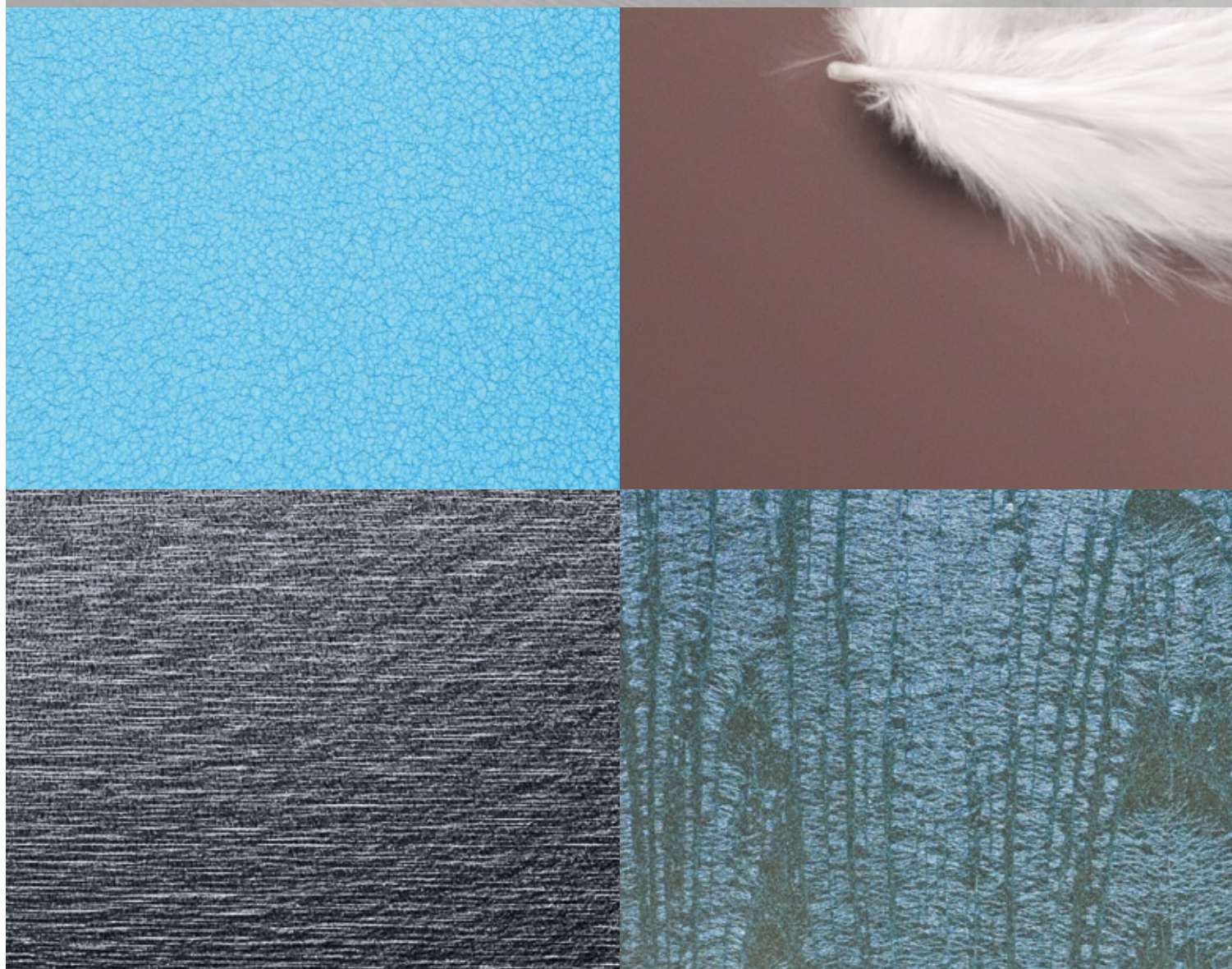


NOVELIS

Aluminium Surface Innovation



Novelis surface innovation



NOVELIS - the european leader in aluminium coil coating attaches great importance to developing new and improved aluminium surfaces.

NOVELIS has a dedicated development and innovation centre capable of carrying out all kinds of test methods ranging from formability and adhesion through weathering and scratch resistance to bondability etc.

A completely new advance as springboard for a highly future-oriented coating generation is the new Novelis NWS coating system.

NOVELIS NWS

NWS is a new lacquer development. NWS widens the spectrum with an absolute matte (03/05 units) surface system. A textured finish opens the way for a multifaceted natural appearance that has a compellingly unique look and feel.

A variety of tests show that Novelis NWS is ideal for outdoors and stressed indoors and so can be put to optimum use in many applications. The possibilities for new finishes with the Novelis NWS product family are endless.

NWS is scratch-resistant and has a good formability.

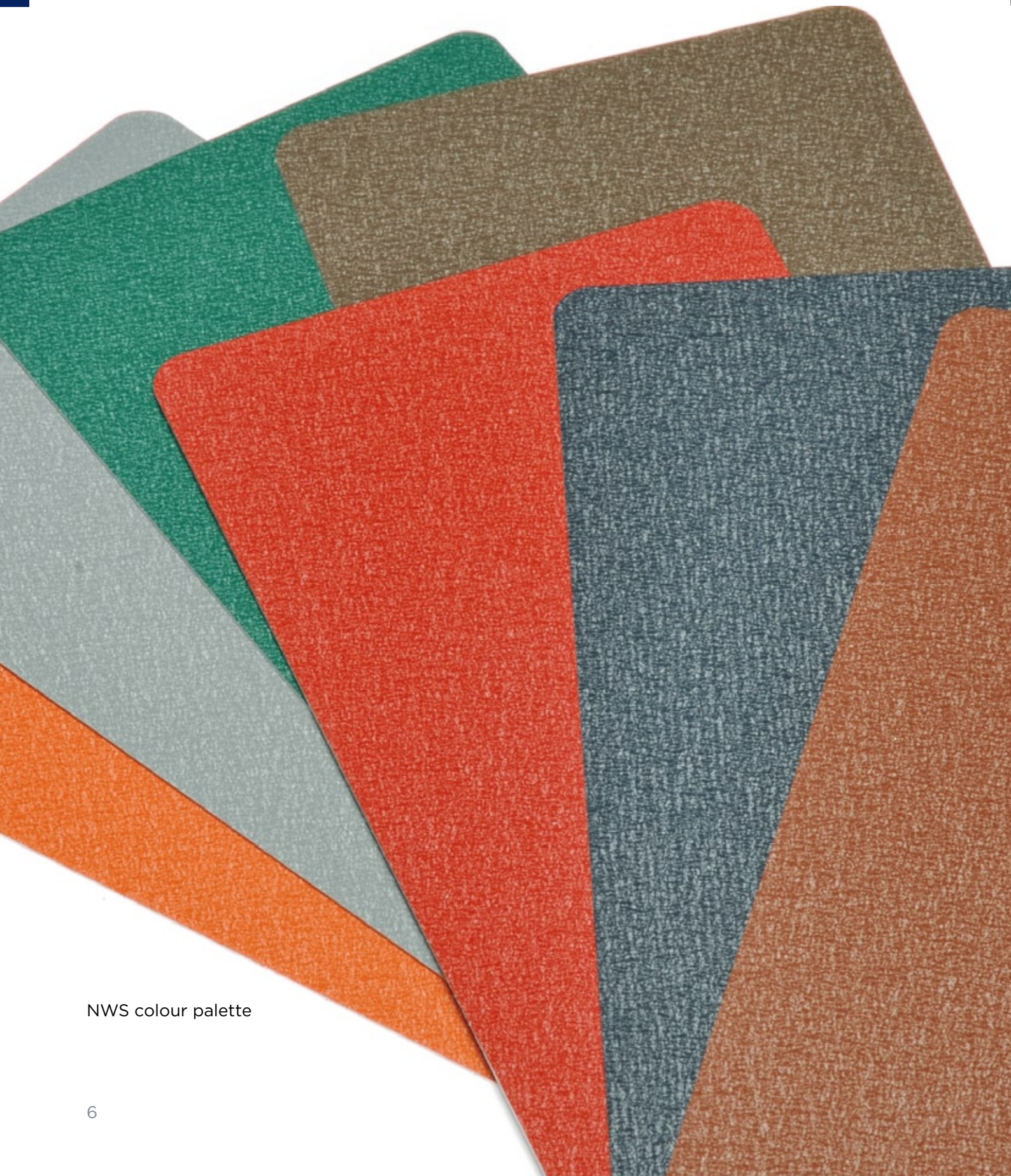
New develoment NWS

NWS is perfectly weather-resitant. No chalking after 2000 h of accelerated weathering test with UV-B radiation. So longlasting design is an outstanding performance of the NWS lacquer family.



NWS is corrosion-resistant. After 500 h of salt spray testing, no lacquer infiltration or blisters could be found.

NWS – Satina Plain



NWS colour palette

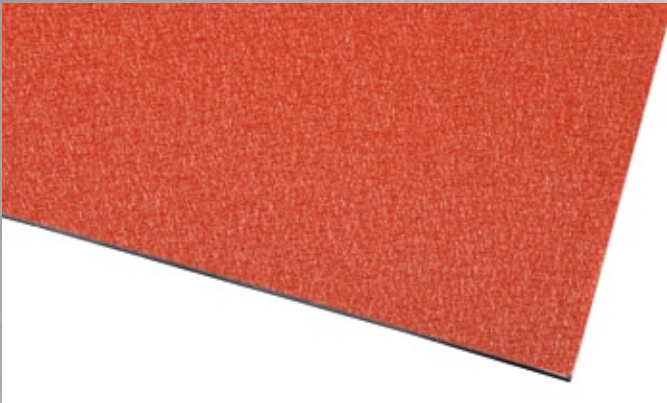
FEATURES

The structured, matt surface makes the plain uni-coats especially vibrant. This must be taken into account when choosing colours.

