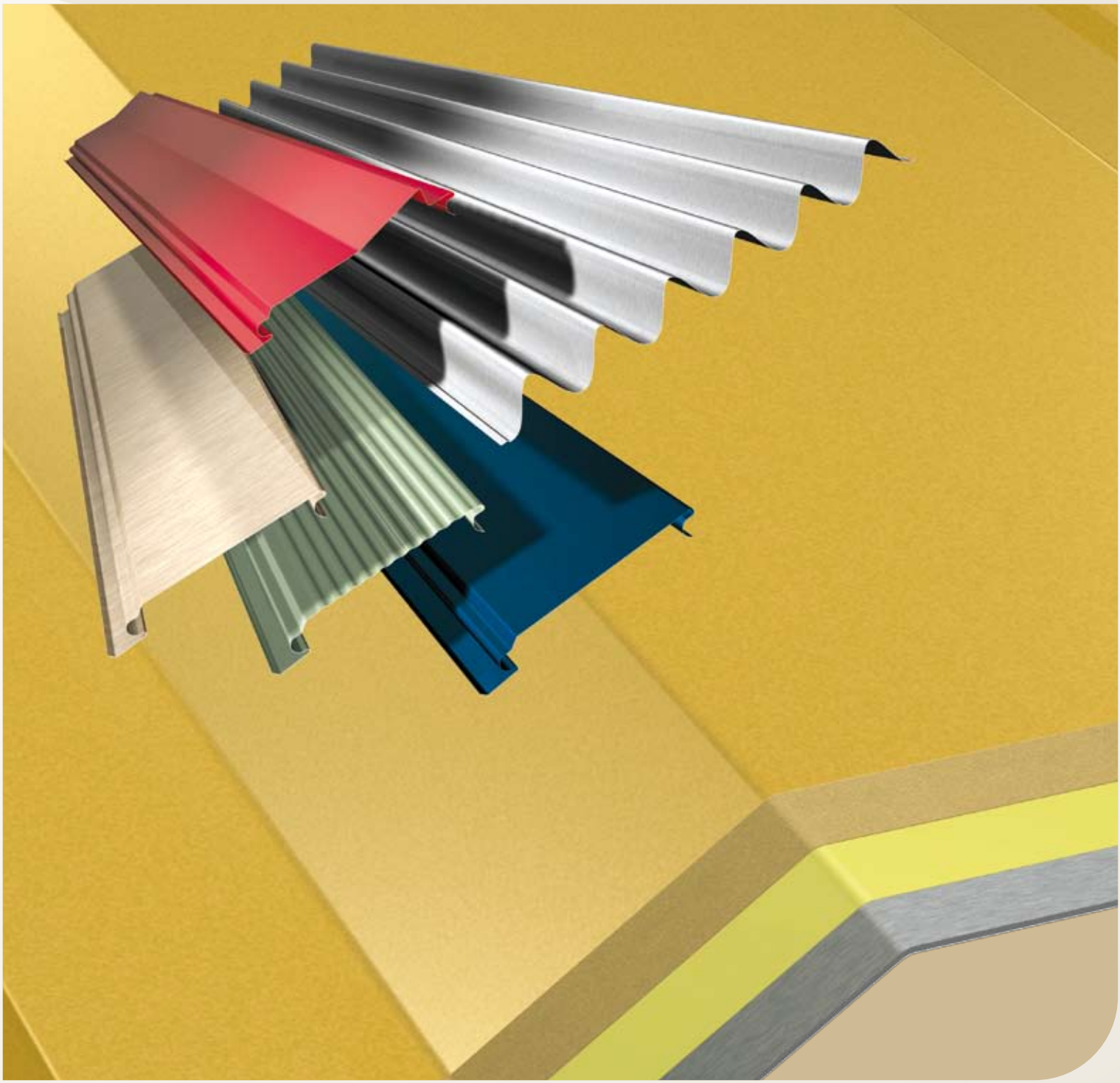
ArcelorMittal

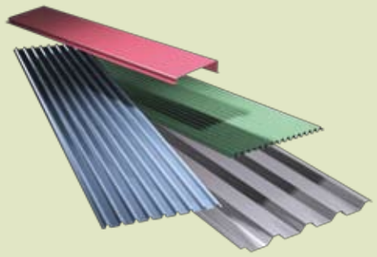
Arval
by ArcelorMittal

Material Selection Guide



Content

For more information about our colour chart, please ask for „Colorissime" the definitive guide for high performance steel materials and coatings and exclusive colours.



CERTIFICATE

ArvalTrust Certificate

ArvalTrust guarantee protecting your investments over decades. Contact your local dealer for more details.

ArcelorMittal

ARVALTrust GUARANTEE CERTIFICATE

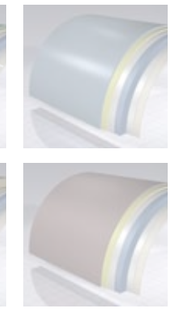
COATING SYSTEMS COVERED BY THE ARVALTrust GUARANTEE

The ArvalTrust Charter

OFFER: a range of building solutions made of prepainted steel that are sustainable in their manufacture, use and disposal thanks to increased resistance-properties and components that respect the environment

IMPROVE: the quality of our building solutions constantly

PROPOSE: new properties for high-performance materials



ArvalTrust up to 40 YEARS GUARANTEE

DEVELOP: clean production procedures under WCM (World Class process)

PROTECT: the environment by reducing our CO_2 emissions and encouraging recycling

ArvalTrust cover coating systems as per COLORISSIME

HAIRULTRA	AUTHENTIC	HAIREXCEL®
EDYXO®	HAIRFLON®*	INTENSE
NATUREL	KEYRON 150**	PEARL
AUTHENTIC	KEYRON 200**	SINEA

*PVDF **PLASTISOL

Arval

Confidence in ArvalTrust Guarantee protecting your investment over decades. Contact our specialists for full information on lasting warranty performance requirements for your building envelope (environmental questionnaire, inspection advices and maintenance instructions).

-- The ArvalTrust Guarantee for your confidence --

Any ArvalTrust Guarantee must be validated / authorized by ArcelorMittal Construction and will be decided prior to order upon customers application-declarations as requested in our specific guarantee-application.

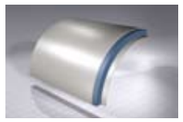
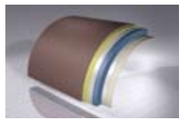
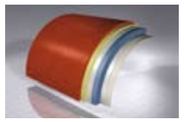
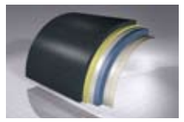
ARCELORMITTAL CONSTRUCTION
SYSTEMS, SOLUTIONS AND COMPONENTS FOR CREATIVE ARCHITECTURE

transforming tomorrow

www.arcelormittal.com/arval

Material selection guide

Helping you design your steel solutions with the appropriate material and the right appearance

Steel has definitively achieved a distinction in architecture. Its popularity throughout the world has grown at lightning speed. This rapid expansion is due to its ever increasing ability to meet architectural requirements and the resulting eagerness of architects use it whenever the opportunity arises.

We wish to invite you to find out all about the material solutions Arval has found to meet all your requirements. Since architecture has become a new language and a brand image, which goes far beyond simple functional needs, your requests for advice are forever increasing.

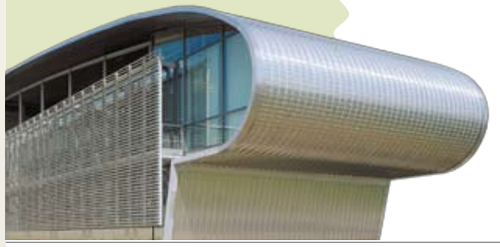
Via this guide, our aim is to help you to select the material best suited to your project. In order to make effective use of this document and choose the system, which meets your requirements, we suggest you use it together with the Colorissime Arval colour chart because not only are technical properties essential but so is the choice of colour and appearance.

Prepainted steel, stainless steel, natural metallic coated steel, such as in our Krystal alternative, are a source of shared architectural pleasure.

ARCELORMITTAL CONSTRUCTION is the leader in transforming coated steel and as such has contributed to this evolution. How? By offering you, in your capacity as designers, new products, completely new applications using traditional materials, and, above all, the certainty of a strong image, innovative aesthetics and daring architectural designs. And because we are your partner standing beside you and ready to listen to you, you can rely on the Arval expertise and technical services.

Today, many superb buildings exist. Some of them reflect styles in the vanguard of architecture. Our material, services and techniques are designed to give you ideas, the means and above all the pleasure of accomplishing truly signed architected buildings.

Colorissime paint systems is one of the leading paint ranges worldwide, offering longer life expectancy with low maintenance.



Manufacturing process

High-Performance Product

Highly elaborate techniques are used to manufacture **Arval** pre-painted steel, which have solved many painting problems, thus giving a highperformance product.

The sheets are industrially manufactured under rigorous control, which gives such a good technical quality to **Arval** precoated steel that it can be used in a very wide range of sectors:

- industrial and storage buildings
- tertiary sector
- office buildings
- goods and equipment buildings
- etc ...

The cladding elements are manufactured from coils of coated steel or stainless steel. The sheet is uncoiled, flattened and sheared lengthwise. Then, it is cold processed on a roll-forming, panel or bending line. The elements are then stacked and packaged at the end of the manufacturing line.

The adhesion of the zinc to the base metal (iron-zinc combination) occurs during the continuous galvanization process and guarantees increased resistance to corrosion, and so does the cathode protection provided by the zinc. Iron-zinc cathode protection checks the spread of rust on the sheared edges or in the fixing holes via a transfer of zinc by electrolysis.

An important feature of steel galvanized on a continuous process is that it is rust-resisting, not only on the zinc coated sides but also when cut. The zinc spreads to cover exposed steel on cuts or small scratches, galvanized steel has self-reparing properties.

The galvanized non prepainted steel sheeting undergoes a white rustinhibiting treatment, which may give it a temporary yellow sheen. In use of non prepainted galvanized steel should there be any efflorescent (white rust) caused by a deposit of hydrated zinc oxide, zinc hydro carbonate or zinc oxychloride, it will not alter the mechanical properties of the profiles steel sheeting.

In prepainted steel, small scratches are protected by zinc. Even though we recommend to retouch with an appropriated paint.

Quality Management

At each stage in production, an assessment procedure is followed in order to check that the appearance of the product complies with the standards in force and also that it meets the customer's requirements.

Laboratory tests are performed by the quality department in order to verify the conformity of the mechanical properties of the steel and the coating.

Environment

Because our coil coating lines centralize paint operations from many locations to high-tech coil coating lines, many green benefits are gained. ArcelorMittal has pioneered controlled processes that include a focus on reducing VOC emissions and lowering energy consumption. All our manufacturing processes have been designed to be environmentally friendly. Surface treatment waste is processed in accordance with the most stringent European regulations. Gas emissions from the painting lines are incinerated. A close watch is kept on the performance of depollution installations. This is how **ArcelorMittal Construction** manufactures in a total environment friendly manner. Mastery over environmental issues is definitely one of the success factors for prepainted products.

Our priority is to offer a range of products with respect of the environmental impact, all traces of heavy metals have been removed for making the colours offered by Arval.

In accordance with the NF P 01-010 standard, Health and Environmental statement forms are available, on request, for the following coated steel products:

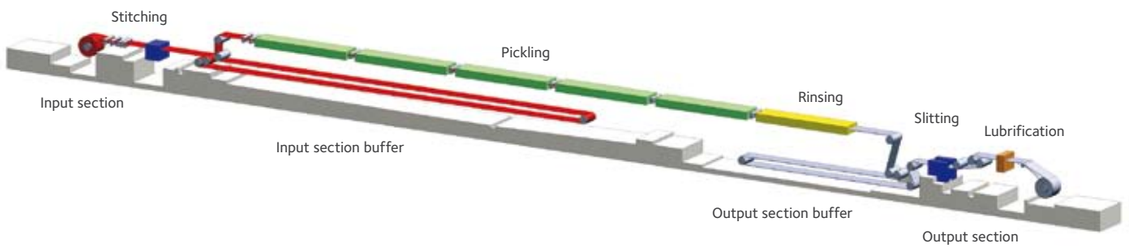
- decking
- single skin roofing profile
- cladding tray
- single skin cladding profile

Respecting the environment is a priority approach in the way we make progress. And this is why we are one of the leaders.

