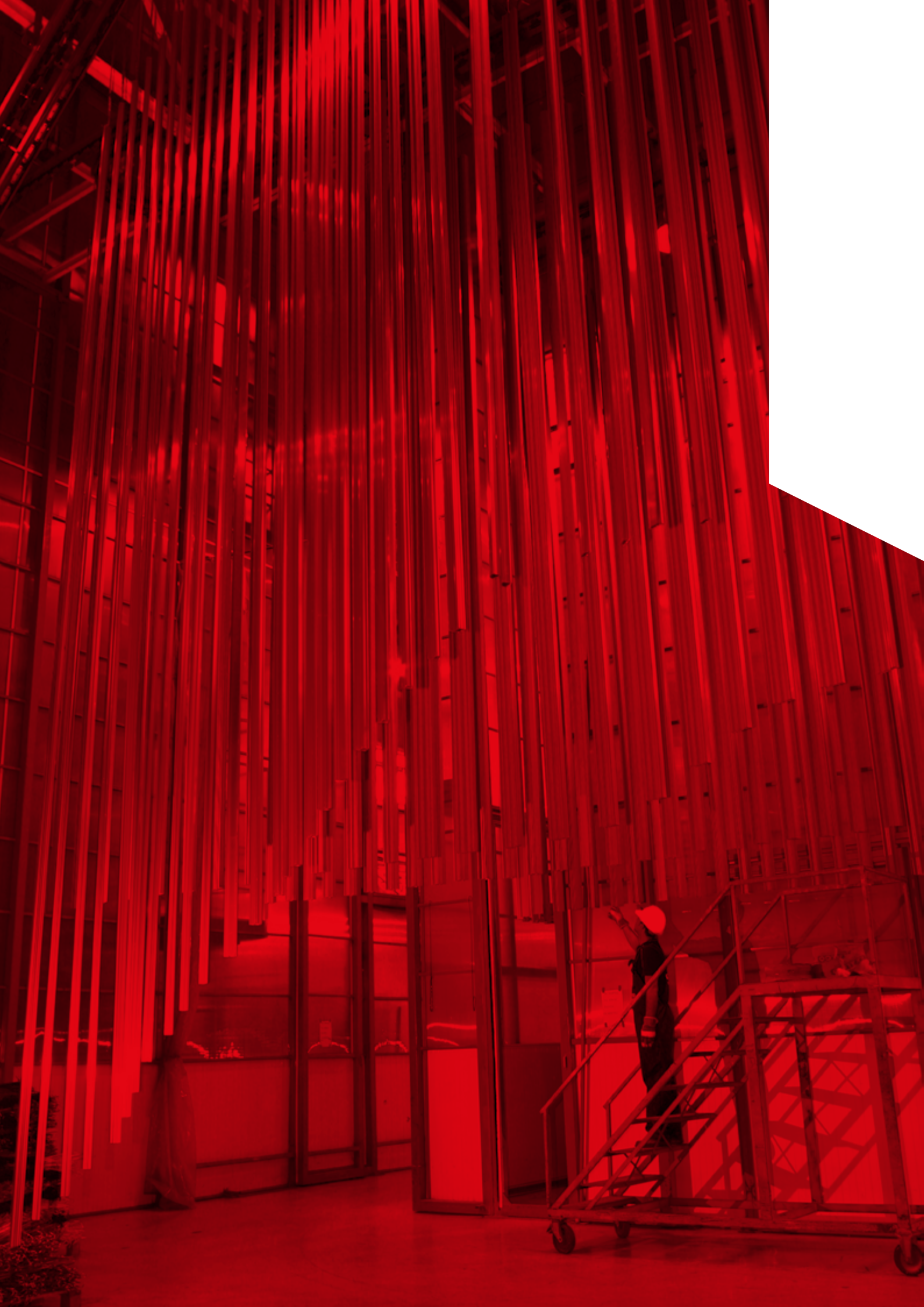




ISO 9001:2015
ISO 14001:2015
ISO 45001:2018
ISO 50001:2018
QUALICOAT
QUALIDECO
QUALANOD
EN 15088:2005 (EU R305/2011-CE MARKING)

TECHNICAL SPECIFICATIONS

www.exalco.gr



EXALCO is a leader within the Greek aluminium extrusion industry and has developed an extended sales network within domestic and foreign markets. Founded in 1973 with its headquarters based in Larissa, Greece the company is an integral part of the Greek Aluminium History linked with the tradition, experience, development and quality of its products and services.

The company is an integrated industrial unit producing aluminium profiles, having the capability to cover all the modern structural, architectural and customized needs. EXALCO is focused to customer satisfaction, compliance with regulations, continuous improvement and development of the services rendered with respect towards the natural and social environment.