SPECIAL CHARACTERISTICS

- Very good formability
- Very good weather resistance
- Metallic systems are possible and are to be processed according to the batch
- Guarantees can be arranged for particular objects

COLOURS
All conventional colours are possible
DEGREE OF GLOSS
03 - 05 units
LAYER STRUCTURE
Two-layer system
PROTECTIVE FOIL
Special protective foil on request. As the lacquer system has a durable surface the protective foil can therefore be dispensed in many cases



NWS tomatenrot (1366-02)



NWS mokkabraun (18E3-02)



NWS metallgrau (29E7-02)

NWS – Satina Pastel



FEATURES

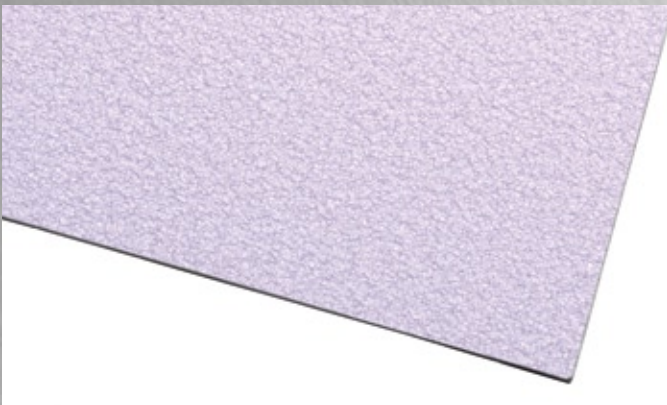
These pastel colours provide the surface with an especially satiny appearance. This is underscored by the surface haptics.

Because of the addition of effect pigments to the lacquer, colour changes depending on the viewing angle and the incidence of light can be achieved (flip-flop effect). This gives the surface a metallic-textile appearance.

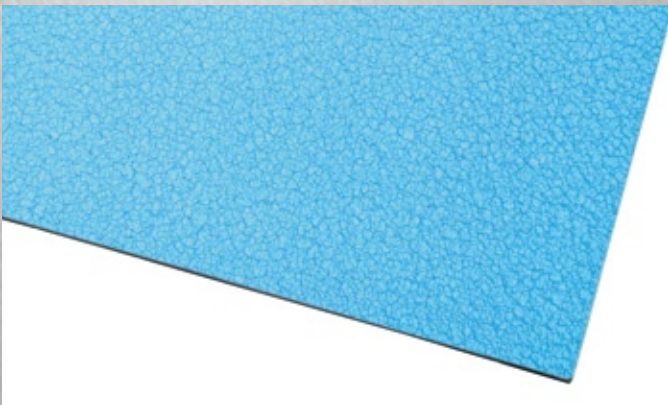
SPECIAL CHARACTERISTICS

- Special coatings with effect pigments should be laid according to the batch

COLOURS
All conventional colours can be produced. Combinations are possible by adding effect pigments
DEGREE OF GLOSS
02 – 10 units, depending on the pigmentation
LAYER STRUCTURE
Two-layer system
PROTECTIVE FOIL
Special protective foil on request. As the lacquer system has a durable surface the protective foil can therefore be dispensed in many cases



Satina Flieder (7151-09)

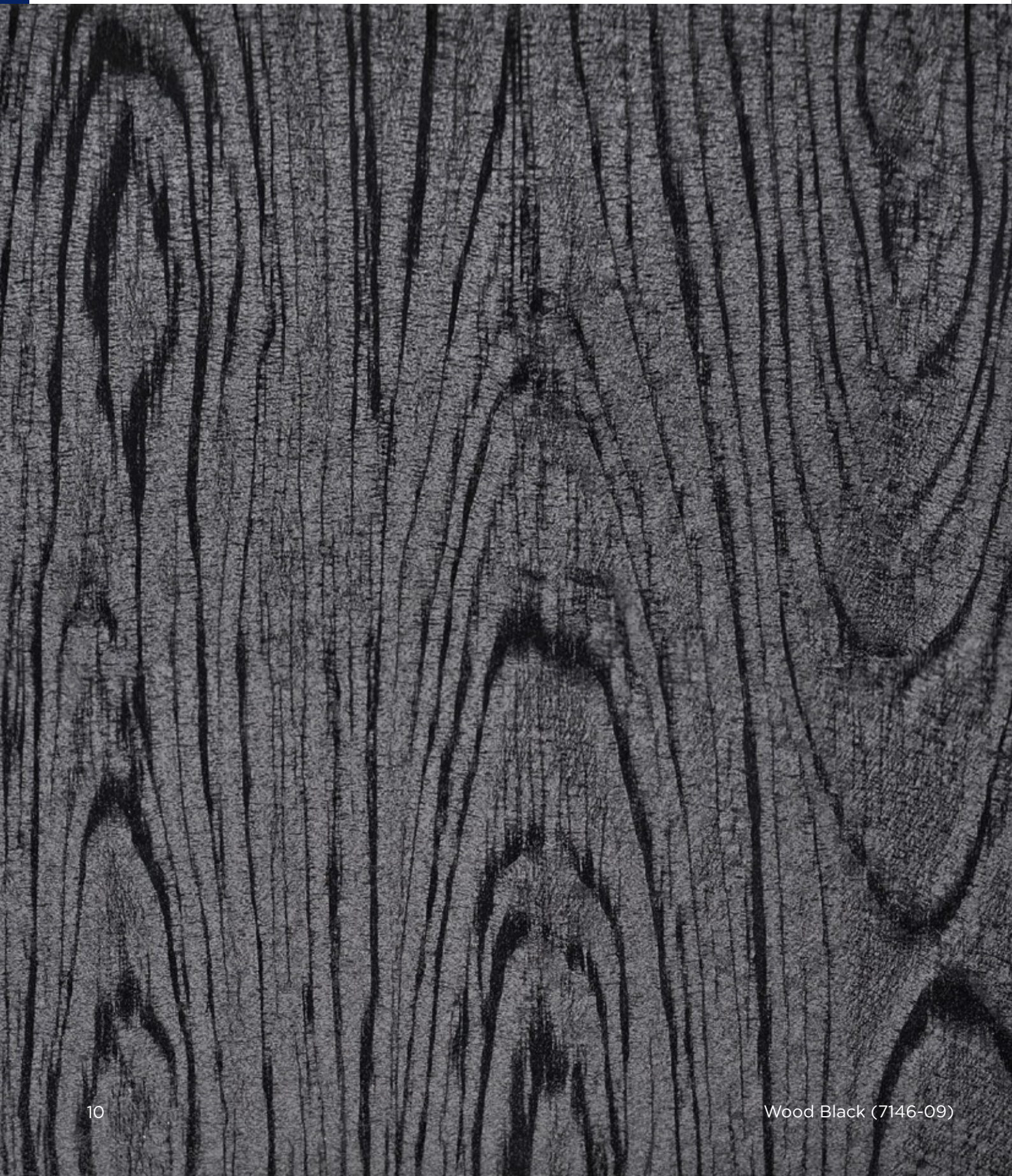


Satina Metallic Blau (7149-09)



NWS Satina Pastel optics

NWS – Wood Optic



FEATURES

The wood optics are printed surfaces. The combination of printing and a tangible effect gives the impression of a natural product.

By using particular effect pigments, it is also possible to achieve special effects.

SPECIAL CHARACTERISTICS

- Guarantees can be arranged for particular objects
- Metallic surfaces are to be processed according to the batch

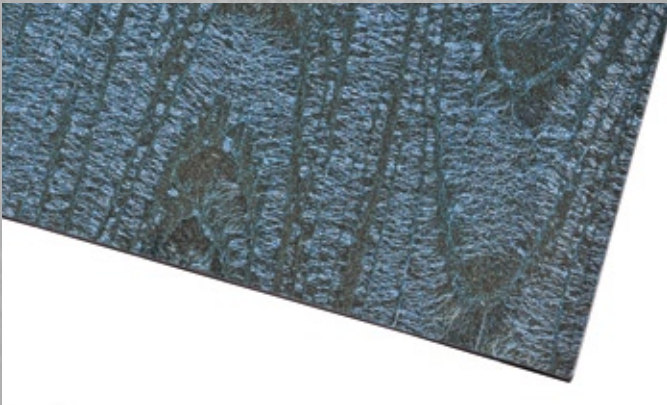
COLOURS
All conventional colours can be produced. Special lacquer effects are possible on request
DEGREE OF GLOSS
Ranges from 03 units, depending on the design.
LAYER STRUCTURE
Multi-layer structure
PROTECTIVE FOIL
Special protective foil on request. As the lacquer system has a durable surface the protective foil can therefore be dispensed in many cases



Wood Graphite (7145-09)



Astholz Effekt (3854-02)



Wood Petrol (7143-09)



Wood White (7144-09)

Wood Black (7146-09)

NWS – Frost Optic



FEATURES

The combination of the print and lacquer system creates the impression of a special frost structure.

The integration of special effect pigments is possible.

SPECIAL CHARACTERISTICS

- Guarantees can be arranged for particular objects
- Metallic and effect pigments must be processed according to the batch

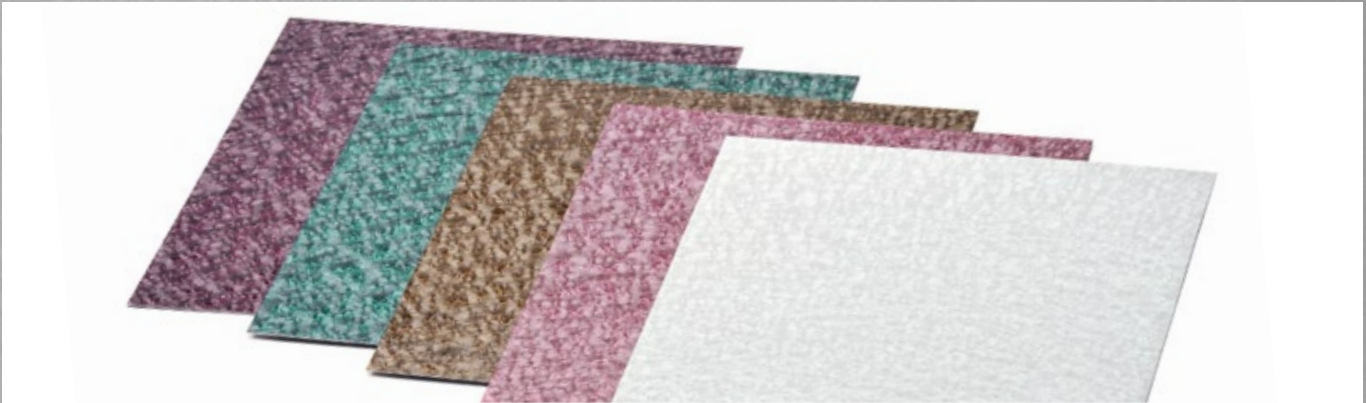
COLOURS
In addition to white and silver, all conventional colours are possible. The use of effect pigments requires special co-ordination
DEGREE OF GLOSS
03 - 05 units
LAYER STRUCTURE
Multi-layer structure
PROTECTIVE FOIL
Special protective foil on request. As the lacquer system has a durable surface the protective foil can therefore be dispensed in many cases



Eisblume Silbermetallic (3908-02)



Eisblume Weißmetallic (3909-02)



Frost range of colours

NWS – Stone Optic



Limestone
(3168-02)

FEATURES

The rough surface of the lacquer system gives the impression of a natural product.

