



NOVELIS aluminium shates.
For transport applications and shipbuilding.
For industrial and plant construction.

The Nachterstedt plant



Novelis was formed in 2005 as a spin-off from aluminium producer Alcan Inc. Then, in 2007, Novelis was acquired by Hindalco Industries Limited, itself a 50-year veteran in the aluminium business. Hindalco is the flagship company of the Aditya Birla Group of companies, a multinational conglomerate headquartered in India.

Novelis is globally positioned, operating in 11 countries with approximately 12,700 employees. The company reported revenue of \$11.2 billion in its 2008 fiscal year.

Located at the foot of the Harz mountains and between the historical townson Quedlingburg and Aschersleben, Novelis Nachterstedt is one of the leading industrial companies in the Saxony-Anhalt region. The Nachterstedt site is one of five production units operated by Nachterstedt within Germany and is the most modern within the world-wide group of Novelis companies.

Nachterstedt's success is built around a sound management structure, some six-hundred qualified and motivated staff, combined with state of the art manufacturing equipment.

Certified to DIN EN ISO 9001, ISO/TS 16949, DIN EN ISO 14001, EMAS, OHSAS 18001, Novelis Nachterstedt satisfies the necessary requirements to be a preferred supplier for aluminium rolled products.

Scope of supply

The Nachterstedt plant produces 1000, 3000, 5000 and 8000 series alloys of as-rolled hardness. 6000 series precipitation-hardenable alloys are available in various tempers with degreased, chemically pretreated, flash-anodised, regreased and painted finishes.

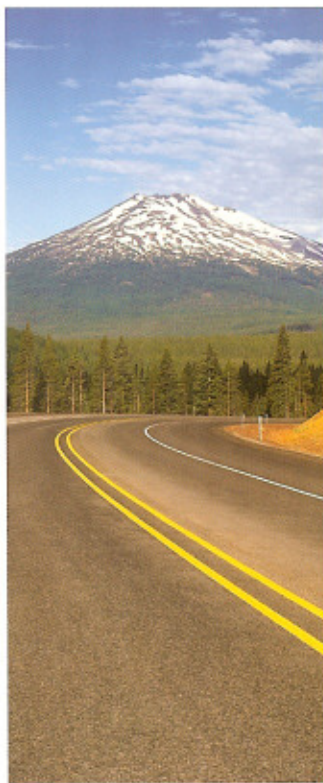
Prepainted aluminium is also part of the product range, as are stucco-patterned, roll-formed sheets with trapezoidal corrugations which are mainly used for architectural applications.



Aluminium – the material with a future

- Strong but light
- High resistance to corrosion
- Perfect for recycling, a process which requires very little energy
- Easy to process
- Long-lasting and robust

Aluminium shate for transport applications



One of the areas where soft-temper shate has the most applications is road transport. Dumper trucks, lorry trailers, tankers and bulk transport vehicles in all shapes and sizes are made from aluminium sheets of various dimensions and we can also offer harder tempers where these are traditionally used.

The advantages for manufacturers are clear – in addition to large, medium and small formats, Novelis also supplies extra-large shate which allows effective processing and saves time.

Aluminium matches the strength of other materials typically used in this sector but weighs up to 50% less, resulting in significant fuel savings and makes vehicles more economical. What's more, lower emissions make aluminium more environmentally friendly.

Individual supply specifications such as those stipulated by the TÜV (Technical Inspection Association) and ADR (international agreement on the transport of dangerous goods by road) are of course complied with and the relevant certification is provided.

ALUTRANS®PLUS, a product specially developed for the transport of dangerous goods, has very good elongation properties. Is certified and enables ALUTRANS®PLUS TÜV manufacturers to obtain better safety with reduced wall thicknesses and adhere to the ADR guidelines.

What is Shate?

Shate (sheet + plate = shate) is normally hot-rolled sheet in gauges of between 3 mm and 10 mm. It is supplied in EN temper H111.

We also supply 5000 series alloys in other high-strength tempers, such as H24. These are used in the transport sector too and may also be designated as cold-rolled shate.

The Nachterstedt cut-up lines cut aluminium strips of all gauges and widths to the customer's specified dimensions. The cut sheets are roller – levelled and stacked with either a protective film or a paper interleaving as required.

Preferred alloys in transport applications



Alloy	Gauge (mm)	Width (mm)	R _m (MPa)	R _{p0,2} (MPa)	Elongation A50 in %
EN AW 5083 Temper H111	3,0 - 10,0	1000 - 1500	275 - 350	≥ 125	≥ 15 <small>(Gauge > 6 mm ≥ 16)</small>
	3,0 - 8,0	1000 - 2000			
	4,8 - 8,0	1000 - 2500			
EN AW 5086 Temper H111	3,0 - 10,0	1000 - 1500	240 - 310	≥ 100	≥ 15 <small>(Gauge > 6 mm ≥ 17)</small>
	3,0 - 8,0	1000 - 2000			
	4,8 - 8,0	1000 - 2500			
Figures in accordance with EN 485-2					



