ArcelorMittal Construction

ArcelorMittal

Metallic and organic coatings guide

Inspiring Smarter Building

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Designing with steel: From material choice to visual aesthetics

Architects who choose to build with steel tell us they like the distinctive signature it brings to their work, as well as its ability to meet new requirements on recycling, waste and sustainability.

As the market leader in coated steel solutions, ArcelorMittal has perhaps the broadest range available to help architects communicate their vision, no matter how daring or original that is. We offer a vast product range, completely new applications using traditional materials, and innovative aesthetics. We also have all the market expertise, technical knowledge and support services which customers need.

This guide is primarily designed to inform and inspire. It has been produced to help you select the best material for your project and choose the right system from our range to meet any requirement. We recommend that it is used in conjunction with our Colorissime® literature to help achieve the perfect combination of material and aesthetics.

Metallic and organic coatings guide ArcelorMittal Construction

ArcelorMittal

smart support

Smart Support is our promise to you; a comprehensive package of support that our customers can rely upon.

From design, industry expertise and training to environmental assessments and warranties, Smart Support offers you local knowledge and understanding to help you deliver your project efficiently and effectively.

Environmental Assessment

Ensuring the right products are chosen for a specific building environment and design from the start of any project is essential. Our technical team is available to help identify ways to optimise the design, performance and construction of your building from the very beginning by carrying out a full environmental assessment of your project. Our assessment includes appraising the building's environment, including situation, weather conditions and interior and exterior surroundings, alongside its design and performance. Based on this we will advise on the optimum solutions for your specific building, ways to enhance performance and construction logistics.

Technical and Design Support

Our local technical and design experts are available to assist you with both on-site, online and phone support. From reviewing the technical and design aspects of your project, to preparing specific design drawings, specifications, calculations and any other technical assistance required around performance, installation and logistics, our experienced team is on hand.

BIM Expertise

We can support you by providing standard or project specific BIM objects and advise on the development of your project using our solutions. A complete BIM library of our standard range of products is available to download and we can build bespoke BIM objects for any specially designed solutions.

ArcelorMittal

Tailor-made Solutions

We pride ourselves in being adaptable and flexible, helping our customers to achieve their vision. Our bespoke solutions ensure that specifiers and developers don't need to compromise on design. Working closely with our R&D and Technical teams we support clients around the world with flexible, tailor-made solutions, whatever the size, shape, colour or coating they are looking for.

Fast Product and Colour Sampling

Not sure which solution or colour is right for you? Contact your local support team who will be pleased to organise product samples or colour charts for our complete range of panel and façade solutions.

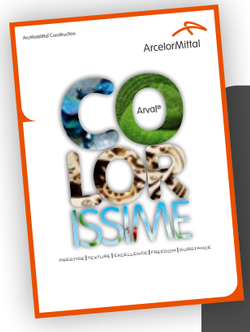
Project Support

Support does not just end after specification. From logistics to installation our support teams are available locally to help you optimise delivery, panel and façade installation and advise on post-installation maintenance; providing support across the whole product lifecycle.

All Backed by Our Flexible Warranty

We don't believe in a one size fits all approach to warranties. There are many factors that influence the longevity of a building and its component parts. This is why we develop individual warranties for every building our products are installed in. Our clear, no-quibble warranties are tailored to you and your project needs and our coatings are covered for up to 40 years.

Get support tailored to your needs with ArcelorMittal Construction Smart Support!



All ArcelorMittal Construction pre-painted steels are covered by the SMART SUPPORT warranty programme. Our Colorissime colour chart will help you choose the right product for you in terms of style and performance.

HAIRPLUS®, IRYSA®, KEYRON 200, HAIREXCEL®, R'UNIK, INTENSE®, PEARL, SINEA®

Explore our ranges

ArcelorMittal

Substance

Premium buildings require premium steel, turning your construction into a unique piece of architecture.

Freedom

Beautiful from every angle, Freedom is particularly well-suited for sunny and maritime environments,

and can face harsh environments

Excellence

This range offers best-in-class performance against UV and corrosion, recommended for challenging environments.

Texture

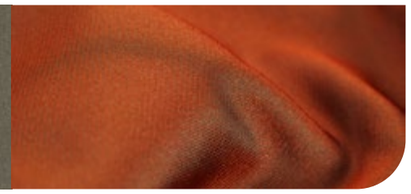
Emulating wooden and stone textures, as well as matte finishes, this range is both elegant and versatile.

Prestige

Distinctive and versatile, our Prestige range of coatings can suit even the most extraordinary buildings.

Explore a complete selection of organic coatings to ensure your building will look as good in years to come as it did when it was first built

Naturel
- Deeply textured, unique finish
- Velvet effect dedicated to façades
- Distinctive, prestigious look and feel



Edyxo Pattinated or Spangle
- Two unique textural finishes
- Marble and stone effects
- Tactile, aesthetic visual impact

Edyxo Wood
- Cosy and textured effect
- Authentic wood appearance
- Long-term colour stability

Explore our ranges

ArcelorMittal

Pearl
- Pearly shine, nacre
- Play of light and colour
- Color change according to the view angle

Irysa
- Iridescent emotions
- Inspired by nature and animals
- For the most contemporary façade

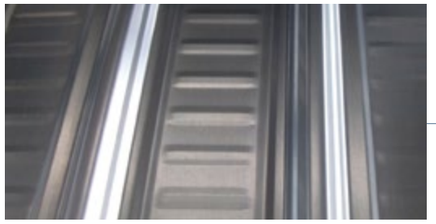
Sinea
- Ultimate protection
- Ideal for extreme environments
- Sustains colour stability and metallic sheen

Hairexcel
- Designed for life
- High durability
- Very resistant to UV and corrosion

Tectova
- Highly textured & tactile aesthetics
- Deep matt finish
- Ideal for roofing applications

Authentic
- Colours for traditional metallic roofing
- Ultra satinated coating
- Ideal for enhancing flat surfaces

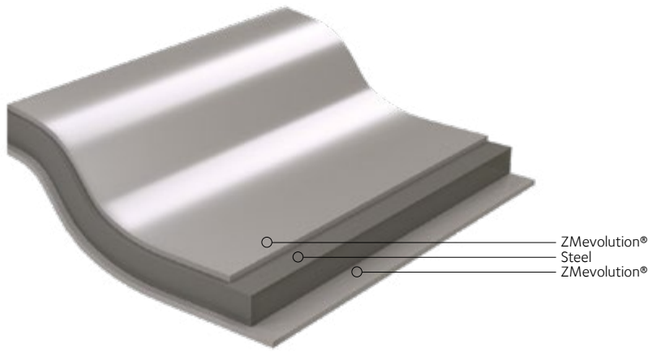
Intense
- Intensity of diamond
- Metallic colors for exceptionnal esthetics
- Unique perception of light



ZMevolution®

ArcelorMittal

Substance



New generation, galvanised metallic coating

Applicable standards

EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Type of coating

Metallic coating based on zinc aluminium magnesium alloy defined by "ZM" according to EN 10346: 2015

Appearance and applications

Homogeneous, grey, spangle-free aspect
Very low waviness allowing for nice aspect
The color of the coating can vary from one batch to another

Incompatibilities

Copper, lead, non protected steel, plaster, wood acids, oak and chesnut.

Brasing with tin-lead alloy is not suitable.


Cladding and roofing


Structural decking


Trays


Partitions

Selection guide

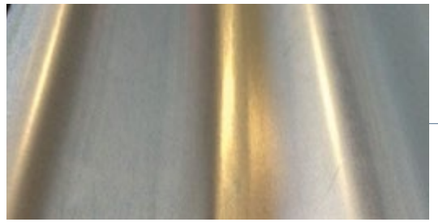
Outdoor

Passivated metallic coating	Rural non polluted	Urban and industrial		Marine				Special	
		Normal	Severe	20 to 10 km	10 to 3 km	Coast (< 3 km)	Mixed	High U.V.	Special
ZM175	A	B	C	B	C	C	C	A	C
ZM275	A	A	B	A	B	B	B	A	B

Indoor

Passivated metallic coating	Not aggressive				Aggressive
	Low humidity	Medium humidity	High humidity	Very high humidity	
ZM80	A	C	C	C	C
ZM120	A	A	B	C	C
ZM175	A	A	B	B	B
ZM275	A	A	A	B	B

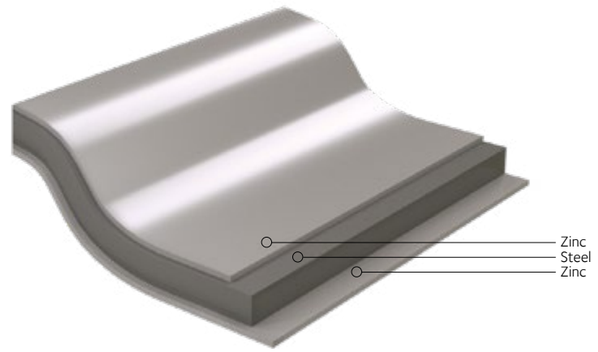
A : the product is suitable **B : as per survey** **C : the product is not suitable**



Galvanised Steel

ArcelorMittal

Substance



A popular standard

Applicable standards

EN 10346:2015

Type of coating

Metallic coating of at least 99% of zinc (defined by Z) and following the standard EN 10346: 2015

Appearance and applications

No spangle
Homogeneous metallic aspect

Incompatibilities

Copper, lead, non protected steel, plaster, wood acids, oak and chesnut.


Cladding and roofing


Structural decking


Trays


Partitions

Selection guide

Outdoor

Passivated metallic coating	Rural non polluted	Urban and industrial		Marine				Special	
		Normal	Severe	20 to 10 km	10 to 3 km	Coast (< 3 km)	Mixed	High U.V.	Special
Z 275	A	B	C	B	C	C	C	(1)	C
Z 350	A	A	B	A	B	B	B	(1)	B

Indoor

Passivated metallic coating	Not aggressive				Aggressive
	Low humidity	Medium humidity	High humidity	Very high humidity	
Z 180	A	C	C	C	C
Z 275	A	A	B	C	B
Z 350	A	A	B	B	B

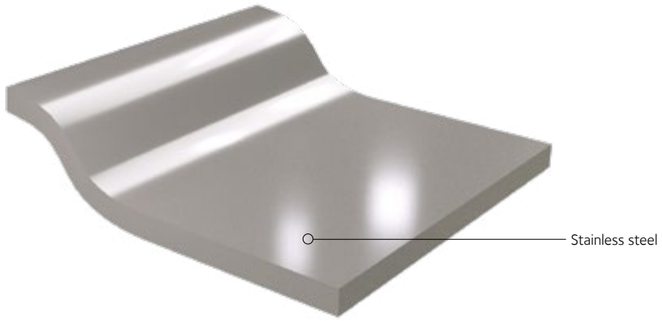
A : the product is suitable **B : as per survey** **C : the product is not suitable**

(1) Not relevant for this coating.

Stainless steel

Substance

Aesthetics first



Applicable standards

EN 10088-1: 2014

Appearance and applications

TOUCH TOP: mat aspect
TOUCH 2B: semi-mat aspect
TOUCH LINE: light brushed aspect
TOUCH GLOSS: gloss aspect

Cladding and roofing

Structural decking

Siding and Cassette

Selection guide

Outdoor

Stainless steel			Rural non polluted	Urban and industrial		Marine				Special	
Nuance	EN	AISI		Normal	Severe	20 to 10 km	10 to 3 km	Coast (< 3 km) (1)	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	316 L	A	A	B	A	A	B	B	A	B

Indoor

Stainless steel			Not aggressive			Weakly aggressive	Aggressive	Very aggressive
Nuance	EN	AISI	Low humidity	Medium humidity	High humidity	High humidity	Very high humidity	Very high humidity
18-9 E	1.4301	304	A	A	A	B	B	B
18-11 ML	1.4404	316 L	A	A	A	A	B	B

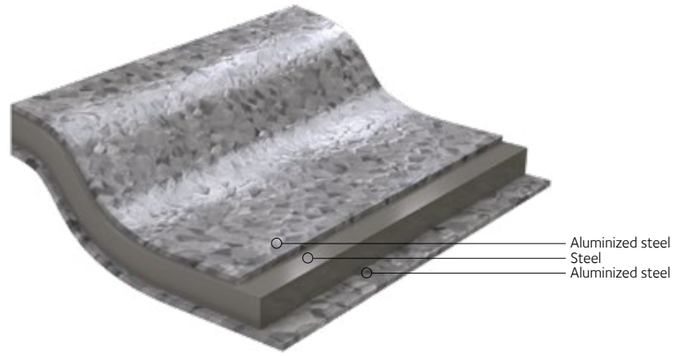
A : the product is suitable **B : as per survey** **C : the product is not suitable**

(1) For building locations within less than 1 km of any coast, consult us.

Kristal®

Substance

Natural beauty forever



Applicable standards

EN 10346: 2015
ETPM 18/0049 18th April 2018

Type of coating

Aluminized steel with a composition of 44 % of zinc, and 1.6 % of silicium allowing:
- a very high protection against corrosion
- an high sun reflectivity
- a long durability of brightness

Appearance and applications

Silver natural aspect
Small spangle with guaranteed size
Anti-finger print passivation

> **Available with Hairclyn® functionality.**

Incompatibilities

Copper, lead, non protected steel, wet concrete, alkalinity.

Brasing with tin-lead alloy is forbidden.