The surface printing increases the stone haptics.

SPECIAL CHARACTERISTICS

- Guarantees can be arranged for particular objects
- Some surfaces can also be supplied in other lacquer systems (e.g. PVdF)
- Different colour schemes are possible
- Surfaces are to be processed according to the batch

COLOURS

Various colour schemes can be combined with different surface textures

DEGREE OF GLOSS

03 – 05 units

LAYER STRUCTURE

Multi-layer structure

PROTECTIVE FOIL

Special protective foil on request.
As the lacquer system has a durable surface the protective foil can therefore be dispensed in many cases



Basalt (3748-20)



Tile Marble white (6926-09)



Slate Stone (3749-02)

PVdF – Stone Optic



Marmor Lachsrot
(3306-20)

FEATURES

The PVdF lacquer system is well-known and has proven to be successful due to its excellent weather resistance. Combination of print and lacquer system enables creative stone designs.

SPECIAL CHARACTERISTICS

- Guarantees can be arranged for particular objects
- For surface-stressed applications, special precautionary measures should be taken
- Surfaces are to be processed according to the batch

COLOURS

Almost all conventional colours can be produced. In the case of prints, colour and design co-ordination may be necessary in particular cases

DEGREE OF GLOSS

20, 40 or 80 units are possible with fluoropolymer clear lacquer

LAYER STRUCTURE

Multi-layer system, four-layer finishes in part

PROTECTIVE FOIL

Standard protective foil is recommended

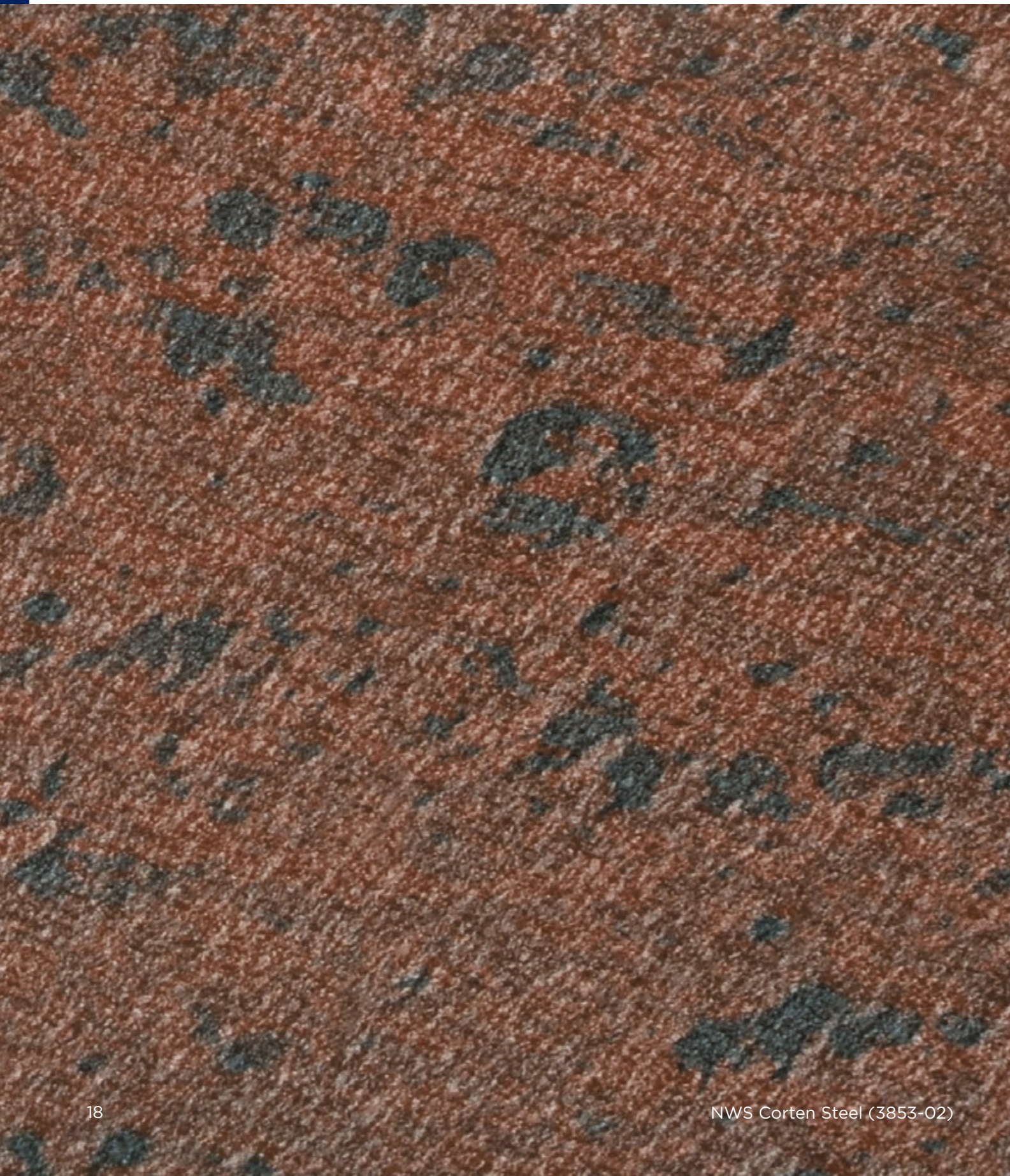


Tile Marble white (6926-20)



Graugestein (3746-20)

NWS – Metal Optic



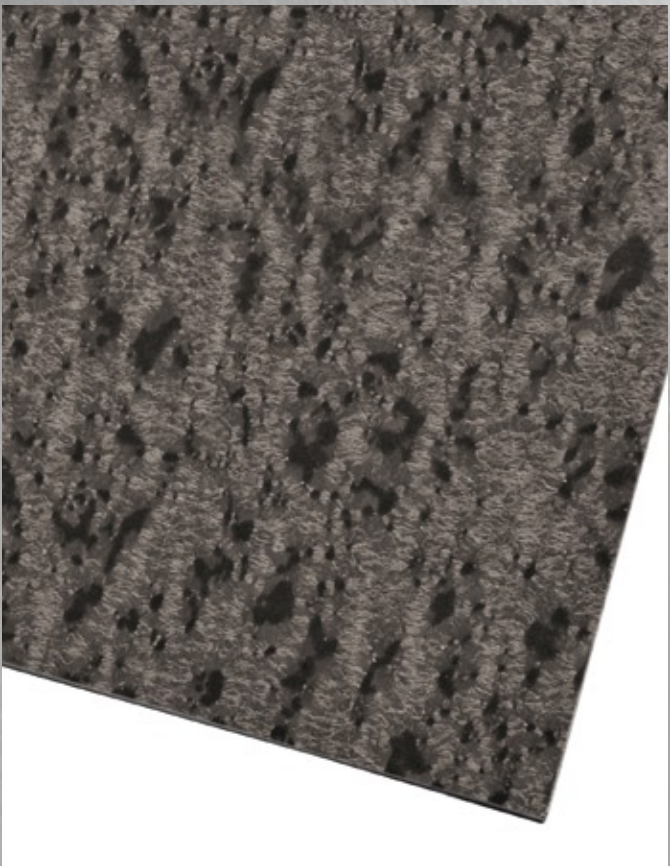
FEATURES

Different metal surfaces are available: Weathered or Antique Copper, Corten (imitation of a rusted steel surface) or Stainless Steel Design.

- The surfaces have a stable design and do not change
- The surfaces are structured and have a textile touch
- The system is weather resistant and scratch-resistant

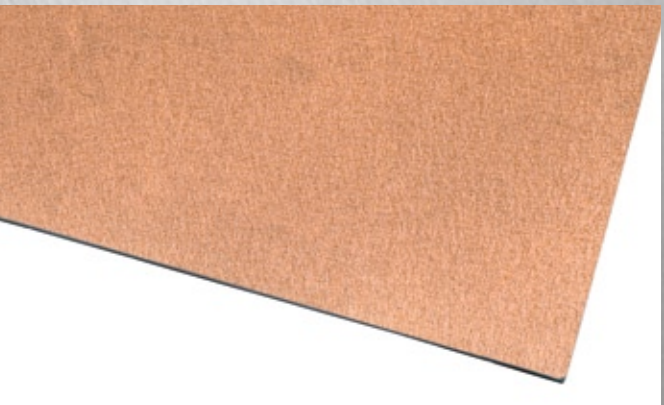
SPECIAL CHARACTERISTICS

- High formability
- Surfaces are to be processed according to the batch



Antik-Kupfermetallic (3859-02)

COLOURS
Various colour schemes can be combined with different surface textures
DEGREE OF GLOSS
03 – 05 units
LAYER STRUCTURE
Multi-layer structure
PROTECTIVE FOIL
Special protective foil on request. As the lacquer system has a durable surface the protective foil can therefore be dispensed in many cases

