

55HX[®] ALUMINIUM FOR MODERN ARCHITECTURE





ENSM ECOLE NATIONALE SUPÉRIEURE MARITIME,
LE HAVRE / FRANCE
AIA ASSOCIÉS
PHOTO: ©LUC BOEGLY

55HX® – INSPIRING CREATIVITY

55HX® allows architects to design the material in line with their individual needs. The ease of its bending, perforating, punching and deep-drawing have made it the outstanding aluminium solution. After anodising 55HX® aluminium substrate is weather-, corrosion- and UV-resistant while maintaining its authentic metallic gloss as well as its durability.

THE COLOUR VARIETY OF 55HX®



To view more references, request a colour sample or look into technical details, visit www.aluminiumduffel.com

55HX® – SUSTAINABILITY

Anodised 55HX® aluminium coil and sheet for architectural cladding comes with an Environmental Product Declaration – EPD – in accordance with ISO 14025 and EN 15804:2012 + A2:2019. Using a combination of recycled pre-consumer, post-consumer and primary aluminium, Aluminium Duffel is able to offer 55HX® aluminium substrate with a recycled content of 75% according to ISO 14021. While Aluminium Duffel has the clear intention to increase its recycling capacities in the future, availability is limited to a certain volume on an annual base. By 2025, our bare aluminium coils and sheets will have a product carbon footprint of not more than 5,0 kg CO₂e/kg aluminium. By 2030, we will further reduce this product carbon footprint to 3,5 kg CO₂e/kg aluminium.



55HX® BRANDED FOIL

55HX® – PREMIUM ALUMINIUM ANODISING QUALITY

For over 30 years, our Aluminium Duffel technical experts provide innovative aluminium solutions optimised for architectural applications.

Our committed workforce produces aluminium coils, strips and sheets with high-surface quality and excellent deformation properties.

Our innovation center continuously develops durable solutions in collaboration with our customers, in

order to meet their demand as well as improve overall processes, for the building and construction industry.

55HX® – ANODISED FOR HIGH RESISTANCE

To enhance corrosion and scratch resistance, 55HX® aluminium can be anodized while keeping its unique metallic look. Anodising may be done in its natural shade or combined with colouring.

55HX® – FOR EXTERIOR AND INTERIOR ARCHITECTURE

Reference projects in different sectors and for various applications illustrate 55HX®'s successful usage inside and outside of buildings in architecture worldwide.

ARCHITECTURAL APPLICATIONS

- Façades and wall cladding
- Ceilings, roofs and balconies
- Pillars and escalator casing

KEY BENEFITS

- Colour uniformity across various batches
- Corrosion, UV- and scratch resistant after anodising
- Excellent deformation properties
- Very good bending properties
- Outstanding durability
- Easy cleaning
- 100% recyclable
- Non-combustible
- (European Fire Class A1)



EXTERIOR ARCHITECTURE

Rézo Building, Paris / France
Architectures Anne Démians



INTERIOR ARCHITECTURE

Int. Conference Centre, Dalian / China
Coop Himmelb(l)au

55HX® – BENEFITS AND FEATURES

FAST DELIVERY TIME

Aluminium Duffel has developed a stock programme to meet short delivery times. This gives our customers the required flexibility to respond to sudden market fluctuations or unexpected changes.

TRACEABILITY

55HX® is branded with a special foil and marked with a black ink stencil at the non-visible side of anodising quality sheets. After etching and anodising it leaves braille-like text surface which is sufficiently readable. This ensures traceability of mill origin during the whole life cycle of the product.

COMPETENCE CENTER

An experienced group of Aluminium Duffel field engineers and metallurgists are involved to meet project requirements. With their know-how they can advise on the optimum chemical composition and mechanical properties of the alloy.

COLOUR AND GLOSS CONSISTENCY

The 55HX® production process, from casting through rolling, is kept within strict tolerances and closely monitored. This provides the aluminium with perfect surface quality, consistent in colour and gloss.

NON-COMBUSTIBLE ALUMINIUM

Aluminium is classified Euroclass A1, the highest standard in the European fire reaction classification system for materials.

