



## Not just aluminium, Novelis Aluminium.™

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.

Novelis is an important part of the worldwide Aditya Birla Group of companies. 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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We reserve the right to make changes.

novelis.com

## New Ideas for Roofs and Facades

**FALZONAL®**

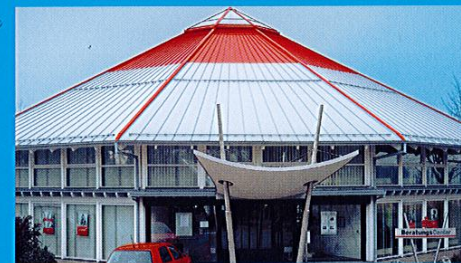
1027238 GB 03/2015 - wider printed in Germany on environmental friendly paper

# Novelis Novelis





Residence in Rotterdam



#### Colours as a design element

FALZONAL adds a touch of colour to the full range of buildings from residential properties and commercial constructions to church towers and congress halls. For practical examples and further information on colours and the colour range, refer to pages 4 – 7.

4-7



#### „Form follows function“

...This old rule of good design is what FALZONAL is all about – FALZONAL adapts to your ideas, not the other way around. You can find more about flexibility and the variety of forms available on pages 8 – 11.

8-11



#### Functional and inexpensive

The ease and reliability with which FALZONAL can be processed provides the perfect basis for ensuring that even top flight architecture can be implemented cost-effectively. Notes for plumbers and technicians can be found on pages 12 – 15.

12-15



#### Environment and ecology

Eco-thinking – from production to recycling after a long product life. Pages 16 and 17

16-17



#### Quality in every detail

For technical information on FALZONAL e.g. thermal expansion, elasticity, strength, environmental protection and quality monitoring, refer to pages 18 – 19.

18-19



## Colour – Puts the emphasis on fantasy and creativity

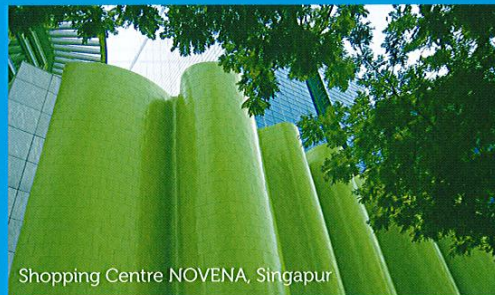
If you are using colour creatively to accentuate a feature, to group areas together or set them apart, or to incorporate details into the construction environment – FALZONAL prepainted aluminium offers you a whole range of options for adding colour to architecture.

### Wide range of standard and special colours

From shining bright colours to discreet metallic sheen – the broad range of FALZONAL colours has something to satisfy everyone. Colour is particularly important to create an aesthetic effect.

The paints, a PVdF coating system with a mixture ratio of 80/20, are applied in a continuous coil-coating process in two to four layers, depending on the colour, and stoved. The result is a high-quality surface with outstanding uniformity of colour. Personalised colour requests can also be accommodated for orders over 1500 m<sup>2</sup>.

On request, we would be delighted to send you our latest colour chart and original colour samples.



