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# Aluminium

Surface Innovation



# Novelis

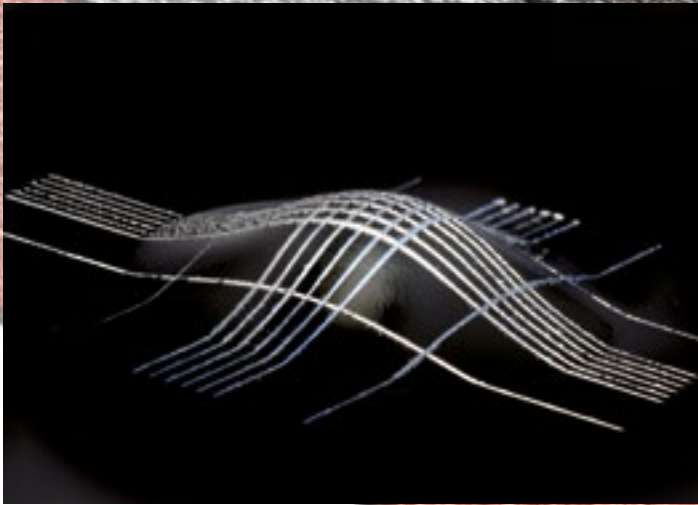
# Novelis surface innovation

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 development NWS



**NWS is perfectly weather-resitant.**

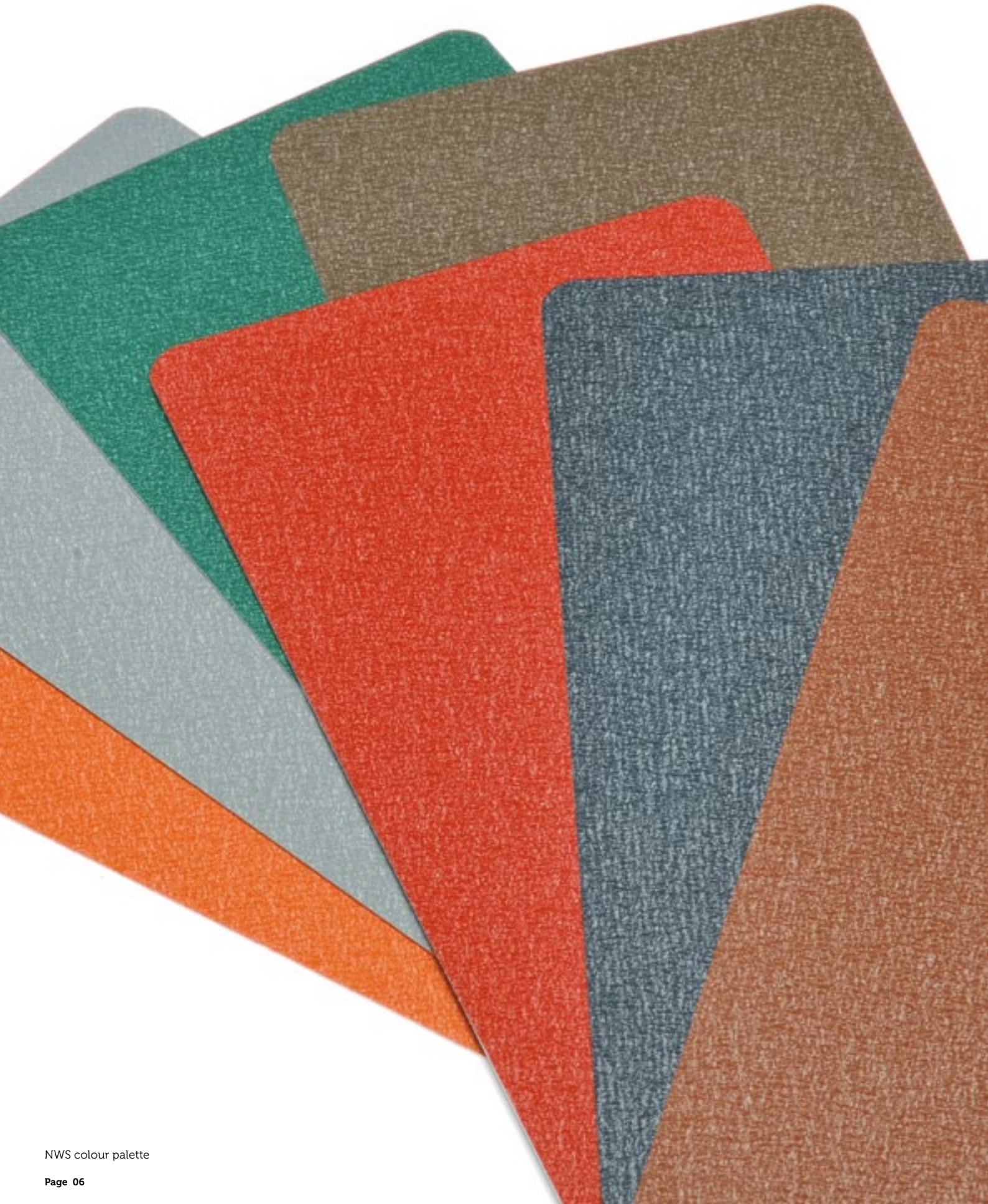
No chalking after 2000h of accelerated weathering test with UV-B radiation. So longlasting design is an outstanding performance of the NWS lacquer family.