55HX® dimensional capabilities

	Thickness [mm]	Width [mm]
Coil	0.3 - 5	up to 1,650
Sheet	0.6 - 5	up to 1,650

55HX® non-combustible material



European
Fire Class A1

55HX® delivery programme

Width x length [mm]	Thickness [mm]					
	1.0	1.5	2.0	2.5	3.0	4.0
1,000 x 2,000	■	■	■	■	■	■
1,250 x 2,500	■	■	■		■	
1,500 x 3,000	■	■	■		■	
1,500 x 4,000		■	■		■	

■ 55HX® anodising quality

■ 55HX® 10µm or 15µm natural anodised

55HX® chemical composition limits [all data on wt. - %]

Alloy	EN-alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others each	total
55HX®	5005	0.3	0.7	0.2	0.2	0.5 - 1.1	0.1	0.25	–	0.05	0.15

55HX® mechanical properties [typical values]

Alloy Elongation	Temper	Thickness [mm]	Tensile strength		Yield strength	
			R _m [MPa]		R _{p0.2} [MPa]	A ₅₀ [%]
55HX®	H14	0.2 ≤ 1.5	145 - 185		min. 120	min. 2
55HX®	H14	1.5 ≤ 3	145 - 185		min. 120	min. 3
55HX®	H14	3 ≤ 5	145 - 185		min. 120	min. 4

55HX® – COLOUR UNIFORMITY AND BEST PRACTICE

For the unique metallic look of 55HX®, it is essential to combine a consistent surface finish coil-to-coil aluminium production with a perfectly controlled anodising process. Colour and gloss between production batches will be stable, provided that Aluminium Duffel guidelines are followed. Colour anodising remains the responsibility of the anodiser.

ALUMINIUM DUFFEL RECOMMENDS THE FOLLOWING:

Ordering

55HX® should be ordered with paper or protective film on the visible side. The UV-resistant film can be removed without residue, provided it was protected against water during storage at temperatures between 5°C and 30°C.

Handling

Loading and unloading of 55HX® should be done very carefully to avoid scratches and other surface defects.

Fabrication

All creative processes such as laser-cutting, punching, perforating and folding, should take place prior to anodising. All processes influencing the surface quality must be avoided on the visible side. Therefore welding and soldering should only be done at the non-visible side.

Anodising

A certified anodizer is capable to hold parameters constant, capture data during the entire process and perform obligatory pre-treatment of the natural oxide layer. The surface of

the visible side must be etched to a depth of min. 15µm. Then, it can be anodised to a depth of max. 30µm, respecting narrow thickness tolerances.

Installation

During wall cladding all panels need to be put up in the same rolling direction. Thicknesses sizes < 2mm and > 2mm should not be intermixed.

Cleaning

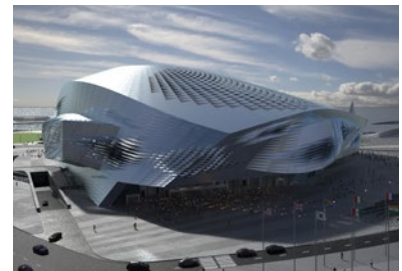
Once a year, a water wash with neutral, soft detergent additives is recommended, followed by a plain water rinse and drying with a soft, absorbing cloth.



Friends Arena, Stockholm / Sweden
Berg Arkitektkontor AB, Arkitekterna
Krook & Tjäder



Fiera Milano SpA, Rho / Italy
Massimiliano Fuksas



Int. Conference Center, Dalian / China
Coop Himmelb(l)au



COVER:

THE TWIST, JEVNAKER / NORWAY

BJARKE INGELS GROUP (BIG)

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HI, WE ARE ALUMINIUM DUFFEL

Manufacturer of aluminium rolled products, made by local heroes, for international clients. Our heroes are the 1000 people working in Duffel. We make sure we can do our job under the best possible, safe circumstances. Working with us is dealing with a company that provides the best product, made by the best people in the best possible way. You get three for one. It's beyond the material. Or as we say it: mind over metal. You can find a lot of companies, selling aluminium semi-finished products. Sure. But there's only one Aluminium Duffel. What sets us apart is that we change the game. Not with highbrow chitchat, but with fearless action.

Want to know more about our mind over metal philosophy? **Let's roll!**

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