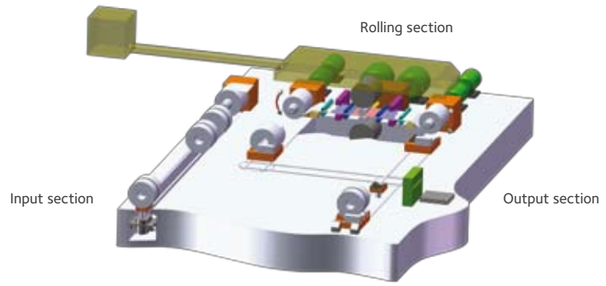
Manufacturing process

Hi-tech process to accompany 3rd millennium builders in their projects

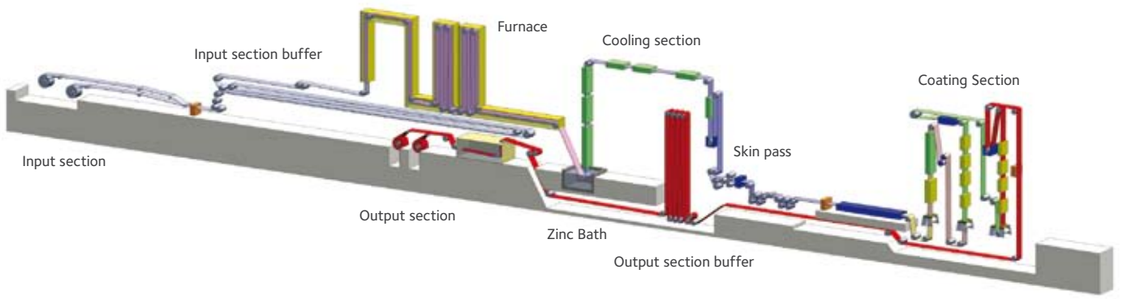
PICKLING LINE



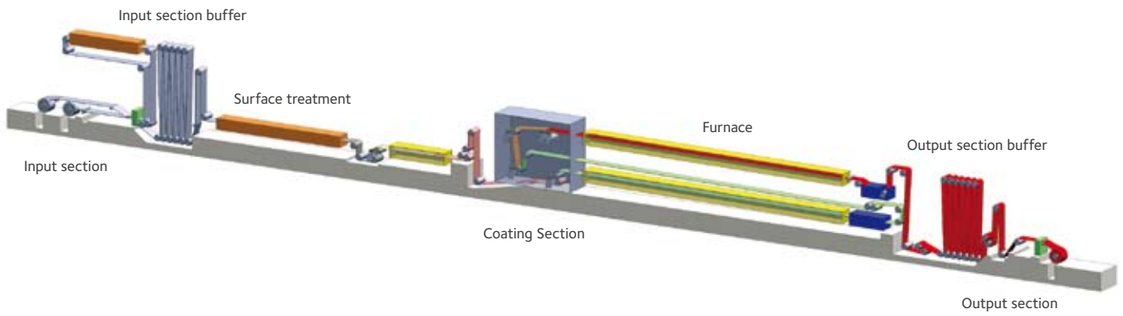
COLD ROLLING



GALVANISING AND PREPAINTING COMBLINES LG1 & LG2



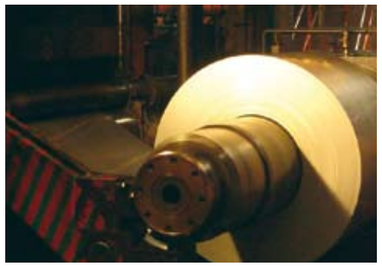
PREPAINTING LINE L3



Manufacturing process

TECHNICAL CHARACTERISTICS :

- Coil width : from 750 to 1500 mm
- Sheet gauge : 0,4 to 1,5 mm
- Maximum weight : 18 tonnes
- Zinc layer : 100 to 350 gr/m²
- Finish : passivation
- Speed of line : maxi 100 m/m



Rolling and Pickling Process

Process

The coil undergoes first a pickling process to remove scale from the hot rolled sheet surface. Then the hot-rolled steel coil is transported to our plant via a waterway or railway. The gauge of the sheet varies from 1.8 to 3 mm.
Rolling the coil out to the correct thickness required for the properties of the end product is the second operation in the manufacturing process. The quarto reversible cold rolling mill rolls out coils to gauges between 0.4 and 1.5 mm.

Controls

Specialists constanly monitor the thickness and flatness in order to garantee the mould properties of the product.

Results

A rigourous approach is applied during the different rolling phases, which is essential for the subsequent manufacturing stages.

Galvanizing

Process

The galvanization process is performed on 2 continuous lines and takes place in 3 main stages:

1. The rolled steel sheet is treated in an annealing furnace so that it has the appropriate properties for roll-forming, transforming and final use.

2. It is then dipped in a bath of molten zinc, during which there is an iron-zinc reaction. This process ensures perfect coating adhesion.

3. The final stage is that of finishing, which consists of levelling and passivating.

Controls

A certificate indicating the weight of zinc per unit area can be provided with each order.

Results

The sheet, thus coated with a protective layer of zinc, could be used as it is or as a support for a more sophisticated product : pre-painted steel.

Pre-painting

Process

The pre-painting technique consists of spreading organic coating, i.e. paint, over a galvanized steel sheet using a continuous process. First, an alkali is used to degrease the galvanized steel and then chemical treatment is given to the sheet to improve paint adhesion. The following operations consist of spreading a coat of primer onto the sheet, followed by several layers of finish. Paints are cured in the furnaces at temperature around 240° C.

Controls

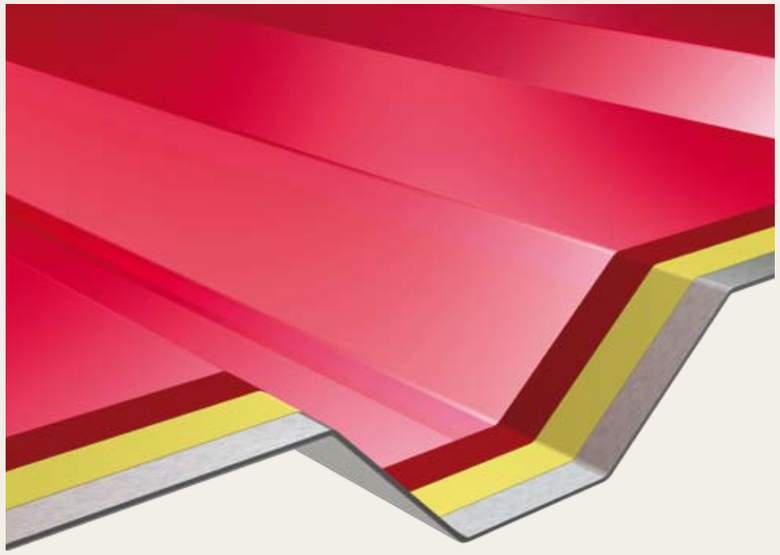
Inspections on the continuous manufacturing line are constantly carried out in order to guarantee the quality and conformity of the products. Also, very strict laboratory tests are performed as well as field tests in harsh weather conditions.

Results

This association of Galvanizing and Pre-painting gives remarkable product durability results.

Our manufacturing lines, which combine quality, productivity and flexibility, have the capacity to offer a wide range of very highly sustainable products specially adapted to the most aggressive atmospheres and environments.


Aproport 71 / L. BESSARD Arch DESA
G. BESSARD Arch DESA



Material selection guide

MATERIAL SELECTION GUIDE

Galvanised and prepainted steel

The steel is hot dip coated with a metal alloy on the continuous line and comes under the NF EN 10346 standard. We have selected the most appropriate steel grade, bearing in mind the use intended for the products. Excellent corrosion resistance is obtained by spreading the coating over the surface of the steel substrate.

Stainless steel

Stainless steel is a steel which contains at least 10,5% of chromium, less than 1,2 % of carbon, as well as alloying elements. Its corrosion resistance is an intrinsic property obtained by the reaction between chromium and oxygen, thus creating a very fine self-protecting passive layer. The surface can be changed by applying mechanical treatment or by hot dip surface tinning. These materials come under the NF EN 10088 standard.

S 320 GD
Minimum conventional yield stress $R_{P0,2}$ = 320 MPa
Minimum tensile strength R_m = 390 MPa
Minimum elongation at failure A_{80} = 17 %

S 350 GD
Minimum conventional yield stress $R_{P0,2}$ = 350 MPa
Minimum tensile strength R_m = 420 MPa
Minimum elongation at failure A_{80} = 16 %

STAINLESS STEEL
All our stainless steel grades have a minimum yield stress $R_{P0,2}$ equal to 300 MPa

The mechanical properties of our steel are determined in accordance with the NF EN 10002-1 standard.

1MPa = 1N/mm²

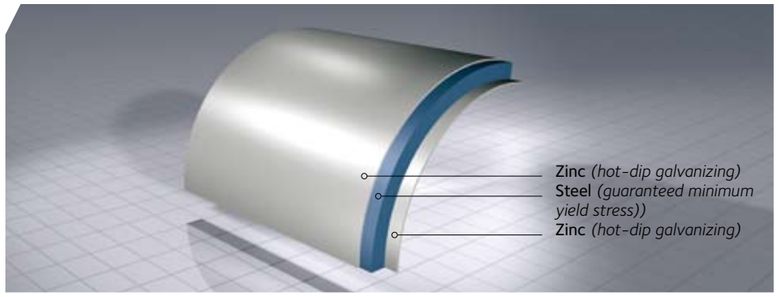
METAL COATING

Galvanized steel

STANDARDS IN FORCE

Metal substrate and coating
as per standard EN 10346

as per standard P 34.310 (F)



TYPE OF COATING	Metal coating with a minimum 99 % zinc content
APPEARANCE	No pattern plain metal appearance
SECTOR OF APPLICATION	- Decking - Cladding, mainly inside - Partitions
INCOMPATIBILITIES	Copper, lead, unprotected steel, plaster, acidic wood, oak and chestnut

COATING PROPERTIES

FIRE BEHAVIOR

REACTION TO FIRE

M0 (M classification)
A1 (Euroclass simple skin)
A1 (Euroclass double skin)

EXTERIOR SELECTION GUIDE

ZINC COATING	RURAL UN-POLLUTED	URBAN AND INDUSTRIAL		MARINE				SPECIAL	
		Normal	Harsh	20-10 km	10-3 km	Coast 3-1 km *	Mixed	High U.V.	Special
Z 275	B	B	C	C	C	C	C	-*	C
Z 350	A	B	C	B	C	C	C	-*	C

INTERIOR SELECTION GUIDE

ZINC COATING	NOT AGGRESSIVE				AGGRESSIVE ENVIRONMENT
	Low humidity	Average humidity	High humidity	Very high humidity	
Z 180 - Z 200, Z 225	A	B	C	C	C
Z 275	A	A	B	C	B
Z 350	A	A	B	B	B

A : the suitable product / **B** : as per survey / **C** : unsuitable product
* For building locations within less than 1 km of any coast, consult us.

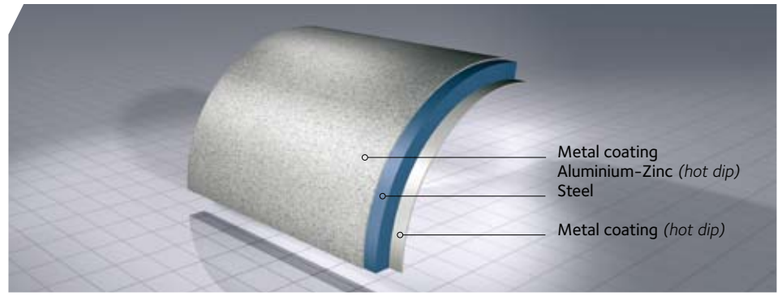
METAL COATING

Krystal

STANDARDS IN FORCE

Metal substrate and coating
as per standard NF EN 10346

Metal coating
as per TC 2/04-1124 (FR)



TYPE OF COATING	Metal coating with a 55 % aluminium content and 45 % of zinc with thin organic protective coating
APPEARANCE	Metallic effect due to the formation of crystals
SECTOR OF APPLICATION	- Cladding - Roofing - Façade facing
INCOMPATIBILITIES	Copper, lead, unprotected steel, wet concrete and cadmium-plated steel, alkaline mediums

COATING PROPERTIES

FIRE BEHAVIOR

REACTION TO FIRE

M0 (M classification)
A1 (Euroclass simple skin)
A1 (Euroclass double skin)

EXTERIOR SELECTION GUIDE

KRYSTAL COATING	RURAL UN-POLLUTED	URBAN AND INDUSTRIAL		MARINE				SPECIAL	
		Normal	Harsh	20-10 km	10-3 km	Coast 3-1 km *	Mixed	High U.V.	Special
AZ 185	A	A	B	A	A	B	B	A	B
-	-	-	-	-	-	-	-	-	-

INTERIOR SELECTION GUIDE

KRYSTAL COATING	NOT AGGRESSIVE			SLIGHTLY AGGRESSIVE	AGGRESSIVE	VERY AGGRESSIVE
	Low humidity	Average humidity	High humidity	Damp *(high humidity)*	Very damp *(very high humidity)*	Saturated *(very high humidity)*
AZ 185	A	A	A	A	B	B

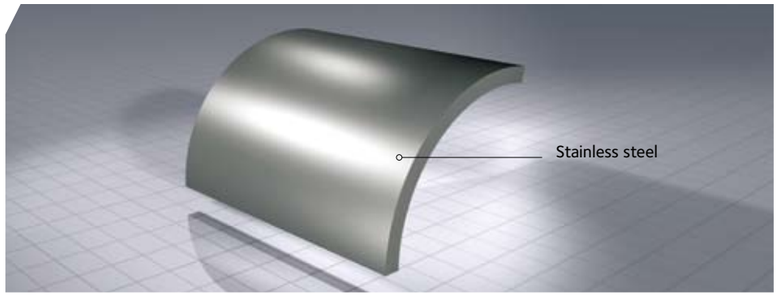
A : the suitable product / **B** : as per survey / **C** : unsuitable product
* Not including the sea shore for which a final appraisal will be made or special measures determined after seeking advice from ARVAL.