**NWS is corrosion-resistant.**

After 500h of salt spray testing, no lacquer infiltration or blisters could be found.



# NWS – Satina Plain



# 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

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## Colours

All conventional colours are possible

## Degree of gloss

02-06 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

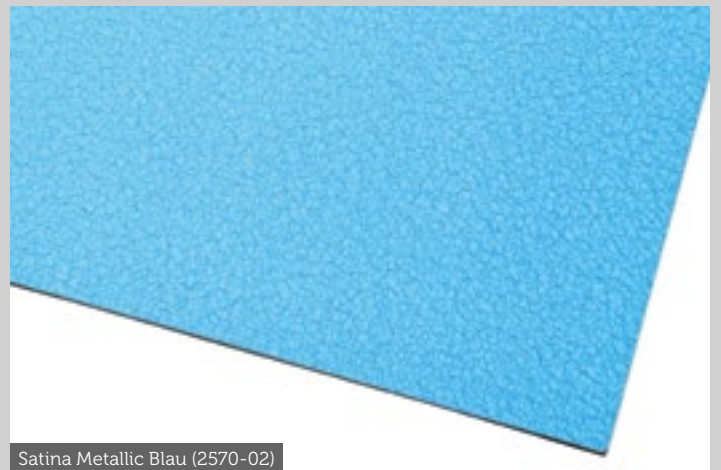
Two-layer system

## 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 (2570-02)



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

02-06 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)

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# 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

02-06 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



# 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

In addition to white and silver, all conventional colours are possible. The use of effect pigments requires special co-ordination

## Degree of gloss

02-06 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 (3748-02)



Tile Marble white (6926-09)



Slate Stone (3749-02)