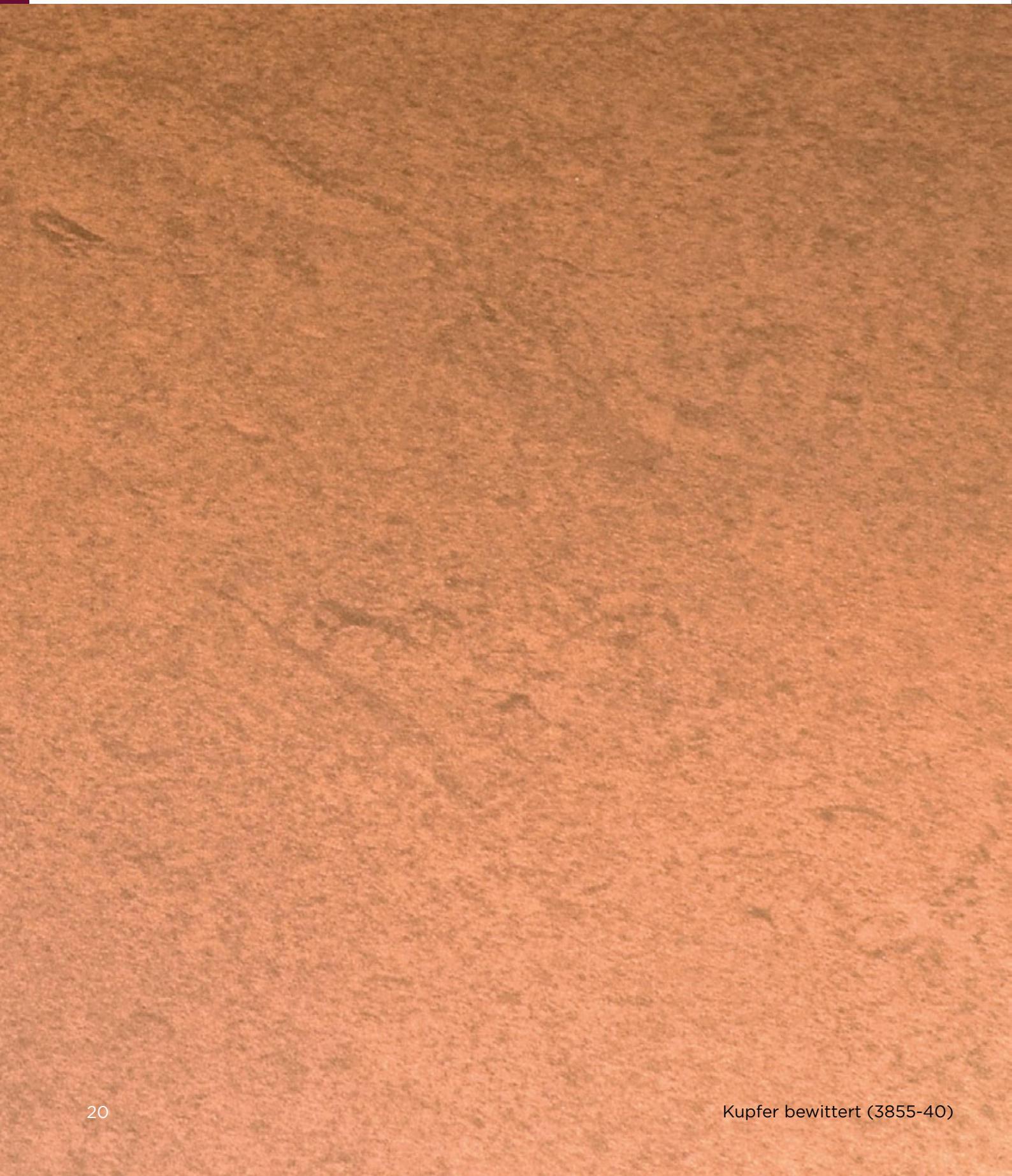


NWS Kupfer bewittert (3855-40)



Edelstahl Strich Design (3906-02)

PVdF – Metal Optic



FEATURES

Different metal surfaces are available, partly with a weathered appearance: zinc, copper and patina.

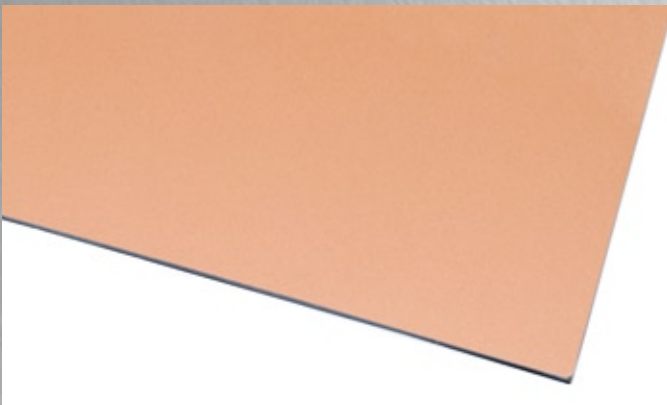
The produced surfaces remain stable in design and colour and do not change.

All systems are weather resistant because of PVdF lacquer quality.

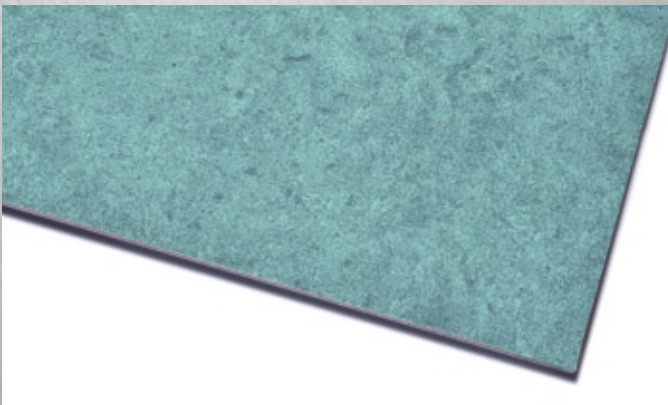
SPECIAL CHARACTERISTICS

- Good formability
- Guarantees can be arranged for particular objects

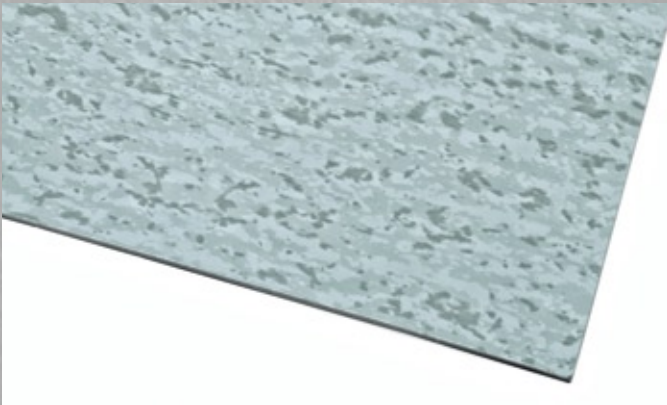
COLOURS
See illustrations
DEGREE OF GLOSS
Up to 80 units
LAYER STRUCTURE
Multi-layer structure
PROTECTIVE FOIL
A special protective foil is recommended



Neukupfer (2877-30)



Patina III (3604-20)



Altzink (3700-20)



Zinkgrau (1773-20)

Metal Effect Optic PVdF or HDP



FEATURES

The lacquered metal design gives the impression of a haptic and optic rendering coat. Structured textile optic with High Durable Polyester (HDP). Plain surface design in PVdF lacquer systems available.

SPECIAL CHARACTERISTICS

- Material developed for outside use

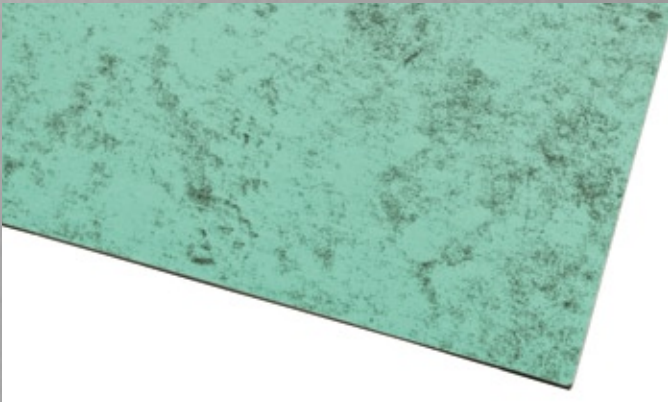
COLOURS
Different finishes can be agreed
DEGREE OF GLOSS
03 units
LAYER STRUCTURE
Two-layer lacquer system
PROTECTIVE FOIL
Protective foil on request



Antic Copper (71D8-3Y)