Shopping Centre NOVENA, Singapur



Therme VIVAT, Slovenia



Factory in Denkingen, Germany



# Colour – Puts the emphasis on fantasy and creativity

## Permanently weatherproof and low-maintenance

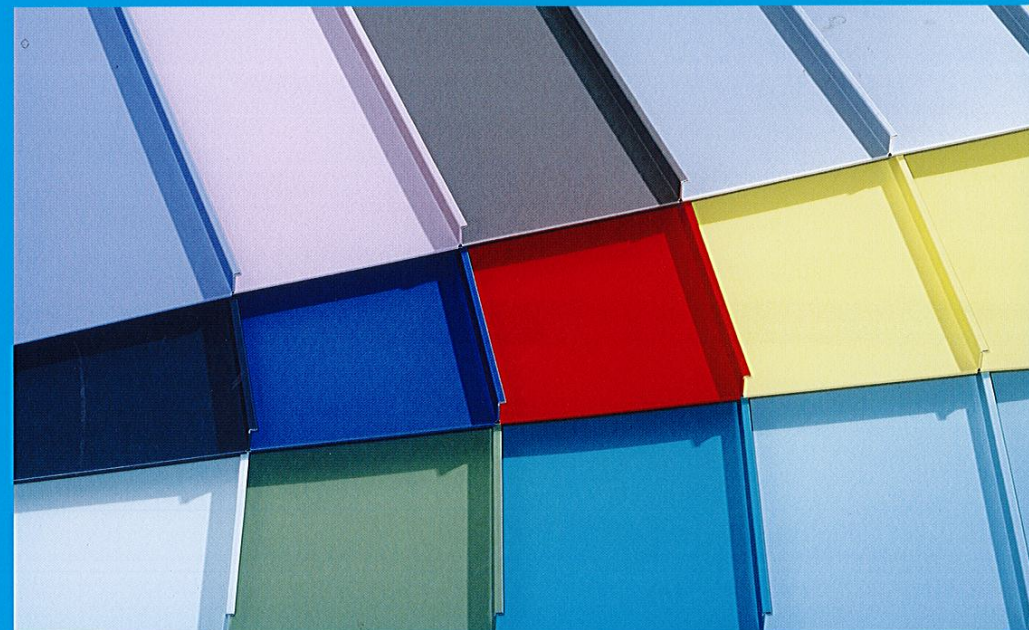
FALZONAL colours have proven their worth even in extreme climatic zones – this is reflected in long life and low maintenance costs. The FALZONAL coating is resistant to UV light and chalking. It is also resistant to embrittlement from the effects of light and weathering and is dirt repellent. In order to provide additional protection against corrosion, the reverse is provided with a transparent protective lacquer. FALZONAL is also easy to maintain – the surfaces can be cleaned easily without need for harmful agents.

## FALZONAL is creativity

FALZONAL simply invites creative solutions. Standard dimensions and ease of processing allow users to combine strips and sheets of different colours at will.



Housing in Mannheim/Germany



**FALZONAL®**  
Novelis prepainted aluminium in lock-welt quality



Housing in Überlingen/Germany



## The form – open for new ideas

FALZONAL opens up a broad spectrum of individualised options to architects, planners and site owners looking for creative roofing and wall designs. It is ideal for a whole range of applications – for both new and old buildings and for both functionality and avantgarde design.

FALZONAL can be used just as easily and cheaply for double-skin, rear-ventilated roof constructions or single-skin roof constructions without rear-ventilation as it can for complex facade architecture.

FALZONAL can also be combined with other materials such as wood, stone or glass to create individual styles.