# PVdF – Stone Optic





# 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

10-80 units (depending on colours) are possible with fluoropolymer clear lacquer

## Layer structure

Multi-layer system, four-layer finishes in part

## Protective foil

Standard protective foil is recommended

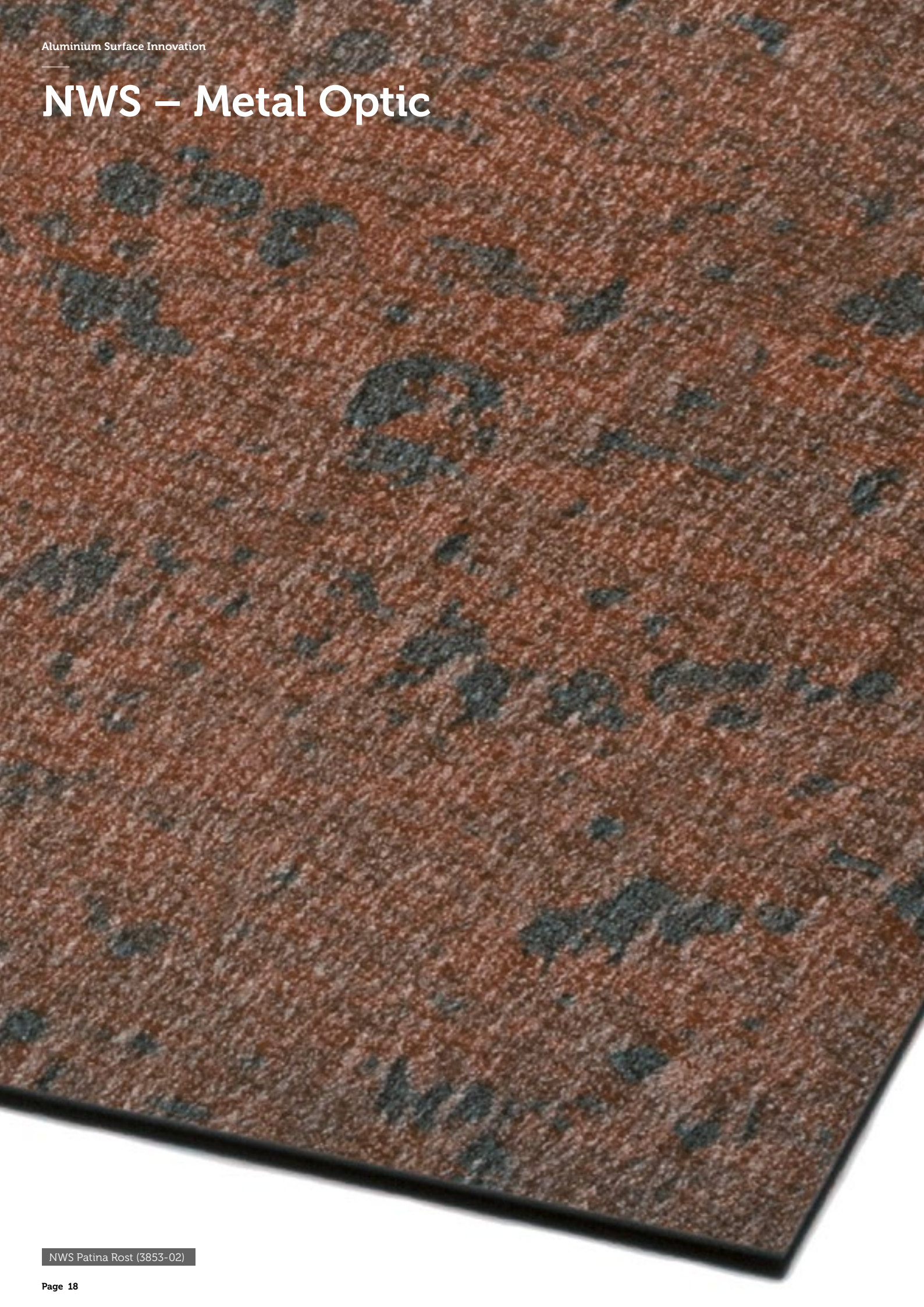


Tile Marble white (6926-08)



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

## Colours

Various colour schemes can be combined with different surface textures

## Degree of gloss

02-06 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



Antik-Kupfermetallic (3859-02)



NWS Kupfer bewittert (3855-40)



Edelstahl (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

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## Colours

See illustrations

## Degree of gloss

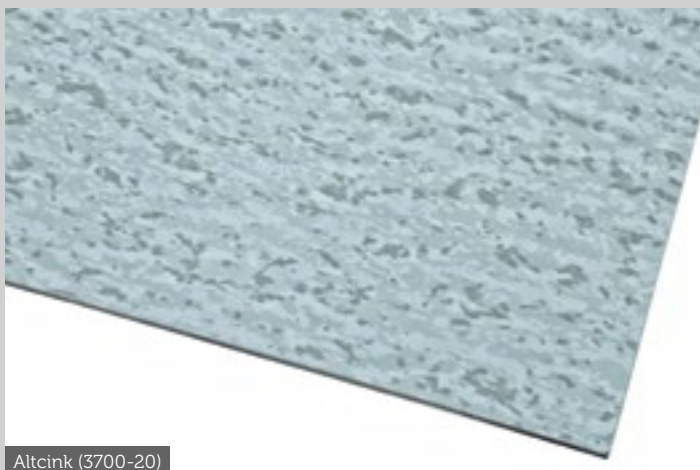
10-80 units (depending on colours)

## Layer structure

Multi-layer system, four-layer finishes in part

## Protective foil

A special protective foil is recommended



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# PVdF – Metal Optic

# Features

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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

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## Colours

Different finishes can be agreed

## Degree of gloss

03-80 units (depending on colours)

## Layer structure

Two-layer lacquer system

## Protective foil

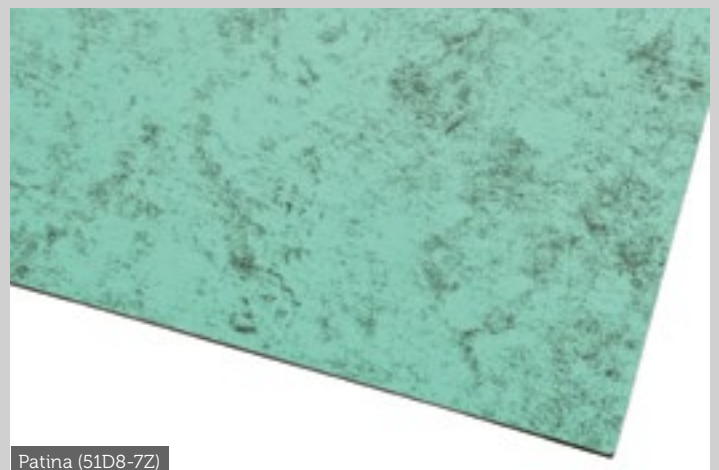
Protective foil on request



Antic Copper (71D8-3Y)



Weathered Zinc (21N5-3Z)



Patina (51D8-7Z)