Cladding and roofing

Siding and Cassette

Selection guide

Outdoor

Metallic coating KRISTAL®	Rural non polluted	Urban and industrial		Marine				Special	
		Normal	Severe	20 to 10 km	10 to 3 km	Coast (< 3 km)	Mixed	High U.V.	Special
AZ 185	A	A	B	A	A	B	B	A	B

Indoor

Metallic coating KRISTAL®	Not aggressive			Weakly aggressive	Aggressive	Very aggressive
	Low humidity	Medium humidity	High humidity			
AZ 185	A	A	A	A	B	B

A : the product is suitable **B : as per survey** **C : the product is not suitable**

Indaten®

Substance

Create, it will do the rest

Applicable standards

EN 10025-5: 2018

Appearance and applications

This steel develops a purplish-brown patina that evolves according to the weather and climatic conditions.
To ensure a nice aspect, proper management of run-off water is required to avoid staining (e.g. using gutters, drainpipes, etc.)

Incompatibilities

Permanent humidity and water retention
Corrosive smokes
Contact with de-icing salt
Coastal aera

Our Coque MD® have been especially designed for Indaten®. For other sidings or cassettes, please consult us.

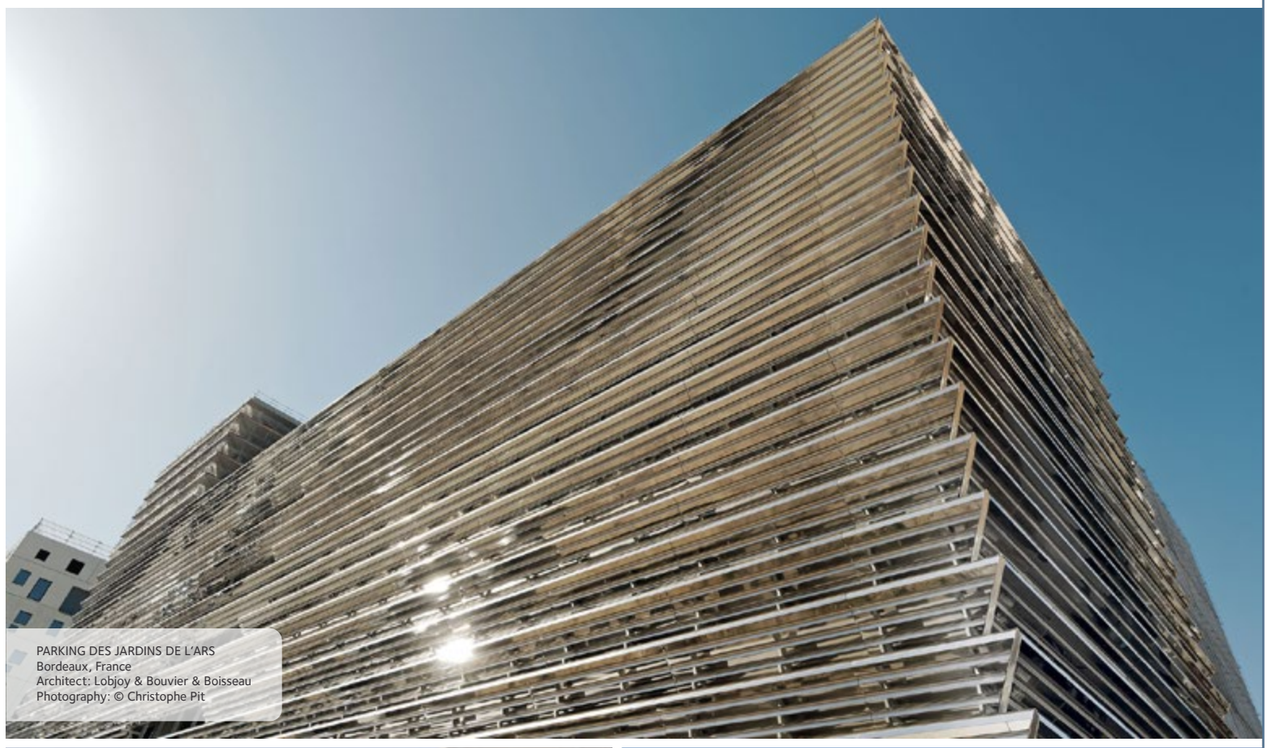
Siding and Cassette

Main properties

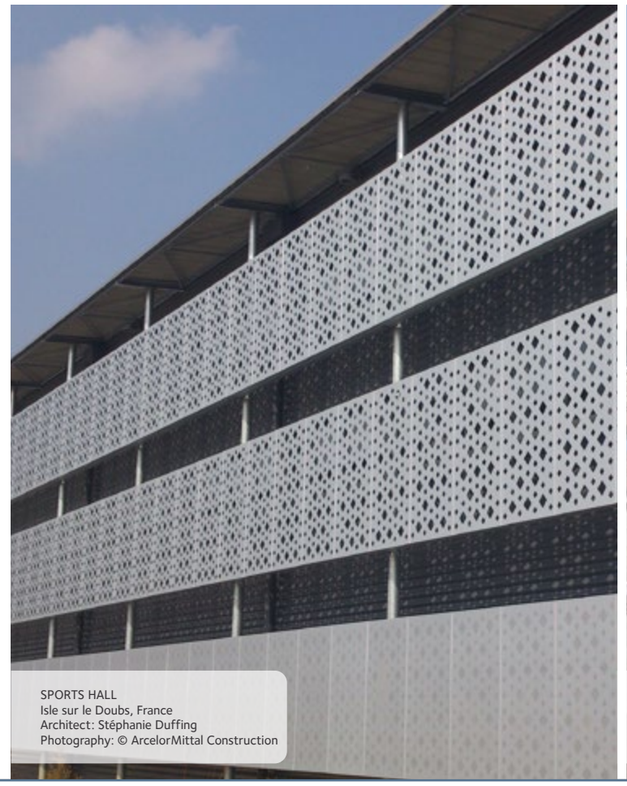
Quality	Cr (%)	Cu (%)	P (%)	T (°C)	KV (J) min.	Thickness (mm)	EN 10025-5:2005	Equivalence ASTM
Indaten® 355A	0,3-0,8	0,25-0,55	0,06-0,15	0	27	1,7-26,5	S355J0WP	A242 A606 T2 A606 T4
Indaten® 355D	0,4-0,8	0,25-0,55	<0,030	-20	27	1,5-20	S355J2W	A588 qualité A

Given the very specific behaviour of this material depending on the environment and the intended application, the material specification will be defined by our technical team on the basis of the project details and its location.

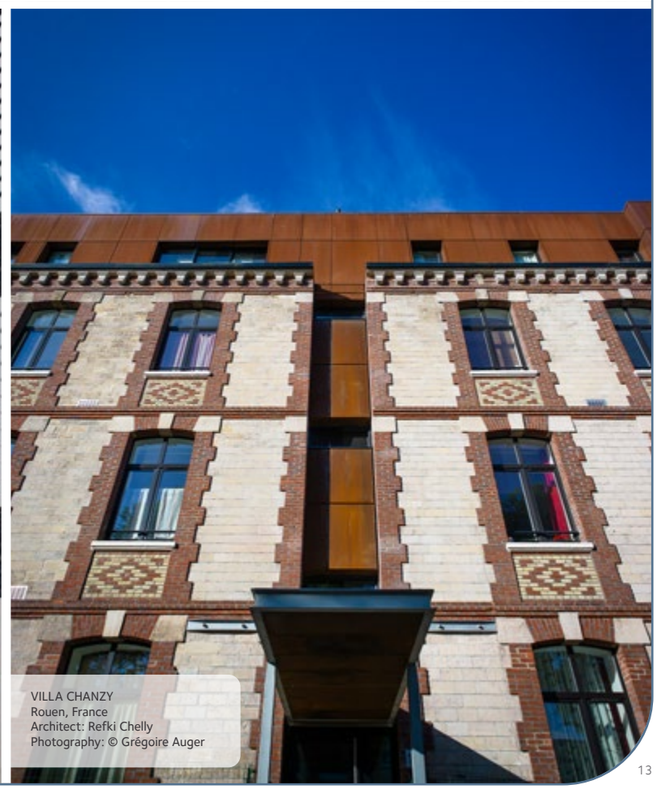
A : the product is suitable **B : as per survey** **C : the product is not suitable**



PARKING DES JARDINS DE L'ARS
Bordeaux, France
Architect: Lobjoy & Bouvier & Boisseau
Photography: © Christophe Pit



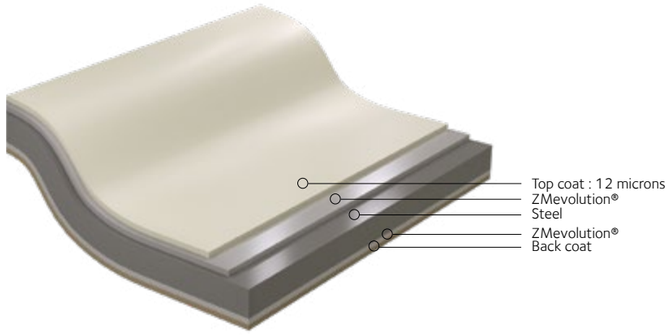
SPORTS HALL
Isle sur le Doubs, France
Architect: Stéphanie Duffing
Photography: © ArcelorMittal Construction



VILLA CHANZY
Rouen, France
Architect: Refki Chelly
Photography: © Grégoire Auger

Intérieur

Freedom



Properties and applications

- Ceiling and internal partition of industrial and tertiary buildings
- Structural decking and floor
- Trays
- Internal side of sandwich panels

Visual comfort

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Coating description

Composition
Thermosetting polyester resin
Front: 12 microns of polyester monolayer resin
Back: Back coat category **CPI2**

Gloss
Nominal: 30 GU

Coating class

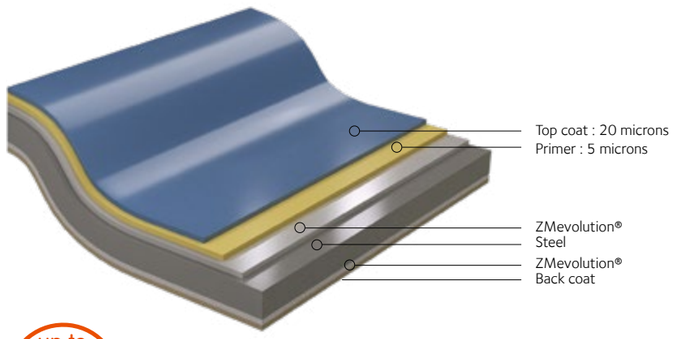
Indoor environment
Category **CPI2** (NF EN 10169)
Category **C2** (Zulassung Z-30.11-61)

Coating properties

Paint hardness	Pencil hardness	HB-B	**Corrosion**	Salt spray test	240 hours
				Humidity resistance	500 hours
Flexibility at 20°c	Brutal indentation	No peeling	**Chemical agents**	Acids, bases and solvents	Consult us
	Bending	5t without cracking		Acids and bases > Good Mineral oils > Very good Aliphatic solvents > Good Aromatic solvent > Good Ketonic solvents > Poor Chlorine solvents > Poor	
	ERICHSEN	Very good	**Fire behavior**	Euroclass	A1
Thermal resistance	Oven	Maxi : 90°C	**Volatil organic compounds**		TVOC(C6-C16) 3,5 µg/m³ CMR : benzene <0,4µg/m³ Formaldehyd : 4,4µg/m³

Hairplus

Freedom



up to **15** years warranty

Properties and applications

Good resistance to corrosion
Good color and appearance stability
Good outdoor durability
Good forming ability

> Available with anti-graffiti Flontec® functionality

- Urban

Colour freedom

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Coating description

Composition
Thermosetting polyester resin
Front: 5 µm of primer - 20 µm of top coat
Back: Back coat category **CPI2**

Possibilities
Back: 25 µm on request

Gloss
Hairplus®: nominal 30 GU
Hairplus® M on request: nominal 15 GU

Coating class

Indoor environment
Category **CPI3** (NF EN 10169)

Outdoor environment
Category **RUV3 and RC3** (NF EN 10169)
Category **C3** (Zulassung Z-30.11-61)

Coating properties

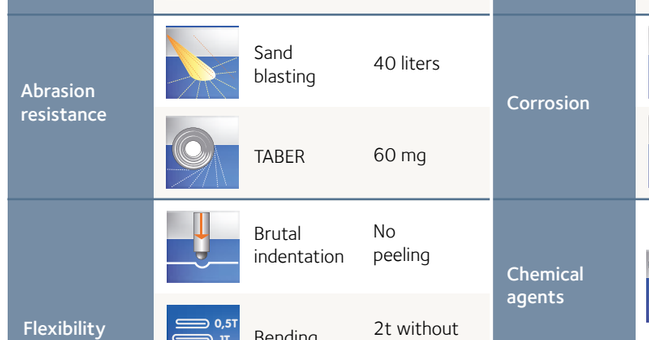
Paint hardness	Pencil hardness	HB-H	**Color Gloss**	UV resistance	ΔE ≤ 3 Gloss retention ≥ 60%
Abrasion resistance	Sand blasting	40 liters	**Corrosion**	Salt spray test	360 hours
	TABER	60 mg		Humidity resistance	1000 hours
Flexibility at 20°c	Brutal indentation	No peeling	**Chemical agents**	Acids, bases and solvents	Consult us
	Bending	3t without cracking		Acids and bases > Good Mineral oils > Very good Aliphatic solvents > Very good Aromatic solvent > Good Ketonic solvents > Poor Chlorine solvents > Poor	
	ERICHSEN	Very good	**Fire behavior**	Euroclass	A1
Thermal resistance	Oven	Maxi : 90°C	**Volatil organic compounds**		TVOC : 9,5µg/m³ Formaldehyd : 11,9µg/m³ CMR<Limit of detection

Any trust guarantee must be validated/authorized by ArcelorMittal Construction and the durability will be defined by our specialists after analysis of the environmental questionnaire.

