

55HX[®] Aluminium for Modern Architecture

AD
ALUMINIUM DUFFEL

Aluminium Duffel
www.aluminiumduffel.com





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, e.g. for the building and construction industry.

55HX® – ANODISED FOR HIGH RESISTANCE

To enhance corrosion and scratch resistance, 55HX® aluminium can be anodised 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

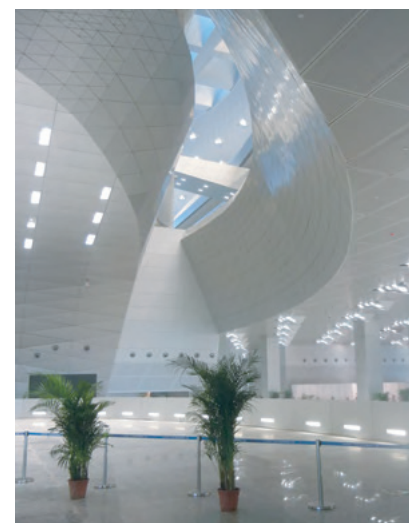
KEY BENEFITS

- 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

International 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 a kind of braille 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 from casting through rolling is kept within strict tolerances and closely monitored during the

entire production process. 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 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 | Temper | Thickness [mm] | Tensile strength R _m [MPa] | Yield strength R _{p0.2} [MPa] | Elongation 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 GUIDELINES:

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 anodiser is capable to hold parameters constant, capture their data during the entire process and perform obligatory pre-treatment of the natural oxide layer. Etching

must be min. 15µm on the visible side and anodising layer max. 30µm thick with narrow thickness layer 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

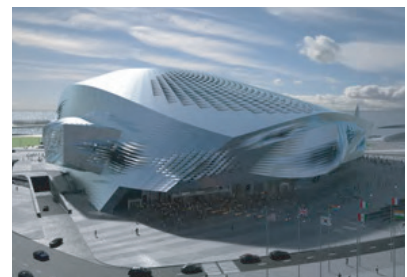
Once a year wash with water added with a neutral soft detergent. Afterwards rinse with plain water and dry with a soft and absorbing cloth.



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



Fiera Milano SpA, Rho / Italy
Massimiliano Fuksas



Internat. Conference Center, Dalian / China
COOP HIMMELB(L)AU



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

55HX[®] – Unlimited Creative Potential

55HX[®] allows architects to design the material in line with their individual needs. The easiness of its bending, perforating, punching and

deep-drawing have made it the outstanding aluminium solution. After anodising aluminium substrate is weather-, corrosion- and

UV-resistant while maintaining the authentic metallic gloss as well as the durability.

THE COLOUR VARIETY OF 55HX[®]