# Designed Rolled Surfaces



# 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.

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## 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)

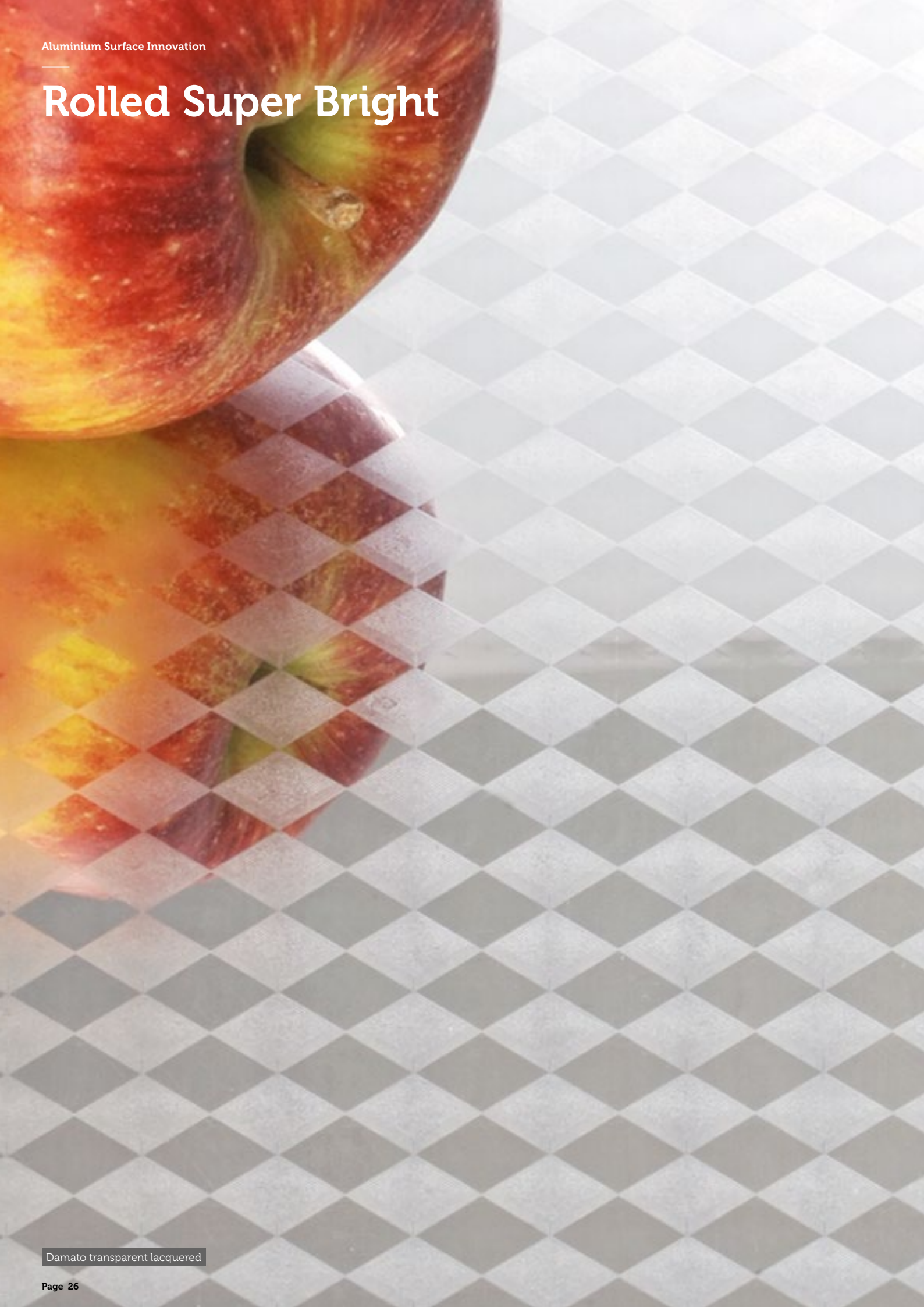


Titanium brushed (0805-28)



Bronze brushed (AC46X2-28)