Hairultra®

Freedom

ArcelorMittal



up to **20** years warranty

Properties and applications

Very good resistance to corrosion
Good color and appearance stability
Good durability outside
Good forming ability

> Available with anti-graffiti Flontec® functionality

Urban · Marine · Industrial · Strong sunning

Colors and performances

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Coating description

Composition
Thermosetting polyester resin
Front: 15 µm of primer - 20 µm of top coat
Back: Back coat category **CPI2**

Possibilities
Back: 35 µm on request

Gloss
Nominal: 30 GU

Coating class

Indoor environment
Category **CPI4** (NF EN 10169)

Outdoor environment
Category **RUV4 and RC4** (NF EN 10169)
Category **C3** (Zulassung Z-30.11-61)

Coating properties

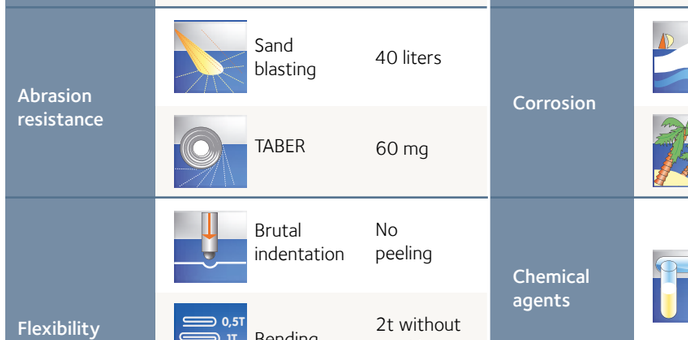
Paint hardness	Pencil hardness	F-H B	**Color Gloss**	UV resistance	ΔE ≤ 3 Gloss retention ≥ 80%	
Abrasion resistance	Sand blasting	40 liters	**Corrosion**	Salt spray test	500 hours	
	TABER	60 mg		Humidity resistance	1500 hours	
Flexibility at 20°c	Brutal indentation	No peeling	**Chemical agents**	Acids, bases and solvents	Consult us	Acids and bases > Good Mineral oils > Very good Aliphatic solvents > Very good Aromatic solvent > Good Ketonic solvents > Poor Chlorine solvents > Poor
	Bending	2t without cracking				
	ERICHSEN	Very good	**Fire behavior**	Euroclass	A1	
Thermal resistance	Oven	Maxi : 90°C	**Volatil organic compounds**		TVOC(C6-C16) 21,5 µg/m³ CMR : benzene 0,9µg/m³ Formaldehyd :14,5µg/m³	

Any trust guarantee must be validated/authorized by ArcelorMittal Construction and the durability will be defined by our specialists after analysis of the environmental questionnaire.

Hairfarm

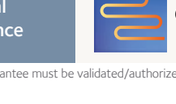
Freedom

ArcelorMittal



up to **10** years warranty

Coating description

Single skin		External: Hairplus® or Hairultra® Internal: Hairfarm 15 µm of primer - 20 µm of top coat Specific color
Sandwich Panel		External facing: Hairplus® or Hairultra® or Hairexcel® Internal facing: Hairfarm with reinforced back coat
Properties	Gloss	Nominal: 30 GU

Performances in corrosive environments

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Applications

Food storage
Ventilated livestock building
Stable (consult us)

Coating class

Indoor environment
Category **CPI4** (NF EN 10169)

Coating properties

Paint hardness	Pencil hardness	F-HB	**Color Gloss**	UV resistance	ΔE ≤ 3 Gloss retention ≥ 60%	
Abrasion resistance	Sand blasting	40 liters	**Corrosion**	Salt spray test	500 hours	
	TABER	60 mg		Humidity resistance	1500 hours	
Flexibility at 20°c	Brutal indentation	No peeling	**Chemical agents**	Acids, bases and solvents	Consult us	Acids and bases > Good Mineral oils > Very good Aliphatic solvents > Very good Aromatic solvent > Good Ketonic solvents > Poor Chlorine solvents > Poor
	Bending	2t without cracking				
	ERICHSEN	Very good	**Fire behavior**	Euroclass	Depends on application. Consult us.	
Thermal resistance	Oven	Maxi : 90°C	**Volatil organic compounds**		TVOC(C6-C16) 21,5 µg/m³ CMR : benzene 0,9µg/m³ Formaldehyd :14,5µg/m³	

Any trust guarantee must be validated/authorized by ArcelorMittal Construction and the durability will be defined by our specialists after analysis of the environmental questionnaire.

Hairflon® 25

Freedom

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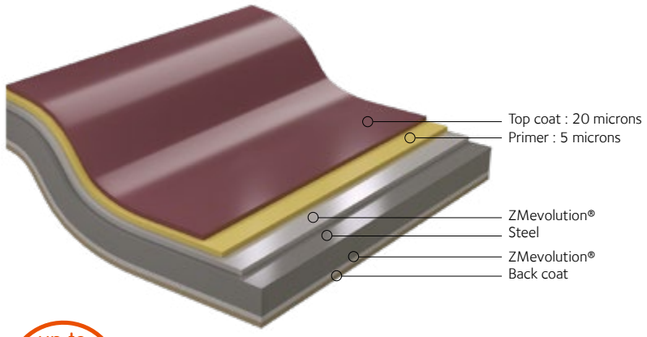

up to **15** years warranty

Properties and applications

Good resistance to chemical agents, corrosion, abrasion and erosion
Very good flexibility
Very good anti-staining properties
Excellent color and appearance stability
Very good ultraviolet ray resistance
Not recommended for roofing application

Urban · Industrial · Strong sunning

PVDF Technology

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Coating description

Composition
PVDF based thermoplastic fluoride resin (70%)
Front: 5 µm of primer - 20 µm of top coat
Back: Back coat category **CPI2**

Possibilities
Back: 25 µm on request

Gloss
Nominal: 20 GU

Coating class

Indoor environment
Category **CPI3** (NF EN 10169)

Outdoor environment
Category **RUV4 and RC3** (NF EN 10169)
Category **C3** (Zulassung Z-30.11-61)

Coating properties

Paint hardness	Pencil hardness	H B-B	**Color Gloss**	UV resistance	ΔE ≤ 2 Gloss retention ≥ 80%
Abrasion resistance	Sand blasting	60 liters	**Corrosion**	Salt spray test	360 hours
	TABER	25 mg		Humidity resistance	1000 hours
Flexibility at 20°c	Brutal indentation	No peeling	**Chemical agents**	Acids, bases and solvents Consult us	Acids and bases > Very good Acid nitric vapor > Very good Mineral oils > Very good Détergents > Very good Aliphatic solvents > Very good Aromatic solvent > Very good Ketonic solvents > Very good Chlorine solvents > Poor
	Bending	3t without cracking			
	ERICHSEN	Very good	**Fire behavior**	Euroclass	Single skin with a back coat of 12µm polyester
Thermal resistance	Oven	Maxi : 100°C	**Volatil organic compounds**	A+	TVOC(C6-C16) 285329,5 µg/m³ CMR : benzene <0,6µg/m³ Formaldehyd 7,9µg/m³

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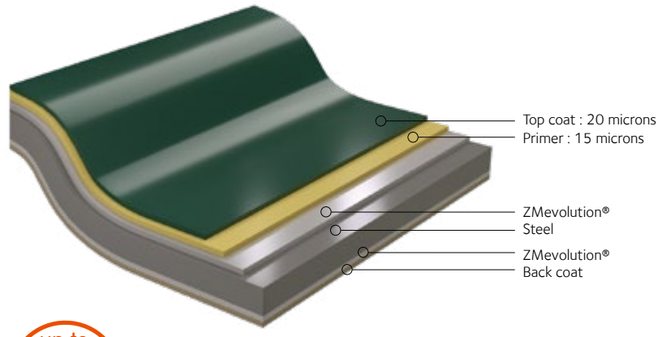
Hairflon® 35

Freedom

ArcelorMittal



up to **20** years warranty

Properties and applications

Good resistance to chemical agents, to corrosion, abrasion and erosion
Very good ultraviolet ray resistance
Very good flexibility
Excellent color and appearance stability
Anti-staining properties

Urban · Marine · Industrial · Strong sunning

PVDF Technology

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Coating description

Composition
PVDF based thermoplastic fluoride resin (70%)
Front: 15 µm of primer - 20 µm of top coat
Back: Back coat category **CPI2**

Possibilities
Back: 35 µm on request

Gloss
Nominal: 20 GU

Coating class

Indoor environment
Category **CPI4** (NF EN 10169)

Outdoor environment
Category **RUV4 and RC4** (NF EN 10169)
Category **C3** (Zulassung Z-30.11-61)

Coating properties

Paint hardness	Pencil hardness	HB-B	**Color Gloss**	UV resistance	ΔE ≤ 2 Gloss retention ≥ 60%
Abrasion resistance	Sand blasting	80 liters	**Corrosion**	Salt spray test	500 hours
	TABER	25 mg		Humidity resistance	1000 hours
Flexibility at 20°c	Brutal indentation	No peeling	**Chemical agents**	Acids, bases and solvents Consult us	Acids and bases > Very good Acid nitric vapor > Very good Mineral oils > Very good Détergents > Very good Aliphatic solvents > Very good Aromatic solvent > Very good Ketonic solvents > Very good Chlorine solvents > Good
	Bending	2t without cracking			
	ERICHSEN	Very good	**Fire behavior**	Euroclass	Depends on application. Consult us.
Thermal resistance	Oven	Maxi : 100°C	**Volatil organic compounds**	A+	TVOC(C6-C16) 285329,5 µg/m³ CMR : benzene <0,6µg/m³ Formaldehyd 7,9µg/m³

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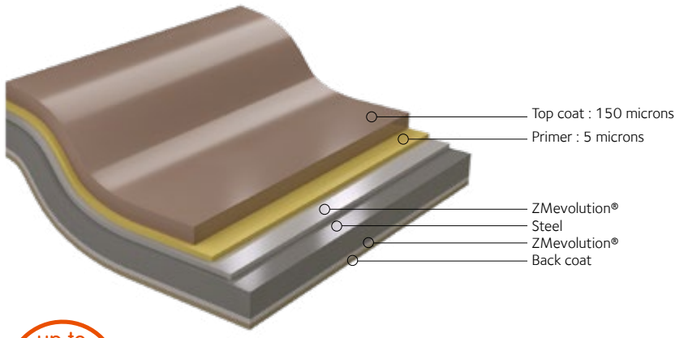
Keyron® 150

Freedom

ArcelorMittal



up to 20 years warranty

Properties and applications

Very good behavior in corrosive and aggressive atmospheres
Very good flexibility
Very good resistance to abrasion thanks to high thickness
Recommended when the indoor environment is severe

Sand wind · Industrial · Marine · High humidity

Strength & Durability

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®

Coating description

Composition
Polyvinyl chloride based thermoplastic resin phtalate free
Front: 5 µm of primer - 150 µm of top coat
Back: Back coat category **CPI2**

Possibilities
Back: 150 µm on request

Gloss
Nominal: 30 GU

Coating class

Indoor environment
Category **CPI4** (NF EN 10169)

Outdoor environment
Category **RUV3 and RC5** (NF EN 10169)

Coating properties

Paint hardness	Pencil hardness		**Color Gloss**	UV resistance	ΔE ≤ 3 Gloss retention ≥ 60%
Abrasion resistance	Sand blasting	350 liters	**Corrosion**	Salt spray test	500 hours
	TABER	30 mg		Humidity resistance	1500 hours
Flexibility at 20°c	Brutal indentation	No peeling	**Chemical agents**	Acids, bases and solvents	Acids and bases > Very good Acid nitric vapor > Very good Mineral oils > Very good Aliphatic solvents > Good Aromatic solvent > Poor Ketonic solvents > Poor Chlorine solvents > Poor
	Bending (0,5T 1T 1,5T)	2t without cracking		Consult us	
	ERICHSEN	Very good	**Fire behavior**	Euroclass	CS-2, d0 with a back coat of 12µm polyester or epoxy
Thermal resistance	Oven	Maxi : 80°C	**Volatil organic compounds**		TVOC(C6-C16) 2853 µg/m³ CMR : benzene <0,7µg/m³ Formaldehyd 0,3µg/m³

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Keyron® 200

Freedom

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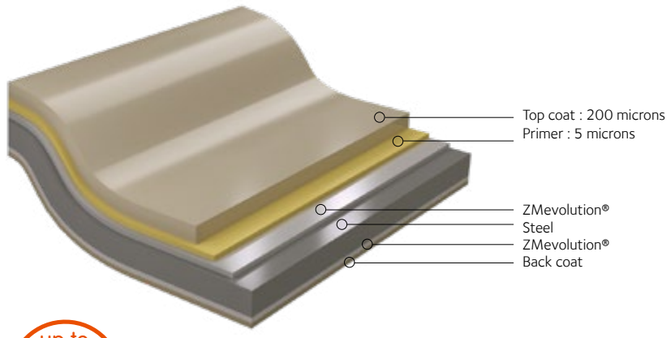

up to 20 years warranty

Properties and applications

Very good behavior in corrosive and aggressive atmospheres
Very good flexibility
Very good resistance to abrasion thanks to high thickness
Recommended when the indoor environment is severe

Sand wind · Industrial · Marine · High humidity

Strength & Durability

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®

Coating description

Composition
Polyvinyl chloride based thermoplastic resin phtalate free
Front: 5 µm of primer - 200 µm of top coat
Back: Back coat category **CPI2**

Possibilities
Front: embossed or smooth aspect
Back: 150 µm on request

Gloss
Nominal: 30 GU

Coating class

Indoor environment
Category **CPI5** (NF EN 10169)

Outdoor environment
Category **RUV3 and RC5** (NF EN 10169)