METAL COATING

Stainless steel

STANDARDS IN FORCE

EN 10088



APPEARANCE	UGITOP : steel with a matt effect UGIBAT : low reflective steel with a glazed effect UGILINE : reflective satin-finish steel with a slightly streaky effect UGIBRIGHT : brilliant effect FTE : tinned surface for welding suitability and natural patina over the year
SECTOR OF APPLICATION	- Decking (except FTE) - Cladding (except FTE) - Roofing - Partition - FTE (thickness 0,5 only, dedicated for roof application in non agressive environment)
INCOMPATIBILITIES	None

COATING PROPERTIES

FIRE BEHAVIOR

REACTION TO FIRE

M0 (M classification)
A1 (Euroclass simple skin)
A1 (Euroclass double skin)

EXTERIOR SELECTION GUIDE

GRADES OF STAINLESS STEEL			RURAL UN-POLLUTED	URBAN AND INDUSTRIAL		MARINE				SPECIAL	
Quality	EN	AISI		Normal	Harsh	20-10 km	10-3 km	Coast 3-1 km *	Mixed	High U.V.	Special
18-9 E	1.4301	304	A	A	B	A	B	C	C	A	B
18-11 ML	1.4404	316L	A	A	B	A	A	B	B	A	B
K36	1.4526	436	A	A	B	A	B	C	C	A	B
K41 FTE	1.4509	441	A	A	C	B	C	C	C	A	C

INTERIOR SELECTION GUIDE

GRADES OF STAINLESS STEEL			NOT AGGRESSIVE			SLIGHTLY AGGRESSIVE	AGGRESSIVE	VERY AGGRESSIVE
Quality	EN	AISI	Low humidity	Average humidity	High humidity	Damp *(high humidity)*	Very damp *(very high humidity)*	Saturated *(very high humidity)*
18-9 E	1.4301	304	A	A	A	B	B	B
18-11 ML	1.4404	316L	A	A	A	A	B	B
K36	1.4526	436	A	A	B	B	B	C

A : the suitable product / **B** : as per survey / **C** : unsuitable product
* For building locations within less than 1 km of any coast, consult us.

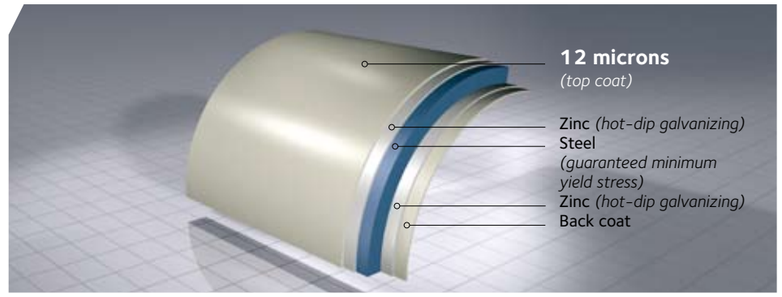
ORGANIC COATING

Interieur

STANDARDS IN FORCE

Metal substrate and coating
as per Standard EN 10346

Organic coating
as per standards EN 10169
and (F) XP P 34.301



TYPE OF COATING	THERMOSETTING POLYESTER RESIN
COATING CLASS	INTERIOR ENVIRONMENT : class II (XP P 34.301) - category CPI5 (NF EN 10169)
SECTOR OF APPLICATION	INTERIEUR is a thin paint system consisting of a polyester for internal use. Arval standard colour "912" white-grey is available for all products. INTERIEUR is recommended for : - Indoor use as decking, liner, cassette profiles - Indoor use as inner face of the sandwich panel

DESCRIPTION OF ORGANIC COATING

COMPOSITION	RECTO : 12 microns of polyester finish directly bonded onto the substrate VERSO : class II or category CPI2 back coat
POSSIBILITIES	Colours other than 912, consult us
GLOSS	NOMINAL : 30 GU

COATING PROPERTIES

PAINT HARDNESS

PENCIL HARDNESS	HB-H

FLEXIBILITY

BRUTAL DISTORTION	No peeling
BENDING	T = Radius/Thickness 5T no cracking
ERICHSON	Very good

CORROSION

SALT SPRAY	240 hours
HUMIDITY TEST	500 hours

CHEMICAL AGENTS

ACIDS, BASES AND SOLVENTS

Acids and bases	good
Mineral oils	very good
Aliphatic solvents	good
Aromatic solvents	good
Ketonic solvents	poor
Chlorine solvents	poor

FIRE BEHAVIOR

REACTION TO FIRE

M0 (M classification)
A1 (Euroclass simple skin)
A1 (Euroclass double skin)

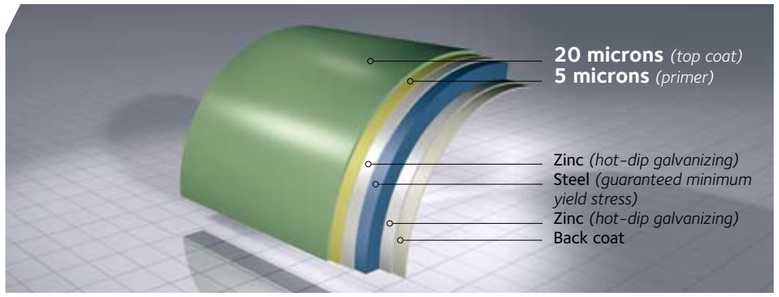
ORGANIC COATING

Hairplus®

STANDARDS IN FORCE

Metal substrate and coating
as per Standard EN 10346

Organic coating
as per standards EN 10169
and (F) XP P 34.301



TYPE OF COATING	Thermosetting polyester resin : - Good resistance to corrosion - Good colour and appearance stability	- Good external durability - Good metal forming suitability
COATING CLASS	Interior environment : class III a (XP P 34.301) - category CPI3 (NF EN 10169) Exterior atmosphere : class IV (XP P 34.301) - category RUV3 and RC3 (NF EN 10169)	
SECTOR OF APPLICATION	Roofing and cladding for : - Outdoor use in normal atmospheric conditions - Indoor use in low hygrometric and non aggressive atmospheres	- >10 km of the sea (between 3 and 10 km consult us) - Various interior cladding possibilities - HAIRPLUS, very large colours offer
DESCRIPTION OF ORGANIC COATING		
COMPOSITION	Front : 5 microns of primer - 20 microns of top coat Back : Back coat class II or category CPI2	
POSSIBILITIES	Both sides : 25 microns on request	
GLOSS	Nominal : 30 GU	
HYGIENE	According to EC 852 200 M, Hairplus (white colors) can be used in the food stuff industry. Hairplus is not intended to come into direct contact with food stuff.	

COATING PROPERTIES

PAINT HARDNESS

Pencil hardness	F-H

ABRASION RESISTANCE

Sand blasting	40 liters
Taber	60 mg

FLEXIBILITY

Brutal distortion	No peeling
Bending	T=Radius/Thickness 3T no cracking
Erichson	Very good

THERMAL RESISTANCE

Oven	Maxi : 90 °C

COLOUR AND GLOSS

Resistance to UV (lab. test)	DE ≤ 3 Gloss retention ≥ 60%

CORROSION

Salt spray	360 hours
Humidity resistance	1.000 hours

CHEMICAL AGENTS

Acids, bases and solvents

Acids and bases	good
Mineral oils	very good
Aliphatic solvents	very good
Aromatic solvents	good
Ketonic solvents	poor
Chlorine solvents	poor

FIRE BEHAVIOR

Reaction to fire

M0 (M classification)
A1 (Euroclass simple skin)
A1 (Euroclass double skin)
(see also our fire guide)

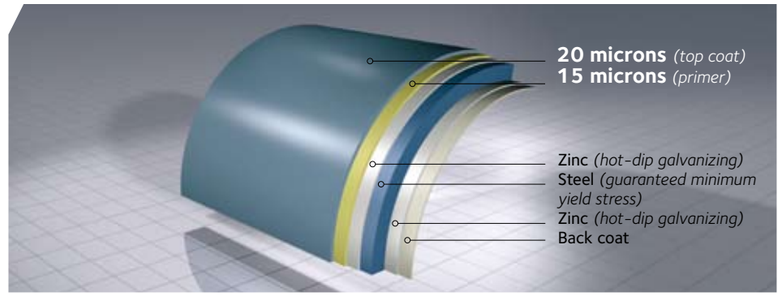
ORGANIC COATING

Hairultra®

STANDARDS IN FORCE

Metal substrate and coating
as per Standard EN 10346

Organic coating
as per standards EN 10169
and (F) XP P 34.301



TYPE OF COATING	Thermosetting high durability polyester resin : - Good resistance to corrosion - Good colour and appearance stability - Good external sustainability - Good metal forming suitability	
COATING CLASS	Interior environment : class IIIa (XP P34.301) – category CPI4 (NF EN 10169) Exterior atmosphere : class VI (XP P 34.301) – category RUV4 and RC4 (NF EN 10169)	
SECTOR OF APPLICATION	Roofing and cladding for : - Industrial or normal urban environments - Strong sunshine exposure - Marine environments: both sides HAIRULTRA recommended	HAIRULTRA both side coating is recommended in the Caribbean islands where weather conditions and UV radiation are strong.
DESCRIPTION OF ORGANIC COATING		
COMPOSITION	Front : 15 microns of primer - 20 microns of top coat Back : Class II or category CPI2 back coat	
POSSIBILITIES	Both sides : 35 microns on request	
GLOSS	Nominal : 30 GU	

COATING PROPERTIES

PAINT HARDNESS

Pencil hardness	F-H

ABRASION RESISTANCE

Sand blasting	40 liters
Taber	60 mg

FLEXIBILITY

Brutal distortion	No peeling
Bending	T = Radius/Thickness 2T no cracking
Erichson	Very good

THERMAL RESISTANCE

Oven	Maxi : 90 °C

COLOUR AND GLOSS

Resistance to UV (lab. test)	DE ≤ 2 Gloss retention ≥ 80%

CORROSION

Salt spray	500 hours
Humidity resistance	1.500 hours

CHEMICAL AGENTS

Acids, bases and solvents

Acids and bases	good
Mineral oils	very good
Aliphatic solvents	very good
Aromatic solvents	good
Ketonic solvents	poor
Chlorine solvents	poor

FIRE BEHAVIOR

Reaction to fire

M0 (M classification)
A1 (Euroclass simple skin)
F (Euroclass double skin)
(see also our fire guide)

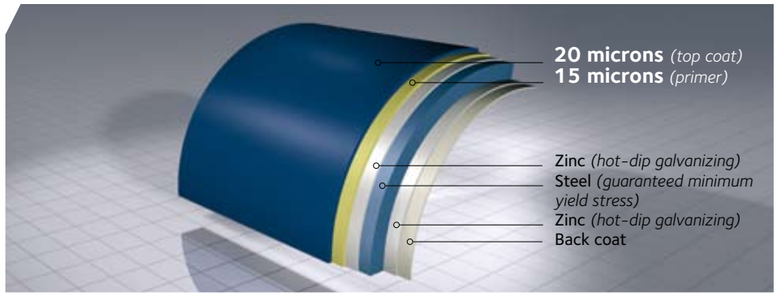
ORGANIC COATING

Authentic

STANDARDS IN FORCE

Metal substrate and coating
as per Standard EN 10346

Organic coating
as per standards EN 10169
and (F) XP P 34.301



TYPE OF COATING	Thermosetting high durability polyester resin : - Very good resistance to corrosion - Good colour and appearance stability - Good external sustainability - Good metal forming suitability		
COATING CLASS	Interior environment : class IIIa (XP P34.301) – category CPI4 (NF EN 10169) Exterior atmosphere : class VI (XP P 34.301) – category RUV4 and RC4 (NF EN 10169)		
SECTOR OF APPLICATION	Roofing and cladding for : - Industrial or normal urban environments - Marine environments : HAIRULTRA on the back face recommended	Special colours for roof and wall application as patinated zinc, copper aspect ...	
DESCRIPTION OF ORGANIC COATING			
	COMPOSITION	Front : 15 microns of primer - 20 microns of top coat Back : Class II or category CPI2 back coat	
	POSSIBILITIES	Both sides : 35 microns on request	
	GLOSS	15 GU, Semi matt	

COATING PROPERTIES

PAINT HARDNESS

Pencil hardness	F-H

ABRASION RESISTANCE

Sand blasting	40 liters
Taber	60 mg

FLEXIBILITY

Brutal distortion	No peeling
Bending	T = Radius/Thickness 2T no cracking
Erichson	Very good

THERMAL RESISTANCE

Oven	Maxi : 90 °C

COLOUR AND GLOSS

Resistance to UV (lab. test)	DE ≤ 2 Gloss retention ≥ 80%

CORROSION

Salt spray	500 hours
Humidity resistance	1.500 hours

CHEMICAL AGENTS

Acids, bases and solvents

Acids and bases	good
Mineral oils	very good
Aliphatic solvents	very good
Aromatic solvents	good
Ketonic solvents	poor
Chlorine solvents	poor

FIRE BEHAVIOR

Reaction to fire

M0 (M classification)
A1 (Euroclass simple skin)
F (Euroclass double skin)
(see also our fire guide)

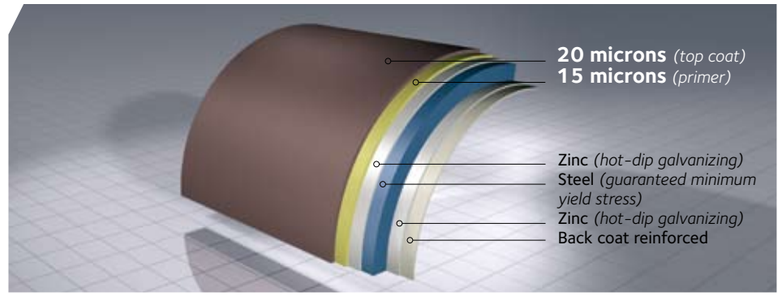
ORGANIC COATING

Naturel

STANDARDS IN FORCE

Metal substrate and coating
as per Standard EN 10346

Organic coating
as per standards EN 10169
and (F) XP P 34.301



TYPE OF COATING	Thermosetting high durability polyester resin : - Very good resistance to corrosion - Good colour and appearance stability - Good external sustainability - Good metal forming suitability		
COATING CLASS	Interior environment : class IIIa (XP P34.301) – category CPI4 (NF EN 10169) Exterior atmosphere : class VI (XP P 34.301) – category RUV4 and RC4 (NF EN 10169)		
SECTOR OF APPLICATION	Roofing and cladding for : - in Industrial or normal urban environments - in Marine environments: HAIRULTRA recommended on the back face	Specially designed for flat façades, the finely textured paint surface scatters light for velvet visual effect, while retaining the look of steel material. Use gloves during installing.	
DESCRIPTION OF ORGANIC COATING			
	COMPOSITION	Front : 15 microns of primer - 20 microns of top coat Back : Class II or category CPI2 back coat	
	POSSIBILITIES	Both sides : 35 microns on request	
	GLOSS	Matt, without light reflection	