# Rolled Super Bright



# 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

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### Colours

Various transparent lacquers

### Degree of gloss

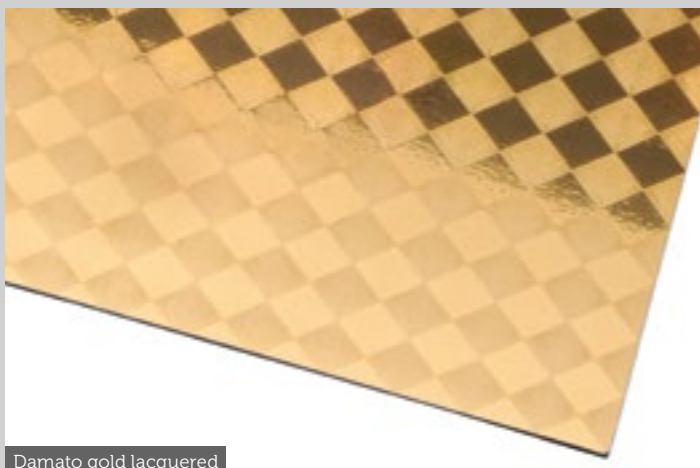
High gloss

### Layer structure

One-layer lacquer system

### Protective foil

Transparent protective foil is necessary



# 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

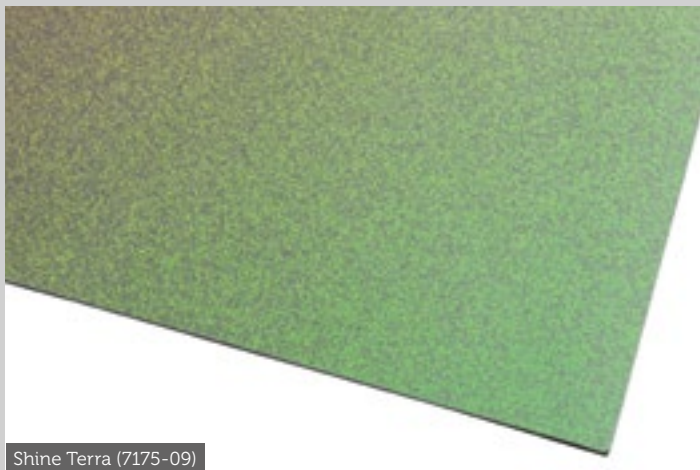
10-80 units, depending on colours (PVdF and fluoropolymer). High degrees of gloss are recommended in order to achieve the best effects

## 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)



Green-White (7462-10)

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# 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

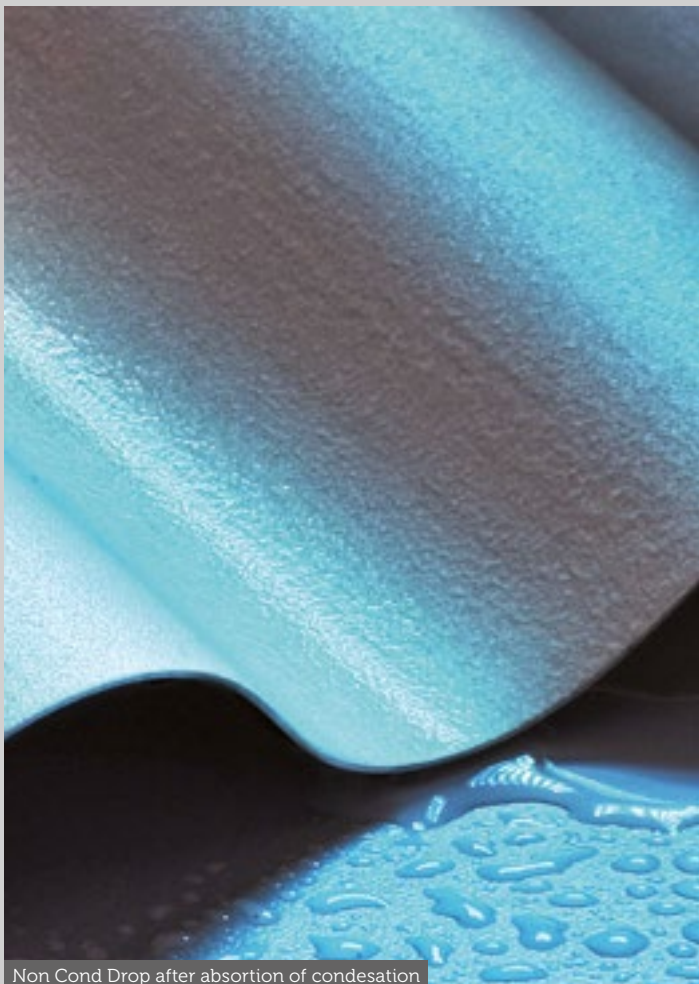
matt

## Layer structure

Two-layer system. The clear lacquer absorbs 800-1000 ml/m<sup>2</sup> of moisture with a layer thickness of 20-30 µm