EXALCO's permanent goal for the high quality of its products and services implements a certified **Quality Management System**, in accordance with the requirements of the **International Standard ISO 9001:2015**.

The company with respect to the environment, material recycling, waste management, energy saving and minimizing the carbon footprint implements certified **Environmental Management System ISO 14001:2015** and **Energy Management System ISO 50001:2018**.

Focusing on human, the company implements a certified **Occupational Health & Safety Management System ISO 45001:2018**. For the quality regarding **Construction Products Regulation 305/2011**, EXALCO implements a **Factory Production Control system for the Extrusion Process** in accordance with the **European Standard EN15088: 2005 / CE Marking**.

Finally, for the Surface Treatment quality of the extrusions, the company is certified with **Qualicoat (Seaside Class)**, **Qualideco** for the Powder Coating process and products as well as with **Qualanod (Architectural & Industrial)** for the Anodizing process.

OUR PRODUCTS

- Aluminium profiles for general structural and industrial applications
- Aluminium systems (ALBIO) for doors, windows, building facades, atriums and many other architectural constructions
- Aluminium Shading Systems & Pergolas
- Aluminium Railing Systems
- Aluminium Composite Panels EXALCO-BOND
- Solar Mounting Systems (Exalco Sunergy)
- Accessories and other supplementary products.

OUR SERVICES

- Vertical and horizontal powder coating units available with a large colour range.
- Sublimation system for wood or marble imitations.
- Anodizing unit and new INOX colour anodization.

@A GLANCE

220

MILLION
EUROS IN SALES
(2020)

35

COUNTRIES
70% OF THE
PRODUCTION

660

EXALCO EMPLOYEES
AS BIOKARPET
GROUP OF COMPANIES

6

ALUMINIUM
EXTRUSION
LINES

78K_{SQM}

OF PRODUCTION
FACILITIES

300K_{SQM}

OF PRIVATE OWNED
LAND

65K_{TN/Y}

ANNUAL PRODUCTION
CAPACITY

19K_{TN/Y}

ANNUAL CAPACITY OF VERTICAL AND HORIZONTAL
COATING SYSTEM PLANT

5K_{TN/Y}

ANODISING
ANNUAL PRODUCTION CAPACITY

3K_{TN/Y}

WOOD IMITATION
PRODUCTION CAPACITY

EXTRUSION CAPACITY

Extrusion presses 1.100T, 1.600T, 1750T, 2.200T, 2.300T, 2.840T

EXTRUDED PROFILE DIMENSION

MAX_{diagonal} 250mm (Always be advised by EXALCO)

WEIGHT PER METER

MIN 0.100Kg/m - **MAX** 15Kg/m (Always be advised by EXALCO)

STANDARD LENGTH

6.000mm (Special lengths after agreement)

PACKAGING

EXALCO Standard (Special packaging after agreement)

MECHANICAL PROPERTIES - EXTRUDED PROFILES (According to EN 755-2)

Alloy Description*		Temper	Wall Thickness t (mm)	Rm min (Mpa)	Rp 0.2 min (Mpa)	A min %	A 50mm min %	HBW Typical Value**
EN-AW 6060	AlMgSi0.5	T4	≤25	120	60	16	14	50
		T5	≤5	160	120	8	6	60
			5<t≤25	140	100	8	6	60
		T6	≤5	190	150	8	6	70
			5<t≤25	170	140	8	6	70
		T64	≤15	180	120	12	10	60
		T66	≤5	215	160	8	6	75
			5<t≤25	195	150	8	6	75
EN-AW 6063	AlMg0.7Si	T4	≤25	130	65	14	12	50
		T5	≤10	175	130	8	6	65
			10<t≤25	160	110	7	5	65
		T6	≤10	215	170	8	6	75
			10<t≤25	195	160	8	6	75
		T64	≤15	180	120	12	10	65
		T66	≤10	245	200	8	6	80
			10<t≤25	225	180	8	6	80
EN-AW 6005A	AlSiMg	T4 OPEN	≤25	180	90	15	13	50
		T6 OPEN	≤5	270	225	8	6	90
			5<t≤10	260	215	8	6	85
			10<t≤25	250	200	8	6	85
		T4 HOLLOW	≤10	180	90	15	19	50
		T6 HOLLOW	≤5	255	215	8	6	85
			5<t≤10	250	200	8	6	85
EN-AW 6082	AlSiMgMn	T4	≤25	205	110	14	12	70
		T5	≤5	270	230	8	6	90
		T6	≤5	290	250	8	6	95
			5<t≤25	310	260	10	8	95
EN-AW 6101A	AlMgSi(A)	T6	≤50	200	170	10	8	70
EN-AW 6101B	AlMgSi(B)	T6	≤15	215	160	8	6	70
		T7	≤15	170	120	12	10	60
EN-AW 6106	AlMgSiMn	T6	≤10	250	200	8	6	75