COATING PROPERTIES

PAINT HARDNESS

Pencil hardness	F-H

ABRASION RESISTANCE

Sand blasting	40 liters
Taber	60 mg

FLEXIBILITY

Brutal distortion	No peeling
Bending	T = Radius/Thickness 2T no cracking
Erichson	Very good

THERMAL RESISTANCE

Oven	Maxi : 90 °C

COLOUR AND GLOSS

Resistance to UV (lab. test)	DE ≤ 2 Gloss retention ≥ 80%

CORROSION

Salt spray	500 hours
Humidity resistance	1.500 hours

CHEMICAL AGENTS

Acids, bases and solvents

Acids and bases	good
Mineral oils	very good
Aliphatic solvents	very good
Aromatic solvents	good
Ketonic solvents	poor
Chlorine solvents	poor

FIRE BEHAVIOR

Reaction to fire

M0 (M classification)
A1 (Euroclass simple skin)
F (Euroclass double skin)
(see also our fire guide)

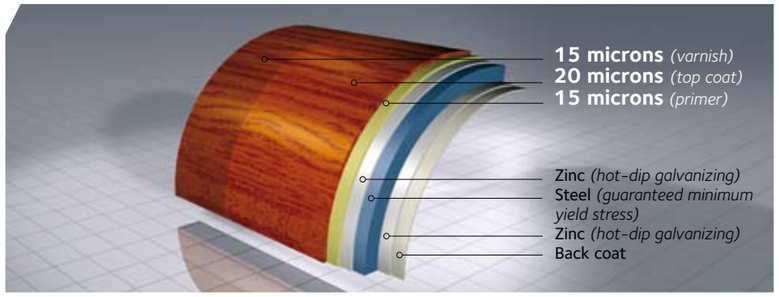
ORGANIC COATING

Edyxo®

STANDARDS IN FORCE

Metal substrate and coating
as per Standard EN 10346

Organic coating
as per standards EN 10169
and (F) XP P 34.301



TYPE OF COATING	Thermosetting polyester resin : - Very good resistance to corrosion - Good colour and appearance stability - Good external sustainability - Good metal forming suitability	
COATING CLASS	Interior environment : class IIIa (XP P34.301) – category CPI4 (NF EN 10169) Exterior atmosphere : class VI (XP P 34.301) – category RUV4 and RC4 (NF EN 10169)	
SECTOR OF APPLICATION	Roofing and cladding for : - in Industrial or normal urban environments - in Marine environments : HAIRULTRA recommended on the back face	Specially designed for flat façades and roofs 2 aspects : wood or patinated as per Colorissime
DESCRIPTION OF ORGANIC COATING		
COMPOSITION	Front : 15 microns of primer - 20 microns of top coat Back : Class II or category CPI2 back coat	
POSSIBILITIES	Both sides : 35 microns on request	
GLOSS	Semi matt - Aspect : non-uniform colour	

COATING PROPERTIES

PAINT HARDNESS

Pencil hardness	F-H

ABRASION RESISTANCE

Sand blasting	40 liters
Taber	60 mg

FLEXIBILITY

Brutal distortion	No peeling
Bending	T = Radius/Thickness 2T no cracking
Erichson	Very good

THERMAL RESISTANCE

Oven	Maxi : 90 °C

COLOUR AND GLOSS

Resistance to UV (lab. test)	DE ≤ 2 Gloss retention ≥ 80%

CORROSION

Salt spray	500 hours
Humidity resistance	1.500 hours

CHEMICAL AGENTS

Acids, bases and solvents

Acids and bases	good
Mineral oils	very good
Aliphatic solvents	very good
Aromatic solvents	good
Ketonic solvents	poor
Chlorine solvents	poor

FIRE BEHAVIOR

Reaction to fire

M0 (M classification)
A1 (Euroclass simple skin)
F (Euroclass double skin)
(see also our fire guide)

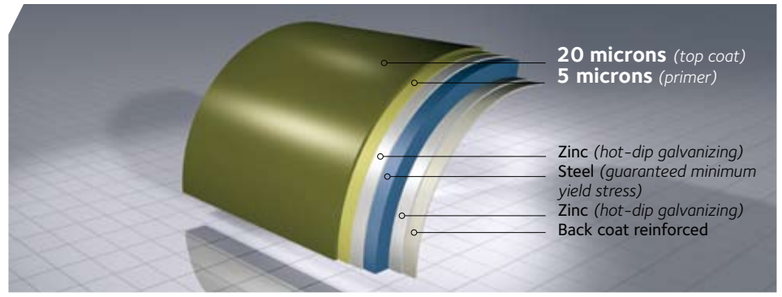
ORGANIC COATING

Hairflon® 25

STANDARDS IN FORCE

Metal substrate and coating
as per Standard EN 10346

Organic coating
as per standards EN 10169
and (F) XP P 34.301



TYPE OF COATING	(70%) PVDF based thermoplastic fluoride resin : - Good chemical resistance - Very good flexibility - Good resistance to corrosion - Excellent colour and appearance stabiltiy (consult us for colour feasability)	
COATING CLASS	Interior environment : class IIIa (XP P34.301) – category CPI4 (NF EN 10169) Exterior atmosphere : class VI (XP P 34.301) – category RUV4 and RC4 (NF EN 10169)	
SECTOR OF APPLICATION	Roofing and cladding for : - Industrial or normal urban environments - Strong sunshine	
DESCRIPTION OF ORGANIC COATING		
COMPOSITION	Front : 5 microns of primer - 20 microns of top coat Back : Class II or category CPI2 back coat	
POSSIBILITIES	Both sides : 25 microns on request	
GLOSS	Nominal : 20 GU	

COATING PROPERTIES

PAINT HARDNESS

Pencil hardness	HB-H

ABRASION RESISTANCE

Sand blasting	60 liters
Taber	25 mg

FLEXIBILITY

Brutal distortion	No peeling
Bending	T = Radius/Thickness 3T no cracking
Erichson	Very good

THERMAL RESISTANCE

Oven	Maxi : 100 °C

COLOUR AND GLOSS

Resistance to UV (lab. test)	DE ≤ 2 Gloss retention ≥ 80%

CORROSION

Salt spray	500 hours
Humidity resistance	1.000 hours

CHEMICAL AGENTS

Acids, bases and solvents

Acids and bases	very good
Nitric acid fumes	very good
Mineral oils	very good
Detergents	very good
Aliphatic solvents	very good
Aromatic solvents	very good
Ketonic solvents	very good
Chlorine solvents	poor

FIRE BEHAVIOR

Reaction to fire

M0 (M classification)
A1 (Euroclass simple skin)
F (Euroclass double skin)
(see also our fire guide)

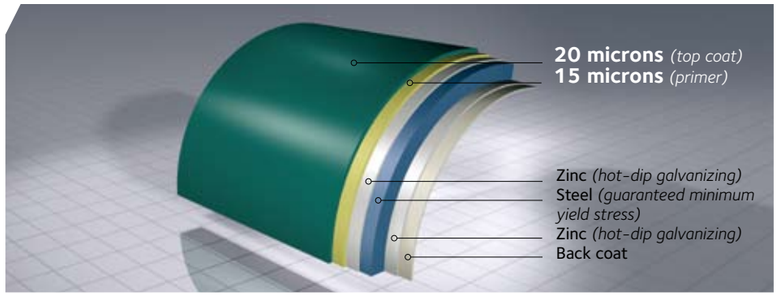
ORGANIC COATING

Hairflon® 35

STANDARDS IN FORCE

Metal substrate and coating
as per Standard EN 10346

Organic coating
as per standards EN 10169
and (F) XP P 34.301



TYPE OF COATING	(70%) PVDF based thermoplastic fluoride resin : - Good chemical resistance - Very good flexibility - Good resistance to corrosion - Excellent colour and appearance stabiltiy (consult us for colour feasability)	
COATING CLASS	Interior environment : class IVb (XP P34.301) – category CPI4 (NF EN 10169) Exterior atmosphere : class VI (XP P 34.301) – category RUV4 and RC4 (NF EN 10169)	
SECTOR OF APPLICATION	Roofing and cladding for : - Industrial or normal urban environments	- Strong sunshine - Marine environments

DESCRIPTION OF ORGANIC COATING

COMPOSITION	Front : 15 microns of primer - 20 microns of top coat Back : Class II or category CPI2 back coat	
POSSIBILITIES	Both sides : 35 microns on request	
GLOSS	Nominal : 20 GU	

COATING PROPERTIES

PAINT HARDNESS

Pencil hardness	HB-H

ABRASION RESISTANCE

Sand blasting	80 liters
Taber	25 mg

FLEXIBILITY

Brutal distortion	No peeling
Bending	T = Radius/Thickness 2T no cracking
Erichson	Very good

THERMAL RESISTANCE

Oven	Maxi : 100 °C

COLOUR AND GLOSS

Resistance to UV (lab. test)	DE ≤ 2 Gloss retention ≥ 80%

CORROSION

Salt spray	500 hours
Humidity resistance	1.000 hours

CHEMICAL AGENTS

Acids, bases and solvents

Acids and bases	very good
Nitric acid fumes	very good
Mineral oils	very good
Detergents	very good
Aliphatic solvents	very good
Aromatic solvents	very good
Ketonic solvents	very good
Chlorine solvents	poor

FIRE BEHAVIOR

Reaction to fire

M0 (M classification)
A1 (Euroclass simple skin)
F (Euroclass double skin)
(see also our fire guide)

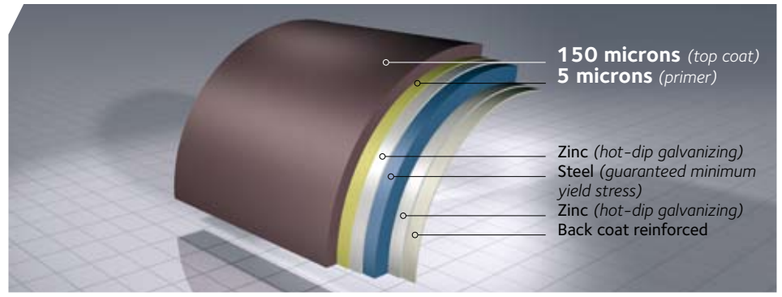
ORGANIC COATING

Keyron® 150 smooth

STANDARDS IN FORCE

Metal substrate and coating
as per Standard EN 10346

Organic coating
as per standards EN 10169
and (F) XP P 34.301



TYPE OF COATING	Polyvinyl chloride based thermoplastic resin phtalate free (PLASTISOL) : - Withstands a corrosive and aggressive inner atmosphere very well - Very good flexibility - Very good abrasion resistance due to its thickness - Smooth surface aspect	
COATING CLASS	Interior environment : class IV b (XP P 34.301) - category CPI4 (NF EN 101 69-3) Exterior environment : class V (XP P 34.301) - category RUV3 and RC5 (NF EN 10169-2)	
SECTOR OF APPLICATION	Roofing and cladding for : - Industrial environments - Marine environments - Sand wind aggression - Interior environments with high humidity	

DESCRIPTION OF ORGANIC COATING

COMPOSITION	Front : 5 microns of primer - 150 microns of top coat Back : Class II or category CPI2 back coat	
POSSIBILITIES	Back : 150 or 200 microns on request	
GLOSS	Nominal : 30 GU	

COATING PROPERTIES

ABRASION RESISTANCE

Sand blasting	60 liters
Taber	30 mg

FLEXIBILITY

Brutal distortion	No peeling
Bending	T = Radius/Thickness 2T no cracking
Erichson	Very good

THERMAL RESISTANCE

Oven	Maxi : 80 °C

CORROSION

Salt spray	500 hours
Humidity resistance	1.500 hours

CHEMICAL AGENTS

Acids, bases and solvents

Acids and bases	very good
Nitric acid fumes	very good
Mineral oils	very good
Aliphatic solvents	good
Aromatic solvents	bad
Ketonic solvents	bad
Chlorine solvents	poor

FIRE BEHAVIOR

Reaction to fire

M2 (M classification)
C-S3, do (Euroclass simple skin)
C-S3, do (Euroclass simple skin)
(see also our fire guide)

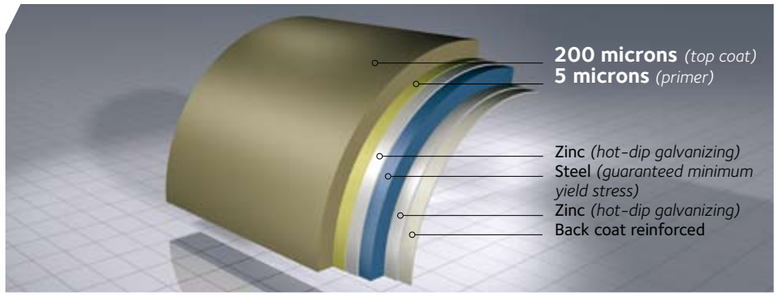
ORGANIC COATING

Keyron® 200 smooth or embossed

STANDARDS IN FORCE

Metal substrate and coating
as per Standard EN 10346

Organic coating
as per standards EN 10169
and (F) XP P 34.301



TYPE OF COATING		Polyvinyl chloride based thermoplastic resin phtalate free (PLASTISOL) : - Withstands a corrosive and aggressive inner atmosphere very well - Very good flexibility - Very good abrasion resistance due to its thickness
COATING CLASS		Interior environment : class IV b (XP P 34.301) - category CPI5 (NF EN 10169) Exterior environment : class V (XP P 34.301) - category RUV3 and RC5 (NF EN 10169-2)
SECTOR OF APPLICATION		Roofing and cladding for : - Industrial environments - Marine environments - Interior environments with high humidity
DESCRIPTION OF ORGANIC COATING		
	COMPOSITION	Front : 5 microns of primer - 200 microns of top coat Back : Class II or category CPI2 back coat
	POSSIBILITIES	Back : 150 or 200 microns on request
	GLOSS	Nominal : 30 GU