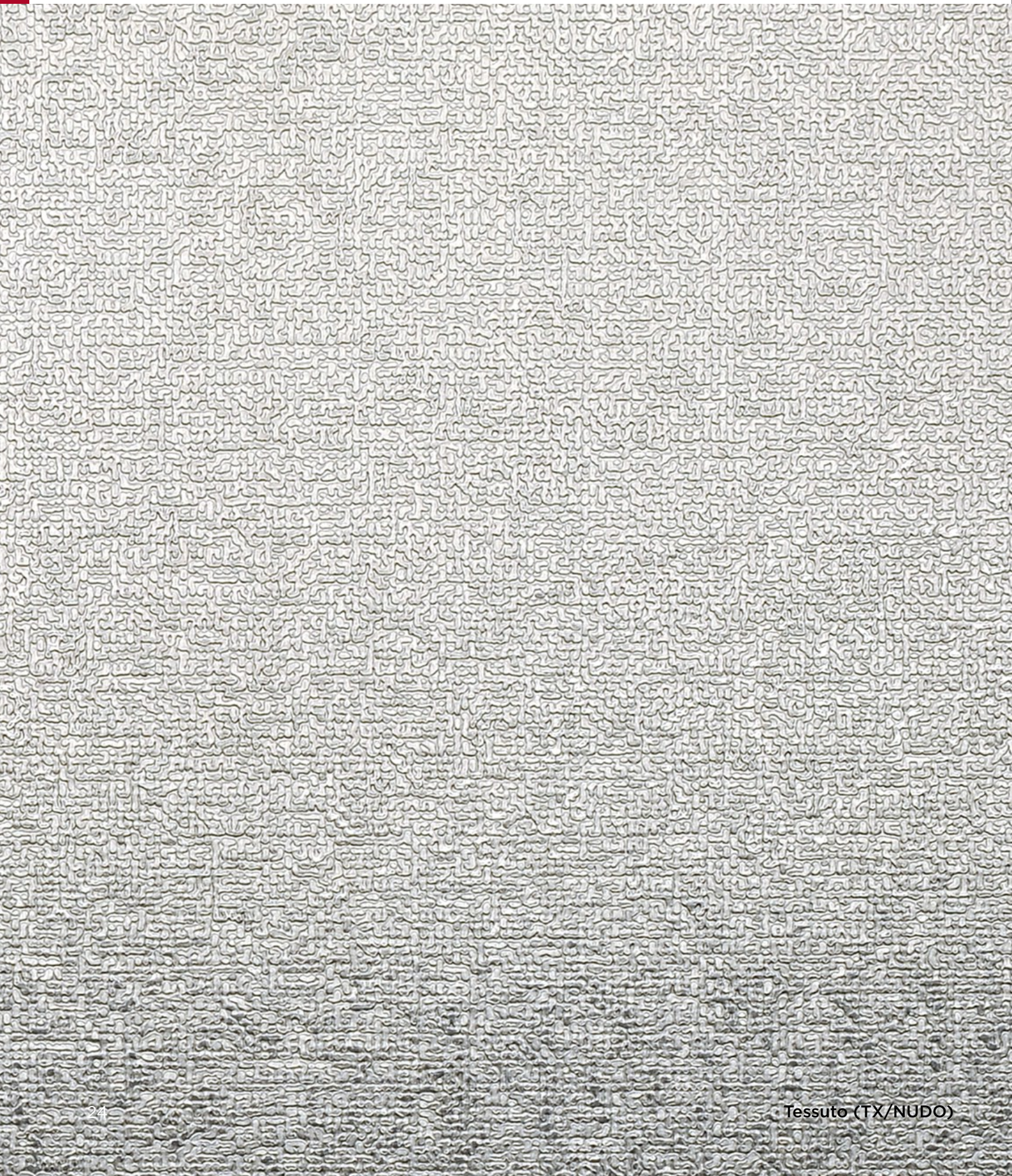


Weathered Zinc (21N5-3Z)



Patina (51D8-7Z)

Designed Rolled Surfaces



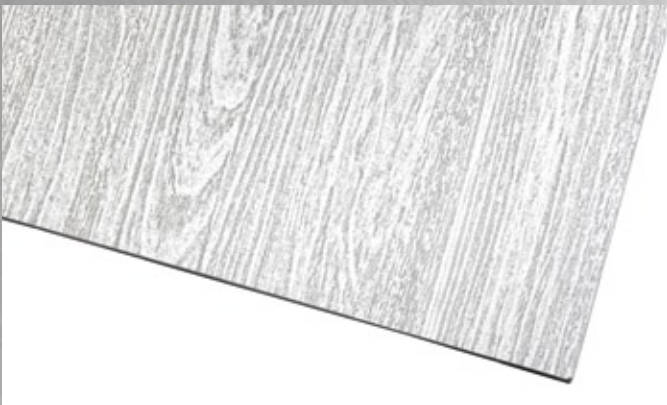
Tessuto (TX/NUDO)

FEATURES

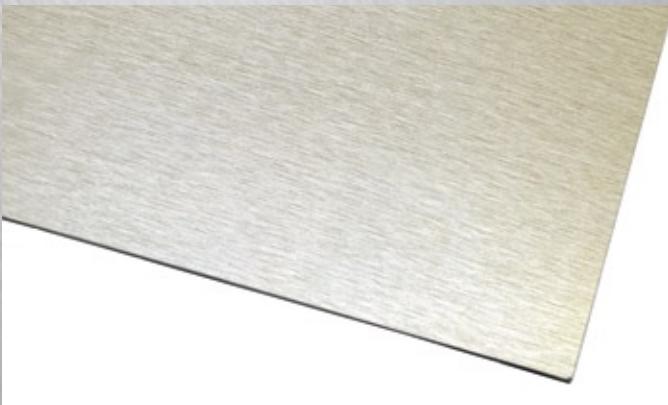
The surface design is done by rolling.
The rolled surfaces can be painted
in a further production step.

From structured texture patterns, wood
design up to brushed surfaces with
different coloured transparent coating.

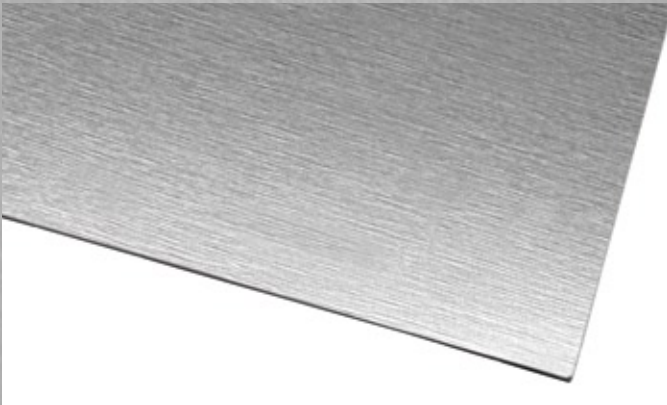
COLOURS
Available in various coating systems and colours. Colours can be transparent or opaque
DEGREE OF GLOSS
Various, on request
LAYER STRUCTURE
One- or two-layer lacquer system
PROTECTIVE FOIL
Protective foil on request



Woodgrain



Champagne brushed (3312-70)

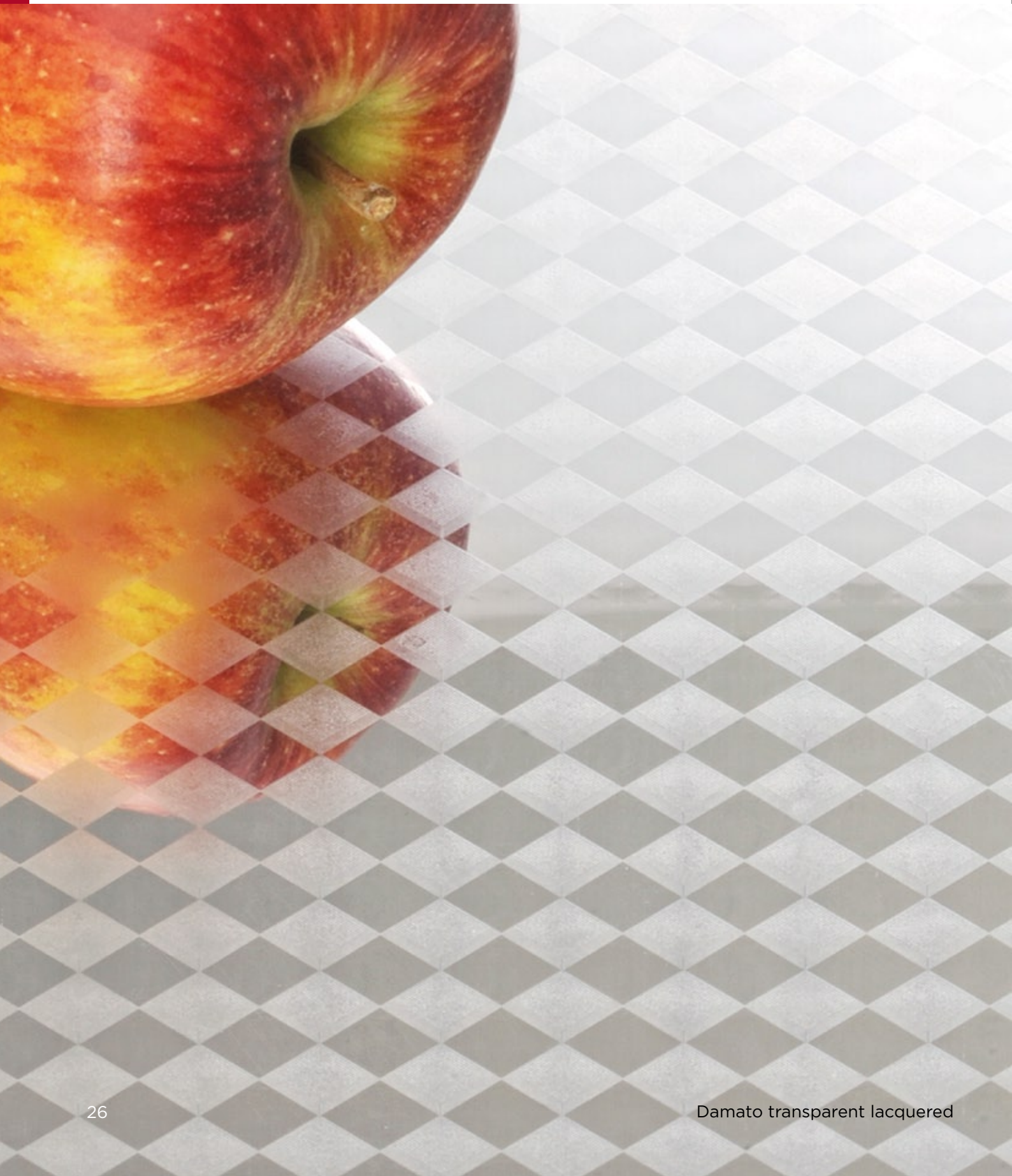


Titanium brushed (0805-28)



Bronze brushed (AC46X2-28)

Rolled Super Bright



Damato transparent lacquered

FEATURES

The surface design is produced by special rolling technology and coating. Transparent or coloured transparent lacquers are possible.

