Paroc Panel System

COATING SELECTOR

A Guide to the Range of Steel Coatings

COATING SELECTOR

The information in this brochure describes the conditions and technical properties of the disclosed products, valid at the time of publication of this document and until replaced by the next printed or digital version.

The latest version of this brochure is always available on the Paroc Panel System's website. Our information material presents applications for which the functions and technical properties of our products have been approved.

However, the information does not mean a commercial guarantee. We do not assume liability of the use of third party components used in the application or the installation of our products. We cannot warrant the suitability of our products if used in an area or conditions which are not provided in our information material. As a result of constant further development of our products we reserve the right to make alterations to our information material at any time.

Contents

Sustainability

Commitment to Sustainability

With a number of significant advancements in the European climate change and energy performance agenda over the past years, it has never been more important for businesses to recognise and take responsibility for their impact on the environment. Paroc Panel System - member of Kingspan Group - has been leading the way with its dedication to sustainable business practice.

We have developed third party verified EN 15804:2012+A2:2019/AC:2021 environmental product declarations (EPD's) for our insulated panel systems. EPD's provide technical and quantified environmental information across a product's lifespan. Our Insulated Panels Environmental Product Declarations (EPDs) are available on our website.

www.parocpanels.com

Planet Passionate

Climate change is today the most significant threat to our planet. To protect our planet, we must limit the rise in global temperature to 1.5 degrees this century. That is why CO_2 emissions must be reduced to zero worldwide by 2050 - but we are clearly falling short of this target at the moment. We also face an unprecedented threat of biodiversity loss, with one million species at risk on our planet, generating 2 billion tones of waste a year.

How can we, and the construction industry, play our part?

We believe advanced materials, building systems and digital technologies hold the key to addressing these issues. Working in partnership with the industry, and through our new IKON innovation centre and our Planet Passionate global sustainability programme, we are confident that together we can:

1. Move to a clean energy future
2. Manage the earth's resources more sustainably
3. Protect our natural environment

What is "Planet Passionate"?

Planet Passionate is our new 10-year global sustainable development program, which aims to address three major global issues: climate change, the circular economy and the protection of biodiversity.

PLANET PASSIONATE

Main Focus Areas:

ENERGY	CARBON	CIRCULARITY	WATER
Maintain our net zero Energy target	Net Zero carbon manufacturing by 2030	1 billion PET bottles up-cycled into our manufacturing processes by 2025	5 active ocean clean-up projects by 2025
Increase our direct use of renewable energy to 60% by 2030	50% reduction in product CO_2 intensity from our primary supply partners by 2030	All QuadCore insulation to utilise upcyceld PET by 2025	100 million litres of rain-water harvested by 2030
Increase our on site renewable energy to 20% by 2030	Zero emission ready company cars by 2025	Zero company waste to landfill by 2030	
Install Solar PV Panels on all owned facilities by 2030			

Coatings Systems

When a building design demands colour and tone or special technical requirements, Paroc Panel System has a vast palette of choice. We have plenty of colour options and ranges of standard and special coatings for different external and internal applications.

Types of coating and metal substrates:

During the coating process, different types of coatings can be applied. The possibilities for the creation of complex pre-painted metal products with unique properties are therefore virtually unlimited.

The combination of used layers provides the final properties of the prepainted metal product. The top coating plays a crucial role in determining the product performance, durability and appearance. Therefore prepainted metals are usually named after the top coating.

The thickness of the coating is usually specified in µm and contains the total thickness of the base layer and top coating. In most cases the base layer is very thin, cca. of 4 µm, and the majority of the coating thickness consists of top coating.