COATING PROPERTIES

ABRASION RESISTANCE

Sand blasting	60 liters
Taber	30 mg

FLEXIBILITY

Brutal distortion	No peeling
Bending	T = Radius/Thickness 2T no cracking
Erichson	Very good

THERMAL RESISTANCE

Oven	Maxi : 80 °C

COLOUR AND GLOSS

Resistance to UV (lab. test)	DE ≤ 3 Gloss retention ≥ 60%

CORROSION

Salt spray	500 hours
Humidity resistance	1.500 hours

CHEMICAL AGENTS

Acids, bases and solvents

Acids and bases	very good
Nitric acid fumes	very good
Mineral oils	very good
Aliphatic solvents	good
Aromatic solvents	bad
Ketonic solvents	bad
Chlorine solvents	poor

FIRE BEHAVIOR

Reaction to fire

M2 (M classification)
C-S3, do (Euroclass simple skin)
C-S3, do (Euroclass simple skin)
(see also our fire guide)

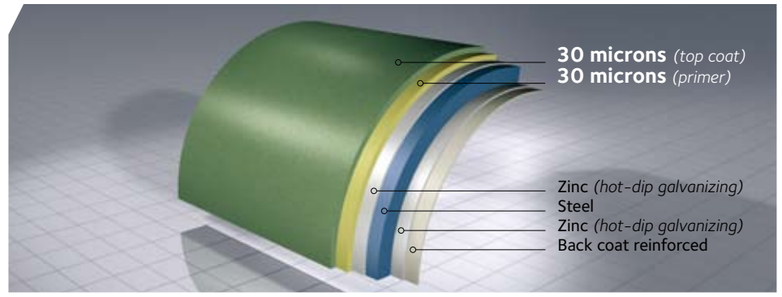
ORGANIC COATING

Hairexcel®

STANDARDS IN FORCE

Metal substrate and coating
as per Standard EN 10346

Organic coating
as per standards EN 10169
and (F) XP P 34.301



TYPE OF COATING		Composite coating : - Very good resistance to chemical agents - Excellent corrosion resistance - Excellent ultraviolet ray resistance - Excellent abrasion resistance	- Excellent scratch resistance - Excellent appearance and colour stability - Very high durability
COATING CLASS		Interior environment : grade IV b (XP P 34.301) - category CPI4 (NF EN 10169) Exterior atmosphere : grade VI (XP P 34.301) - category RUV4 et RC5 (NF EN 10169)	
SECTOR OF APPLICATION		Hairexcel is remmended for long lasting roofs and walls in : - Industrial or harsh urban - High humidity - Marine (double side recommended)	Performance, protection, appearance and total cost effectiveness are the factors customers take into consideration when selecting Hairexcel.
DESCRIPTION OF ORGANIC COATING			
	COMPOSITION	Front : 30 microns of primer - 30 microns of top coat Back : Class II or category CPI2 back coat	
	POSSIBILITIES	Back sides : HAIRUTRA, HAIREXCEL on request	
	GLOSS	Grainy appearance	

COATING PROPERTIES

PAINT HARDNESS

Pencil hardness	H-2H

ABRASION RESISTANCE

Sand blasting	120 liters
Taber	40 mg

FLEXIBILITY

Brutal distortion	No peeling
Bending	T = Radius/Thickness 2T no cracking
Erichson	Very good

COLOUR AND GLOSS

Resistance to UV (lab. test)	DE ≤ 2 Gloss retention ≥ 80%

CORROSION

Salt spray	500 hours
Humidity resistance	1.500 hours

CHEMICAL AGENTS

Acids, bases and solvents

Acids and bases	very good
Nitric acid fumes	very good
Mineral oils	very good
Aliphatic solvents	very good
Aromatic solvents	good
Ketonic solvents	good
Chlorine solvents	good

FIRE BEHAVIOR

Reaction to fire

M0 (M classification)
A1 (Euroclass simple skin)
F (Euroclass double skin)
(see also our fire guide)

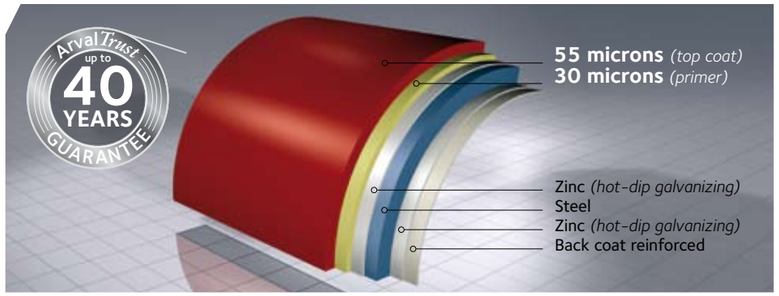
ORGANIC COATING

Sinea

STANDARDS IN FORCE

Metal substrate and coating
as per Standard EN 10346

Organic coating
as per standards EN 10169
and (F) XP P 34.301



TYPE OF COATING	Polyurethane enriched with abrasion-resistant particles - Very good resistance to chemical agents - Excellent corrosion resistance - Excellent ultraviolet ray resistance - Excellent abrasion resistance	
COATING CLASS	Interior environment : use the same classif of Hairexcel for interior Exterior atmosphere : grade VI (XP P 34.301) - category RUV4 et RC5 (NF EN 10169)	
SECTOR OF APPLICATION	Prestige buildings : Roofing and Cladding when exceptionnel durability of the beauty of the colours is sought for the roof or the wall.	Up to 40 years warranty after environmental questionaire.

DESCRIPTION OF ORGANIC COATING

COMPOSITION	Front : 85 microns multi-layer polyurethane Back : Class II or category CPI2 back coat
POSSIBILITIES	Back sides : Hairutra, Hairexcel Possibilities on request.
GLOSS	Grainy appearance

COATING PROPERTIES

PAINT HARDNESS

Pencil hardness	H-2H

ABRASION RESISTANCE

Sand blasting	345 liters
Taber	15 mg

FLEXIBILITY

Brutal distortion	No peeling
Bending	T = Radius/Thickness 2T no cracking
Erichson	Very good

COLOUR AND GLOSS

Resistance to UV (lab. test)	DE ≤ 2 Gloss retention ≥ 80%

CORROSION

Salt spray	1.000 hours
Humidity resistance	1.500 hours

CHEMICAL AGENTS

Acids, bases and solvents

Acids and bases	very good
Nitric acid fumes	very good
Mineral oils	very good
Aliphatic solvents	very good
Aromatic solvents	good
Ketonic solvents	good
Chlorine solvents	good

FIRE BEHAVIOR

Reaction to fire

M0 (M classification)
A1 (Euroclass simple skin)
F (Euroclass double skin)
(see also our fire guide)

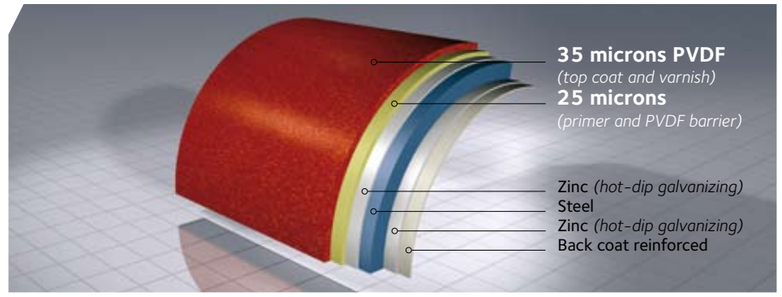
ORGANIC COATING

Intense

STANDARDS IN FORCE

Metal substrate and coating
as per Standard EN 10346

Organic coating
as per standards EN 10169
and (F) XP P 34.301



TYPE OF COATING	Thermoplastic fluoride resin (70%) : - Excellent resistance to chemical agents - Excellent resistance to corrosion - Excellent resistance ultraviolet rays	- Excellent resistance to abrasion and erosion - Excellent colour and appearance stability - Very good flexibility - Self-cleaning with rain
COATING CLASS	Interior environment : class Vc (XP P 34.301) - category CPI5 (NF EN 10169) Exterior atmosphere : class VI (XP P 34.301) - category RUV4 and RC5 (NF EN 10169)	
SECTOR OF APPLICATION	Usable in : - Industrial or severe urban environments - Strong sunshine exposure - Sand wind aggression - Marine environments	Prestige buildings : Roofing and cladding when exceptionnel durability of the beauty of the colours is sought for the roof or the wall.

DESCRIPTION OF ORGANIC COATING

COMPOSITION	Front : 25 microns of primer - 35 microns colored PVDF and varnish PVDF protection Back : Coat class II or category CPI2
POSSIBILITIES	Back sides : HAIRULTRA, HAIREXCEL or INTENSE on request
GLOSS	Nominal : 30 GU

COATING PROPERTIES

PAINT HARDNESS

Pencil hardness	HB-H

ABRASION RESISTANCE

Sand blasting	120 liters
Taber	25 mg

FLEXIBILITY

Brutal distortion	No peeling
Bending	T = Radius/Thickness 2T no cracking
Erichson	Very good

THERMAL RESISTANCE

Oven	Maxi : 100 °C

COLOUR AND GLOSS

Resistance to UV (lab. test)	DE ≤ 2 Gloss retention ≥ 80%

CORROSION

Salt spray	500 hours
Tropical	1.500 hours

CHEMICAL AGENTS

Acids, bases and solvents

Acids and bases	very good
Nitric acid fumes	very good
Mineral oils	very good
Aliphatic solvents	very good
Aromatic solvents	very good
Ketonic solvents	very good
Chlorine solvents	very good

FIRE BEHAVIOR

Reaction to fire

M1 (M classification)
F (Euroclass simple skin)
F (Euroclass double skin)
(see also our fire guide)

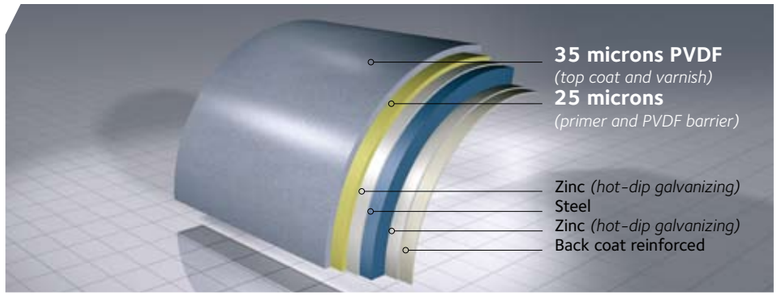
ORGANIC COATING

Pearl

STANDARDS IN FORCE

Metal substrate and coating
as per Standard EN 10346

Organic coating
as per standards EN 10169
and (F) XP P 34.301



TYPE OF COATING	THERMOPLASTIC FLUORIDE RESIN (70%) : - Excellent resistance to chemical agents - Excellent resistance to corrosion - Excellent resistance ultraviolet rays	- Excellent resistance to abrasion and erosion - Excellent colour and appearance stability - Very good flexibility - Self-cleaning with rain
COATING CLASS	INTERIOR ENVIRONMENT : class Vc (XP P 34.301) - category CPI5 (NF EN 10169) EXTERIOR ATMOSPHERE : class VI (XP P 34.301) - category RUV4 and RC5 (NF EN 10169)	
SECTOR OF APPLICATION	USABLE IN : - Industrial or severe urban environments - Strong sunshine exposure - Sand wind aggression - Marine environments	PRESTIGE BUILDINGS : Roofing and cladding when exceptionnel durability of the beauty of the colours is sought for the roof or the wall. This special coating allows creating iridescent effects which we call " Pearl".
DESCRIPTION OF ORGANIC COATING		
COMPOSITION	FRONT : 25 microns of primer - 35 microns colored PVDF and varnish PVDF protection BACK : class II or category CPI2 back coat	
POSSIBILITIES	BACK SIDES : HAIRULTRA, HAIREXCEL or INTENSE on request	
GLOSS	NOMINAL : 30 GU	

COATING PROPERTIES

PAINT HARDNESS

PENCIL HARDNESS	HB-H

ABRASION RESISTANCE

SAND BLASTING	120 liters
TABER	25 mg

FLEXIBILITY

BRUTAL DISTORTION	No peeling
BENDING	T = Radius/Thickness 2T no cracking
ERICHSON	Very good

THERMAL RESISTANCE

OVEN	Maxi : 100 °C

COLOUR AND GLOSS

RESISTANCE TO UV (LAB. TEST)	DE ≤ 2 Gloss retention ≥ 80%

CORROSION

SALT SPRAY	500 hours
TROPICAL	1.500 hours

CHEMICAL AGENTS

ACIDS, BASES AND SOLVENTS

Acids and bases	very good
Nitric acid fumes	very good
Mineral oils	very good
Aliphatic solvents	very good
Aromatic solvents	very good
Ketonic solvents	very good
Chlorine solvents	very good

FIRE BEHAVIOR

REACTION TO FIRE

M1 (M classification)
F (Euroclass simple skin)
F (Euroclass double skin)
(see also our fire guide)