Coating properties

Paint hardness	Pencil hardness		**Color Gloss**	UV resistance	ΔE ≤ 3 Gloss retention ≥ 60%
Abrasion resistance	Sand blasting	500 liters	**Corrosion**	Salt spray test	500 hours
	TABER	30 mg		Humidity resistance	1500 hours
Flexibility at 20°c	Brutal indentation	No peeling	**Chemical agents**	Acids, bases and solvents	Acids and bases > Very good Acid nitric vapor > Very good Mineral oils > Very good Détergents > Very good Aliphatic solvents > Very good Aromatic solvent > Very good Ketonic solvents > Very good Chlorine solvents > Good
	Bending (0,5T 1T 1,5T)	2t without cracking		Consult us	
	ERICHSEN	Very good	**Fire behavior**	Euroclass	CS-2, d0 with a back coat of 12µm polyester or epoxy
Thermal resistance	Oven	Maxi : 80°C	**Volatil organic compounds**		TVOC(C6-C16) 2853 µg/m³ CMR : benzene <0,7µg/m³ Formaldehyd 0,3µg/m³

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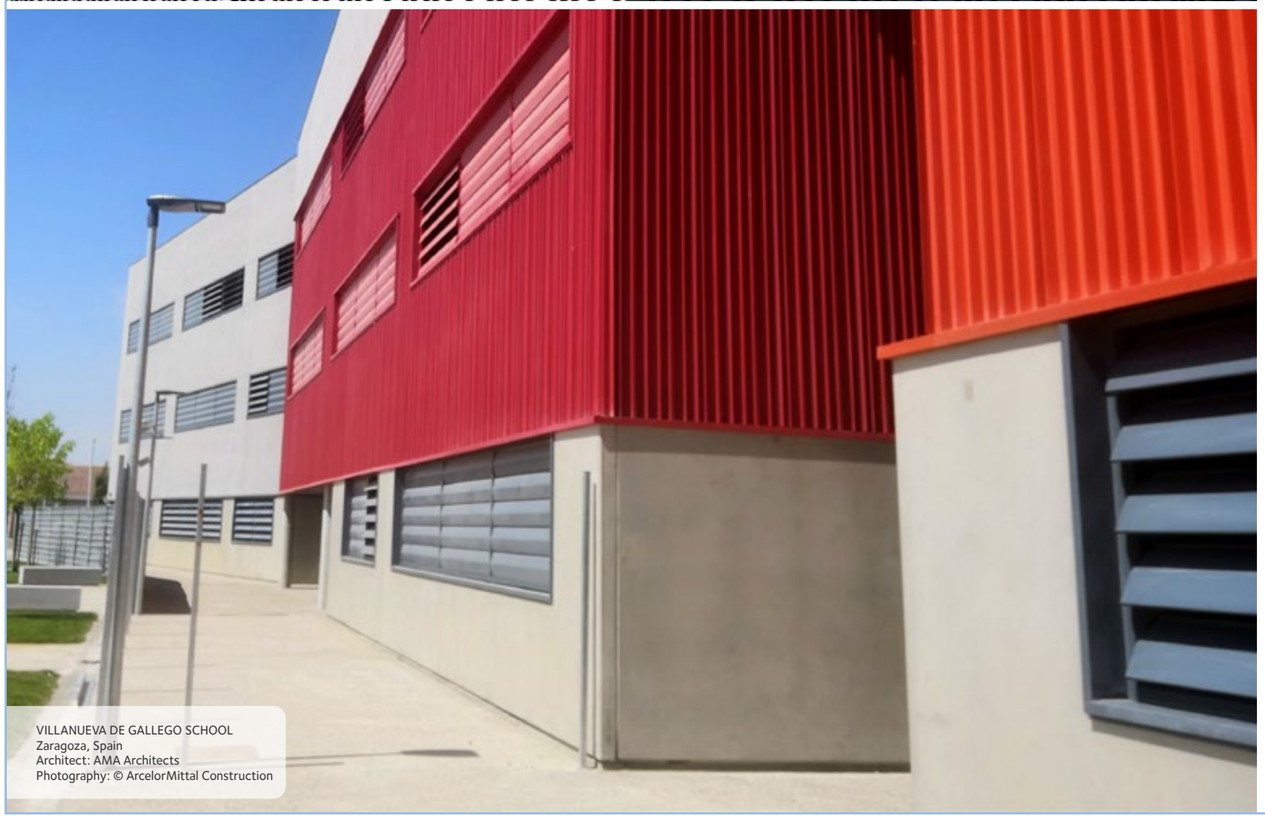
References

ArcelorMittal

VAN BAAREN
Schoonhoven, Netherlands
Architect: Slangen & Koenis
Photography: © LT Photography



VILLANUEVA DE GALLEGO SCHOOL
Zaragoza, Spain
Architect: AMA Architects
Photography: © ArcelorMittal Construction

References

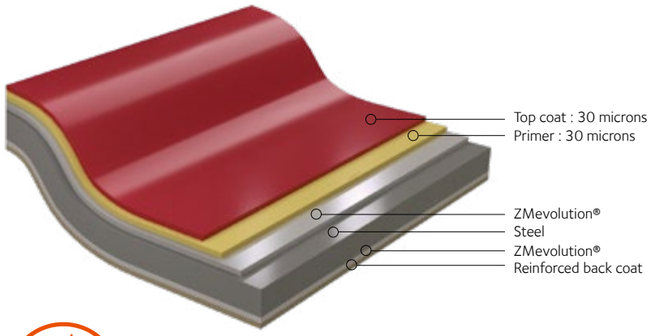
ArcelorMittal

DE ZWART SCHOONMAAK
Oosteinde, Netherlands
Architect: Tordoir Van Den Berg Architecten
Photography: © LT Photography

Hairexcel®

Excellence

ArcelorMittal



up to **30** years warranty

Properties and applications

> Available with anti-graffiti Flontec® functionality

Very good chemical agents resistance
Excellent resistance to corrosion, ultraviolet rays, abrasion and scratches
Excellent color and appearance stability
Very high durability

Harsh urban · Industrial · Marine · High humidity

Designed for life

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Coating description

Composition
Composite coating
Front: 30 µm of primer - 30 µm of top coat
Back: Back coat category **CPI2**

Possibilities
Back: 60 µm on request

Gloss
Grained aspect: gloss 30 GU
Particularly bright metallized colors

Coating class

Indoor environment
Category **CPI4** (NF EN 10169)

Outdoor environment
Category **RUV4 and RC5** (NF EN 10169)
Category **C4** (Zulassung Z-30.11-61)

Coating properties

Paint hardness	Pencil hardness	H-F	Color Gloss	UV resistance	ΔE ≤ 2 Gloss retention ≥ 80%
Abrasion resistance	Sand blasting	120 liters	Corrosion	Salt spray test	750 hours
	TABER	40 mg		Humidity resistance	1500 hours
Flexibility at 20°c	Brutal indentation	No peeling	Chemical agents	Acids, bases and solvents	Consult us
	Bending	2t without cracking			
	ERICHSEN	Very good	Fire behavior	Euroclass	A1
Thermal resistance	Oven	Maxi : 100°C	Volatil organic compounds		TVOC(C6-C16) 11,8 µg/m³ CMR : benzene <0,7µg/m³ Formaldehyd 3,9µg/m³

Chemical agents	
Acids and bases	> Very good
Acid nitric vapor	> Very good
Mineral oils	> Very good
Aliphatic solvents	> Very good
Aromatic solvent	> Good
Ketonic solvents	> Poor
Chlorine solvents	> Poor

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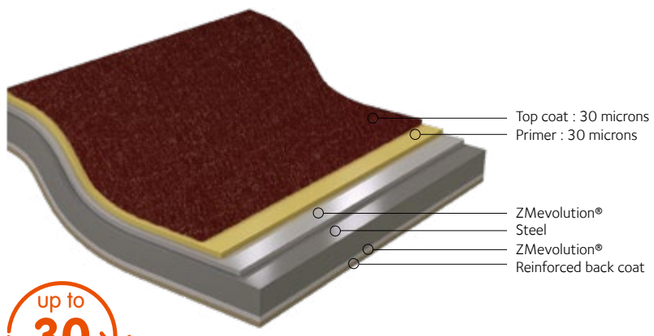
Tectova®

Excellence

ArcelorMittal



up to **30** years warranty

Properties and applications

Very good chemical agents resistance
Excellent resistance to corrosion, ultraviolet rays, abrasion and scratches
Excellent color and appearance stability
Very high durability

Harsh urban · Industrial · Roof Anti-slipping coating · High humidity · Marine

Designed for life

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Coating description

Composition
Composite coating part of the Hairexcel range
Front: 30 µm of primer - 30 µm of top coat
Back: Back coat category **CPI2**

Gloss
Without light reflection

Coating class

Indoor environment
Category **CPI4** (NF EN 10169)

Outdoor environment
Category **RUV4 and RC5** (NF EN 10169)
Category **C4** (Zulassung Z-30.11-61)

Coating properties

Paint hardness	Pencil hardness	H-F	Color Gloss	UV resistance	ΔE ≤ 2 Gloss retention ≥ 80%
Abrasion resistance	Sand blasting	150 liters	Corrosion	Salt spray test	750 hours
	TABER	40 mg		Humidity resistance	1500 hours
Flexibility at 20°c	Brutal indentation	No peeling	Chemical agents	Acids, bases and solvents	Consult us
	Bending	2t without cracking			
	ERICHSEN	Very good	Fire behavior	Euroclass	A1
Thermal resistance	Oven	Maxi : 100°C	Volatil organic compounds		TVOC(C6-C16) 11,8 µg/m³ CMR : benzene <0,7µg/m³ Formaldehyd 3,9µg/m³

Chemical agents	
Acids and bases	> Good
Aliphatic solvents	> Very good
Alcohols	> Very good
Aromatic solvent	> Very good
Ketonic solvents	> Very good

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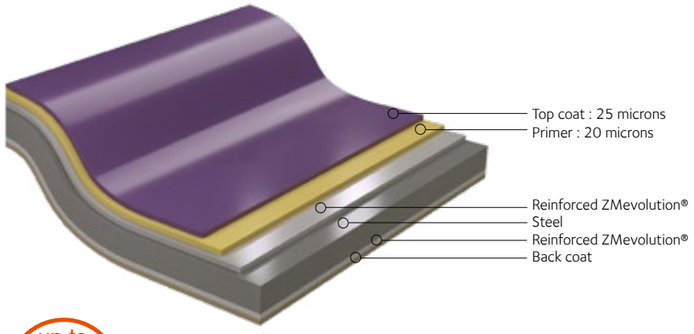
R'unik

Excellence

ArcelorMittal

A new generation of pre-painted steels



up to **25** years warranty

Applicable standards

Metal substrate
EN 10346
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®

Coating description

Composition
Composite coating
Front: 20 µm of primer - 25 µm of top coat
Back: Back coat category **CPI2**

Possibilities
Back: 45 µm on request

Gloss
Grained aspect: reduced gloss 20 GU

Coating class

Indoor environment
Category **CPI4** (NF EN 10169)

Outdoor environment
Category **RUV4 and RC5** (NF EN 10169)

Properties and applications

Very good chemical agents resistance
Excellent resistance to corrosion, ultraviolet rays, abrasion and scratches
Excellent color and appearance stability
Very high durability

Sand wind · Industrial · Harsh urban · Strong marine sunning

Coating properties

Paint hardness	Pencil hardness	H-F	Color Gloss	UV resistance	ΔE ≤ 2 Gloss retention ≥ 80%
Abrasion resistance	Sand blasting	120 liters	Corrosion	Salt spray test	750 hours
	TABER	40 mg		Humidity resistance	1500 hours
Flexibility at 20°c	Brutal indentation	No peeling	Chemical agents	Acids, bases and solvents	Consult us
	Bending (0,5T 1T 1,5T)	2t without cracking			
	ERICHSEN	Very good	Fire behavior	Euroclass	A1
Thermal resistance	Oven	Maxi : 100°C	Volatil organic compounds	A+	TVOC(C6-C16) 11,8 µg/m³ CMR : benzene <0,7µg/m³ Formaldehyd 3,9µg/m³

Acids and bases	> Very good
Acid nitric vapor	> Very good
Mineral oils	> Very good
Aliphatic solvents	> Very good
Aromatic solvent	> Good
Ketonic solvents	> Poor
Chlorine solvents	> Poor

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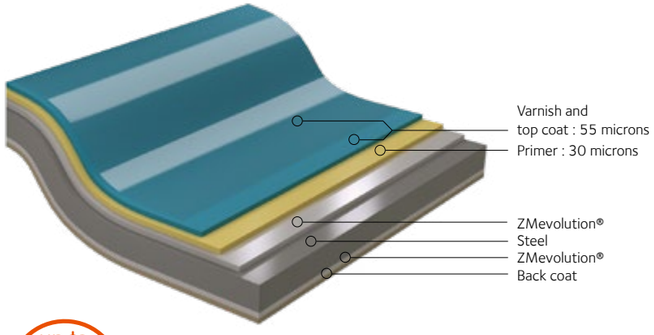
Sinea®

Excellence

ArcelorMittal

Ultimate protection



up to **40** years warranty

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®

Coating description

Composition
Composite coating
Front: 85 µm multi-layer polyurethan
Back: Back coat category **CPI2**

Possibilities
Back: 85 µm on request
60 µm on request

Gloss
Grained aspect: reduced gloss 30 GU

Coating class

Indoor environment
Category **CPI5** (NF EN 10169)

Outdoor environment
Category **RUV4 and RC5** (NF EN 10169)

Very good chemical agents resistance
Excellent resistance to corrosion, ultraviolet rays, abrasion and scratches
Excellent color and appearance stability
Very high durability