## Protective foil

Only possible after consultation



# 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

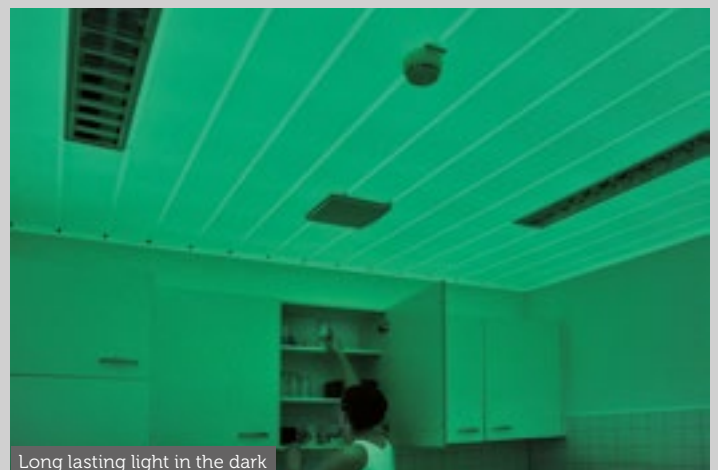
Depending on the coating system:  
20-40 units

## Layer structure

Multi-layer structure

## Protective foil

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



# Technical Surfaces Clearly 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

10-80 (depending on colours)

## Layer structure

Multi-layer structure

## Protective foil

Protective foil is recommended



# Technical Surfaces Cool Colour

Keep cool!  
Up to 17° less heat!

-17°C



# 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

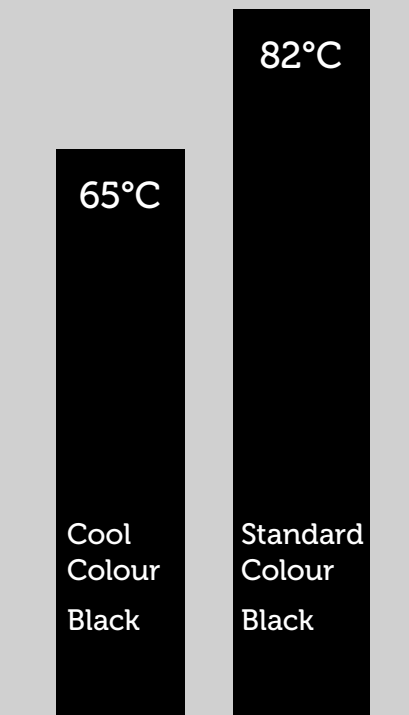
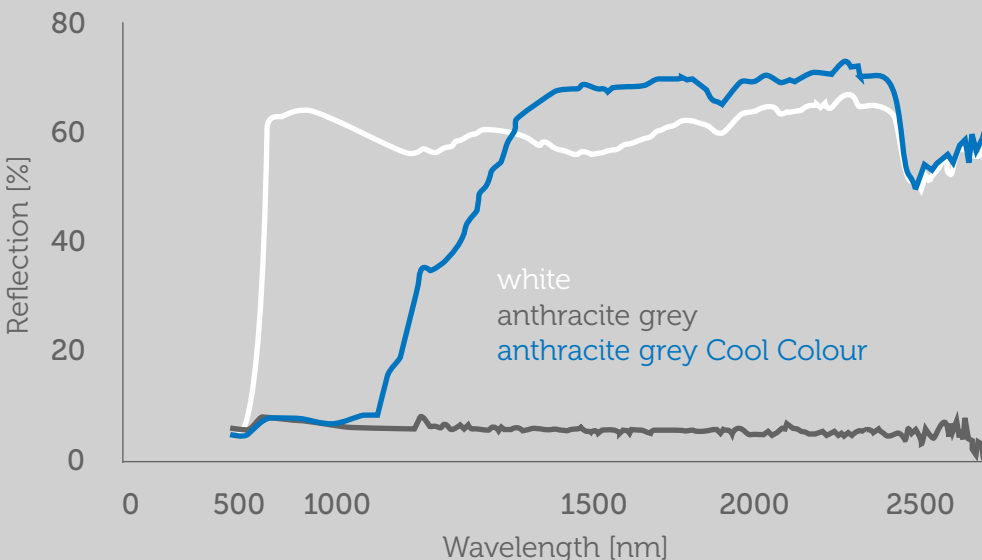
## Protective foil