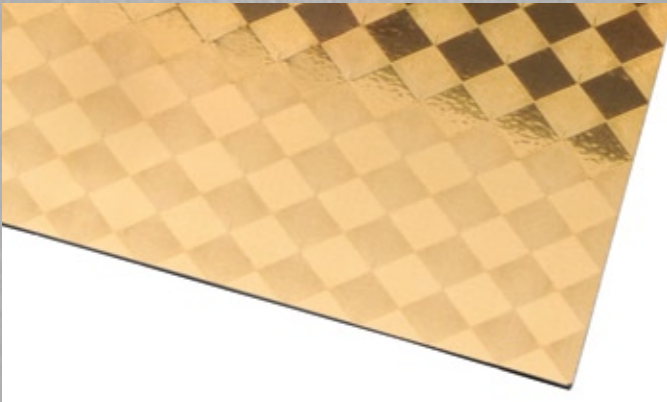
SPECIAL CHARACTERISTICS

- Material is for indoor use and especially used in the white goods industry

COLOURS
Various transparent lacquers
DEGREE OF GLOSS
High gloss
LAYER STRUCTURE
One-layer lacquer system
PROTECTIVE FOIL
Transparent protective foil is necessary



Rigato transparent lacquered



Damato gold lacquered



Quadretti

Effect Surfaces

Rainbow



FEATURES

The lacquer system stands out due to its impressive, varied reproduction of colours, depending on the incidence of light, perspective and sun intensity.

The rainbow system is a fluoropolymer and therefore designed for outdoor applications.

SPECIAL CHARACTERISTICS

- The lacquer system has a good formability
- Guarantees can be arranged for particular objects
- Surfaces are to be processed according to the batch

COLOURS

Different basic colours are available

DEGREE OF GLOSS

Matt to high gloss. The best rainbow effects are achieved with a high-gloss surface

LAYER STRUCTURE

Multi-layer system

PROTECTIVE FOIL

A special protective foil is recommended

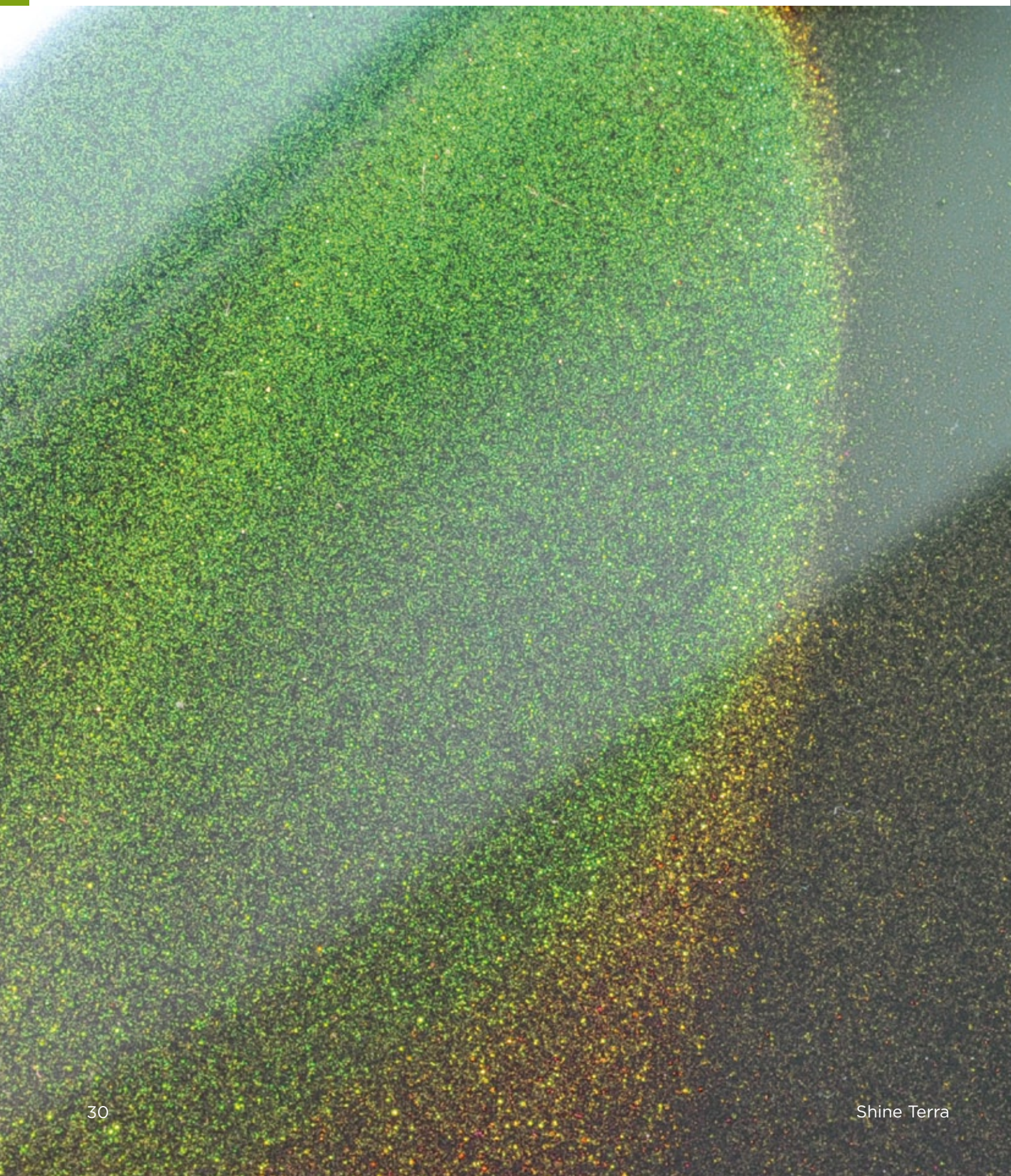


In the morning



In the afternoon

Effect Surfaces Shine



FEATURES

Depending on the angle of view and sun intensity, the surface changes between two completely different colours.

This yields attractive design possibilities. The Shine-effect can be integrated in all conventional lacquer systems.

SPECIAL CHARACTERISTICS

- Shine surfaces are to be processed according to the batch
- The system is suitable for outdoor applications

COLOURS

All conventional colours can be produced

DEGREE OF GLOSS

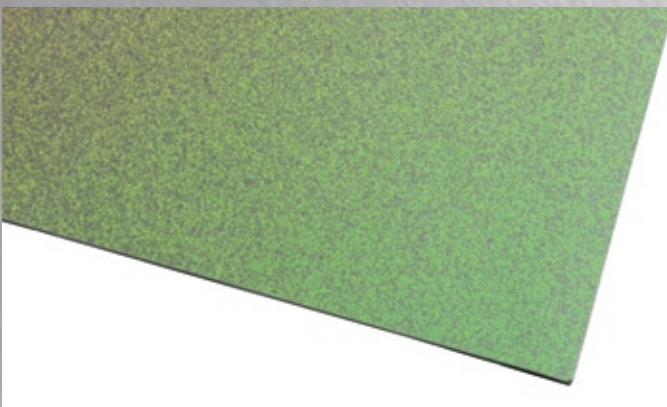
20 - 80 units (PVdF and fluoropolymer). High degrees of gloss are recommended in order to achieve the best effects

LAYER STRUCTURE

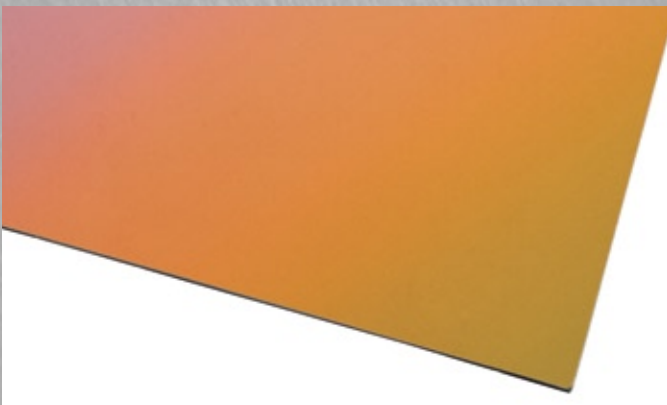
Multi-layer structure; three to four layers depending on the lacquer system

PROTECTIVE FOIL

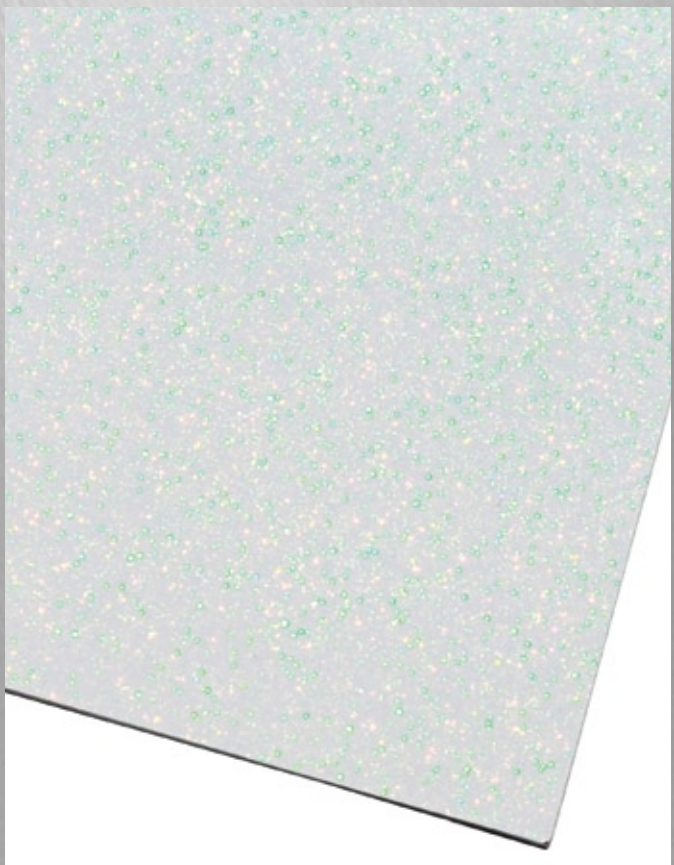
A special protective foil is recommended



Shine Terra (7175-09)



Shine Sunset (7170-09)



Iceberg (7462-10)

Effect Surfaces

Soft Touch



FEATURES

This lacquer system provides the surface with special haptics. Touching the surface produces a satiny, textile, smooth feeling.

The system has been developed for indoor use, e.g. for housings, partitions, doors, interior consoles etc.

