



World leader  
in anodising

ADDING VALUE TO ALUMINIUM



**COIL NV/SA**  
Landen, Belgium



**COIL GmbH**  
Bernburg, Germany



# ALOXIDE

**COIL is the world's largest anodiser, providing continuous anodising on aluminium flat rolled products whilst still in coil form and the next generation of batch anodizing for a wide range of architectural, industrial and decorative applications.**

## Production

COIL is having 3 continuous anodising lines and 1 next generation batch anodising line in Landen, Belgium and 2 continuous anodising lines in Bernburg, Germany.

COIL is responding to the highest standards on quality and environment, and is having, besides several service lines, specialized equipment in the plants to meet these standards.

Coil is committed to the environment. In Landen, Belgium, Coil is using a cogeneration system for the concurrent generation of power and heat from the same energy source. In Bernburg, Germany, Coil launched an investment into photovoltaic electricity, which allows the plant to be CO2 neutral from 2022.

## The anodising process

Anodising is an electro-chemical process – the surface of the aluminium is modified to create a very hard, but still flexible and transparent layer. This process may be combined with electrolytic coloring or selected organic dyes to give a range of UV proof colors. The anodic layer or 'film' remains 100% aluminium, so the full recyclability of the aluminium is not compromised. The result is an exceptionally durable, corrosion-proof pure aluminium product which retains all the qualities and the authentic metal sheen of natural aluminium. Thanks to the layer flexibility, the products can be cut-to-length, rollformed or bent into the desired end product.

Aluminium anodising may be carried out in 2 distinct ways. One is the vertical or 'batch' process whereby individual aluminium components are placed on racks and then immersed into treatment banks. This process can only be used for aluminium in other forms (profiles, sheets, pre-formed pieces).

Continuous anodising, on the other hand, is ideally suited to large surface areas and is the

anodising of aluminium coils whilst still in coil form. Following anodising, the coils are typically broken down into sheets or further processed (e.g. rollforming, bending and folding).

Both processes at COIL are fully automated processes, permitting perfect control of the aluminium metal's aspect, not just from coil to coil or from sheet to sheet but also over different production batches.

## Aloxide product range

For over 45 years, Coil has been the reference for anodised aluminium with its exceptional dimensional capacity combined with its wide range of different gloss levels, textures colours and anodic film thickness.

Aloxide products are pure, authentic anodised aluminium products offering optimum longevity and a genuine metallic finish – we never use coatings of any type.

## Aloxide vertical anodising

In 2018, we installed a next generation, automated vertical anodising line.

Using the same production parameters as for our continuous anodising process, we are able to produce smaller volumes of anodised aluminium in sheet form with a flexible anodic film. This hybrid film exceptionally permits transformation after anodising. This anodic film does not suffer from surface erosion, like conventional batch anodising.

This process also permits the line to operate with better control than conventional batch anodising, ensuring a better, more consistent finish.

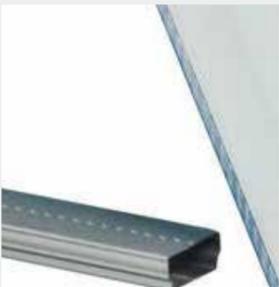
This new vertical anodising process has also permitted us to extend our product offering from coil sheet products to pre-manufactured panels and sections as well as more complex architectural forms.

# Discover our brands



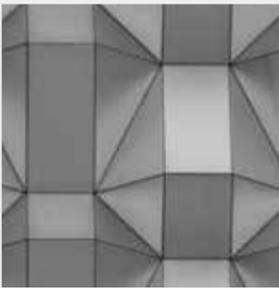
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X-Iconic



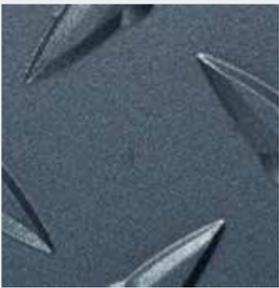
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X-Tech



6

X-Wall



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X-Tread



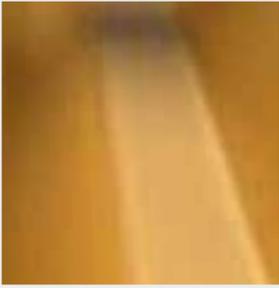
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X-Bond