Protective foil on request

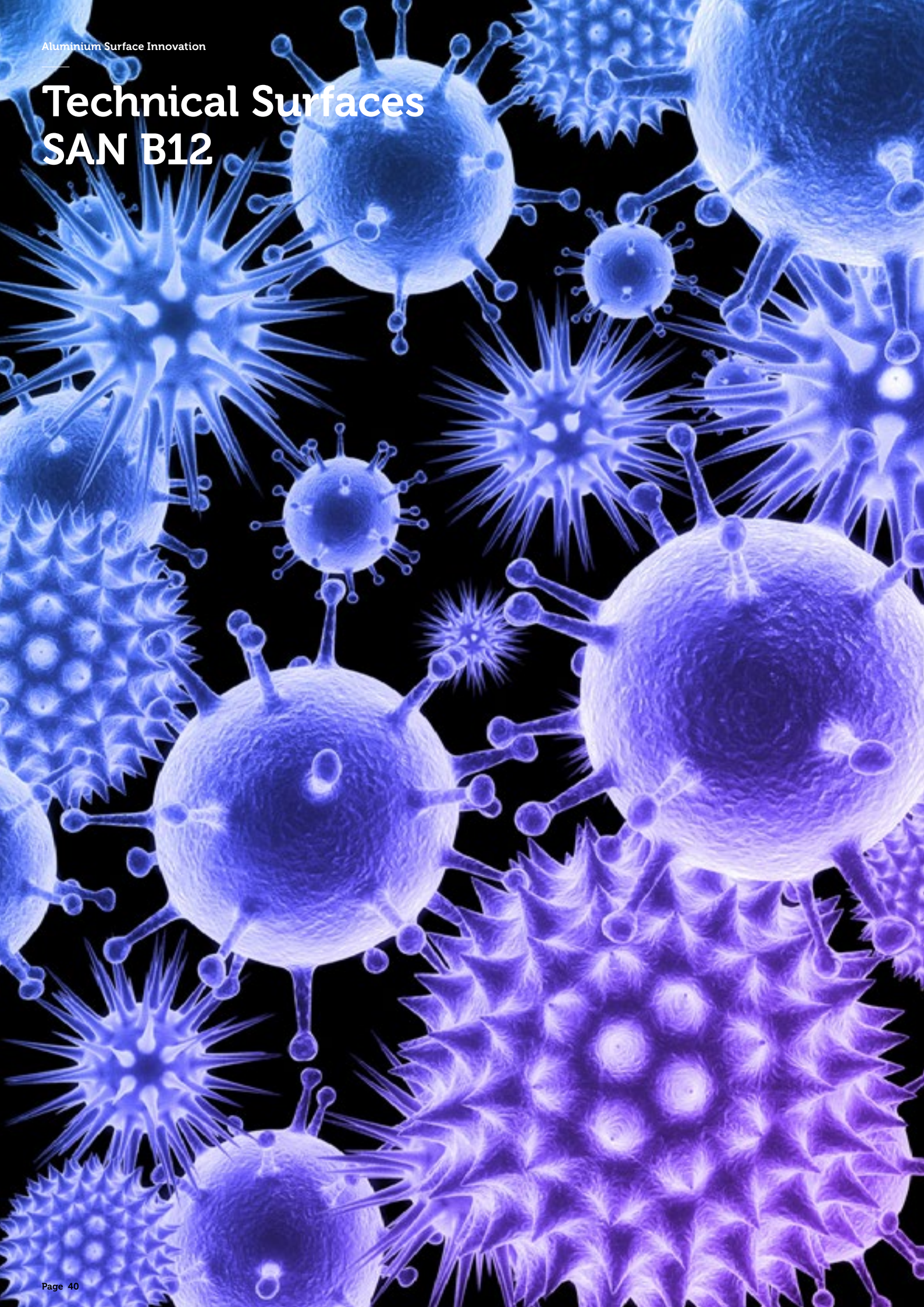
Calculated savings under test conditions:

Colour name	RAL	Energy saving Euro / 1000m <sup>2</sup> / year	
		Florida	Arizona
slate grey	7015	1012,00 €	1234,00 €
black grey	7021	944,00 €	1140,00 €

Cool Colour reduces the temperature up to 17°C



# Technical Surfaces SAN B12





# Features

Its antimicrobial properties make the innovative hygienic product line particularly suited for use in clinics and other medical facilities as well as for air ducts and hygienically sensitive areas.

Special paint elements in the Novelis coating prevent or reduce the reproduction of germs, thereby breaking the transmission cycle.

The hygienic surface is currently available in widths up to 1,500 mm, in thicknesses of up to 0.8 mm and with a matte-white polyester paint coating.

## Colours

White and metallic, all common RALs under request

## Degree of gloss

Matt

## Layer structure

Double layer, either Primer + top coat or base coat + clear coat, depending on the colour and the application

## Protective foil

Available on request; both Transparent and Black and White



The risk of bacteria being transmitted is greatest wherever large numbers of people congregate.

Coated product samples were tested in accordance with ISO 22196 in the laboratories of IMSL (Industrial Microbiological Services Limited) in the UK.

The results show the percent reduction in the microbial load archived after an incubation period of 24 hours at 35°C and a relative humidity (RH) of >95% compared with the starting condition.