Sand wind · Industrial · Strong marine sunning · High humidity

Coating properties

Paint hardness	Pencil hardness	H-F	Color Gloss	UV resistance	ΔE ≤ 2 Gloss retention ≥ 80%
Abrasion resistance	Sand blasting	240 liters	Corrosion	Salt spray test	1000 hours
	TABER	40 mg		Humidity resistance	1500 hours
Flexibility at 20°c	Brutal indentation	No peeling	Chemical agents	Acids, bases and solvents	Consult us
	Bending (0,5T 1T 1,5T)	1,5t without cracking			
	ERICHSEN	Excellent	Fire behavior	Euroclass	Single skin with back coat of 35µm A2, S-1, d0
Thermal resistance	Oven	Maxi : 100°C	Volatil organic compounds	A+	A+, according to french labelling

Acids and bases	> Very good
Acid nitric vapor	> Very good
Mineral oils	> Very good
Aliphatic solvents	> Very good
Aromatic solvent	> Good
Ketonic solvents	> Good
Chlorine solvents	> Good

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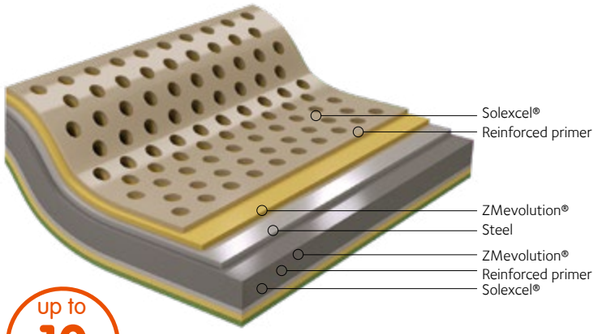
Solexcel®

Excellence



up to **10** years warranty

Properties and recommendations

Excellent resistance to ultraviolet, abrasion, scratches
Excellent stability of color and aspect

Sun-screen

For sun-screens

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Coating description

Composition
Composite coating
Top coat: Solexcel® on reinforced primer
Back coat: Solexcel® on reinforced primer

Gloss
Grained aspect, smooth gloss

We recommend the perforations R10T14 and R6T10, especially adapted for sun-screens.

Zinc coating	Rural non polluted	Urban and industrial		Marine				Special	
		Normal	Severe	20 to 10 km	10 to 3 km	3 to 1 km*	Mixed*	High U.V	Special
Solexcel® 60/60	A	A	B	A	B	B	C	A	C

A : the product is suitable **B : as per survey** **C : the product is not suitable**
For others thicknesses, please consult us.

Coating properties

Paint hardness	Pencil hardness	H-F	Color Gloss	UV resistance	ΔE ≤ 2 Gloss retention ≥ 80%	
Abrasion resistance	Sand blasting	120 liters	Corrosion	Salt spray test	750 hours	
	TABER	40 mg		Humidity resistance	1500 hours	
Flexibility at 20°c	Brutal indentation	No peeling	Chemical agents	Acids, bases and solvents	Acids and bases Acid nitric vapor Mineral oils Aliphatic solvents Aromatic solvent Ketonic solvents Chlorine solvents	> Very good > Very good > Very good > Very good > Good > Poor > Poor
	Bending	2t without cracking		Consult us		
	ERICHSEN	Very good	Fire behavior	Euroclass	A2, S-1, d0	
Thermal resistance	Oven	Maxi : 100°C	Volatil organic compounds	A+	A+, according to French labelling	

References

CULTURAL CENTER MARC SANGNIER
Mont St Aignan, France
Architect: Karine MILLET
Photography: © SBE552-ELITE D&B

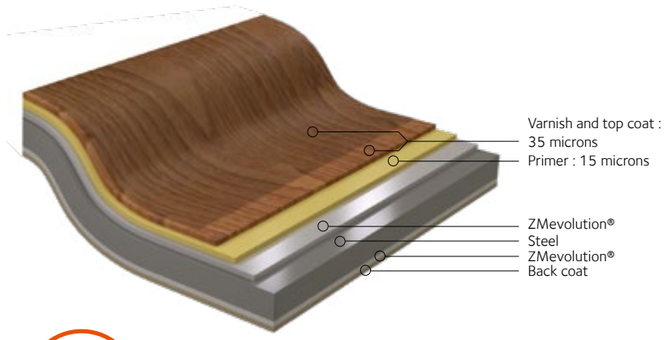
SPORTQUBE
Nijmegen, Netherlands
Architect: LIAG Architecten
Photography: © LT Photography

KORF VIS BV
Urk, Netherlands
Photography: © ArcelorMittal Construction

Edyxo®

Texture

ArcelorMittal



up to **25** years warranty

Properties and applications

Very good resistance to corrosion
Good color and appearance stability
Good outdoor durability
Good forming ability

Urban · Industrial · Marine · Strong sunning

Cosy & Textured effect

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Coating description

Composition
Thermosetting polyester resin
Front: 15 µm of primer - 35 µm of top coat and transparent varnish
Back: Back coat category **CPI2**

Gloss
Nominal: mat

Coating class

Indoor environment
Category **CPI4** (NF EN 10169)

Outdoor environment
Category **RUV4 and RC4** (NF EN 10169)
Category **C3** (Zulassung Z-30.11-61)

Coating properties

Paint hardness	Pencil hardness	F-HB	**Color Gloss**	UV resistance	ΔE ≤ 2 Gloss retention ≥ 80%	
Abrasion resistance	Sand blasting	40 liters	**Corrosion**	Salt spray test	500 hours	
	TABER	60 mg		Humidity resistance	1500 hours	
Flexibility at 20°c	Brutal indentation	No peeling	**Chemical agents**	Acids, bases and solvents	Consult us	Acids and bases > Good Mineral oils > Very good Aliphatic solvents > Very good Aromatic solvent > Good Ketonic solvents > Poor Chlorine solvents > Poor
	Bending (0,5T 1T 1,5T)	2t without cracking	**Fire behavior**	Euroclass	A1 Single skin with 12µm polyester back coat	
	ERICHSEN	Very good				
Thermal resistance	Oven	Maxi : 90°C	**Volatil organic compounds**		A, according to French labelling	

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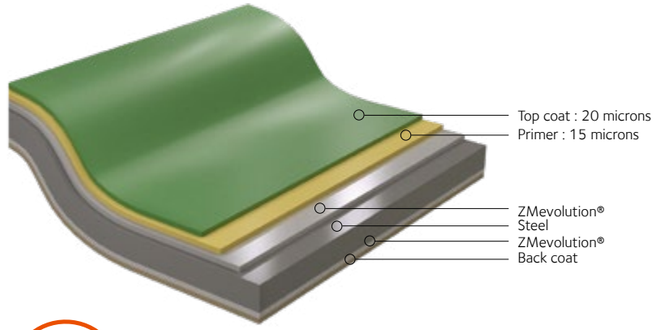
Authentic

Texture

ArcelorMittal



up to **20** years warranty

Properties and applications

Very good resistance to corrosion
Good color and appearance stability
Good outdoor durability
Good forming ability

Urban · Industrial · Marine · Strong sunning

Soft gloss

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Coating description

Composition
Thermosetting polyester resin
Front: 15 µm of primer - 20 µm of top coat
Back: Back coat category **CPI2**

Possibilities
Back: 35 µm on request

Gloss
Nominal: 15 GU / Semi-mat

Coating class

Indoor environment
Category **CPI4** (NF EN 10169)

Outdoor environment
Category **RUV4 and RC4** (NF EN 10169)
Category **C3** (Zulassung Z-30.11-61)

Coating properties

Paint hardness	Pencil hardness	F-HB	**Color Gloss**	UV resistance	ΔE ≤ 3 Gloss retention ≥ 80%	
Abrasion resistance	Sand blasting	40 liters	**Corrosion**	Salt spray test	500 hours	
	TABER	60 mg		Humidity resistance	1500 hours	
Flexibility at 20°c	Brutal indentation	No peeling	**Chemical agents**	Acids, bases and solvents	Consult us	Acids and bases > Good Mineral oils > Very good Aliphatic solvents > Very good Aromatic solvent > Good Ketonic solvents > Poor Chlorine solvents > Poor
	Bending (0,5T 1T 1,5T)	2t without cracking	**Fire behavior**	Euroclass	A1 Single skin with 12µm polyester back coat	
	ERICHSEN	Very good				
Thermal resistance	Oven	Maxi : 90°C	**Volatil organic compounds**		TVOC(C6-C16) 21,5 µg/m³ CMR : benzene 0,9µg/m³ Formaldehyd :14,5µg/m³	

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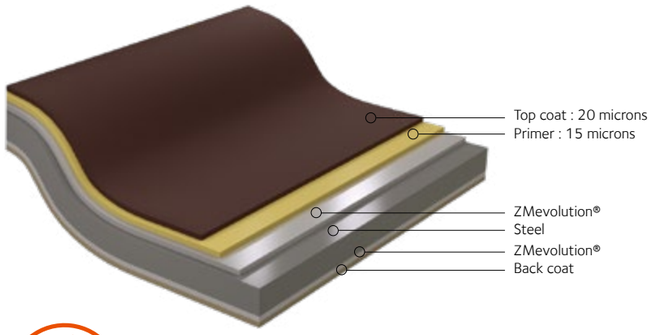
Naturel

Texture



up to 20 years warranty

Properties and applications

Very good resistance to corrosion
Good color and appearance stability
Good outdoor durability
Good forming ability

Urban · Industrial · Marine · Strong sunning

Coating properties

Paint hardness	Pencil hardness	F-HB	Color Gloss	UV resistance	ΔE ≤ 3 Gloss retention ≥ 80%
Abrasion resistance	Sand blasting	40 liters	Corrosion	Salt spray test	500 hours
	TABER	60 mg		Humidity resistance	1500 hours
Flexibility at 20°c	Brutal indentation	No peeling	Chemical agents	Acids, bases and solvents	Consult us
	Bending (0,5T / 1T / 1,5T)	2t without cracking	Fire behavior	Euroclass	A1 Single skin with 12µm polyester back coat
	ERICHSEN	Very good	Volatil organic compounds		TVOC(C6-C16) 21,5 µg/m³ CMR : benzene 0,9µg/m³ Formaldehyd :14,5µg/m³
Thermal resistance	Oven	Maxi : 90°C			

Acids and bases	> Good
Mineral oils	> Very good
Aliphatic solvents	> Very good
Aromatic solvent	> Good
Ketonic solvents	> Poor
Chlorine solvents	> Poor

Any trust guarantee must be validated/authorized by ArcelorMittal Construction and the durability will be defined by our specialists after analysis of the environmental questionnaire.

ArcelorMittal

References

Cosy & Textured effect

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Coating description

Composition
Thermosetting polyester resin
Front: 15 µm of primer - 20 µm of top coat
Back: Back coat category **CPI2**

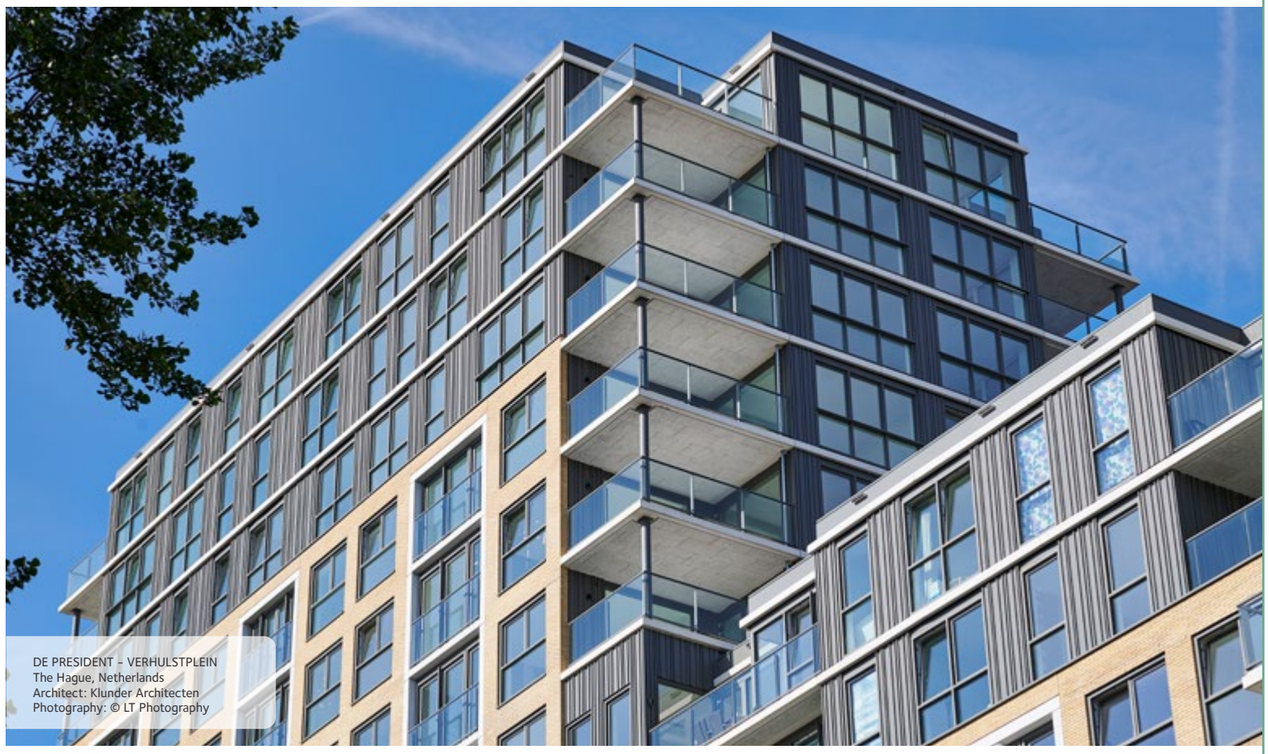
Possibilities
Back: 35 µm on request

Gloss
Without light reflection

Coating class

Indoor environment
Category **CPI4** (NF EN 10169)