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X-Med



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X-Flex



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X-3D



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X-Deco

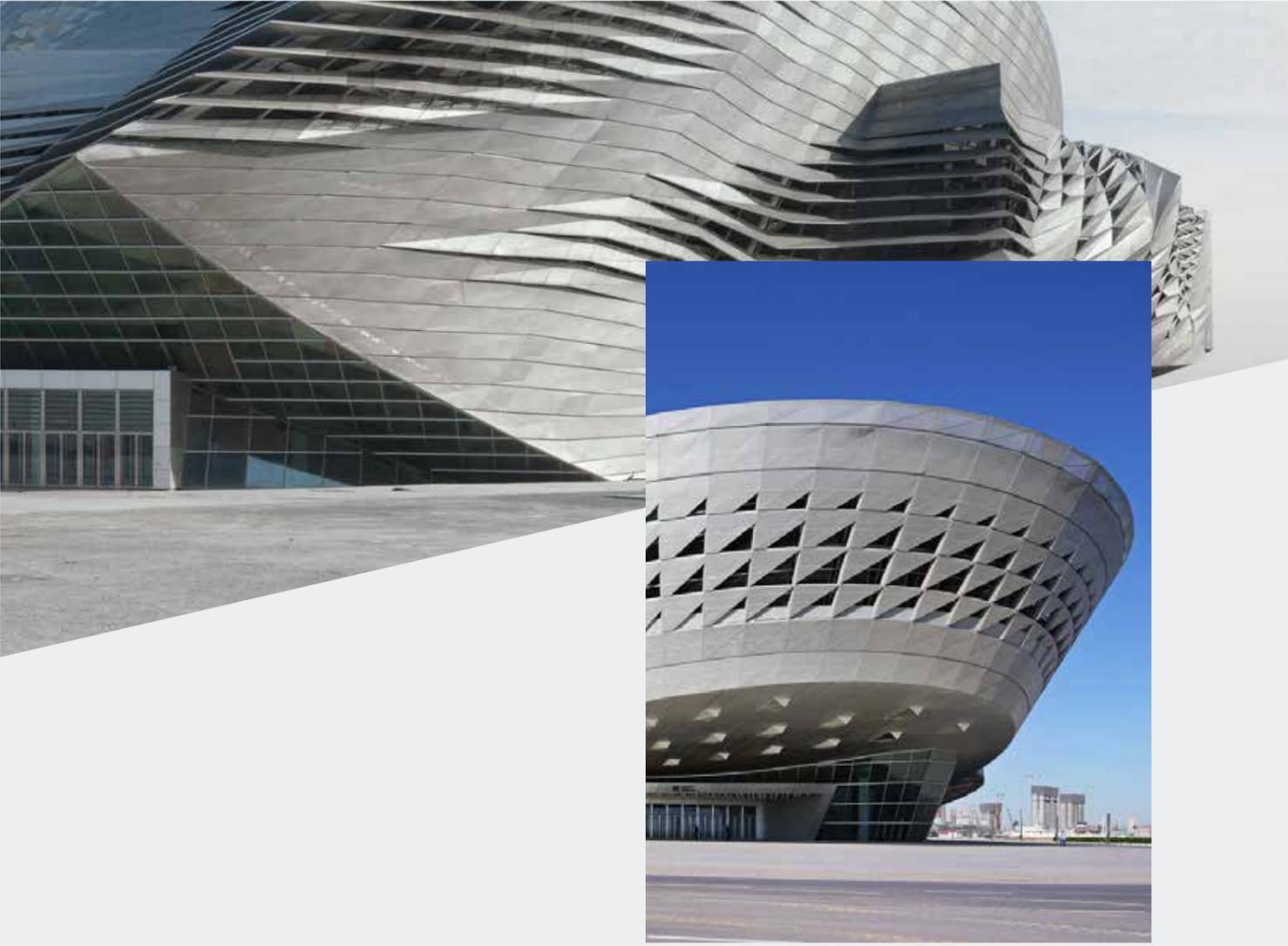


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X-Sky

# Benefits of anodised products by Aloxide

- Unique flexible anodic layer
- Suitable for all kinds of corrugated profiles.
- Interior and exterior applications
- No peeling, blistering
- No chalking
- No fading
- UV resistant
- No filiform corrosion
- No fingerprints
- 100% recyclability
- Metallic look and touch
- Natural and other colors
- Graffiti proof
- Fire resistance according to class A1



# X-Iconic

X-Iconic is a high-end anodising treatment for matte architectural façade applications and is reserved for high budget public and private buildings.