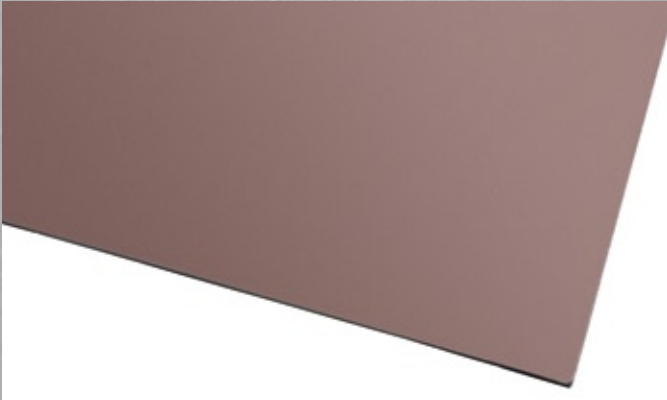
SPECIAL CHARACTERISTICS

- Good formability

COLOURS
Brilliant colours cannot be produced, since the surface is extremely matt. Prints are possible (e.g. wood designs)
DEGREE OF GLOSS
> 20 units
LAYER STRUCTURE
Multi-layer structure
PROTECTIVE FOIL
A special protective foil is recommended



Soft Touch Creme (7156-09)



Soft Touch Chocolate (7153-09)



Soft Touch Wood (7152-09)

Technical Surfaces

Non Cond Drop



FEATURES

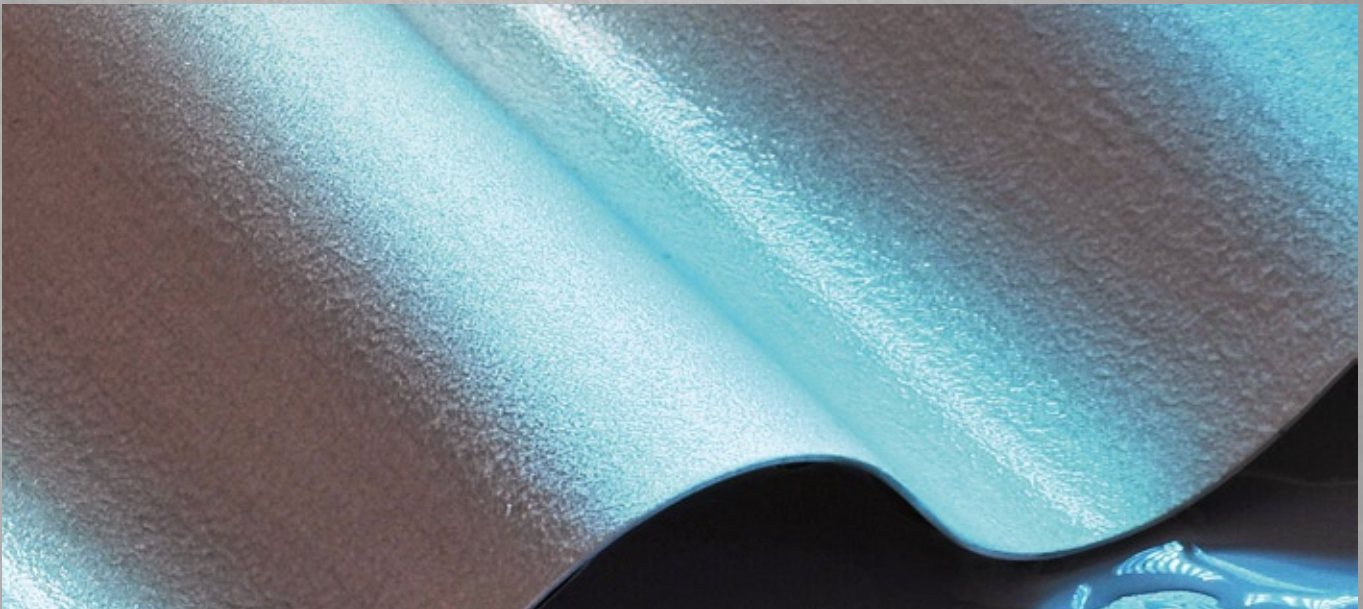
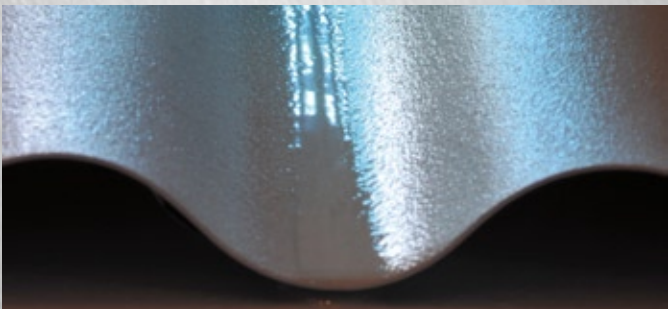
Non Cond Drop is a functional coating system. It absorbs water in the case of high humidity and releases it into the environment again when the atmosphere is dry. This prevents the annoying dripping of condensate, e.g. from ceilings.

In test cycles, reduced water absorption could not be determined during repeated change of functions.

SPECIAL CHARACTERISTICS

- The system does not fulfil decorative requirements
- The system can only be cleaned with ethanol when dry
- After water absorption, the coating appears to have a jellylike surface.
- Weather resistant

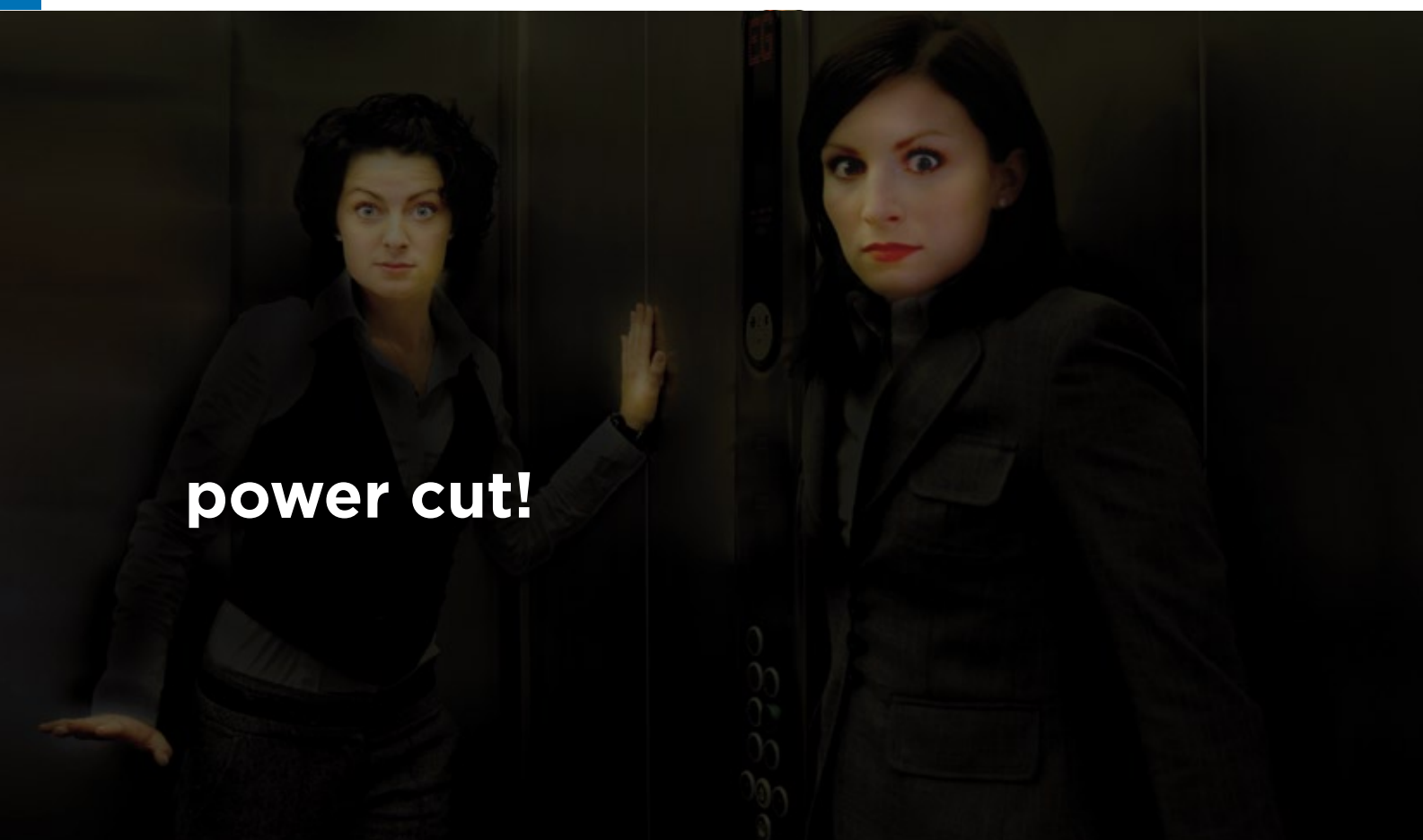
COLOURS
Clear lacquer system Colours are possible as a two-layer system
DEGREE OF GLOSS
matt
LAYER STRUCTURE
Two-layer system The clear lacquer absorbs 800 - 1000 ml/m ² of moisture with a layer thickness of 20 - 30 µm
PROTECTIVE FOIL
Only possible after consultation



Non Cond Drop after absortion of condensation

Technical Surfaces

Luminal



power cut!



...bright even in the dark!

FEATURES

Luminal is a special lacquer system with luminescent effects. The pigments excited by light achieve a long lasting luminance.

Possible applications:

- Underground stations
- Stairwells
- Bathrooms
- Elevators etc.