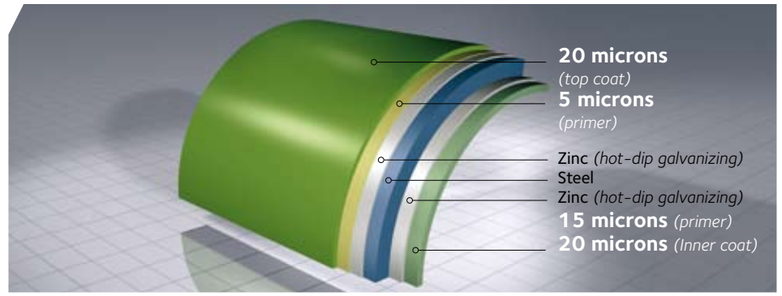
ORGANIC COATING

Hairfarm® 25/35

STANDARDS IN FORCE

Metal substrate and coating
as per Standard EN 10346

Organic coating
as per standards EN 10169
and (F) XP P 34.301



TYPE OF COATING	THERMOSETTING POLYESTER RESIN : - Good chemical resistance - Good resistance to corrosion - Good colour and appearance stability	- Good external and internal durability - Good metal forming suitability
COATING CLASS	INTERIOR ENVIRONMENT : category CPI4 (NF EN 10169) EXTERIOR ATMOSPHERE : class IIIa (XP P 34.301) - category RUV3 and RC3 (NF EN 10169)	
SECTOR OF APPLICATION	USABLE IN : - farm applications - live stock housing - cow sheds (consult us)	
DESCRIPTION OF ORGANIC COATING		
COMPOSITION	FRONT : 5 microns of primer - 20 microns of top coat BACK : 15 microns of primer - 20 microns of inner coat - special colour	
POSSIBILITIES	TOP COAT : HAIRULTRA 35 recommended in marine areas	
GLOSS	NOMINAL : 30 UB	

COATING PROPERTIES

PAINT HARDNESS

PENCIL HARDNESS	F-H

ABRASION RESISTANCE

SAND BLASTING	40 liters
TABER	60 mg

FLEXIBILITY

BRUTAL DISTORTION	No peeling
BENDING	T = Radius/Thickness 2T no cracking
ERICHSON	Very good

THERMAL RESISTANCE

OVEN	Maxi : 90 °C

COLOUR AND GLOSS

RESISTANCE TO UV (LAB. TEST)	DE ≤ 2 Gloss retention ≥ 80%

CORROSION

SALT SPRAY	Top coat: 500 h Inner coat: 1.500 h
HUMIDITY RESISTANCE	Top coat: 1.000 h Inner coat: 1.500 h

CHEMICAL AGENTS

ACIDS, BASES AND SOLVENTS

	Top Coat 25	Inner Coat 25
Acids and bases	good	good
Mineral oils	very good	very good
Aliphatic solvents	very good	very good
Aromatic solvents	good	good
Ketonic solvents	poor	poor
Chlorine solvents	poor	poor
Ammoniac	-	good

FIRE BEHAVIOR

REACTION TO FIRE

M0 (M classification)
A1 (Euroclass simple skin)

MODIFICATION

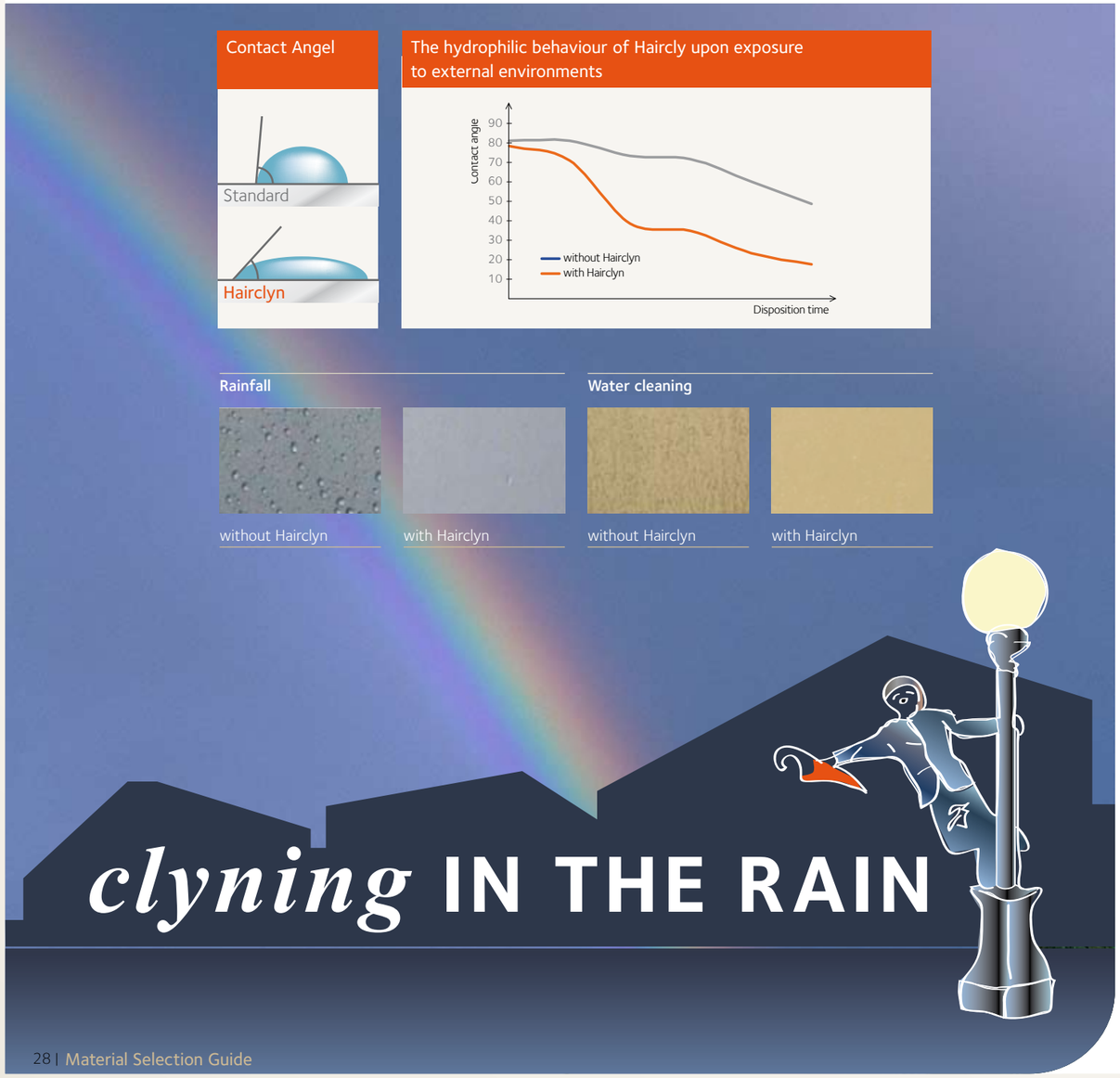
Hairclyn®

Hairclyn is the easy cleaning coating for aesthetic quality of pre-painted steel façades:

- means great ease of cleaning, even with rainfall
- stands for greater pollution resistance, less embedded dust and soiling

The cleaning capacity of a surface depends mainly on the contact angle of the droplet on the surface. Hairclyn is based on the vacuum coating technology PVD *(Physical Vacuum Deposition)*. The coating is applied when the material is manufactured and contains titanium dioxide (TIO_3), which confers hydrophilic properties to the surface.

It is available in the followiing ranges of coatings: Hairplus® Clyn, Hairultra® Clyn and Hairexcel® Clyn and has the same properties *(performances and sustainability)*. It is available in all the colours you can find in the **Arval „Colorissime"** and it adapts to the entire range of **Arval** envelope solutions.



DIGITAL PICTURES

Imageo® – Create Your Visual

IMAGEO
CREATE YOUR VISUAL

With Imageo, you can go right to the heart of innovation by linking up technology with architectural contemplation. Decorating a façade or dressing an interior can be achieved via the Imageo process by sending digital photos, drawings or texts to the very heart of thermosetting coating on outer or inner wall cladding. This new creative medium supported by **Molecular Digital-Transfer** (TNM) increments spaces where exclusive customized visual environments can be imagined and brought to life.

Feel free with your colours and decorative effects and be bold enough to imprint them on space and mind; Arval is here to transpose your graphic universe into images.

IMAGEO :

gloss medium - high UV resistance - anti graffiti varnish

Organic coating

GENERAL PROPERTIES

Metal Substrate : Galvanized steel as per standards : P34.310; EN 10346
Organic Coating : as per standards : XP P 34.301; EN 10169

Guarantees

The "Building Insurance" obliges each party involved in the building construction to take out an insurance covering professional liability.

Pursuant to this law, **Arval** has taken out an insurance policy covering the manufacturer's liability for any material manufactured by the Company insofar as :

- the products have been installed in accordance with the erecting rules and as per the requirements that figure in the relevant official documents (Technical instructions, Brochures of technical standards, trade regulations, Arval technical brochures ...)
- the coating chosen is suited to the corresponding type of atmospheric exposure.

On request, a paint film durability guarantee can be issued after performing a survey of the environment and application criteria specified in the questionnaire, which is completed by our customers (a surplus should be allowed for). Whatever the case may be, the request must be made before placing the order.

EXTERIOR SELECTION GUIDE

ORGANIC COATINIG [1]	CATEGORY		EN 10169		RURAL UNPOL-LUTED	URBAN AND INDUSTRIAL		MARINE				SPECIAL	
	DIN 55928-8-XP	P 34301	UV Cate-gory	Corrosion category		Normal	Harsh	20-10 km	10-3 km	Coast [2] 3-1 km	Mixed	High U.V.	Special
HAIRPLUS®	III	IV	RUV3	RC3	A	A	C	A	B	C	C	B	C
HAIRULTRA® / EDYXO®	III	VI	RUV4	RC4	A	A	B	A	A	A	B	A	B
NATUREL / AUTHENTIC	III	VI	RUV4	RC4	A	A	B	A	B	A	B	A	B
HAIRFLON® 25	III	IV	RUV4	RC3	A	A	C	A	B	C	C	B	C
HAIRFLON® 35	III	VI	RUV4	RC4	A	A	B	A	A	A	B	A	B
KEYRON 200	III	V	RUV3	RC5	A	A	B	A	A	A	B	B	B
HAIREXCEL®	III	VI	RUV4	RC5	A	A	B	A	A	A	B	A	B
INTENSE / PEARL / SINEA	III	VI	RUV4	RC5	A	A	B	A	A	A	B	A	B

INTERIOR SELECTION GUIDE

ORGANIC COATINIG	CATEGORY		EN 10169	NOT AGGRESSIVE			SLIGHTLY AGGRESSIVE	AGGRESSIVE	VERY AGGRESSIVE
	DIN 55928-8-XP	P 34301	Humidity category	Low humidity	Average humidity	High humidity	Humid (high humidity)	Very humid (very high humidity)	Saturated (very high humidity)
INTÉRIEUR	II	II	CPI2	A	B	C	C	C	C
HAIRPLUS®	III	IIIa	CPI3	A	A	B	C	C	C
HAIRULTRA® / EDYXO®	III	IIIa	CPI4	A	A	A	B	C	C
NATUREL / AUTHENTIC	III	IIIa	CPI4	A	A	A	B	C	C
HAIRFLON® 25	III	IIIa	CPI3	A	A	B	C	C	C
HAIRFLON® 35	III	IVb	CPI4	A	A	A	A	B	C
KEYRON 150	III	IVb	CPI4	A	A	A	A	B	C
KEYRON 200	III	IVb	CPI5	A	A	A	A	B	C
HAIREXCEL®	III	IVb	CPI4	A	A	A	A	B	C
INTENSE / PEARL / SINEA	III	Vc	CPI5	A	A	A	A	B	C

- [1]Unless otherwise specified when the order is placed, the underside is systematically coated with a standard coating of category CPI2. In certain cases, the reverse side must be replaced by an organic coating suited to the environment.
- [2]3 to 1 km from the seashore: not including conditions involving direct aggression from seawater and/or seaspray - <1 km from the seashore: consult us.

A : the suitable product / **B** : as per survey / **C** : unsuitable product

Organic and metallic coating

Transport

During haulage the packs must be stowed in a dry place away from the damp. Should any damage be seen when unloading, reservations must be made to the haulier at once.

Storage

- When galvanized or prepainted galvanized steel sheeting is stacked up in a bundle, it is damp sensitive (permanent moisture condensation). Once erected, galvanized steel can be in contact with water.

The products must be sheltered with freely circulating air (a covered warehouse, tarpaulin ...). The packages must be inclined form the horizontal to facilitate drying off and be kept off the ground so that they are properly aired, thus avoiding any permanent damage to the plates.

Under no circumstances must the bundles be covered with just a plastic sheet and left outside. In case galvanized or pre-painted galvanized roll-formed elements are made wet by the rain or condensation, they should be immediately propped up and dried separately to avoid any risk of surface oxidation. In this way, any superficial damage to the coating will be avoided. Furthermore, it is necessary to make sure that any waste or stones are removed as they could damage the under sheets in the pack.

For maritime packaging, it will be necessary :

- to remove the waterproof packaging material in order to air the bundles as soon as they are delivered onsite or within a month of the delivery date at the latest.
- to protect the products from bad weather conditions and ultraviolet rays.

Handling

The profiles must not be bumped or scratched as this would strip them back to the bare steel, i.e. deformations, making the profiles unfit for proper use during site work. Take appropriate handling precautions to prevent any deterioration of the products by slings or any other lifting device.

Installation

The assembly should be correctly performed according to erecting rules (Technical standards, trade regulations, standards, technical reports, the manufacturer's instructions ...).