X-Iconic is also able to guarantee the tightest aspect tolerances for a range of natural and UV-proof colored finishes.

Coil has the highest quality anodised architectural sheet available in the world.



## Properties (standard)

Typical alloys used	EN AW 5005-H14 AQ
Metal width	1000 – 2000 mm
Metal gauge	1 – 5 mm
Anodic layer thickness	15 – 18 – 20 – 25 µm

# X-Bond

X-Bond offers a highly decorative, non-combustible and corrosion resistant surface treatment, suitable for all bonding applications. Thanks to the enhanced anodic layer, it withstands hot gluing processes used to manufacture Aluminium Composite Panels (ACP). X-Bond is the only authentic anodized surface product for ACPs and is available as Standard Mill Finish, Brite and Brush.



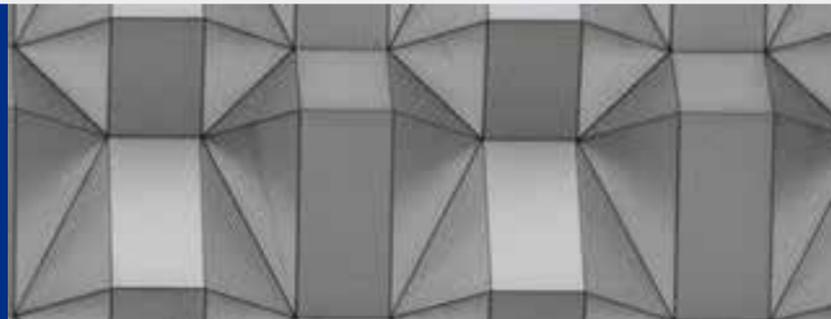
## Properties (standard)

Typical alloys used	EN AW 5005-H14 AQ (Standard Mill Finish / Brush) or EN AW 1085-H18 AQ
Metal width	1000 - 1600 mm
Metal gauge	0,3 - 0,5 mm
Anodic layer thickness	5 - 8 µm

# X-Wall

X-Wall has been the reference for architectural and general purpose anodized sheet since 1972. The clean and modern finish of X-Wall is qualified to interact with light which permits architects across the globe to create appealing and durable building facades as well as interior applications with an excellent control of gloss and colour levels within a coil. This product is available in natural and UV-resistant colours, and is available as Standard Mill Finish, Brite and Brush.

X-Wall is widely sold by distributors in Europe.



## Properties (standard)

Typical alloys used	EN AW 5005-H14 AQ
Metal width	1000 – 2000 mm
Metal gauge	1 – 5 mm
Anodic layer thickness	5 – 8 – 10 – 12 – 15 – 20 µm

# X-Flex

The flexible anodic film developed in the continuous coil anodising process means that surface is ideally for roll-forming after anodising without losing any of the benefits of aspect or surface uniformity or protection. It can be used to create corrugated or profiled sheets. By creating a three-dimensional metallic surface, the play on light can be used to dramatic effect on large surfaces without complex fabrication or fixing.



## Properties (standard)

Typical alloys used	EN AW 3xxx series
Metal width	1000 – 1600 mm
Metal gauge	0,7 – 1,5 mm
Anodic layer thickness	5 – 8 – 10 – 12 – 15 µm

# X-Deco

Anodised aluminium can be very effectively used for interior design or design applications – either as a solid sheet or laminated onto other materials, such as wood.

X-Deco is available in a variety of genuine metallic colors and is used for high design metallic luggage, furniture and kitchens. The product ensure a perfect surface uniformity; required since these products are typically viewed at close range.