NATURAL



CHAMPAGNE
G10



LIGHT GOLD
G20



MEDIUM GOLD
G30



DARK GOLD
G40



LIGHT BRONZE
B40



LIGHT MEDIUM BRONZE
B50



MEDIUM BRONZE
B60



DARK BRONZE
B70

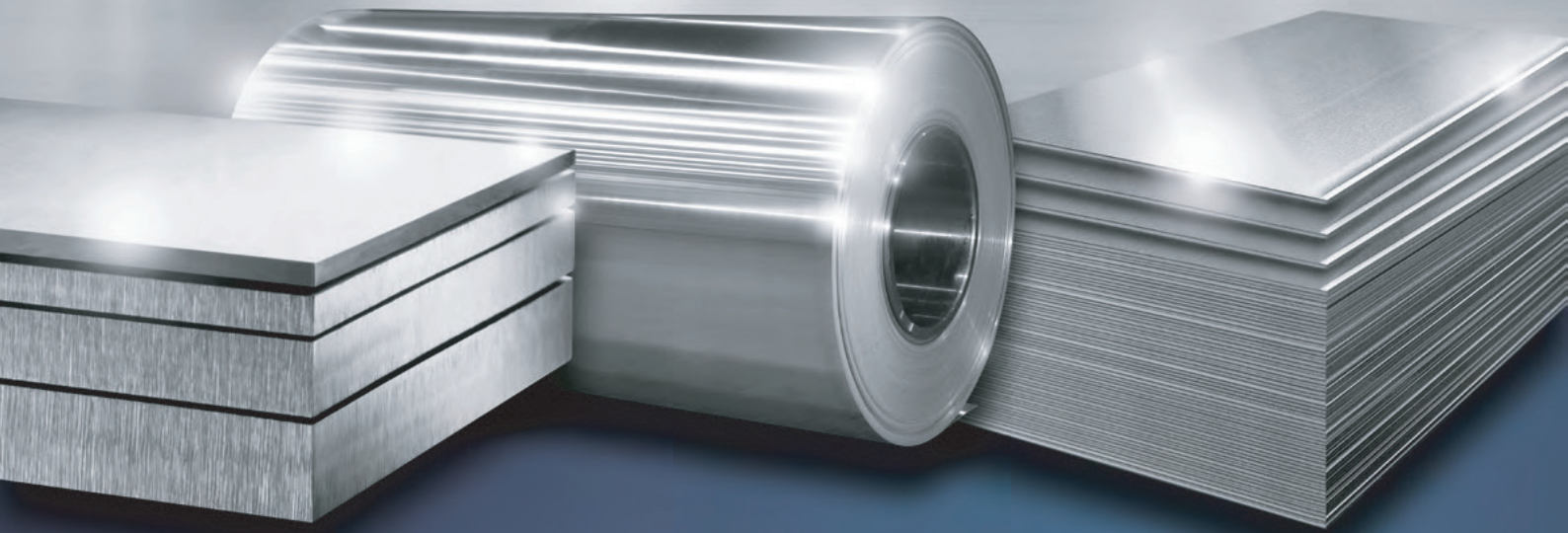


BLACK



other colours possible
(upon request)

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



TITLE:
ICE RINK, MÉDIACITÉ, LIÈGE / BELGIUM
L'ESCAUT ARCHITECTURES
ET BUREAU D'ÉTUDES WEINAND

Contact details

Belgium

Aluminium Duffel BV
A. Stocletlaan 87
2570 Duffel
T +32 15 30 21 11

www.aluminiumduffel.com



This Document has been prepared by the Aluminium Duffel. It is protected by international copyright laws and is for the recipient's use in connection with considering a potential business relationship with the Aluminium Duffel only. This Document and any related materials are confidential and may not be distributed or reproduced (in whole or in part) in any form without Aluminium Duffel's written permission. By accepting or accessing this Document or any related materials you agree to be bound by the limitations and conditions set out herein and, in particular, will be taken to have represented, warranted and undertaken that you have read and agree to comply with the content of this disclaimer, including, without limitation, the obligation to keep information contained in this Document and any related materials confidential. The information contained herein does not constitute an offer or solicitation to sell or acquire any security or fund the acquisition of any security by anyone in any jurisdiction, nor should it be regarded as a contractual document. Under no circumstances should the information provided in this Document or any other written or oral information made available in connection with it will be considered as investment advice, or as a sufficient basis on which to make investment decisions. This Document is provided to you for information purposes only. The distribution of this document or any information contained in it and any related materials may be restricted by law in certain jurisdictions, and any person into whose possession this Document or any part of it comes should inform themselves about, and observe, any such restrictions. The information in this Document does not purport to be comprehensive and has been provided by Aluminium Duffel (and, in certain cases, third party sources) and has not been independently verified. No reliance may be placed for any purposes whatsoever on the information contained in this Document or

related materials or in the completeness of such information and no information set out or referred to in this Document shall form the basis of any contract. Whilst this Document has been prepared in good faith, neither Aluminium Duffel nor any of its directors, advisers, representatives, officers, agents, affiliated companies or employees makes, or is authorised to make any representation, warranty or undertaking, express or implied, with respect to the information or opinions contained in it and no responsibility or liability is accepted by any of them as to the accuracy, completeness, or reasonableness of such information or opinions or any other written or oral information made available to any party or its advisers. Without prejudice to the foregoing, neither Aluminium Duffel or its directors, advisers, representatives, officers, agents, affiliated companies or employees accepts any liability whatsoever for any loss whatsoever arising, directly or indirectly, from use of this Document and/or related materials or their contents or otherwise arising in connection therewith. The information set out herein and any related materials is subject to updating, completion, revision, verification and amendment, and such information may change materially. Aluminium Duffel is under no obligation to provide the recipient with access to any additional information or to update this Document or any related materials or to correct any inaccuracies in it which may become apparent. This document shall not exclude any liability for, or remedy in respect of, fraudulent misrepresentation. All statements of opinion and/or belief contained in this Document and all views expressed represent Aluminium Duffel's own assessment and interpretation of information available to it as at the date of this Document. If you have not received this Document directly from Aluminium Duffel, your receipt is unauthorised. Please return this Document to Aluminium Duffel immediately.

© 2022 Aluminium Duffel
Issue 9/22 · 2nd release

For further information visit
www.aluminiumduffel.com

AD
ALUMINIUM DUFFEL