* The table refers only to extruded profiles

** For extruded rod/bar and extruded tubes be advised by EN 755-2

*** For Alloys EN AW → 6005, 6082, 6101A, 6101B, 6106 always be advised by EXALCO.

**** HBW (Brinell) values are indicative only.

CORELLATION OF HARDNESS UNITS

BRINELL	30	35	40	45	50	55	60	65	70	75	80	85	90	95
WEBSTER	4	5	6	7	8	9	10	11	12	13	14	15	16	17

TEMPER DESIGNATION T (According to EN 515)

0	Annealed wrought alloys
T4	Solution heat-treated & naturally aged
T5	Cooled from an elevated temperature forming operation & artificially aged (precipitation hardened)
T6	Solution heat-treated & artificially aged (precipitation hardened) Press quenching required
T64	Solution heat-treated & artificially aged (precipitation hardened) Under aged to improve formability (bending temper)
T66	Cooled from an elevated temperature forming operation & artificially aged (precipitation hardened) to a higher level of mechanical properties through special control of manufacturing process. Press quenching required
T7	Solution heat-treated and the artificially overaged

BENDABILITY CLASSES TO STANDARDISED TEMPER (According to EN 15088)

Alloy	T4	T5	T6	T64	T66
EN-AW 6060	-	B3**	B3**	B2*	B3**
EN AW-6063	-	B3**	B3**	-	B3**
EN AW-6005A	-	-	-	-	B3**
EN AW-6082	B2*	B3**	B3**	-	-
EN AW-6101A	-	-	-	-	-
EN AW-6101B	-	-	-	-	-
EN AW-6106	-	-	B3**	-	-

* B2 - Material is midway strain-hardened / naturally aged / partly artificially aged temper.

Therefore bendability with medium radii is possible.

** B3 - Material is hard / fully artificially temper. Therefore bendability only with relatively large radii is possible.

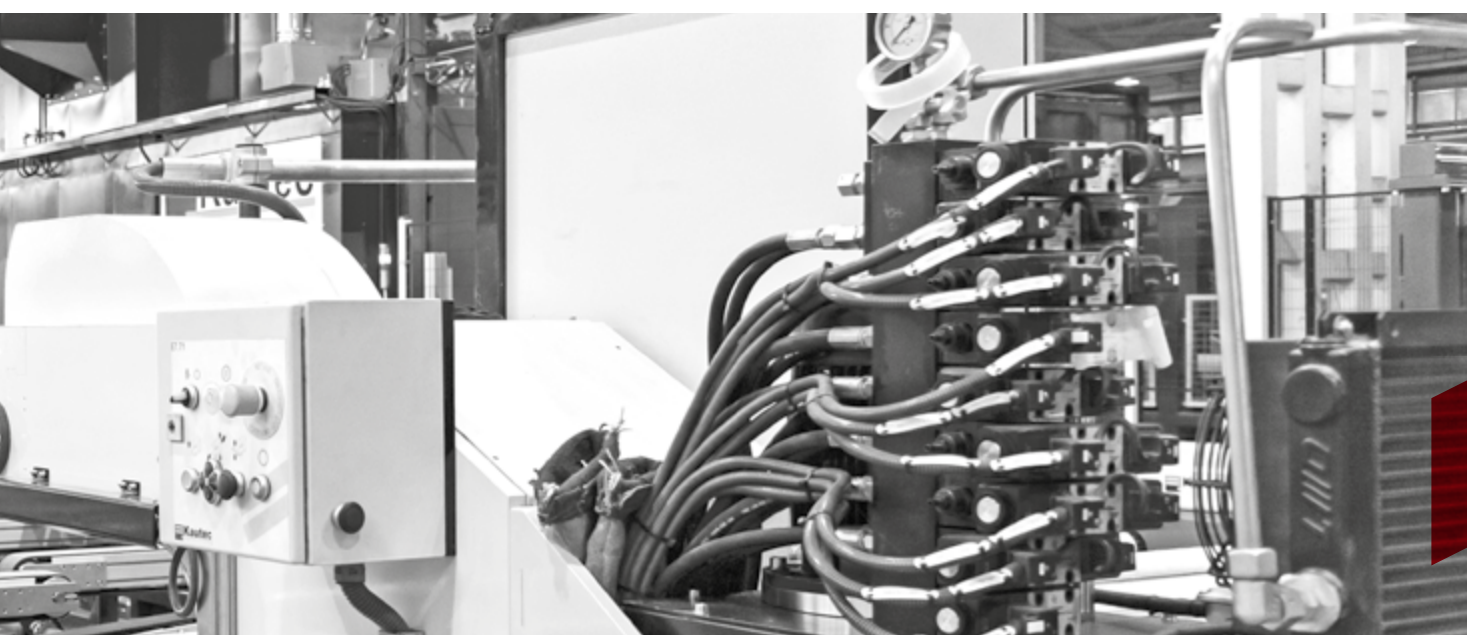


CHEMICAL COMPOSITION % OF ALUMINIUM ALLOYS EN-AW (According to EN 573-3)