## Properties (standard)

Typical alloys used	EN AW 5005 and EN AW 5754
Metal width	1000 – 1600 mm
Metal gauge	0,7 – 5 mm
Anodic layer thickness	5 – 8 – 10 µm

# X-Tread

Tread plate is widely available in a number of different patterns and is visually enhanced and protected by anodizing. Anodising permits the relief of the design to be anodised in perfect consistent film layer and thickness.

## Properties (standard)

Typical alloys used	Technical alloys
Metal width	1000 – 1600 mm
Metal gauge	2 – 3 mm
Anodic layer thickness	10 – 20µm

# X-Tech

Thin anodic layers for a number of different properties unconnected with corrosion protection. This product is typically used as a surface preparation for coating. It is used in spacer bars for double glazing. It can be used on welded tube products to give a purely cosmetic aspect.

## Properties (standard)

Typical alloys used	EN AW 5005
Metal width	1000 – 1600 mm
Metal gauge	1 – 5 mm
Anodic layer thickness	5 – 8 – 10 µm

# X-Med

With hospitals facing the constant challenge of reducing infection, the slippery smooth surface of Aloxide impedes germs from being deposited on the surface of the metal and makes it easy to clean. For this reason, Aloxide is used in a wide range of interior applications in patient rooms, public areas and technical rooms. It is also on food trolleys where the material has a low weight.

## Properties (standard)

Typical alloys used	EN AW 1050/ EN AW 5005
Metal width	1000 – 2000 mm
Metal gauge	1 – 5 mm
Anodic layer thickness	15 – 20µm

# X-3D

With its new vertical anodizing line, Coil is able to offer Aloxide anodising for all types of pre-fabricated sections and panels, extrusions as well as more complex structures, such as architectural mesh.



## Properties (standard)

Typical alloys used	EN AW 1050/ EN AW 5005
Metal width	1000 – 2000 mm
Metal gauge	1 – 5 mm
Anodic layer thickness	15 – 20µm

# X-SKY

Without aluminium, the the aeronautical industry would never have got off the ground. Weight-saving is what aviation is all about. Whilst composites are increasingly used in the industry, aluminium still remains the dominant material in the structure and outer skin of aircraft. Coil's Aloxide product is used inside the aircraft for various trim applications as well as food containers and trollies (where lightweight can be combined with high resistance to wear and tear).



## Properties (standard)

Typical alloys used	EN AW 5005
Metal width	1000 – 2000 mm
Metal gauge	1 – 5 mm
Anodic layer thickness	10 - 15 – 20µm

# Technical details

## ISO 9001 CERTIFIED

The production of COIL is ISO 9001 compliant throughout the design, development, production and sales.

## ISO 14001 AND ISO 50001 CERTIFIED

COIL products are produced in plants that have ISO 14001 and ISO 50001 certificate.

## AAMA 611

- Class I and II conform

## ENVIRONMENT AND RECYCLABILITY

- Anodized aluminium is fully recyclable.
- Energy Product Declaration files, describing the environmental impact of the complete production process, are available upon request.

## CRACKING OF THE ANODIC LAYER (CRAZING)

- A typical phenomena on pre-anodized aluminium.
- A micro-cracking of the anodic layer without any influence on the corrosion behavior of the material.
- Perpendicular to the rolling direction due to recoiling of pre-anodized aluminium coils.
- Crazing will occur more on thick gauge materials and/or thick anodic films
- During post transformation, additional crazing can be caused. Therefore pay attention to our processing guidelines.

## PROTECTIVE FILM APPLICATION

- The application of protective film on continuously anodized aluminium prior to levelling in the cut-to-length process may result in glue residues being impressed into the surface of the metal, which may alter the aspect of the metal.
- It is recommended to apply protective film after levelling operations.

## PRODUCTION REPORTS

- When ordering pre-anodized aluminium in coil form; each coil will be accompanied by a production report.
- The production report and its comments has to be respected during post transformation as it will contain information on eventual non conform parts; indicated with yellow flags. These non-conform parts are not suitable for post-treatment usage and have to be eliminated.

- The production report is a view as seen from the COIL production line point of view; this means meter 0 (zero) is at the inner diameter. Read carefully the production report and the length in between the yellow flags need to be eliminated.
- Do not hesitate to contact us regarding additional quality measurements and reports.