Outdoor environment
Category **RUV4 and RC4** (NF EN 10169)
Category **C3** (Zulassung Z-30.11-61)



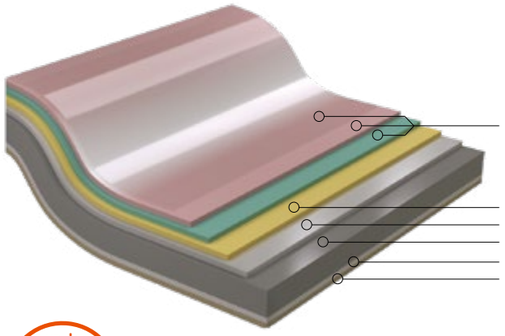
DE PRESIDENT - VERHULSTPLEIN
The Hague, Netherlands
Architect: Klunder Architecten
Photography: © LT Photography

KERMARREC ENTERPRISE HQ
Rennes, France
Architect: Treguer Architectes
Photography: © Benjamin Gouret

Pearl

Prestige

ArcelorMittal



up to **30** years warranty

Properties and applications

> **Available with anti-graffiti Flontec® functionality**

Excellent anti-staining properties
Excellent resistance to chemical agents, ultraviolet rays, corrosion, abrasion and erosion
Excellent color and appearance stability
Very good flexibility

Harsh urban · Industrial · Sand wind · Strong marine sunning

Pearly shine

Applicable standards

Metal substrate
EN 10346
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Coating description

Composition
Thermoplastic fluoride resin (70%)
Front: 10 µm of primer - 50 µm of PVDF top coat and varnish
Back: Back coat category **CPI2**

Possibilities
Back: 60 µm on request

Gloss
Nominal: 30 GU

Coating class

Indoor environment
Category **CPI5** (NF EN 10169)

Outdoor environment
Category **RUV4 and RC5** (NF EN 10169)
Category **C4** (Zulassung Z-30.11-61)

Coating properties

Paint hardness	Pencil hardness	HB-F	**Color Gloss**	UV resistance	ΔE ≤ 2 Gloss retention ≥ 80%
Abrasion resistance	Sand blasting	120 liters	**Corrosion**	Salt spray test	750 hours
	TABER	25 mg		Humidity resistance	1500 hours
Flexibility at 20°c	Brutal indentation	No peeling	**Chemical agents**	Acids, bases and solvents	Consult us
	Bending	2t without cracking			
	ERICHSEN	Very good	**Fire behavior**	Euroclass	A1 Single skin with 15µm polyester back coat
Thermal resistance	Oven	Maxi : 100°C	**Volatil organic compounds**	A+	TVOC(C6-C16) 285329,5 µg/m³ CMR : benzene <0,6µg/m³ Formaldehyd 7,9µg/m³

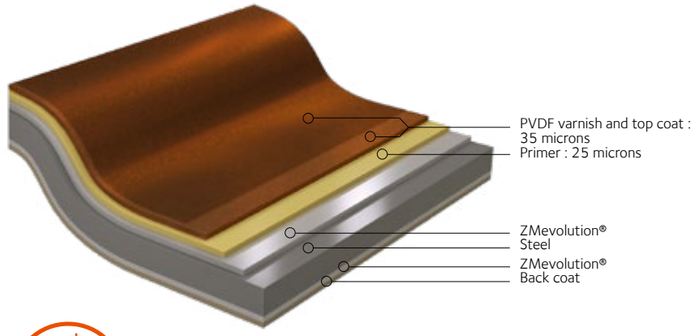
Chemical agents	
Acids and bases	> Very good
Nitric acid vapors	> Very good
Mineral oils	> Very good
Detergents	> Very good
Aliphatic solvents	> Very good
Aromatic solvent	> Very good
Ketonic solvents	> Very good
Chlorine solvents	> Very good

Any trust guarantee must be validated/authorized by ArcelorMittal Construction and the durability will be defined by our specialists after analysis of the environmental questionnaire.

Intense

Prestige

ArcelorMittal



up to **30** years warranty

Properties and applications

> **Available with anti-graffiti Flontec® functionality**

Especially designed for metallized colors
Excellent resistance to chemical agents, to corrosion, to ultraviolet rays, to abrasion and erosion
Excellent color and appearance stability
Very good flexibility and anti-staining properties

Harsh urban · Industrial · Sand wind · Strong sunning Marine

Intensity of diamond

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Coating description

Composition
Polyvinylidene fluoride resin (70%)
Front: 25 µm of primer - 35 µm of PVDF top coat and varnish
Back: Back coat category **CPI2**

Possibilities
Back: 60 µm on request

Gloss
Nominal: 30 GU

Coating class

Indoor environment
Category **CPI5** (NF EN 10169)

Outdoor environment
Category **RUV4 and RC5** (NF EN 10169)
Category **C4** (Zulassung Z-30.11-61)

Coating properties

Paint hardness	Pencil hardness	F-HB	**Color Gloss**	UV resistance	ΔE ≤ 3 Gloss retention ≥ 80%
Abrasion resistance	Sand blasting	120 liters	**Corrosion**	Salt spray test	750 hours
	TABER	25 mg		Humidity resistance	1500 hours
Flexibility at 20°c	Brutal indentation	No peeling	**Chemical agents**	Acids, bases and solvents	Consult us
	Bending	2t without cracking			
	ERICHSEN	Very good	**Fire behavior**	Euroclass	A1 Single skin with 15µm polyester back coat
Thermal resistance	Oven	Maxi : 100°C	**Volatil organic compounds**	A+	TVOC(C6-C16) 285329,5 µg/m³ CMR : benzene <0,6µg/m³ Formaldehyd 7,9µg/m³

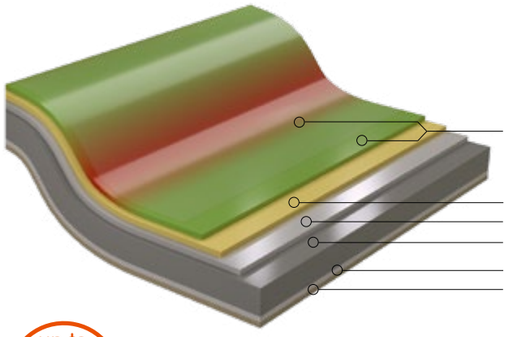
Chemical agents	
Acids and bases	> Very good
Nitric acid vapors	> Very good
Mineral oils	> Very good
Detergents	> Very good
Aliphatic solvents	> Very good
Aromatic solvent	> Very good
Ketonic solvents	> Very good
Chlorine solvents	> Very good

Any trust guarantee must be validated/authorized by ArcelorMittal Construction and the durability will be defined by our specialists after analysis of the environmental questionnaire.

Irysa®

Prestige

ArcelorMittal



up to 25 years warranty

Iridescent emotions

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Coating description

Composition
Thermosetting high durability polyester resin
Front: 15 µm of primer - 35 µm of top coat and varnish
Back: Back coat category **CPI2**

Possibilities
Back: Hairultra®, Hairexcel® or Irysa® on request

Gloss
Nominal: 30 GU

Coating class

Indoor environment
Category **CPI4** (NF EN 10169)

Outdoor environment
Category **RUV4 and RC4** (NF EN 10169)

Properties and applications

Excellent corrosion and ultraviolet rays resistance
Excellent color and appearance stability
Reinforced anti-staining properties thanks to its varnish protective coat

Harsh urban · Industrial · Sand wind · Strong sunning

Coating properties

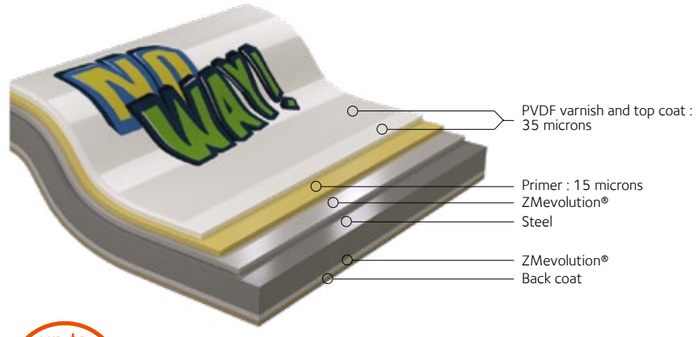
Paint hardness	Pencil hardness	F-HB	Color Gloss	UV resistance	ΔE ≤ 2 Gloss retention ≥ 80%
Abrasion resistance	Sand blasting	60 liters	Corrosion	Salt spray test	500 hours
	TABER	60 mg		Humidity resistance	1500 hours
Flexibility at 20°c	Brutal indentation	No peeling	Chemical agents	Acids, bases and solvents	Acids and bases > Good Mineral oils > Very good Aliphatic solvents > Very good Aromatic solvent > Good Ketonic solvents > Poor Chlorine solvents > Poor
	Bending (0,5T 1T 1,5T)	2t without cracking		Consult us	
	ERICHSEN	Very good	Fire behavior	Euroclass	Measurment in progress
Thermal resistance	Oven	Maxi : 90°C	Volatil organic compounds	A, according to French labelling	

Any trust guarantee must be validated/authorized by ArcelorMittal Construction and the durability will be defined by our specialists after analysis of the environmental questionnaire.

Flontec®

Prestige

ArcelorMittal



up to 25 years warranty

Anti-graffiti

Applicable standards

Metal substrate
EN 10346: 2015
CSTB: ETPM ZMevolution®
Zulassung Z-30.11-61

Organic coating
EN 10169: 2013
CSTB: ETPM ZMevolution®

Coating description

Composition
Thermoplastic fluoride resin (70%)
Front: 15 µm of primer - 35 µm of PVDF top coat and varnish
Back: Back coat category **CPI2**

Possibilities
Back: Hairultra® or Hairexcel® on request

Gloss
Nominal: 30 GU

Coating class

Indoor environment
Category **CPI5** (NF EN 10169)

Outdoor environment
Category **RUV4 and RC5** (NF EN 10169)

Properties and applications

Excellent corrosion and ultraviolet rays resistance
Excellent anti-staining properties
Recommended for urban environments and facades with a high-risk of defacement

Coating properties

Paint hardness	Pencil hardness	F-HB	Color Gloss	UV resistance	ΔE ≤ 2 Gloss retention ≥ 80%
Abrasion resistance	Sand blasting	100 liters	Corrosion	Salt spray test	500 hours
	TABER	15 mg		Humidity resistance	1500 hours
Flexibility at 20°c	Brutal indentation	No peeling	Chemical agents	Graffiti should be removed as quickly as possible (within 72 h). It is recommended to wash the concerned facade with cold water using a high pressure washer. The use of plastic scraper or a non abrasive sponge is possible. For small damaged areas, alcohol for housekeeping can be used as remover. If the adhesion is to strong, special removers can be recommended by our services, contact us. Numerous graffiti removers are available on the market. The use of those chemicals are not allowed on Flontec®. Making touch-ups using painting on a damaged element is not recommended. FLONTEC® anti-graffiti does not protect against acidic paints.	
	Bending (0,5T 1T 1,5T)	2t without cracking			
	ERICHSEN	Very good			
Thermal resistance	Oven	Maxi : 100°C	Fire behavior	Euroclass	A1 Single skin with 15µm polyester back coat

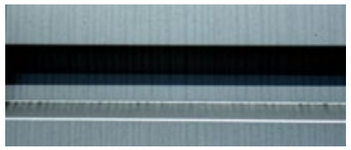
Any trust guarantee must be validated/authorized by ArcelorMittal Construction and the durability will be defined by our specialists after analysis of the environmental questionnaire.

Hairclyn®

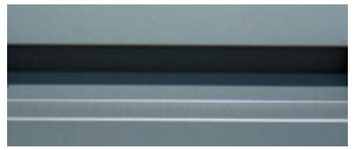
Prestige

ArcelorMittal

Aspect after the rain

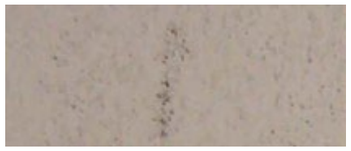


Without Hairclyn®

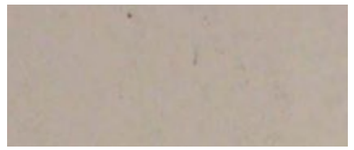


With Hairclyn®

Natural staining of the facade

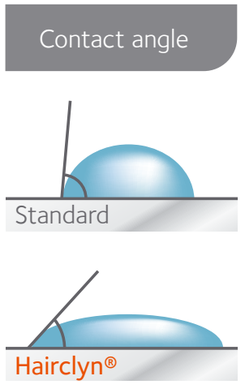


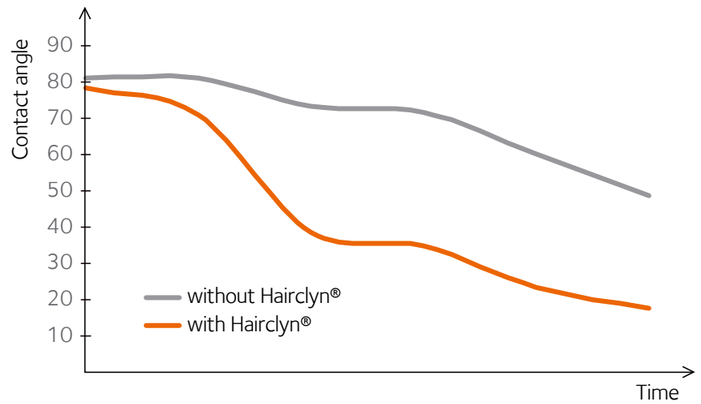
Without Hairclyn®



With Hairclyn®

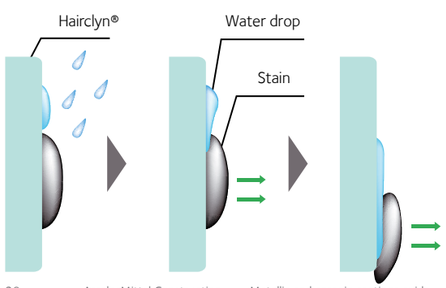
Behavior





Thanks to its absorbent properties, **Hairclyn®** ensures a good distribution of water on all the surfaces, and facilitates the cleaning by rainwater.