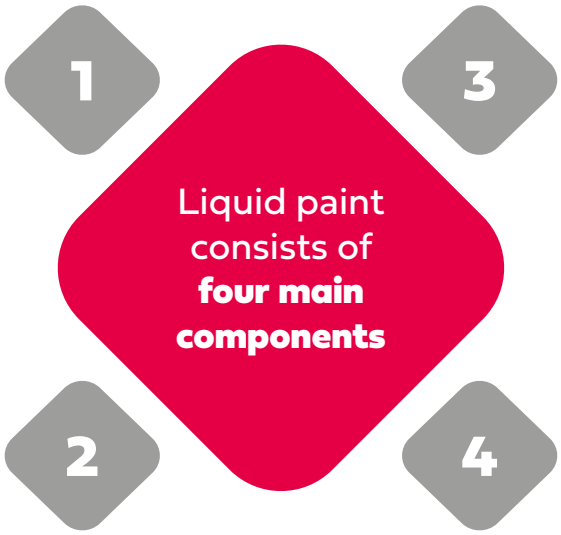
More than 90% of the prepainted metal is coated with liquid paint. Liquid paint consists of four main components:

Solvents

Solvents are used as a delivery mechanism. They ensure that the paint flows out and forms a flat wet layer before it dries and hardens. The solvents disappear out of the finished product.

Pigments

The pigments used in the coating process of strip-coated metals are usually inorganic. One of the exceptions here is our Spectrum polyurethane organic coating. The pigments provide colour and certain physical properties, such as protection against corrosion.



Binders

Binders are polymer materials that give the paint structure. That is why coatings are usually classified depending on the binding polymer used. The main type binding agents are:

- Polyvinyl chloride (PVC)
- Polyurethane (PU)
- Polyvinylidene fluoride (PVDF)
- Polyester (PE)

Additives

Additives are added to the paint composition for properties such as flow, curing speed, UV absorption and to optimize gloss effect. When choosing a prepainted colored metal, the coating type is usually the most important in consideration. However, the substrate (or underlayer) is also a fundamental part of the product.

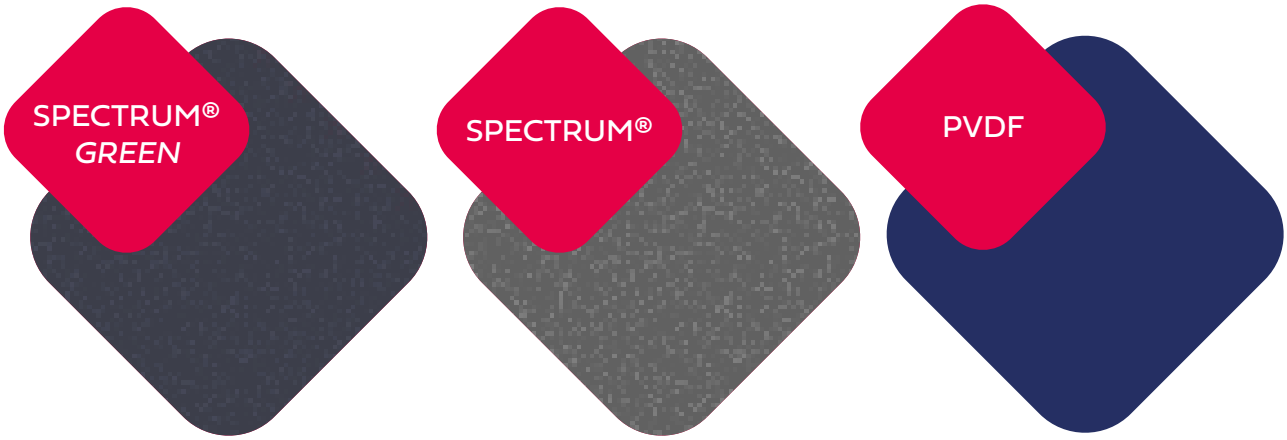
The choice of metal substrate is usually determined by the requirements of the end product. In most cases it consists of steel. Paroc Panel System uses standard S28 strip steel with a thickness of 0,4 - 0,7 mm as substrate.

A thin metal coating is applied to the steel surface to bring corrosion resistance of the steel as well as to improve the substrate. This serves as a protective sacrificial anode, which corrodes slowly while protecting the steel.

The most commonly used metal coating for steel is hot-dip galvanizing, in which a thin layer of zinc is applied to the steel. Paroc Panel System uses a more advanced metal protection with superior corrosion resistance.