It is important that the erection company should receive delivery of the structural frame first, mainly to prevent water stagnating on the roof and any deformation of the cladding, which would be aesthetically unpleasing and detrimental to the integrity of the pre-painted coating.

Contractors must take appropriate precautions in order to avoid scratches or marks. This kind of damage would lead to incipient corrosion over time and would be aesthetically unpleasing. Some of the **Arval** products may be delivered with a protective film covering : it is important to remove this protective film as the products are being erected (and at the latest, 3 months after the date of dispatch if the profiles have still not been erected).

On-site cutting and machining

- When cutting elements on-site during assembly, protect the paint coating (with sheeting) in order to avoid any damage and especially hot metal particles getting incrusted. – Remove the burr.
- Apply clear varnish along the cut edges to prevent them from going rusty.

Drilling to fix

As the products are being erected, carefully clean off drilling swarf with a nylon brush.

Fixing and seam fastening

When fixing and fastening, the installer should stand on the overlapping profile to make sure it interlocks correctly, thus ensuring a perfect overlap.

Condensation regulator back coats - Haircodrop

Remove the two strips of adhesive film from the overlapping corrugation before installing the elements. Take care not to scratch the condensation regulator minimising back coat on the roof purlins.

Coated products

Inspection

- Sustainability can only be guaranteed if a careful watch is kept on the buildings and also if they are properly maintained. It is the owner's responsibility to keep watch of the building and maintain it after acceptance of the work. The coating must be inspected every year.

Preventive maintenance should be carried out every TWO YEARS, in accordance with the rules of the trade, brochures of technical standards, technical reports and current standards.

Keeping watch means above all

- Inspecting elements that make up the shell of the building (particularly the purlins, as water will stagnate on the roof in case of slumping).
- check the physical damages due to impact or abrasion which can lead to rust and take appropriate remedial action (remedial paint ...).
- For most applications cut-edge corrosion as a result of normal weathering, will not impair functionality. However, when there is a risk of water collecting on the cut-edges, painting them will considerbly enhance the durability of the paint coating and the substrate.
- preventive maintenance :
  - removing of moss, vegetation and other kinds of debris ...
  - keeping rainwater pipes in good working order.
  - cleaning façades and roofs.

For more details, consult appendix C of the NFP 34.205-1 (DTU 40-35) standard.

Normal use means keeping trafficking down to a bare minimum for the purposes of normal maintenance, as described above, as well as other work, such as : chimney-sweeping, installing and maintaining aerials ...

Care and appropriate measures must be taken to avoid:

- crushing flat sections or deforming ribs, especially for plates 0,63 mm thick. A solution could be to have trafficking lanes.
- damaging the protective coating. Should there be technical equipment installed on the roof requiring frequent inspection (air conditioning for example) appropriate arrangements should be made, such as trafficking lanes.

Note : The owner's attention should be drawn to the fact that, when the ambient air becomes more aggressive (for example with new pollution) the suitability of the original coating to its new environment must be reexamined and, if need be, the coating must be adapted to these new conditions.

Special aspects

Roof Oversail - Overlaps

In case of incipient corrosion along the edges of drip moulds and/or overlaps and around any roofing cutted parts, repaint these parts with anti-corrosive paint.

Roof outlets

To curb the spreading of rust in roof areas situated very near roof outlets, it is advised to repaint these areas with a suitable anti-corrosive paint as a preventive measure, or at least keep a closer watch on these areas and repaint them as soon as you see rust beginning to form.

Surfaces not subject to natural washing

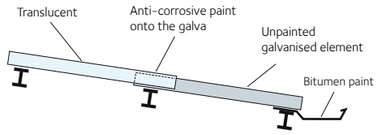
Where surfaces are not subject to a natural rainwater washing process, yearly cleaning will be required, i.e. :
- one wash down per year.
- systematic and immediate treatment of any parts showing signs of incipient corrosion, for any reason whatsoever.

Translucent overlaps (polyester and/or PVC) in the roof

Requisites :

1. A closed cell foam seal, self adhesive on one side, 5 x 15 in size to ensure weathertightness on all the lateral and longitudinal overlaps.
2. Support stools under each corrugation overlap.

Note: Unpainted galvanised elements :
We advise you to protect unpainted galvanised roofing elements, which are situated underneath, by applying anti-corrosive paint along the overlaps.



MAINTENANCE RECOMMENDATIONS

Coated products

Maintainance

The coating of galvanised prepainted (or not) products will afford efficient rust protection providing the film remains undamaged.

Therefore, all paint coatings must be examined during the essential yearly inspection. If deposits of aggressive material are detected (soot, fumarolic gas, ...), they must be cleaned off with a solution of non-abrasive detergent. Should the paint coating start showing signs of damage, appropriate treatment should be carried out to remedy this.

The tables below give a list of different ways of treating the product, according to the condition of the substrate as well as its location.

Description of repairing processes

Preliminary material investigation

Before commencing any work, it is necessary to carry out a thorough preliminary investigation into the product:

- the type of organic coating
- check on paint film adhesion when subjected to bad weather conditions.

Surface preparation

An important phase is the preparation. The objective of this is to make sure the substrate has a clean surface as this contributes to paint adhesion when performing remedial painting.

Main procedures in surface treatment

- Degreasing : clean with pump pressure hot water (HP-70°C) using non-abrasive detergent (or clean by hand, but this is less efficient), then rinse with hot water (pump HP-70°C) and dry.
- Phosphate treatment : chemical cleaning (10% of phosphoric acid).
  Two effects : the pickling effect, which contributes to the adhesion of the anti-rust primer, and the phosphate effect (formation of a protective layer of phosphate and insoluble iron between the phosphoric acid and the rust on the substrate. Rinse with hot water (pump HP -70°C) and dry.
- Mechanical pickling : low pressure sand blasting, to remove any loose particles (rust, paint, ...) from the galvanised steel. This process removes white rust. It is also possible to :
  - clean rusty parts and rusty edges by chipping, scraping and hand or mechanical brushing
  - scour (chemically or mechanically) the shiny areas of the galvanised or prepainted sheet. Then remove the dust (compressed air, sweeping, wiping)

System of repair

Generally speaking, this system involves applying a primer coat and a top coat.

Note : to decide what products to use and how to go about it, it is preferable to seek the paint manufacturer's advice, which he will give you according to
- the extent of the damage
- the environment (rural, urban, industrial, marine, aggressive)
- the type of finish required by the customer: gloss retention, colour stability over the years, variation in colour compared to initial colour.

Paint manufacturers have references of approved applicators of these products.

Variation in colour over the years

The state of the surface and the colour of the pre-painted coating will more or less change over the years depending on ageing due to the natural impact of atmospheric factors (bad weather, acid rain, UV radiations, abrasive wind, ...).
If a new element is used to replace a naturally aged pre-painted roofing or cladding element, there may be a variation in the colour.

Remedial Actions on Galvanised or Pre-Painted Cladding

The tables hereafter give a list of different ways of treating the product, according to the condition of the substrate as well as its location.

CONDITION OF SUBSTRATE	REASONS FOR REPAIR	SURFACE PREPARATION	APPLICATION OF ANTI-CORROSIVE TACK COAT	TOP COAT APPLICATION
GALVANISED STEEL **new / old**	• painting requirement	Degreasing: • if galva is very shiny : Etching with an acid solution *(Chemical treatment)* • rinse with HP pump • dry	Apply 1 coat of anti-corrosive primer using a brush	After drying the clean substrate or primer, apply 1 or 2 layers of polyurethane, acrylic top coat using a brush or a spray. Paint will be selected according to : • quality of finish requested by the customer *(degree of gloss retention, colour stability over the years)* • degree of environment aggressiveness • specifications of paint supplier
PRE-PAINTED STEEL **new** *(less than 1 year old)*	• colour change requirement • cladding installed wrong way round	Degreasing	Generally speaking, no primer is required if the surface is clean and clear of any soiling	
PRE-PAINTED STEEL **no sign of corrosion**	• painting requirement			
PRE-PAINTED STEEL **with corrosion**	Signs of : • white rust and/or • patches of paint peeling off	Phosphate treatment	Apply a coat of anticorrosive primer using a brush or spray it on	
	Signs of : • white rust • spots of rust and/or patches of rust • patches of prepainted coating peeling off	• hand or mechanical brushing, chipping, scraping to strip corroded areas • phosphate treatment	• if necessary, apply anticorrosive primer over rusty edges and rusty parts. • apply a coat of anti-corrosive primer over the whole surface using a brush or a spray gun	
	• general corrosion • considerable peeling of paint film	• mechanical stripping • use sand sweeping or mechanical brushing over the whole surface • general dust removal		

MAINTENANCE RECOMMENDATIONS
Coated products

Remedial Actions on Galvanised or Pre-Painted Cladding

SPECIAL POINTS	SURFACE PREPARATION	APPLICATION TO SYSTEM
Remedial painting of scratches on new buildings	clean with a cloth	• apply the appropriate touch-up paint according to the type of pre-painted coating, using a thin brush to restrict the area repainted
Corrosion protection of sections of cutted edges profiles, flat sheets or flashings	clean with a cloth	**GALVANISED:** • apply zinc paint with a brush **PRE-PAINTED :** • apply colourless anti-corrosive varnish or the same colour anticorrosive paint
Corrosion of the ends of roofing profiles along the overlaps or gutters	• mechanical brushing of corroded areas • remove dust with a cloth or with an HP pump	• mark out the area to be repainted with a gauge or an adhesive strip. • apply an anti-corrosive *(40 microns)* primer with a brush • apply a top coat *(40 microns)* of the same colour using a brush or a spray • overlap between two sheets: spray with « neutralizing anti-rust » paint
Corrosion protection on the inside of galvanised steel gutters	• clean with an HP pump • brush mechanically the corroded areas • remove dust	• apply bitumen paint with a brush
Remedial painting of black marks left by profiles rubbing against each other during transit • galvanised crystal • pre-painted	• clean with a cloth or with an HP pump *(70°)* according to the extent of the black marks	• if there are so many black marks that it is necessary to repaint the whole surface, refer to the previous page
Corrosion protection of galvanised or pre-painted areas in the immediate vicinity of flue outlets		• see the previous page and choose the system according to the degree of corrosion
Paint for sign-plate, logo, ... over the existing one		• choose the appropriate paint system according to the type of pre-painted coating *(go back to previous page)*

NOTE

Remedial painting : ageing differs according to the pre-painted coating initially used (chalking, colour ...)

Stainless steel

Transport

During haulage the packs must be stowed in a dry place away from the damp. Should any damage be seen when unloading, reservations must be made to the haulier at once.

Storage

The products must be sheltered with free air circulation (a covered warehouse, tarpaulin ...). The packages must be inclined from the horizontal to facilitate drying off and be kept off the ground so that they are properly aired, thus avoiding any permanent damage to the plates.

Furthermore, it is necessary to make sure that any waste or stones are removed as they could damage the under sheets of the pack.

For maritime packaging, it will be necessary

- to remove the waterproof packaging material in order to air the bundles as soon as they are delivered on site or within a month of the despatch date at the latest.
- to protect the products from bad weather conditions.

Handling

The profiles must not be deformed by bumping or scratching as this would make them unfit for proper use during site work.

Take appropriate handling precautions to prevent any deterioration of the products caused by slings or any other lifting device.

Installation

The assembly should be correctly performed according to erecting rules (trade regulations, standards, technical reports, manufacturer's instructions ...).

It is important that the erection company should receive delivery of the structural frame first, mainly to prevent water stagnating on the roof and any deformation of the cladding, which would be aesthetically unpleasing.

Contractors must take appropriate precautions to avoid scratches or marks.

Some of our products may be delivered with a protective film covering: it is important to remove this protective film as the products are being erected (and at the latest, 3 months after the date of dispatch if the profiles have still not been erected).

On-site cutting and machining

- When cutting elements on site during assembly, protect the product (with sheeting) in order to avoid any soiling of the surface. Do not grind or shear any metal elements near the product
- Remove the burr.
- It is essential to use tools adapted to stainless steel.

Drilling to fix

As the products are being erected, carefully clean off drilling swarf with a nylon brush.

Fixing and seam fastening

When fixing and fastening, the installer should stand on the overlapping profile to make sure it interlocks correctly, thus ensuring a perfect overlap.

Soldering

Soldering is done by means of a soldering iron with a copper bit and a filler metal made of a Lead-Tin alloy bolt with a minimum tin content of 28%. The only welding flux permitted is made from phosphoric acid diluted to 50%.

Do not use

Ferritic steel for a chimney or downspout surround.

Stainless steel

Sustainability of stainles steel can only be guaranteed if a careful watch is kept on the building and also if it is properly maintained. It is the owner's responsibility to keep watch on the building and maintain it after acceptance of the work. The product must be i nspected every year.

Preventive maintenance should be carried out every TWO YEARS, in accordance with the rules of the trade, technical reports and current standards.

Keeping watch means above all

- Inspecting elements that make up the shell of the building (particularly the purlins, as water could stagnate on the roof in case of slumping) to protect the products from bad weather conditions.
- Preventive maintenance :
  - removal of moss, vegetation and other kinds of debris ...
  - keeping rainwater pipes in good working order
  - cleaning façades and roofs.

Normal use means keeping trafficking down to a bare minimum, for the purposes of normal maintenance, as described above, as well as other work, such as : chimney-sweeping, installing and maintaining aerials ...

Care and appropriate measures must be taken to avoid :

- Puncturing flat areas or deforming ribs, especially plates, which are less than or equal to 0,63 mm thick. A solution could be to have trafficking lanes marked out.
- Damaging the tin layer of the FTE quality.