This process will ensure that your facades find their original aspects.



Cleaning in the rain

Coating description

- Available in our coating ranges (please consult us) and offers the same properties (performance and durability)
- Available for many of the Colorissime colours (consult us)
- Suitable for our entire range of facade solutions with a thickness of up to 1.2 mm.
- Requires a pre-painted support adapted to the environment
- Not compatible with the Natural, Irysa®, Pearl and Intense ranges.

Hairclyn® promotes the aesthetics of your facade in pre-painted steel solution:

- easy-cleaning effect even by the rain
- better resistance against pollution: stains adhere less and are less encrusted.

Hairclyn® is always more hydrophilic than a standard pre-painted steel. This property ensures an efficient distribution of the water on the surface and facilitates the cleaning against clogging.
Thanks to this process, the facades recover their original aspect.

Muralys

Prestige

ArcelorMittal

Muralys Créativ

A real technological and aesthetic revolution in the world of architecture, the Muralys steel printing process opens the doors to your creativity.

Resulting from a particularly innovative technique: Molecular Digital Transfer, the Muralys process makes it possible to reproduce any image chosen by the architect or client on an ArcelorMittal Construction product. All ideas are possible, even the most extravagant ones, because the print resolution is breathtaking.

From dream to reality

Applicable standards

The Muralys technology meets the most demanding standards in the building sector:

- Adhesion according to ISO 2409
- Gloss according to ISO 2813
- Indentation according to ASTM D 2794
- Resistance to strong humide ambient containing EN ISO3231
- Guarantee anti-graffiti : solution approved by RATP (french railway)

To create a single universe

Photo **Letters** **Texture**

Muralys Collection

Available on many products of the ArcelorMittal Construction range (Hairplan and ST sidings, sandwich panels, MD and BS cassettes, Trapeza profiles and Frequence), Muralys Collection offers clients and architects the advantage of simplifying the development and definition of the façade design.

16 exclusive models for an original facade

Metallic inspirations, for a touch of modernity.

Carbone **Titanium** **Metallic Disc** **Indaten®** **Bulging Metal** **Diamond Cubes** **Metallic Tiles**

Mineral influence, to create original facades while respecting the local architectural constraints.

Natural Stone **Concrete** **Red Bricks** **Glass Pasta** **Marbel**

Natural oils, ideal solutions in the green environments, without the constraints related to the maintenance of a vegetalized frontage.

Kraft Paper **Wood of Bamboo** **Old Wood** **Ivy**

General information

Cladding elements are manufactured from coils of coated or stainless steel. The sheet is uncoiled, flattened and sheared lengthwise, before being cold processed on a roll-forming, panel or bending line. The elements are then stacked and packaged at the end of the manufacturing line.
Adhesion of the zinc to the base metal takes place during the continuous galvanization process and guarantees increased resistance to corrosion. An important feature of metallic coated steel produced this way is that it is rust-resisting, not only on the zinc coated sides but also when cut, This is because iron-zinc cathodic protection halts the spread of rust on the sheared edges and in the fixing holes via a transfer of zinc.

Galvanised steel sheets are passivated in a chromium VI-free chemical solution to resist efflorescent (white rust) during transportation and storage. However, non-pre-painted galvanised steel can sometimes appear with white rust caused by a deposit of hydrated zinc oxide, zinc hydro carbonate or zinc oxychloride. This does not alter its mechanical properties in any way. In pre-painted steel, small scratches are protected by zinc, but we still recommend that these are retouched with an appropriate paint.

ArcelorMittal Construction's pre-painted steel sheets are manufactured under the most rigorous controls and are suitable for use in a wide range of sectors including industrial, commercial, educational and storage.

QUALITY MANAGEMENT

At every stage in production, rigorous assessment processes are enforced to check that the appearance of the product complies with the standards in force and meets customers' requirements. Laboratory tests are performed by the quality department to verify the conformity of the mechanical properties of both the steel and the coating.

ENVIRONMENT

Our manufacturing processes are carried out with absolute respect for the environment, and sustainability is one of the key benefits of pre-painted steel. In accordance with the NF P 01-010 standard, Health and Environmental statement forms are available, on request, for the following coated steel products:

> structural decking and floor decking
> single skin roofing profile
> cladding tray
> sandwich panels
> partition

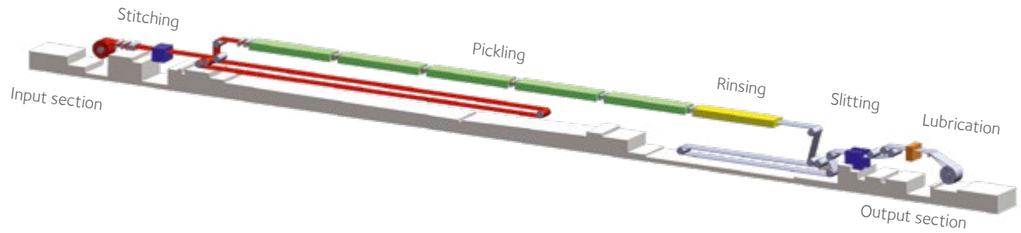
Our priority is to minimise the environmental impact of all our products and, in line with that, all traces of heavy metals are removed from our coloured coatings

Our manufacturing process (Contrisson plant) is certified ISO 14001.

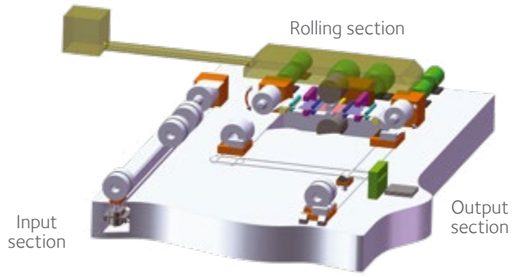
Tools

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

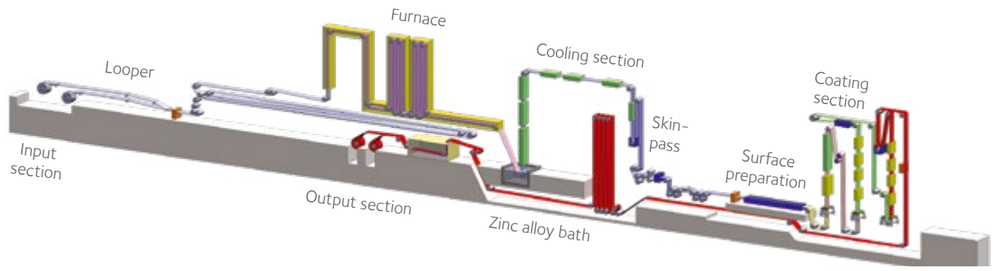
PICKLING LINE



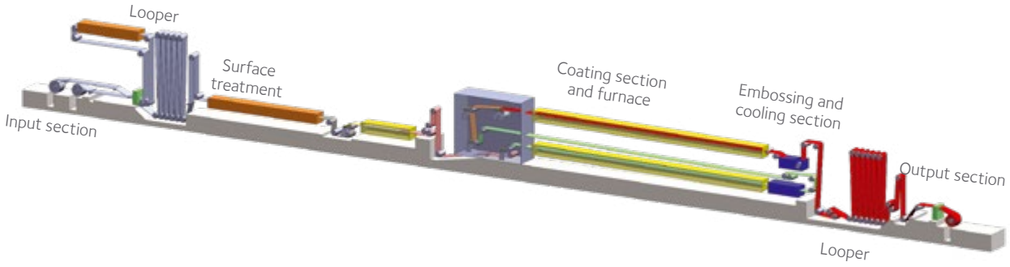
COLD ROLLING



GALVANISING AND PREPAINTING COMBLINES LG1 & LG2



PREPAINTING LINE L3



Mechanical properties of steel

We select the most appropriate grade steel for every product we manufacture. Our steel is hot dip coated with a metal alloy on our continuous line and complies with the NF EN 10346 standard.

Excellent corrosion resistance is achieved by the coating applied to the surface of the steel substrate.

S 280 GD
Minimum conventional yield stress $Rp_{0,2}$ = 280 MPa
Minimum tensile strength Rm = 360 MPa
Minimum elongation at failure A80 = 18 %

S 320 GD
Minimum conventional yield stress $Rp_{0,2}$ = 320 MPa
Minimum tensile strength Rm = 390 MPa
Minimum elongation at failure A80 = 17 %

S 350 GD
Minimum conventional yield stress $Rp_{0,2}$ = 350 MPa
Minimum tensile strength Rm = 420 MPa
Minimum elongation at failure A80 = 16 %

All our stainless steel grades have a minimum yield stress $Rp_{0,2}$ equal to 300 MPa.

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 intrinsic corrosion resistance is achieved by a reaction between the chromium and the oxygen, which creates a very fine self-protecting passive layer.

The surface can be changed by applying mechanical treatment or by hot dip surface tinning. These materials are covered by the NF EN 10088 standard.

In the Colorissime by ArcelorMittal, we have laid out the range of finishes and colours available for each of our coatings which comply with the relevant standards.

Selection Guide

OUTDOOR ENVIRONMENT

Organic coatings (1)	Category according XP P34-301	EN 10169		Rural non polluted	Urban and industrial		Marine					Special	
		UV category	Corrosion category		Normal	Severe	20 to 10 km	10 to 3 km	Coast (3 to 1 km) (2)	1 km to 300 m	Mixte	High U.V.	Special
Hairplus®	IV	RUV3	RC3	A	A	C	A	B	C	C	C	B	C
Hairultra® Edyxo® Irysa® Naturel Authentic	VI	RUV4	RC4	A	A	B	A	A	A	B	B	A	B
Hairflon® 25	IV	RUV4	RC3	A	A	C	A	B	C	C	C	B	C
Hairflon® 35	VI	RUV4	RC4	A	A	B	A	A	A	C	B	A	B
Keyron® 200	V	RUV3	RC5	A	A	B	A	A	A	B	B	B	B
Hairexcel® Flontec® Intense Pearl Sinea®	VI	RUV4	RC5	A	A	B	A	A	A	B	B	A	B
R'Unik	VI	RUV4	RC5	A	A	B	A	A	A	B	B	A	B
Hairclyn®	Coating properties without Hairclyn®												
Muralys	Coating properties without Muralys												

INDOOR ENVIRONMENT

Organic coatings (1)	Category according XP P34-301	EN 10169	Non aggressive			Weakly aggressive	Aggressive	Very aggressive
		Humidity category	Low humidity	Medium humidity	High humidity	High humidity	Very high humidity	Very high humidity
Intérieur	II	CPI2	A	B	C	C	C	C
Hairultra® Edyxo® Irysa® Naturel Authentic	IIIa	CPI4	A	A	A	B	C	C
Hairplus® Hairflon® 25	IIIa	CPI3	A	A	B	C	C	C
R'Unik	IVb	CP14	A	A	A	A	B	C
Hairflon® 35 Hairexcel® Keyron® 150	IVb	CPI4	A	A	A	A	B	C
Keyron® 200	IVb	CPI5	A	A	A	A	B	C
Intense Pearl Sinea®	Vc	CPI5	A	A	A	A	B	C

A: the product is suitable **B: as per survey** **C : the product is not suitable**

(1) Unless otherwise specified when the order is placed, the underside is systematically coated with a standard coating of category II or CPI2.
(2) Sea coast from 3 to 1 km : direct aggression from seawater and/or seaspray are not included. Sea coast <300 m: consult us.

GENERAL CHARACTERISTICS

METAL SUBSTRATE: GALVANISED STEEL according to standards P34-310 / NF EN 10346 or ZMevolution® according to ETPM from CSTB, Zulassung from DIBT and Technical approval from SITAC.
COATING: according to standards NF P 34-301/ NF 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, ArcelorMittal Construction has taken out an insurance policy covering the manufacturer's liability for any material manufactured by the Company in so far 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, ArcelorMittal Construction technical brochures...).
> the coating chosen is suited to the corresponding type of atmospheric exposure.
On request, a paint 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. Whatever the case, the request has to be done before placing the order.

Operating Precautions

TRANSPORT

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

STORAGE

Galvanised or pre-painted galvanised steel sheeting should not be stacked in bundles because it is sensitive to damp.

Products must be stored in a covered warehouse or under a tarpaulin where air can circulate freely. To avoid any permanent damage, they should be kept off the ground and at an angle from the horizontal so that any condensation or damp can dry off easily. Stones or waste on the ground should be removed so that it does not damage the sheets underneath.
Under no circumstances, should product be left outside covered with just a plastic sheet.
If any pre-painted galvanised sheets do become wet from rain or condensation, they should be immediately propped up and dried separately to avoid any risk of superficial damage from surface oxidation.

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 and ultraviolet rays.

HANDLING

Care much be taking when handling so that there is no risk of the profiles being bumped or scratched and bare steel being exposed which would make them unsuitable for installation. This includes handling by slings or other lifting devices.