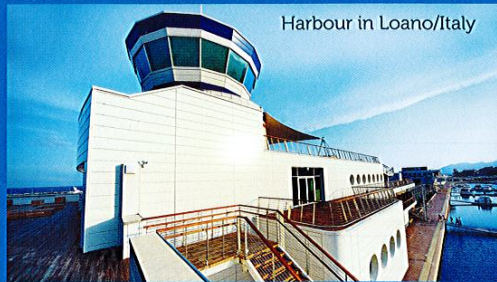


DUN, Malaysia

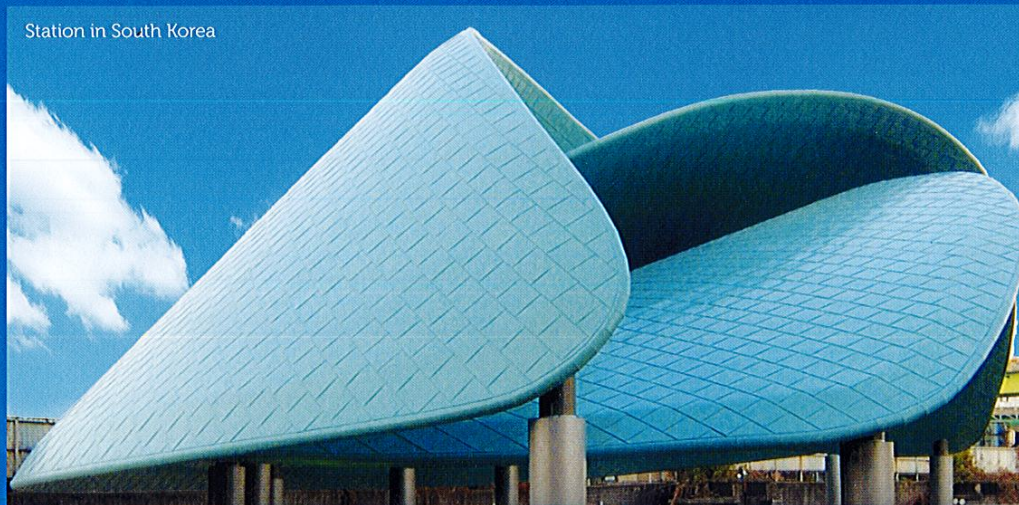
### Easy to shape

FALZONAL can be worked easily to the precise shape you require. It is more ductile than most lock-welt materials and can therefore be employed externally in a wide range of applications.

From broad sweeping arched roof to narrow angled dormer or bay construction, from church tower to large areas of facade cladding, FALZONAL matches every architecture perfectly – and not the other way round!



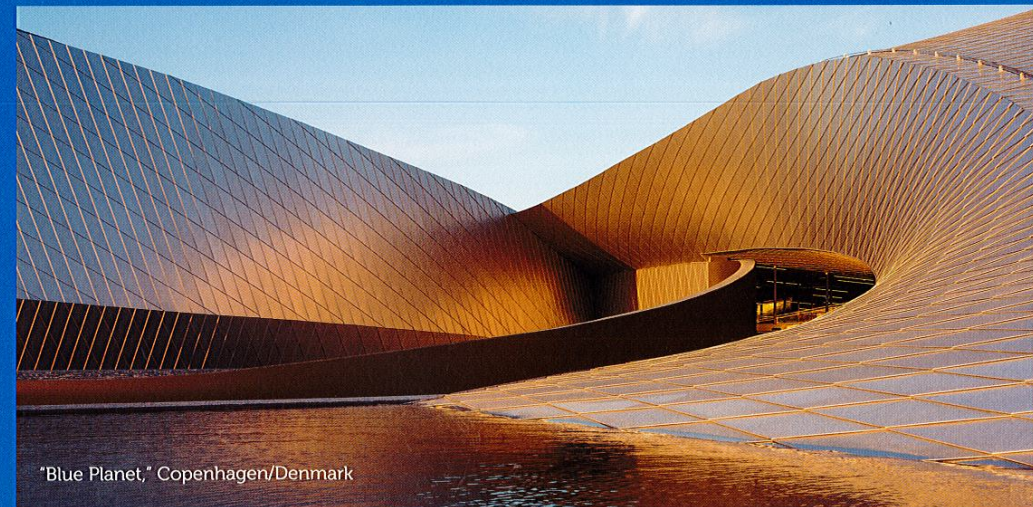
Harbour in Loano/Italy



Station in South Korea



Sports arena, Odessa/Ukraine



"Blue Planet," Copenhagen/Denmark



## The form – open for new ideas

### FALZONAL offers diversity of form

With different design possibilities such as diamond shapes or panels, FALZONAL gives your creativity free rein.

And the necessary accessories such as gutters and pipes can also be produced in FALZONAL.

Airport building with tower,  
Farnborough, Hampshire/England





## Function – cost-effective and easy to work

The alloy, coating and elasticity of FALZONAL pre-painted aluminium has been specially geared for working in plumbing technology.

FALZONAL is therefore ideal for lock-welt technologies such as double lock-welt or ledge roof technologies (see graphic), but can also be cut, sawn, folded, drilled or riveted without problem using standard machines – and without the coating chipping or cracking.