SPECIAL CHARACTERISTICS

- Meets DIN 67510-1, DIN 53436, DIN EN 13501
- Corrosion-resistant
- Good formability
- Scratch-resistant version on request for use in stressed areas

COLOURS

The preferred colour is white; other light colours are possible. Reduced luminance is to be expected with all other colours

DEGREE OF GLOSS

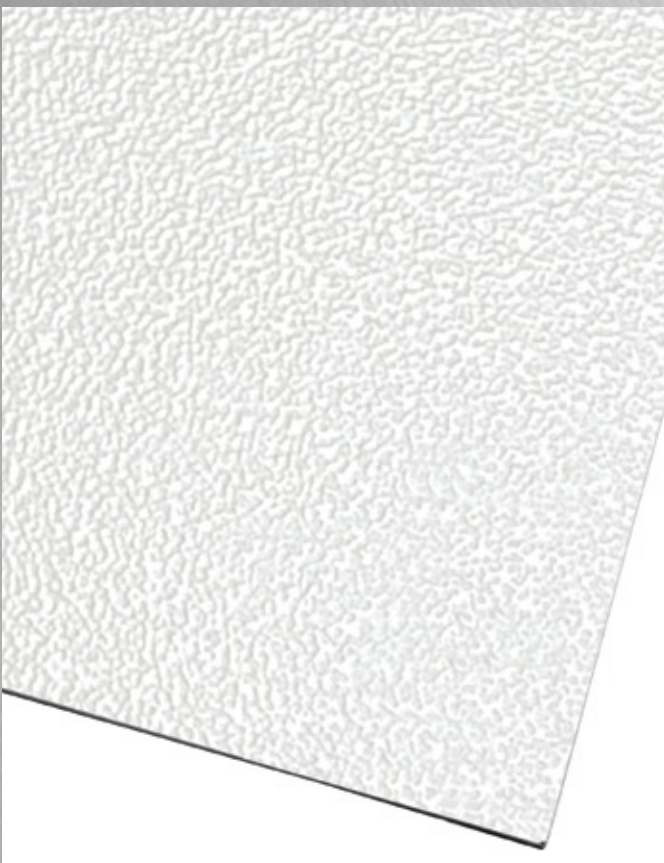
Depending on the coating system:
20 - 40 units

LAYER STRUCTURE

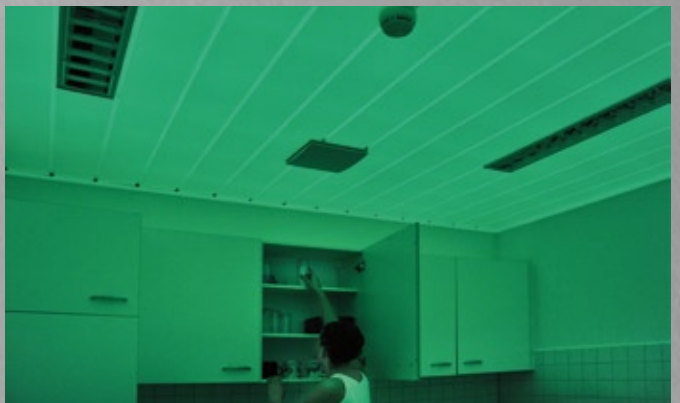
Multi-layer structure

PROTECTIVE FOIL

A special protective foil is recommended, depending on application and processing



Luminal with scratch resistant surface



Long lasting light in the dark

Technical Surfaces

Clearky 105



FEATURES

This is a special lacquer system that allows graffiti and similar things to be easily removed from the lacquered surface.

The coated surface is designed in such a way that lacquers, crayons and the like do not adhere to the surface. For this reason, they can be cleaned easily with high pressure cleaners or mechanically. The cleaning process can be repeated as often as necessary because Clearky 105 is not a "sacrificial coating".

Clearky 105 coating ensures that stickers and posters adhere poorly and are easy to remove.

SPECIAL CHARACTERISTICS

- Its weather resistance corresponds to that of conventional facade qualities
- Good formability
- Material with metallic coatings has to be installed according to the batch

COLOURS

Available in all PVdF colours

DEGREE OF GLOSS

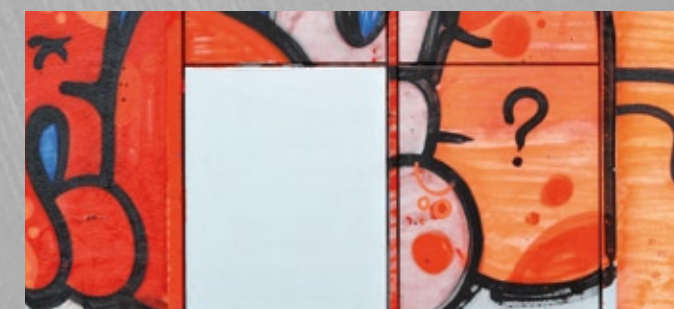
Up to 60 units

LAYER STRUCTURE

Multi-layer structure

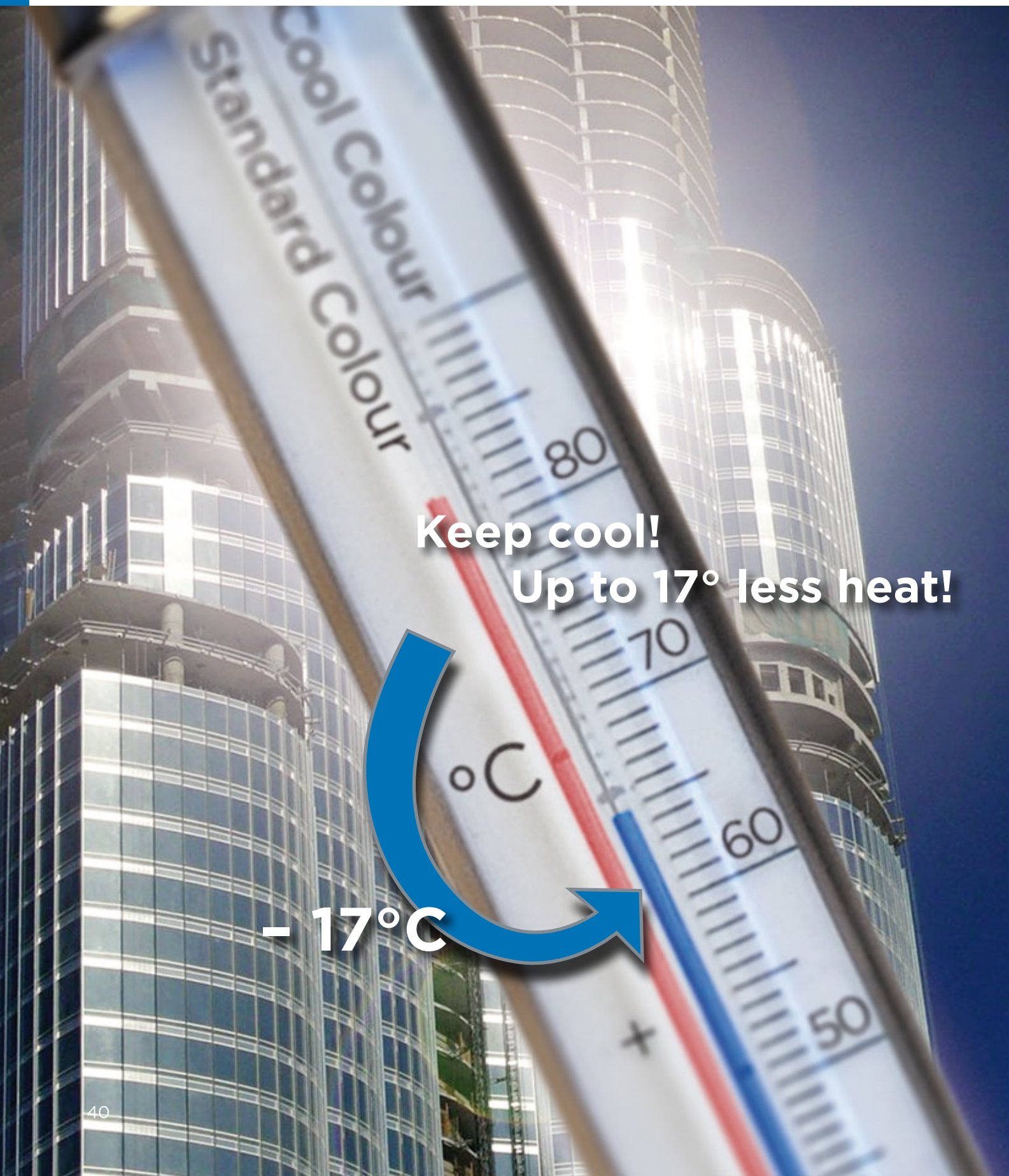
PROTECTIVE FOIL

Protective foil is recommended



Technical Surfaces

Cool Colour



FEATURES

Heat reflecting paints Novelis Cool Colours – compared to conventional paints – have the ability to reflect solar radiation in the near infra-red part of the spectrum and this way reduce the amount of heat that is absorbed by buildings.

Only 40% of the energy in a characteristic radiation spectrum is in the visible range (400-700 nm). Longer wavelengths are invisible to the human eye, but contain about half of the solar energy which strikes the earth. So the heating up of buildings caused by solar energy can be reduced significantly.

The heat reducing effect shows up especially for dark colours. The darker the colour itself, the better the cooling effect with cool colours.

Novelis Cool Colours save energy and money!

COLOURS
Available in all type of paints
DEGREE OF GLOSS
8 – 80 according to lacquer system
LAYER STRUCTURE
Two- to four-layer lacquer system
PROTECTIVE FOIL
Protective foil on request

Calculated savings under test conditions:

COLOUR NAME	RAL	ENERGY SAVING EURO / 1000M ² / YEAR	
		FLORIDA	ARIZONA
slate grey	7015	1012,00 €	1234,00 €
black grey	7021	944,00 €	1140,00 €



References

KTX Station, South Korea,
pre-anodised

The Cube, Birmingham, England,
pre-anodised

Nanjing Renheng ,China,
Stainless Steel Optic



NOVELIS is the world's largest producer of rolled aluminum and the global leader in beverage can recycling. We are a growth-oriented company, drawing upon our industry-leading technology and expertise to develop and deliver an expanding portfolio of premium rolled aluminum products. By partnering with our customers to bring innovative products to market, by being a leader in recycling, and by operating with a mindset of sustainability, **Novelis makes the world lighter, brighter and better.**

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