Range of Coating Systems

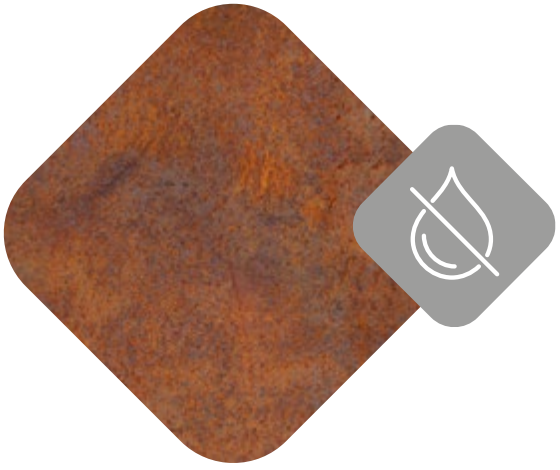
External Coatings



External & Internal Coating

Internal Coatings

Our coating systems offer many important advantages:



Corrosion resistance

Our coatings are one of the best in class for corrosion resistance. They use innovative metal alloy substrates, which provide maximum resistance to corrosion on scratches and on cut edges.

Environment care

Our coloured coating systems have been designed in accordance with Paroc Panel System's sustainable development policy. They are phthalate-free, contain no heavy metals and are fully recyclable. Phthalate-free chemistry contributes to maintaining a safe and healthy environment.

Advanced colour stability and UV resistance

Paroc Panel System coloured coatings use state-of-the-art technology with improved UV resistance that provides better gloss retention and weather resistance.

Maintenance-free, saving time, trouble and cost

Paroc Panel System coatings do not require any special maintenance regime and their performance will not deteriorate during their lifetime.

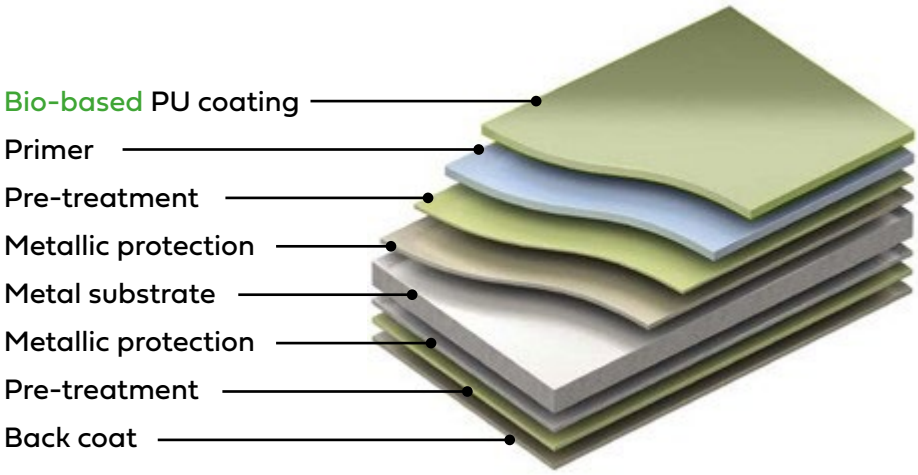
SPECTRUM® *GREEN*

We have taken next step to reduce the embodied carbon in our sandwich panels and now can offer Spectrum® *GREEN* bio-based coating. The fossil component in this coating has been replaced with a rapeseed oil. Spectrum® *GREEN* is fully chromate free, provides strong corrosion resistance and performs in all weather conditions.

Dedicated also for aggressive environments and to withstand severe mechanical damages. Spectrum® *GREEN* consists of a coated semi-gloss finish with a slight granular effect.

UV resistance of R_{UV}4-5 and corrosion class RC5+ makes Spectrum® *GREEN* an ideal solution for a wide variety of applications, especially where:

- Environmental safety is considered
- Maximal corrosion resistance RC5+
- Best in class scratch resistance and formability is needed, also in low temperatures
- Maximal UV resistance is needed
- Stay clean property is important
- 100% recyclable