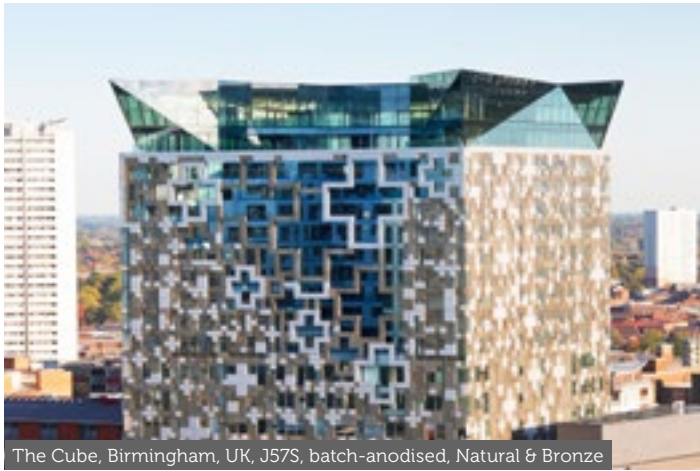
Bacteria type	Reduction (%)
Staphylococcus aureus	> 99,99
Listeria monocytogenes	> 99,80
Escherichia coil O 157	> 99,99
Enterobacter aerogenes	> 99,99
Enterobacter faecalis	> 99,99
Salmonella enteritidis	> 99,90
Salmonella typhimurium	> 99,99

# References

Novelis surface-finished aluminum has proven itself in numerous challenging architectural projects worldwide, and is therefore the perfect choice of materials for such sophisticated projects. Take a look at many of the skylines popping up around the world and you're bound to notice a common thread: Novelis surface-finished aluminum. From train stations and convention centers, to shopping malls in Africa and hospitals in Europe, to museums in North America.

As today's architects look for new ways to distinguish their buildings, Novelis aluminum is becoming their material of choice. It satisfies their high standards for both aesthetics and performance.





The Cube, Birmingham, UK, J57S, batch-anodised, Natural & Bronze



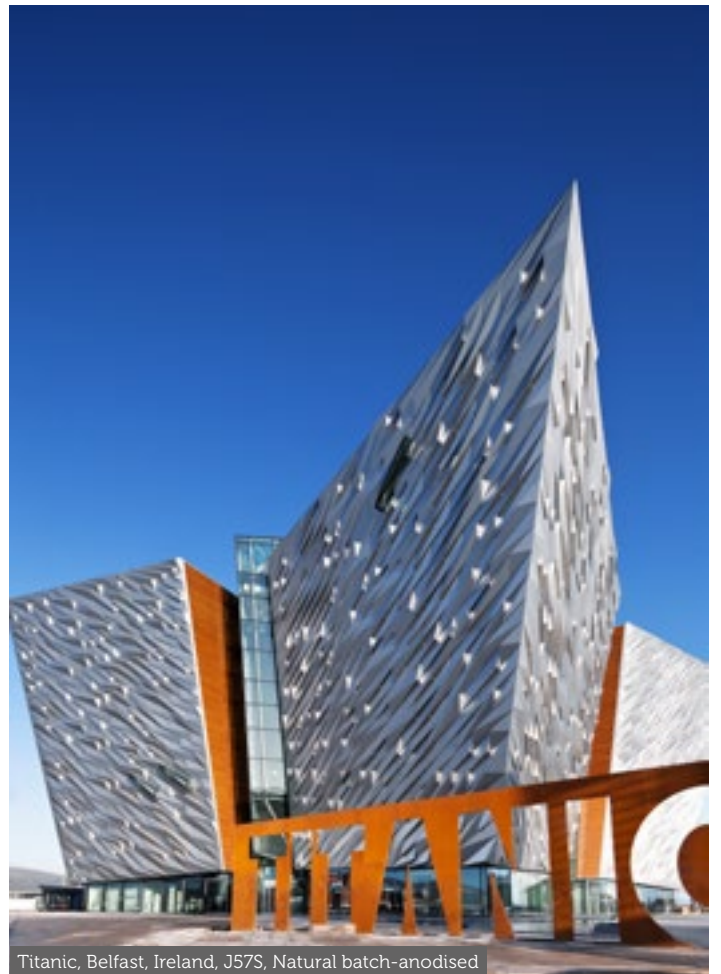
Technical University Wildau, Germany, Kristallsilber



Maritim Museum, Helsingør, Denmark, ff2



Train Station, Bad Kissingen, Germany, Copper Patina



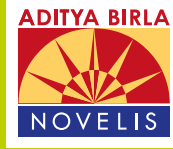
Titanic, Belfast, Ireland, J57S, Natural batch-anodised



Car Park, Copenhagen, Denmark, Sealandwhite



Children Hospital, Moscow, Russia, various PVdF colours



# Contact Novelis

Novelis Europe  
Surface Innovation  
Hannoversche Straße 1,  
37075 Göttingen, Germany  
+49 551 3040  
sales.goettingen@novelis.com



# Novelis