INSTALLATION

Assembly should be carried out in accordance with the manufacturer's instructions and in line with all relevant standards.
It is important that the installation company receives delivery of the structural frame first, mainly to prevent water stagnating on the roof and any deformation of the cladding, which would be aesthetically unattractive 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 could lead to incipient corrosion over time. Some of the ArcelorMittal Construction products are delivered with a protective film covering. This should be removed as the products are erected, and at the latest, within 3 months after the date of despatch, even if the products have not yet been fitted.

On-site cutting and machining

- When cutting elements on-site during assembly, it is important to protect the paint coating (with sheeting) to avoid any damage.
- The burr should be removed.
- Clear varnish needs to be applied along cut edges to prevent rust.

Drilling to fix

As the products are being erected, drilling swarf should be cleaned off carefully 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

Before installing these elements, the two strips of adhesive film should be removed from the overlapping corrugation.

Care should be taken not to scratch the condensation regulator minimising back coat on the roof purlins. If the pack is not completely used, the remainder needs to be securely covered.

Brazing

Zinc Brazing is carried out using a soldering iron with a copper tip and a filler metal consisting of a Lead-Tin alloy bolt with a minimum of 28% Tin. The only permitted pickling flux is based on orthophosphoric acid diluted at 50%. Brazing is not recommended on ZMevolution®. We recommend the use of putty glue. Please contact us for more information.

Restoration

MAINTENANCE

The coating applied to galvanised prepainted (or non-prepainted) products will afford efficient rust protection as long as 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.

Conditions of maintenance of the coated sheets "Krystal®" do not differ from those of hot dip galvanised sheets. It is however important to note that if the coating "Krystal®" is damaged, the repair must be carried out using a metal brush and painting with aluminium powder containing epoxydic resin. The thickness of the film of paint has to be less than 70 microns.

DESCRIPTION OF REPAIRING PROCESSES

Preliminary material investigation

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

- the type of organic coating (HAIREXCEL®, INTENSE, PEARL, HAIRFLON®, KEYRON®)
- paint film adhesion when subjected to bad weather conditions.

Surface preparation

An important phase is the preparation. The substrate must have a clean surface to ensure optimum adhesion when performing remedial painting. The following processes are required:

- 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).
  These produce a pickling effect, which contributes to the adhesion of the anti-rust primer, and a 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 of rust of paint from the galvanised steel. This process removes white rust.
- It is also advised to clean rusty parts and rusty edges by chipping, scraping and hand or mechanical brushing and scour (either 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.

Nota :
We would advise seeing the paint manufacturer's advice before deciding which products to use and how to apply them.
This will depend on:
- the extent of the damage
- the environment where they are located (rural, urban, industrial, marine, aggressive)
- the type of finish required by the customer: gloss retention, color stability over the years, variation in color compared to initial color.

Paint manufacturers will have references of approved applicators of these products.

VARIATION IN COLOR OVER THE YEARS

The concition of of the surface and the color of the pre-painted coating will change more or less over the years depending on the natural impact of atmospheric factors (bad weather, acid rain, UV radiations, abrasive wind...).

If a new element is used to replace a roofing or cladding element which has naturally aged, then a variation in color may occur.

Restoration

REMEDIAL ACTIONS ON GALVANISED OR PRE-PAINTED CLADDING

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, color stability over the years) • Degree of environment aggressiveness • Specifications of paint supplier
PRE-PAINTED STEEL new (less than 1 year old)	• Color change requirement • Ladding 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 anti-corrosive 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	
	Signs of: • General corrosion • Considerable peeling of paint film	• Mechanical stripping • Use sand sweeping or mechanical brushing over the whole surface • General dust removal		

Coated Products

Restoration

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. KRYSTAL®: apply aluminum paint with a brush. PRE-PAINTED: apply colorless anti-corrosive varnish or the same color anti-corrosive 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 color 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 Krystal® • 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, color...).

Maintenance recommendations

The long-term sustainability of the products can only be guaranteed if a careful watch is kept on the buildings and they are properly maintained.
It is the owner's responsibility to inspect the building and maintain the products once they have been handed over. The product must be inspected every year.
Preventive maintenance should be carried out every TWO YEARS, in accordance with current standards and recommendations.

Regular inspection is vital including:

- inspecting elements that make up the shell of the building (particularly the purlins, as water will stagnate on the roof in case of slumping).
- checking the physical damages due to impact or abrasion which can lead to rust and take appropriate remedial action (remedial paint...).
- preventive maintenance:
  - removing of moss, vegetation and other kinds of debris...
  - keeping rainwater pipes in good working order.
  - cleaning facades 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: chimneysweeping, 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 0,63 mm thick.** A solution could be to have trafficking lanes marked out.
- damaging the protective coating.

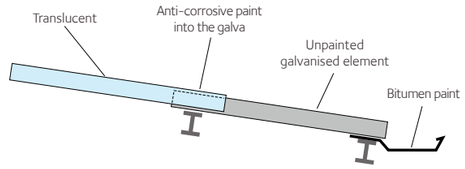
The owner's attention should be drawn to the fact that, when the ambient air becomes more aggressive (for example with new pollution) the suitability of the original coating to its new environment must be re-examined and, if need be, the coating must be adapted to these new conditions.

SPECIAL ASPECTS

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

Requirements:

- A closed cell foam seal, self-adhesive on one side, 5 x 15 in size to ensure weather tightness on all the lateral and longitudinal overlaps.
- Support tools under each corrugation overlap.



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

Roof Oversail - Overlaps

In case of incipient corrosion along the edges of drip moulds and/or overlaps and around any cut roofing 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.

SLAB BUILDING - GLOBAL R&D „NEW FRONTIER"
Avilés, Asturias, Spain
Architect: Sergio Baragaño
Photography: © Mariela Apollonio

AUTOTRON SHOWROOM
Rosmalen, Netherlands
Architect: Jacobs Architekten
Photography: © LT Photography

Operating Precautions

TRANSPORT

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

STORAGE

The products must be stored in a covered warehouse or under a tarpaulin where air can circulate freely. To avoid any permanent damage to the plates, they should be kept off the ground and at an angle from the horizontal so that any condensation or damp can dry off easily. Stones or waste on the ground should be removed so that it does not damage the sheets underneath.

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

Assembly should be carried out in accordance with the manufacturer's instructions and in line with all relevant standards.
It is important that the installation company receives delivery of the structural frame first, mainly to prevent water stagnating on the roof and any deformation of the cladding, which would be aesthetically unattractive and detrimental to the integrity of the pre-painted coating.

Contractors must take appropriate precautions to avoid scratches or marks.
Some of the ArcelorMittal Construction products are delivered with a protective film covering. This should be removed as the products are erected, and at the latest, within 3 months after the date of despatch, even if the products have not yet been fitted.

On-site cutting and machining

- When cutting elements on-site during assembly, it is important to protect the paint coating (with sheeting) to avoid any damage.
- The burr should be removed.
- It is essential to use tools suitable for stainless steel.

Drilling to fix

As the products are being erected, drilling swarf should be cleaned off carefully 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.

BLANGY WHITE-WATER SITE
Saint-Laurent-Blangy, France
Architect: Avant Propos
Photography: © Boris Michel

Maintenance recommendations

Long term sustainability of stainless steel can only be guaranteed if a careful watch is kept on the building and it is properly maintained. It is the owner's responsibility to inspect the building and maintain the products once they have been handed over.
The product must be inspected every year.
Preventive maintenance should be carried out every TWO YEARS, in accordance with current standards and recommendations.

Regular inspection is vital including:

- inspecting elements that make up the shell of the building (particularly the purlins, as water will stagnate on the roof in case of slumping).
- checking the physical damages due to impact or abrasion which can lead to rust and take appropriate remedial action (remedial paint...).
- preventive maintenance:
  - removing of moss, vegetation and other kinds of debris...
  - keeping rainwater pipes in good working order.
  - cleaning facades 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: chimneysweeping, 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.
- 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.

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.

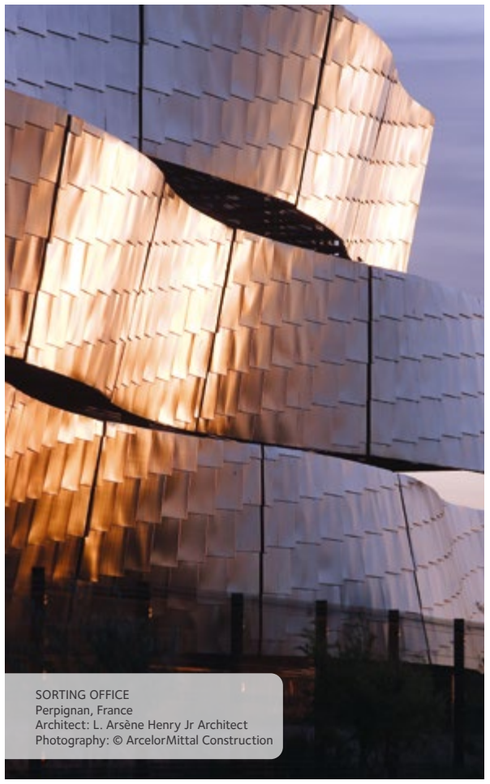
  Do not use products which contain chlorine or bleach. Only very weak bleach and chlorine derivate solutions can be used but they should only be left on the steel for a short period of time. Do not use hydrochloric acid.

- **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 alternatively a soft clean cloth.

- **Operating procedure and tools**

  Use sponges or, failing this, soft nylon brushes (except on Touch Gloss 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.



SORTING OFFICE
Perpignan, France
Architect: L. Arsène Henry Jr Architect
Photography: © ArcelorMittal Construction

Environmental Questionnaire

ArcelorMittal

TO BE RETURNED BY FAX : +33 329 798 735

OBJECTIVE
- ☐ **Prior to a request for a guarantee**
- ☐ **Choice of appropriate coating**

IDENTIFICATION

IDENTIFICATION OF APPLICANT

Corporate name .....

Business activity .....

Adress .....

Street .....

.....

Post code ..... Town .....

Contact : ☐ Mrs ☐ Miss ☐ Mr .....

Fonction .....

Telephone ..... Fax .....

E-mail .....

IDENTIFICATION OF PROJECT

Intended use of building .....

.....

Project (Corporate Name) .....

.....

Location .....

Street .....

Post code ..... Town .....

Contact : ☐ Mrs ☐ Miss ☐ Mr .....

Fonction .....

Telephone ..... Fax .....

E-mail .....

Environmental Questionnaire

ArcelorMittal

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).

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

EXTERIOR ATHMOSPHERE

Rural non polluted	Urban and industrial		Marine					Special	
	Normal	Severe	20 to 10 Km	10 to 3 Km	Coast 3 to 1 Km (2)	Coast 1 km to 300 m (2)	Mixed	High UV	Special

INTERIOR ENVIRONMENT

Rural non polluted	Non aggressive				Aggressive environment
	Low humidity	Medium humidity (1)	High humidity	Very high humidity	

(1) Refer to us for environment with average humidity but high intermittent humidity.
(2) Coastal: under 3 km from the coastline, except direct aggression from seawater and/or from seaspray (seashore) 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).

EXTERNAL FACTORS

DEGREE OF SUNSHINE

Kind of climate

☐ Temperate ☐ Tropical ☐ Mediterranean

☐ Subtropical ☐ Oceanic ☐ Equatorial

☐ Mountain/Altitude ..... m ☐ .....

.....

Sand wind

☐ Yes ☐ No

PERCENTAGE OF RELATIVE HUMIDITY

Rainfall rate

☐ High or very high ☐ Average ☐ Low

Snowfall

☐ High ☐ Average ☐ Low

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

Description of building requested

ROOFING

FEATURES OF THE SYSTEM	BUILDING SYSTEMS							
	Weatherproofing complex		Single skin		Double 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				☐ Perforated ☐ Slotted		☐ Perforated	
Color requested (specify shade)								
Is the roofing curved ?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Are there any overlaps ?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Are there any penetrations (outlets..) ?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Are there any lighting areas ?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Roof overlaps	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Coating requested								

WALL CLADDING

FEATURES OF THE SYSTEM	BUILDING SYSTEMS						
	Single skin		Double skin		Sandwich panels		Sun-screen (fifth facade)
	Internal face	External face	Internal skin	External skin	Internal facing	External facing	
Thickness (roll-formed)							
Surface area (m^2)							
Laying direction	☐ Horizontal ☐ Vertical		☐ Horizontal ☐ Vertical	☐ Horizontal ☐ Vertical	☐ Horizontal ☐ Vertical		☐ Horizontal ☐ Vertical
Sound absorption			☐ Perforated ☐ Slotted		☐ Perforated		
Color requested (specify shade)							
Is the wall cladding curved ?	☐ Yes ☐ No		☐ Yes ☐ No		☐ Yes ☐ No		Centering at installation
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: Double skin systems, which use trays, are designed for buildings with a low or average humidity rating, except Hairaquatic system.

Environmental Questionnaire

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 generators for oil-fired heating nearby ? ..... ☐ Yes ☐ No

Is the building near :

> buildings sheltering animals ? ..... ☐ Yes ☐ No

> factories ? ..... ☐ Yes ☐ No

• Type of production ..... Distance (Km) .....

> laboratories ? ..... ☐ Yes ☐ No

> steam or gas fumes (petrochemicals...) ? ..... ☐ Yes ☐ No

> dust deposits or areas where dusty products are stored (waste reception centres, incinerators...) ..... ☐ Yes ☐ No

• If the answer be yes, specify the type of activity : .....

.....

• 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...) ? ..... ☐ Yes ☐ No

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 ? ..... ☐ Yes ☐ No

• If so, specify the kind of coating : .....

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

FURTHER INFORMATION

Fire behavior requested ..... ☐ Yes ☐ No

• If so : Euroclass ..... ☐

.....

In ..... Date .....

Stamp of customer

Name and signature (preceded by “certified true”)

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