Technical Data

SPECTRUM® *GREEN*	Solid	Matt	Metallic
Gloss	40	20	40
Min bending radius	1 x sheet thickness	1 x sheet thickness	1 x sheet thickness
Scratch resistance	40N	40N	35N
Lowest forming temperature	-15 °C	-15 °C	-15 °C
UV radiation resistance	Ruv 4	Ruv 4-5	Ruv 4
Corrosion resistance	RC5+	RC5+	RC5+
Resistance to dirt pick up	Very good	Very good	Very good
Highest operating temperature	100 °C	100 °C	100 °C
Fire classification	A1 s1 d0	A1 s1 d0	A1 s1 d0
Nominal coating thickness	50 µm	50 µm	45 µm
Surface pattern	Structured	Structured	Smooth

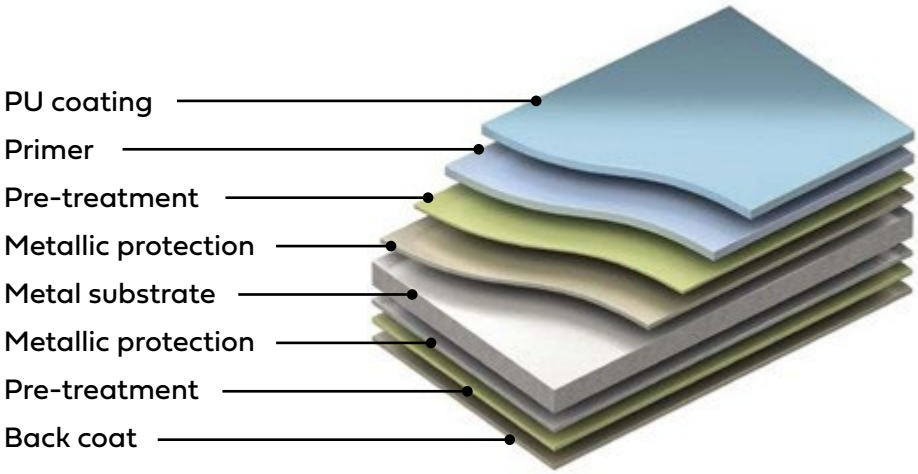
SPECTRUM®

Spectrum® is a coating that delivers aesthetic brilliance and guaranteed performance in a variety of applications. It is a technically advanced polyurethane (PU) coating with multi-layer materials applied to a metal substrate which provides the necessary protection and longevity.

The coating with a thickness of 50 µm provides strong corrosion resistance to the metal substrate. Dedicated also for aggressive environments and to withstand severe mechanical damages.

Spectrum® consists of a coated semi-gloss finish with a slight granular effect. It provides excellent gloss retention and weather resistance. Spectrum improved UV resistance fully complies with European RUV4 classification. All this this makes Spectrum® an ideal solution for a wide variety of applications, especially where:

- Maximal corrosion resistance (RC5) is needed
- Best in class scratch resistance and formability is needed, also in low temperatures
- Maximal UV resistance is needed, this enables superior resistance against fading
- Stay clean property is important



Why Spectrum®?

Long service life and durability

- Very good UV-resistance and color stability
- Developed for marine and aggressive weather and industrial environments

Eco-consciousness

- 100% recyclable
- Thick and solid system without PVC

Stylish and attractive appearance

- Textured low gloss according to current architectural trends
- UV resistant and light grained surface features natural appearance
- Extensive color offering, inspired by Nature

Very good formability

- Suitable for many different type of profiles and shapes and enables individuality
- Workable at temperatures down to -15°C
- Very robust surface withstanding severe mechanical damages