Alloy EN AW	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	OTHERS		AL
									EACH	TOT	
6060	0,30-0,60	0,10-0,30	0,10	0,10	0,35-0,60	0,05	0,10	0,10	0,05	0,15	Rest
6063	0,20-0,60	0,35	0,10	0,10	0,45-0,90	0,10	0,15	0,10	0,05	0,15	Rest
6005A	0,50-0,90	0,35	0,30	0,50	0,40-0,70	0,30	0,20	0,10	0,05	0,15	Rest
6082	0,70-1,30	0,50	0,10	0,40-1,00	0,60-1,20	0,25	0,20	0,10	0,05	0,15	Rest
6101A	0,30-0,70	0,40	0,05	-	0,40-0,90	-	-	-	0,03	0,10	Rest
6101B	0,30-0,60	0,10-0,30	0,05	0,05	0,35-0,60	-	0,10	-	0,03	0,10	Rest
6106	0,30-0,60	0,35	0,25	0,05-0,20	0,40-0,80	0,20	0,10	-	0,03	0,10	Rest

ALUMINIUM PHYSICAL PROPERTIES - GENERAL

Melting Range °C	585-650
Density gr/cm ³	2.7
Electrical Conductivity MS/m	22-38
Thermal Conductivity W/(m K)	170-220
Thermal Expansion (20° to 100° C)	23.4
Modulus of Elasticity Gpa	69.5
Modulus of Rigidity Gpa	26.1
Poisson's Ratio	0.33



STANDARDS FOR INSPECTION & DELIVERY**ALUMINIUM AND ALUMINIUM ALLOYS - Extruded profiles**

EN 515	Temper designation
EN 573-3	Chemical composition & form of products
EN 755-1	Technical conditions for inspection & delivery
EN 755-2	Mechanical properties
EN 755-3	Round bars, tolerances on dimension & form
EN 755-4	Square bars, tolerances on dimension & form
EN 755-5	Rectangular bars, tolerances on dimension & form
EN 755-6	Hexagonal bars, tolerances on dimension & form
EN 755-8	Porthole tubes, tolerances on dimension & form
EN 755-9	Profiles, tolerances on dimension & form

ALUMINIUM AND ALUMINIUM ALLOYS - Extruded precision profiles in alloys EN-AW 6060 & EN-AW 6063

EN 12020-1	Technical conditions for inspection & delivery (precision profiles)
EN 12020-2	Tolerances on dimension & form (precision profiles)

CONSTRUCTION PRODUCTS - EU R305/2011 - CE MARKING

EN 15088	Aluminium and Aluminium alloys. Structural products for construction works. Technical conditions for inspection and delivery
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METALLIC MATERIALS - Products

EN ISO 6892-1	Tensile Testing - Part 1: Method of test at room temperature
EN ISO 6892-2	Tensile Testing - Part 2: Method of test at elevated temperature
EN 10204	Inspection documents: Types 2.1, 2.2, 3.1, 3.2

PROCESSES AFTER EXTRUSION

MACHINING	7 production lines for punching of shutter profiles
THERMAL-BREAK	2 automatic & 1 manual production lines for profile-bar assembly
SURFACE TREATMENT & AESTHETICS	1 Vertical & 1 Horizontal Powder Coating production lines 1 Anodizing production line 1 Sublimation (wood imitation, etc) production line

QUALITY CERTIFICATES & LABELS - SURFACE TREATMENT & AESTHETICS

QUALICOAT	Powder Coating Applicator - Seaside Class
QUALIDECO	Decorator of Coated Aluminium - Architectural use
QUALANOD ARCHITECTURAL	Sulfuric acid-based Anodising of aluminium - Architectural use
QUALANOD INDUSTRIAL	Sulfuric acid-based Anodising of aluminium - Industrial use



Company Certifications

ALUMINIUM EXTRUSION

ISO 9001:2015	Quality Management System
ISO 14001:2015	Environmental Management System
ISO 45001:2018	Occupational Health & Safety Management System
ISO 50001:2018	Energy Management System
EN 15088:2005	Factory Production Control - EU R305/2011 - CE Marking

SURFACE TREATMENT & AESTHETICS

QUALICOAT

Quality Label According to Qualicoat Specification for Powder Coated Aluminium Surfaces

QUALIDECO

Quality Label According to Qualideco Specification for Sublimation of Coated Surfaces

QUALANOD

Quality Label According to Qualanod Specification for Aluminium Anodized Surfaces



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