## FIRE RESISTANCE

- The aluminium metal is "non-combustible" :
  - Aluminium will not burn when exposed to fire.
  - Aluminium is a Euro Class A1 construction material according to DIN 4102-4 and according to European Commission decision 96/603/EC without the need for testing.
  - The anodic layer is an aluminiumoxide and is non-toxic.
  - In case of a building fire, no smoke gas development nor drip-off will occur.
- Aluminium Composite Panels :
  - Is a sandwich of 2 aluminium sheets with a mineral, polymer or mixed core.
  - With our C-Bond product; we only supply the outer skin material.
  - The core material is having impact on reaction to fire, ranging from combustible (class F) to non-combustible (class A2)

## PROCESSING GUIDELINES : CUT-TO-LENGTH

- A preparation of the cut-to-length equipment is required; where we recommend :
  - A cleaning of the complete machinery to remove left aluminium particles.
  - A cleaning can be done by pulling a felt through the equipment.
  - To work in dedicated production campaigns.
- During the operation :
  - Use enough oil or lubricant
  - Too much pressure can result into additional cracking of the anodic layer; therefore it is important to find an equilibrium between flatness and surface appearance.
  - It is recommended to apply protective film after the levelling operation.

## PROCESSING GUIDELINES : BENDING

- Anodized aluminium can be bent. In the bending zone some superficial cracking can occur.
- Bending characteristics in function of alloy and temper; conform standards EN 485, EN 573.
- A smaller bending zone is recommended :
  - A small bending zone will keep the crazing only in the bending zone.
  - A balance between aesthetic and mechanical properties need to be found.
- Protect the surface with protective film before bending.

## VISUAL INSPECTION CRITERIA

- Visual inspection criteria for anodized products are determined in the DIN 17611:2011-11 and are binding :
  - Design applications : a viewing distance of 0,5 m is applicable.
  - Architectural applications :
    - » Ground floor : a viewing distance of 3 m is applicable
    - » Upper floors : a viewing distance of 5 m is applicable
    - » Perpendicular to the façade
    - » Cloudy weather

## BUILDING INSPECTION REPORT

- The cladding finish is one of the most important visual elements of any building.
- The choice of finish is decisive for the life of the building.
- A study on different buildings, service lives even more than 30 years, by an independent engineering group has been made; with the next results :
  - Not any trace of erosion of the anodic layer
  - The anodic layer remained unchanged to the initial thickness
  - No deterioration due to adhesion, failures, blooming, peeling, blistering, cracking, ...

## ARCHITECTURAL PROJECTS – RECOMMENDATIONS

- The metal from one single, homologated metal supplier must be used.
- The metallic structure remains visible, therefore the rolling direction must be respected and panels may not be installed in different directions to avoid differences

- To facilitate the respect of rolling direction, it is recommended to use protective film with lines and arrows.
- Panels from different production batches may vary in color. It is important that panels mounted on the same façade are coming from the same production.

## CLEANING RECOMMENDATIONS

- It is recommended to clean the building minimum once a year.
- General cleaning :
  - Washing with water plus neutral soft detergent (pH between 5 & 8)
  - Afterwards rinsing with water and wiping with a soft and absorbing rag.
- To remove a higher degree of dirtiness, a bristle or nylon brush can be used.
- To remove oil, grease or adhesive residues; solvents such as white spirit; methyl-ethyl-ketone; turpentine; kerosene; ... can be used.
- To be avoided are aggressive products such as washing powder, detergent products for dishwasher, strong acids and strong alkaline products. Also the contact with abrasive products such as sand, steel, wool and glass paper have to be avoided since they can be harmful for the product.

## GUARANTEES

- Standard guarantees are available for every brand name.
- Specific guarantees can be obtained upon request.

## COLORS

- The colors displayed in the color chart may differ slightly from actual products. Confirm the color with the reference color sample.
- For projects min – max samples, representing the utmost tolerance of the color, should be agreed between all parties prior to the anodizing process.
- Colors may vary slightly between production lots. To ensure the color consistency, we recommend to order the total requirement in one single order.
- Should you use material of the same color from different production lots in one project, please make sure to consult our offices in advance.



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