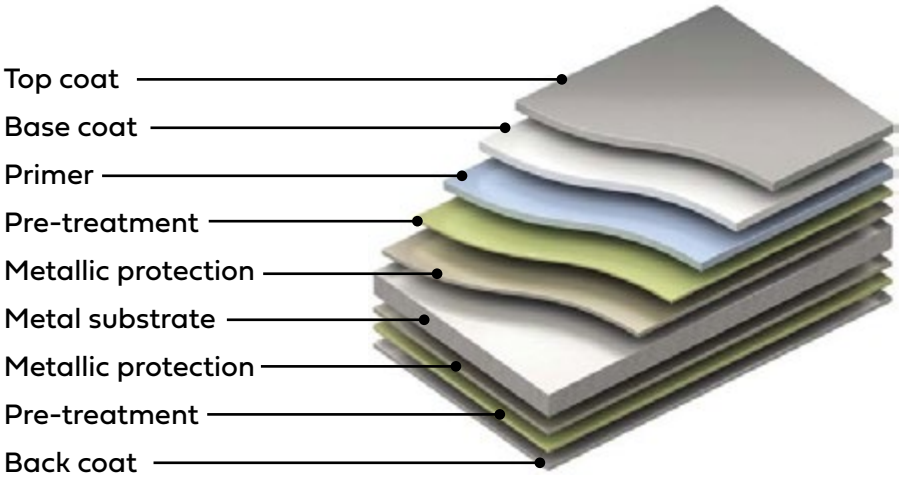
Technical Data

SPECTRUM®	Solid	Matt	Metallic
Gloss	40	20	40
Min bending radius	1 x sheet thickness	1 x sheet thickness	1 x sheet thickness
Lowest forming temperature	-15 °C	-15 °C	-15 °C
UV radiation resistance	Ruv 4	Ruv 5	Ruv 4
Corrosion resistance	RC5	RC5	RC5
Resistance to dirt pick up	Very good	Very good	Very good
Highest operating temperature	100 °C	100 °C	100 °C
Fire classification	A1 s1 d0	A1 s1 d0	A1 s1 d0
Nominal coating thickness	50 µm	50 µm	50 µm
Surface pattern	Structured	Structured	Smooth

PVDF

PVDF (polyvinylidene fluoride) is fine-looking external coating featuring colour purity, strength, resistance and stability. PVDF coatings vary in thickness from 27 µm to 35 µm and consist of 2 or 3 layers of paint. Provide very good protection against environmental weathering and is perfectly suited for high-end applications.

It is available in a wide range of highly polished and two-tone colours.



Technical Data

PVDF	2L	3L
Gloss	35	27-35
Min bending radius	1 x sheet thickness	1 x sheet thickness
Scratch resistance	30 N	30 N
Lowest forming temperature	0 °C	0 °C
UV radiation resistance	Ruv 4	Ruv 4
Corrosion resistance	RC4	RC4
Resistance to dirt pick up	Excellent	Excellent
Highest operating temperature	110 °C	100 °C
Fire classification	A1 s1 d0	A1 s1 d0
Nominal coating thickness	27 µm	45 µm
Surface pattern	Smooth	Smooth

Spectrum® vs PVDF

	Spectrum®	PVDF
Option for Bio-based Technology	Yes	No
Gloss	40/20	35
Min bending radius	1 x sheet thickness	1 x sheet thickness
Scratch resistance	35-40 N	30 N
Lowest forming temperature	-15 °C	0 °C
UV radiation resistance	Ruv4-5	Ruv4
Corrosion resistance	RC5/RC5+	RC4
Resistance to dirt pick up	Very good	Excellent
Highest operating temperature	100°C	110 °C
Fire classification	A1 s1 d0	A1 s1 d0
Nominal coating thickness	50-45 µm	27 µm
Surface pattern	Structured/Smooth	Smooth

Internal Coatings

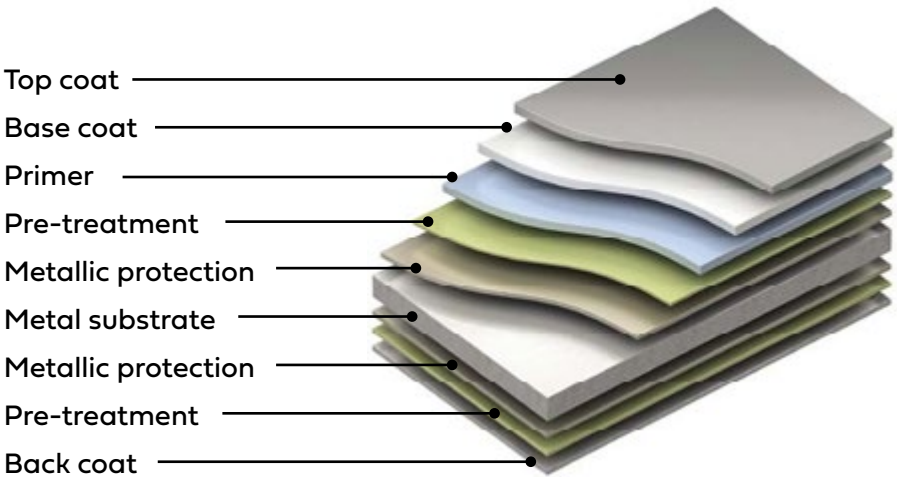
The corrosive factors of an internal environment are determined by the presence of corrosive chemicals and / or micro-organisms in the internal atmosphere, relative humidity, as well as by the frequency of cleaning, aggressiveness of the cleaners, degreasers, sanitizers, and method of cleaning.