### Protective film on the exposed side

To prevent damage during processing, FALZONAL features a non-slip UV-resistant white protective film with asymmetric perforations on the exposed side.

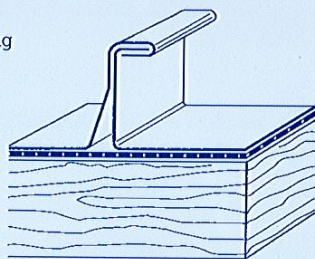
Before the FALZONAL is worked, the protective film is removed at the perforation along both edges in the lock-welt area. The remaining film is simply stripped away after installation.

The protective film can be left on the panels for up to six months until all the work has been completed.

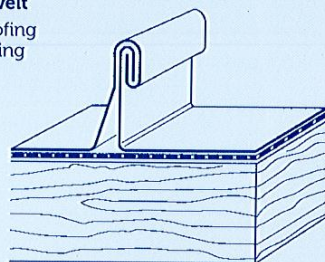
### Watertight and protected

State-of-the-art production processes deliver consistently high quality base material and coating. FALZONAL is sturdy, features long-term corrosion resistance, and is extremely durable. You can be sure of permanent waterproofing and protection for roofs and facades.

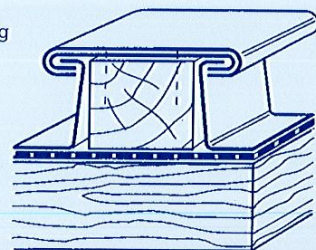
**Angle lock-welt**  
used primarily  
for wall cladding



**Double lock-welt**  
suitable for roofing  
and wall cladding



**Ledge roof**  
used primarily  
for wall cladding



Residence, Schramberg/Germany

Ecco Futura, Denmark



Residence in Ostfildern/Germany





## Function – cost-effective and easy to work

FALZONAL absorbs building movement or temperature fluctuations without any problems.

The reverse side is protected from corrosion with a transparent protective coating.

Even maintaining FALZONAL is child's play - the surfaces are easy to clean using eco-friendly materials.

- FALZONAL specifications comply with the guidelines widely recognized throughout Europe.
- FALZONAL has passed load tests against wind pressure and suction, achieving outstanding results.
- Working temperature down to 0 °C.
- Processing residues can be recycled without any loss of quality.
- When required, roofs and facades are easy to clean in an environmentally compatible way.
- Resistant to condensate and bitumen corrosion – no additional corrosion protection needed
- No heavy metal erosion from surface
- No patchiness
- No special barrier layers (woven mats/profiled mats) required





# Environment and ecology

In recent years, the intensity of debate surrounding the eco-friendliness of building materials has increased.

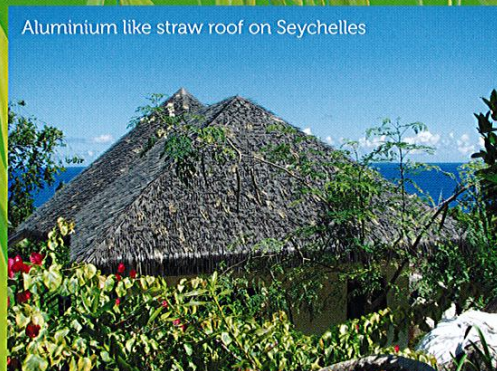
Because there are no standardised evaluation criteria, discussions have been - and are still being - based on scant detailed knowledge.

All the results from trials of FALZONAL under various weather conditions have confirmed that it poses no risk to the environment.

Swimming bath, Berchtesgaden/Germany



Aluminium like straw roof on Seychelles



The seawater-resistant aluminium base material is protected by a PVDF (polyvinylidene fluoride) coating. If areas become exposed, e.g. due to installation errors, the aluminium protects itself through a reaction with the oxygen or water vapour in the air to form a thin but dense oxide layer ( $Al_2O_3$ ).

This oxide layer protects the base material from metal erosion. Condensation presents no risk.

According to prevailing German food laws, the use of aluminium is not subject to any restrictions. Aluminium has no detrimental effects on plants, animals, groundwater or surface water.