Should there be technical equipment installed on the roof requiring frequent inspection (air conditioning for example) appropriate arrangements should be made, such as marking out trafficking lanes.

USINE D'ASSEMBLAGE A380 - BLAGNAC •
Architecte : CARDETE & HUET

Good cleaning practice for stainless steel

Tin-coated stainless steel does not require cleaning because the layer of tin gives the finish that uniform stainless look.

Products

Degreasing agents for windows, bleach-free detergent (washing powder, detergent, liquid soap) and washing soda are regarded as safe for use on stainless steel. It is preferable to use commercial household products (and not just active substances) as they tend to contain corrosion inhibitors. Make sure you comply with the best possible operating parameters. In order to disinfect stainless steel, all you need do is use products 10 to 100 times weaker in concentration than you would for other material.

Do not use products which contain chlorine or bleach. Only very weak bleach and chlorine derivate solutions can be used and they should only be left on the steel for a short period of time. Do not use hydrochloric acid.

Operating procedure and tools

Use sponges or, failing this, soft nylon brushes (except on Ugibright surface).

Use stainless steel wire brushes or scotch-brite brushes to remove deposits that tend to stick : other wire brushes could leave residues and cause incipient rust. The brush should be moved in the same direction as the polish, and, whatever the circumstances, always in the same direction. Use a high pressure cleaner, with or without a detergent product, and / or hot water. As a general rule, use clean instruments and tools.

Put protection round the ends of ladders, which are propped against the steel.

Rinsing and drying

Thoroughly rinse : systematically rinse with soft water once all the cleaning product has been applied. Use a squeegee to wipe the surface over or, failing this, a soft clean cloth.

Environmental questionnaire

1. OBJECTIVE

☐ Prior to a request for a guarantee

☐ Choice of appropriate coating

IDENTIFICATION OF APPLICANT

CORPORATE NAME		
BUSINESS ACTIVITY		
ADDRESS		
STREET		
POST CODE		TOWN
CONTACT		
TELEPHONE		
E-MAIL		

IDENTIFICATION OF PROJECT

INTENDED USE OF BUILDING		
PROECT (Corporate Name)		
LOCATION		
ADDRESS		
POST CODE		TOWN
CONTACT		
TELEPHONE		
FAX		
E-MAIL		

MATERIAL SELECTION

Environmental questionnaire

2. ENVIRONMENTAL CONDITIONS

Atmospheric exposure & interior environment
Please fill in the table with the building criteria.
(tick the box containing the relevant interior and exterior criteria)

EXTERIOR ATHMOSPHERE

RURAL UNPOLLUTED	URBAN AND INDUSTRIAL		MARINE				SPECIAL	
	Normal	Harsh	20-10 km	10-3 km	Coast 3-1 km **	Mixed	High U.V.	Special

INTERIOR ENVIRONMENT

NOT AGGRESSIVE			SLIGHTLY AGGRESSIVE	AGGRESSIVE	VERY AGGRESSIVE
Low humidity	Average humidity*	High humidity	Damp (high humidity)	Very damp (very high humidity)	Saturated***

▸ * Refer to us for environment with average humidity but high intermittent humidity

▸ ** Coastal : under 3 km from the coastline, except direct aggression from sea water and/or from sea spray (sea shore) and as per standard XP P 34.301. In an area less than 1 km from the coast = the manufacturer will determine which coating is suitable after examining the environmental questionnaire and the layout plan (to be provided).

▸ *** For agricultural buildings with high ammoniacal concentrations, consult us.

EXTERNAL FACTORS

DEGREE OF SUNSHINE

KIND OF CLIMATE			SAND WIND
☐ Temperate	☐ Subtropical	☐ Mountain/Altitude :	☐ Yes
☐ Tropical	☐ Oceanic	..... m	☐ No
☐ Mediterranean	☐ Equatorial	☐ Other :	

PERCENTAGE OF RELATIVE HUMIDITY

RAINFALL RATE (ref. : Europe)	SNOWFALL	PERCENTAGE OF RELATIVE HUMIDITY depending on the season
☐ High o very high	☐ High	☐ Mini
☐ Average	☐ Average	☐ Maxi
☐ Low	☐ Low	

▸ Environmental conditions as per Appendix A of standard XP P 34.301

▸ All this information is essential for a proper evaluation of the project

Environmental questionnaire

3. DESCRIPTION OF BUILDING REQUESTED

ROOFING

FEATURES OF THE SYSTEM	BUILDING SYSTEMS							
	WEATHERPROOFING COMPLEX		SINGLE SKIN		TWIN SKIN		SANDWICH PANELS	
	Internal face	External face	Internal face	External face	Internal face	External face	Internal face	External face
Thickness (roll-formed)								
Surface area (m^2)								
Sound absorption perforated/slotted	☐ perf. ☐ slot.				☐ perf. ☐ slot.		☐ perf.	
Colour requested (specify shade)								
Is the roofing curved ?	☐ yes ☐ no		☐ yes ☐ no		☐ yes ☐ no		☐ yes ☐ no	
Are there any overlaps ?	☐ yes ☐ no		☐ yes ☐ no		☐ yes ☐ no		☐ yes ☐ no	
If so, how many per m^2 ?	.....		.....		.....		.....	
Are there any penetrations (outlets..) ?	☐ yes ☐ no		☐ yes ☐ no		☐ yes ☐ no		☐ yes ☐ no	
Are there any lighting areas ?	☐ yes ☐ no		☐ yes ☐ no		☐ yes ☐ no		☐ yes ☐ no	
Coating requested								

- DEFINITIONS
- Internal : Side of profile or panel exposed to the inside environment of the building
- External : Side of profile or panel exposed to the outside atmosphere
- Comment : Twin-skin systems, which use trays, are designed for buildings with a low or average humidity rating.

Environmental questionnaire

4. DESCRIPTION OF BUILDING REQUESTED

WALL CLADDING

FEATURES OF THE SYSTEM	BUILDING SYSTEMS					
	SINGLE SKIN		TWINSKIN		SANDWICH PANELS	
	Internal face	External face	Internal skin	External skin	Internal facing	Outside facing
Thickness (roll-formed)						
Surface area (m^2)						
Laying direction	☐ horizontal ☐ vertical		☐ horizontal ☐ vertical	☐ horizontal ☐ vertical	☐ horizontal ☐ vertical	
Sound absorption perforated/slotted			☐ horizontal ☐ vertical		☐ perforated	
Colour requested (specify shade)						
Is the roofing curved ?	☐ yes ☐ no		☐ yes ☐ no		☐ yes ☐ no	
Coating requested						

- DEFINITIONS
- Internal : Side of profile or panel exposed to the inside environment of the building
- External : Side of profile or panel exposed to the outside atmosphere
- Comment : Twin-skin systems, which use trays, are designed for buildings with a low or average humidity rating.

Environmental questionnaire

5. ANALYSIS OF ENVIRONMENT

Please answer the following questions :

OUTSIDE AGENTS

Does the building have oil-fired heating :		☐ yes	☐ no
Are there chimneys for the discharge of smoke and fumes :		☐ yes	☐ no
Are there any smoke generator s for oil-fired heating nearby :		☐ yes	☐ no
Is the building near			
▸ buildings sheltering animals :		☐ yes	☐ no
▸ factories ? Type of production :	Distance :		
▸ laboratories :		☐ yes	☐ no
▸ steam or gas fumes (petrochemicals ...) :		☐ yes	☐ no
▸ dust deposits : Or areas where dusty products are stored (waste reception centres, incinerators ...) If the answer be yes, specify the type of activity :		☐ yes	☐ no
▸ Are the dusty products under dominant winds :		☐ yes	☐ no

INSIDE AGENTS

Specify what the activity will be inside the building		
Are chemical products used or stored :	☐ yes	☐ no
Are there steam or gas fumes inside the building :	☐ yes	☐ no
Are there any extractor fans, for chimneys, natural or forced ventilation :	☐ yes	☐ no
Is there a risk of condensation forming inside the building :	☐ yes	☐ no
Is the internal face covered with insulation? (stretched felt, false ceiling ...) :		
Is there likely to be any fermentation or animals inside the building :	☐ yes	☐ no
Will the metal framework be coated with paint before being installed : ▸ If so, specify the kind of coating:	☐ yes	☐ no

N.B : Only questionnaires duly filled in and signed by the customer will be taken into consideration.

MATERIAL SELECTION

Environmental questionnaire

6. ANALYSIS OF ENVIRONMENT

FURTHER INFORMATION

THANK YOU FOR SPECIFYING YOUR PROJECT

▸ Date : In :

▸ Stamp of customer

▸ Name and signature (preceded by “certified true”) :

ArcelorMittal

Austria
AMC Austria GmbH-Arval
Lothringenstraße 2
A-4501 Neuhofen an der Krems
T +43 7227 5225

PFLAUM
Ganglgutstraße 89
A-4050 Traun
T: +43 72 29 64 584

Belgium-Belgie
ArcelorMittal Construction-Arval
Lammerdries 8
2440 Geel
T: +32 14 56 39 15

Croatia-Hrvatska
ArcelorMittal Construction Croatia
Bani bb
10000 Zagreb
T: +385 1 6607 532

Czech Republic-Česká Republika
ArcelorMittal Construction-Arval
CZ s.r.o.
Biskupský dvůr7
CZ 10400 Praha 10
T: +420 272 072 080

Denmark-Danmark
ArcelorMittal Construction
Danmark A/S
Kigkurren 8 E
DK-2300 København S
T: +45 36 41 30 22

France
ArcelorMittal Construction-Arval
16 route de la Forge
F-55000 Haironville
T: +33 3 29 79 85 85

Germany-Deutschland
ArcelorMittal Construction-Arval
AMC Deutschland GmbH
Münchener Strasse 2
D-06796 Sandersdorf-Brehna
T: +49 3 49 54 455 0

Greece-Ελλάς
ArcelorMittal Construction-Arval
27 Papandreou Andrea str.
Marousi Athens 15122
T: +30 210 6305900

Hungary-Magyar
ArcelorMittal Construction-Arval
Hungary Kft.
Weiss Manfréd út 5-7.
HU-1211 Budapest
T: +36 1350 2876

Italy-Italia
ArcelorMittal Construction-Arval
Via Vincenzo Bellini 13
IT-20122 Milano
T: +39 02 79 95 68

Netherlands-Nederland
ArcelorMittal Construction-Arval
Biezenwei 2
NL-4004 MB Tiel
T: +313 44 63 17 46

Norway-Norge
ArcelorMittal Construction-Arval
Dyrskueveien 16
N-2040 Kløfta
T: +47 63 94 14 00

Poland-Polska
ArcelorMittal Construction-Arval
Konopnica 120
PL-96-200 Rawa Mazowiecka
T: +48 46 813 28 00

Portugal
ArcelorMittal Construção-Arval
Estrada National 3 (Km 17,5)
Apartado 14
PT-2071-909 Cartaxo
T: +351 263 400 070

Romania-România
ArcelorMittal Construction-Arval
136 Biruintei Bdul, DN3 Km 14
077145 Pantelimon, Jud. Ilfov
T: +40 21 312 45 17

South Africa
ArcelorMittal Construction-Arval
The Place - 1 Sandton Drive
Sandhurst - Sandton 2196
Gauteng
T: +27 (0) 11 722 8621

Slovakia-Slovenská Republika
ArcelorMittal Construction-Arval
Rožňavská 24
SK-82104 Bratislava
T: +421 2 321 326 04

Spain-España
ArcelorMittal Construcción-Arval
Carretera Guipuzcoa Km 7,5
E-31195 Berrioplano (Navarra)
T: +34 948 138 651

Sweden-Sverige
ArcelorMittal Construction
Sverige AB-Arval
Västanvindsgatan 13
SE-65221 Karlstad
T: +46 (0)54 68 83 00

Switzerland-Schweiz
ArcelorMittal Construction-Arval
Industriestrasse 19
CH-8112 Otelfingen / Zürich
T +41 (0) 56 296 10 10

Ukraine
ArcelorMittal Construction Ukraine
6 floor, Business Center „Panorama"
Bolshaya Zhitomirskaya str., 20
Kyiv 01025, Ukraine
T: +38 044 201 4909

Brazil
Perfilor S.A. Construcoes Arval
IND E COM
Rua dos Pinheiros, 498 cj 91
Brazil 05422 000-Sao Paulo SP
T: +55 11 3065 3400

Middle East & International

ArcelorMittal Construction International Arval
Industriestrasse 19
CH-8112 Otelfingen / Zürich
T: +41 56 296 10 10

Caribbean

Guadeloupe
Profilage de la Guadeloupe Arval
51 rue Henri Becquerel
ZI de Jarry
F-97122 Baie Mahault
T: +590 26 82 03

Martinique
Profilage de la Martinique Arval
Zip de la Pointe des Grives
F-97200 Fort de France
T: +596 60 60 00

Saint Martin
Arval Profilage Saint Martin
ZAC Lot 3 et 4 La Savane
F-97150 Saint Martin
T: +590 52 98 04

Dominican Republic
Profilage Dominicana S.A.-Arval
Prolongacion Av. Charles de Gaulle, 131
Dominican Republic-Santo Domingo
T: +1 (809) 483 2790

Guyane
Haironville Guyane-Arval
ZI de Degrad des Cannes BP 418
F-97300 Remi-Remont-Joly
T: +594 25 52 21

Indian Ocean

Réunion
Profilage de la Reunion-Arval
ZIN°2-44 rue Paul Verlaine
BP 802
F-97825 Le Port
T: +262 42 42 42

Mauritius
Profilage de l'ocean Indien Arval
Route de la Filature
Mauritius-Riche Terre
T: +230 248 17 05

07-2011

www.arcelormittal.com/arval