Internal coatings have particular properties suited to different environments. We offer help in choosing the right coatings to meet the appropriate classification of corrosive environment and type of activities.

Polyester SP25

Polyester SP25 is a versatile coating with thickness of 25 μm that is characterized by robustness, flexibility, durability. Suitable for external and internal applications and standard environment. Polyester SP25 is recommended to building applications:

- With standard indoor environments
- It offers the most economical option for applications, where solid durability and flexibility are combined with low cost



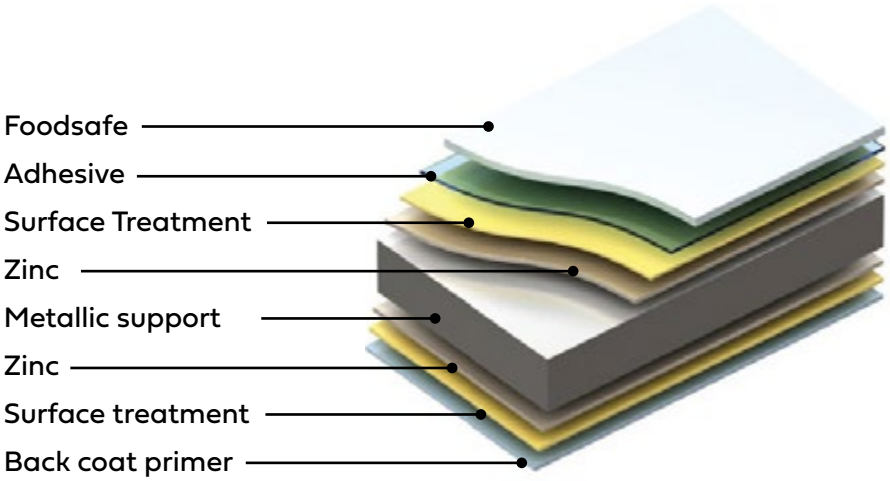
Technical Data

Polyester SP25	
Gloss	35
Min bending radius	1 x sheet thickness
Scratch resistance	20 N
Lowest forming temperature	0 °C
UV radiation resistance	Ruv 2-3
Corrosion resistance	RC3
Resistance to dirt pick up	Satisfactory
Highest operating temperature	90 °C
Fire classification	A1 s1 d0
Nominal coating thickness	25 μm
Surface pattern	Smooth

FOODSAFE

Foodsafe is a chemically inert polyvinyl chloride (PVC) film, laminated to pre-treated metal, and suitable for internal applications in food processing and controlled environments.

- Food safety – suitable for surfaces immediately behind food preparation, processing surfaces or equipment
- Easy to clean
- Resistant to staining, mold growth and surface extraction
- Excellent robustness
- Excellent chemical and humidity corrosion resistance
- Non-toxic
- Resistant to impact and surface wear



Technical Data

Foodsafe	
Gloss	11
Min bending radius	1x sheet thickness
Scratch resistance	55 N
Lowest forming temperature	-40 °C
UV radiation resistance	N/A
Corrosion resistance	RC5
Resistance to dirt pick up	Very Good
Highest operating temperature	60 °C
Fire classification	A1 s1 d0
Nominal coating thickness	120 µm
Surface pattern	Smooth matt
Scratch resistance (Clemen)	> 3,5 kg

STAINLESS STEEL 304 / 316L

Stainless steel 304 is chemically inert, crevice free austenitic stainless steel, quality according to 1.4301, suitable for highly corrosive internal environments.

Stainless steel 316L is inox stainless steel with quality according to 1.4404, specifically designed for conditioned environments with a high corrosion factor, moisture, acids and chemicals like chloride.