The PVDF coating features good shaping properties and outstanding resistance to weather conditions.

The PVdF coating comes in a 80/20 quality (80% PVdF + 20% acrylate) which is used for FALZONAL, and a PVdF coating in 70/30 quality (70% PVdF + 30% acrylate). Generally speaking, the higher the PVdF content, the better the resistance to weathering and annual erosion.

In general terms, the higher the PVDF content, the better the resistance to weathering.

This means that the groundwater is not contaminated. The pigments used are normally non-hazardous; in some cases they are even safe for use with foodstuffs.

FALZONAL is easy to recycle and can be returned to the material cycle without any loss of quality.



For processing reasons, FALZONAL is covered with a removable, UV-resistant polyethylene protective film. This protective film is eco-friendly, groundwater-neutral and can be recycled.

Chalet in Austria



**Product description**

FALZONAL pre-painted aluminium in lock-welt quality is a semi-finished coil-coated product. The alloy, the mechanical properties and the coating materials are also coordinated perfectly with the processing techniques used in lock-welting.

**Application**

Roofing and facade cladding for new and old buildings, e.g. residential buildings, halls, commercial constructions, churches, etc.

**Fireproofing**

FALZONAL is non-combustible in accordance with EN 13501-A1.

**Processing**

FALZONAL can be processed at 0° C without any problems.

**Alloy**

Novelis WG-C4S (AlMn 1 Mg 0.5 to EN 573/EN 1396), lock-welt quality H41.

**Dimensions**

Thickness: 0.7 mm  
Width: 600 mm/1,200 mm

**Strength**

H 41 (1/8 hard). The following guideline values have been calculated from probes to DIN 50114\*):  
Tensile strength: Rm 130 – 170 N/mm<sup>2</sup> · Yield point: Rpo2 > 100 N/mm<sup>2</sup> · Elongation: A50 > 6%

**Thermal expansions**

Coefficient of linear expansion 0.024 mm/m K

**Elasticity**

Modulus of elasticity – 70,000 N/mm<sup>2</sup>

**Coating**

Front face (exposed side): 2-layer system (primer and top coat applied with a mixture ratio of 80/20 (PVdF) using coil-coating process).  
Paint-system: PVdF (polyvinylidene fluoride). A number of special colour tones are applied in 3 or even 4 layers.  
Reverse face: transparent protective lacquer with printed identification No. and Novelis symbol. An arrow indicates the direction of coating.

**Coating thickness**

Front side approx. 25 µm, Reverse side approx. 3 µm.

**Gloss**

10 or 20 units in the Gardner system, measuring angle 60°, metallic colours with approx. 40 units.

**Colour range**

Colours as per current Novelis colour chart, with various special colour developments such as simulated copper, titanium to zinc. Minimum quantities for special colours and special customised tones 1,500 m<sup>2</sup>.

**Protective film**

Anti-slip, white, UV-resistant, asymmetrically-perforated protective film.  
The film can remain on the panels for up to 6 months until all work is complete.

**Quality checks**

Compliant with all relevant European standards such as DIN, ASTM, BS, EN, ISO 9001 and ECCA\*\*).

**Wastewater regulations**

In accordance with ATV-DVWK-M153, no special measures are needed as no detrimental heavy metal erosion can occur.

**Recycling**

FALZONAL pre-painted aluminium can be recycled without problem and without any loss of quality.

**Sales**

FALZONAL pre-painted aluminium is available from specialist dealers.  
We would be pleased to provide you with details of local suppliers on request.

**Other products made from Novelis pre-painted aluminium**

Pre-painted aluminium for facades up to 3.00 mm thickness



\*) The strength properties of Novelis aluminium semi-finished goods comply extensively with DIN 1396.

\*\*) ECCA: European Coil Coating Association, Brussels. The members of the ECCA undertake to ensure the consistently high quality of pre-coated material and to ensure its suitability for use in the construction industry. Novelis is a member of ECCA.