- Food safety – suitable for surfaces immediately behind food preparation, processing surfaces or equipment (Stainless steel 304)
- Food quality – suitable for use in production areas for the food industry or installations (Stainless steel 316L)
- Easy to clean
- Good to polish
- Resistant to stains, mold and flaking
- Excellent robustness
- Excellent corrosion resistance
- Non-toxic
- Suitable for use in waste recycling plants
- Excellent resistance to chemicals and moisture (Stainless steel 316L)

Technical Data

	Stainless steel 304	Stainless steel 316L
Nominal thickness	0,6 mm	0,6 mm
Gloss (Gardner 60°C)	Semi-reflective	Semi-reflective
Appearance	2B - smooth unpolished	2B, line brushed, round brushed
Protective film	Yes	Yes
Scratch resistance (Clemen)	Good	Good
Abrasion Resistance (Taber)	3,2 mg	3,2 mg
Impact resistance	Excellent	Excellent
Temperature resistance	Maximum 870°C	Maximum 100°C
Fire classification (EN 13501-1)	A1	A1

Standard Colours & Coatings

LEC product range - please contact our sales team for availability and lead times. Colours 7024 for exterior applications and 9010 for interior applications are available in stock.

AST® Panels

Bright White FS-1
Foodsafe
0.5/0.6
Gloss: 11

Moonstone 7035
Spectrum® GREEN
Spectrum® 0.6
Gloss: 40

Graphite Grey Matt 7024M
Spectrum® *GREEN*
Spectrum® 0.6
Gloss: 20

Jet Matt 9005M
Spectrum® *GREEN*
Spectrum® 0.6
Gloss: 20

White 9010
Spectrum® GREEN
Spectrum® 0.6
Polyester SP25 0.5/0.6/0.7
Gloss: 40

Silver 9006
Spectrum® GREEN
Spectrum® 0.6
Gloss: 40

Graphite Grey Matt 7024M
Matt PVDF 0.6
Gloss: 4

Jet Matt 9005M
Matt PVDF 0.6
Gloss: 4

Howlite White 0020
Spectrum® *GREEN*
Spectrum® 0.6
Polyester SP25 0.5/0.6/0.7
Gloss: 40

Silver Matt 9006M
Matt PVDF 0.6
Gloss: 4

Agate Grey 0021
Spectrum® GREEN
Spectrum® 0.6
Gloss: 40

Howlite Grey 9002
Spectrum® *GREEN*
Spectrum® 0.6
Polyester SP25 0.5/0.6
Gloss: 40

Dark Silver 9007
Spectrum® *GREEN*
Spectrum® 0.6
Gloss: 40

Agate Blue 0035
Spectrum® GREEN
Spectrum® 0.6
Gloss: 40

Goldstone Red 0029
PVDF 0.6
Gloss: 35

Dark Silver Matt 9007M
Matt PVDF 0.6
Gloss: 4

Onyx 7016
Spectrum® GREEN
Spectrum® 0.6
Gloss: 40

Zinc
Galvanised (uncoated)
0.5/0.6/0.7
Gloss: semi-reflective

QuadCore® Panels

Pure White R9010
Polyester SP25 0.5/0.6
Foodsafe 0.5
Gloss: 11

White Aluminium R9006
Polyester SP25 0.5
Gloss: 35

Anthracite Grey R7016
Polyester SP25 0.5
Gloss: 35

Grey White R9002
Polyester SP25 0.5
Gloss: 35

Grey Aluminium R9007
Polyester SP25 0.5
Gloss: 35

Light Grey R7035
Polyester SP25 0.5
Gloss: 35

* Note: Spectrum® coating is available for QuadCore® panels as special coating.

Special Colours & Coatings

LEC product range - please contact our sales team for availability and lead times. Colours 7024 for exterior applications and 9010 for interior applications are available in stock.

AST® Panels

Angelite Blue 0034
Spectrum® *GREEN*
Spectrum® 0.6
Gloss: 40

Platinium 0044
PVDF 0.6
Gloss: 40

Citrine Yellow 1015
Spectrum® *GREEN*
Spectrum® 0.6
Gloss: 40

Pebble Beige 0030
Spectrum® *GREEN*
Spectrum® 0.6
Gloss: 40

Jade Green 6011
Spectrum® *GREEN*
Spectrum® 0.6
Gloss: 40

Fluorite Green 0036
Spectrum® *GREEN*
Spectrum® 0.6
Gloss: 40

Calcite Yellow 0024
Spectrum® *GREEN*
Spectrum® 0.6
Gloss: 40

Amber Yellow 0026
Spectrum® *GREEN*
Spectrum® 0.6
Gloss: 40

Malachite Green 0037
Spectrum® *GREEN*
Spectrum® 0.6
Gloss: 40

Quartz Green 0011
Spectrum® *GREEN*
Spectrum® 0.6
Gloss: 40

Tile Red 0750
Spectrum® *GREEN*
Spectrum® 0.6
Gloss: 40

Copper 0043
PVDF 0.6
Gloss: 35

Garnet Brown 0032
Spectrum® *GREEN*
Spectrum® 0.6
Gloss: 40

Onyx Black 0046
PVDF 0.6
Gloss: 35

Gold 0042
PVDF 0.6
Gloss: 35

Pebble Grey 0022
Spectrum® *GREEN*
Spectrum® 0.6
Gloss: 40

Monazite Brown 0031
Spectrum® GREEN
Spectrum® 0.6
Gloss: 40

Stainless Steel
304 / 316L
0.6
Gloss: semi-reflective

All colours presented in this brochure are for indication only. Small colour variations may appear between different delivery batches of the panel coating material. You can request steel swatch with interested colour from our sales department.

The guideline value for an acceptable colour variation compared to the original colour sample is $E \leq 1$ (ISO 7724). The final colour acceptance is, however, to be visually made in various lighting conditions, where the product is not allowed to essentially deviate from the colour sample.

The colour sample used for comparison will be an original sample agreed on jointly between the buyer, seller and the steel sheet supplier.

Service & Maintenance

Air pollution

Colour coated metal sheets used on the roofs and façades of buildings are exposed to many kinds of pollution in the air. These, together with water and increasing amounts of UV radiation affect the coatings. The effects are worse on those areas of the building where impurities are not washed away by rainwater. Some impurities may also cause internal stress in the coating and even cracking.

From the point of view of the durability of coated sheet, the most detrimental are knocks and scratches, in which the impurities come into direct contact with zinc, which is easily soluble, and as a result of which, it is rapidly consumed. In addition, a number of the impurities absorb water, which keeps the damaged area wet longer and as a consequence rusting is active longer.

The effect of the impurities in the air is greatest when close to polluted industrial areas and in coastal areas. These are typically produced from power stations burning fuels containing sulphur. Impurities stress the coatings and reduce their useful life, so the regular cleaning of wall and roof surfaces is an important part of the servicing and maintenance of coatings.

Mold and weather spots

Some types of local environment are particularly conducive to mould growth, i.e. areas of wet, dark, wooded surroundings or low lying marshland. In these areas, mould will grow, even on inert materials such as glass.

Mould growth can be removed by treatment with a basic solution of the following ingredients, by weight, which should be available from local chemical suppliers. Before using the first three of these ingredients, you should refer to the manufacturers' Health & Safety information.

Quality household detergent / proprietary cleaner	0.5%
Trisodium phosphate	3.0 %
5% sodium hypochlorite solution	25.0%
Fresh water	71.5 %

Before applying this mixture, wash down the coated surface first, as explained in Paroc Panel System's "Use & Maintenance Guide" under "Cleaning Procedures", then apply the mixture to all surfaces by low-pressure spray or brush. All surfaces must then be rinsed with cold water within twenty-four hours.

Instructions about Inspection, Cleaning, Maintenance and Repair of our panels can be found in Paroc Panel System "Use & Maintenance Guide"

Download "Use & Maintenance Guide" from our website **www.parocpanels.com**

Paroc Panel System

Paroc Panel System
Sysilahden teollisuusalue 2
Parainen, FI-21600

+358 (0)46 876 8716
panelinfo@parocpanels.com
www.parocpanels.com

Scan QR code or click here for the most up to date version of this document.

10/2024 v.5