Alloy	Gauge (mm)	Width (mm)	R _m (MPa)	R _{p0,2} (MPa)	Elongation A5 in %
EN AW 5182 Temper H111	3,0 - 10,0	1000 - 1500	275 - 350	≥ 125	≥ 26
	3,0 - 8,0	1000 - 2000			
	4,8 - 8,0	1000 - 2500			
Figures in accordance with EN 14286					
Alutrans® PLUS Temper H111	4,0 - 9,0	1000 - 1500	≥ 280	≥ 125	≥ 26
	4,0 - 8,0	1000 - 2000			
	4,8 - 8,0	1000 - 2500			
Figures in accordance with VDTÜV material data sheet 545 dated 09/2004					

Possible

Aluminium shate in shipbuilding



Whether for cargo or passenger transport, shate is just as effective on the water as it is on the road. Be it for river transport or a seagoing vessel, a container ship or a luxury yacht, aluminium plays a key role with aluminium yachts justifiably considered to be amongst the sleekest and fastest of their kind.

Reducing the dead weight is the basic prerequisite for moving at speed and achieving a high payload with a small hull. Lightweight aluminium structures guarantee a low centre of gravity, contributing significantly to a ship's safety.

Shate is used for both the inside and outside of ships. The demands placed on external areas and exposed parts of the hull are particularly high, especially in the case of saltwater.

Our solution for shipbuilding is 5083 H116. This alloy offers the usual high strength, while the H116 temper guarantees that the material is resistant to corrosion and has passed the relevant tests.

Certification options for sheet metals used in shipbuilding:

- **ABS** American Bureau of Shipping
- **BV** Bureau Veritas
- **DNV** Det Norske Veritas
- **GL** German Lloyd
- **LRS** Lloyd's Register EMEA
- **RINA** Registro Italiano Navale



Preferred alloys in shipbuilding

Alloy	Gauge (mm)	Width (mm)	R_m (MPa)	$R_{p0,2}$ (MPa)	Elongation A50 in %
EN AW 5083	3,0 - 10,0	1000 - 1500	275 - 350	≥ 125	≥ 15 <small>(Gauge > 6 mm ≥ 16)</small>
Temper H111	3,0 - 8,0	1000 - 2000			
	4,8 - 8,0	1000 - 2500			
EN AW 5083	4,0 - 6,0	1000 - 2000	≥ 305	≥ 215	≥ 10
Temper H116					
Figures in accordance with EN 485-2					

Possible lengths: 500 mm to 14,800 mm

Aluminium shate in industrial and plant construction



Because of the large number of alloys and tempers available, aluminium is indispensable for mechanical engineering and plant construction. Valuable bulk materials are stored in upright silos made using shate, while container vehicles made from shate constitute an efficient means of transport. Equipment and containers – also made from shate of course – can withstand high mechanical and chemical stresses.

Thin to medium-gauge shate in particular is very ductile and can be cut to size and welded, producing items such as low-maintenance support structures and sub-structures made from durable, heavy-duty material plus containers and mixing plants for a variety of applications.

There is virtually no limit to the potential uses – shate has even been used for the external cladding of a museum!

Your Novelis service:

- Paper interleaving as standard
- Shate labelling as standard; individual labelling possible
- Acceptance certificate in accordance with EN 10204-3.1 as standard
- Protective film can be applied to a single side
- Reduced gauge tolerances on request



Preferred alloys in industrial and plant construction

Alloy	Gauge (mm)	Width (mm)	R_m (MPa)	$R_{p0.2}$ (MPa)	Elongation A50 in %
EN AW 5454 Temper H111	3,0 - 10,0	1000 - 1500	215 - 275	≥ 85	≥ 17 <small>(Gauge > 6 mm ≥ 18)</small>
	3,0 - 8,0	1000 - 2000			
	4,5 - 8,0	1000 - 2500			
EN AW 5754 Temper H111	3,0 - 10,0	1000 - 1500	190 - 240	≥ 80	≥ 18
	3,0 - 8,0	1000 - 2000			
	4,5 - 8,0	1000 - 2500			
Figures in accordance with EN 485-2					

Possible lengths: 500 mm bis 14,800 mm

Care for the environment – we build a sustainable future by protecting each other and our environment by taking responsibility for the whole production process – from primary to production until recycling after a long product life.



Technology and environment

Our main aim is, to create the process as environmentally sound as possible.

Novelis is committed to working with its stakeholders (business partners, employees, communities, environmental agencies, trade associations and local, state and national authorities) to realise social, environmental and economic benefits for people around the world. Whether it's through the design and application of innovative products or by building long-term partnerships through our stakeholder engagement efforts.

The environmental benefits of aluminium recycling are significant because aluminium produced from scrap requires just 5 percent of the energy needed to produce primary aluminium – which means that up to 95 percent of related emissions, such as greenhouse gases, are avoided.



Following are some of the environmental benefits from recycling one tonne of aluminium:

- Saves 95 percent of the energy required.
- Avoids the emission of about 10 tonnes of CO₂ equivalents.
- Reduces the use of natural resources and chemicals (caustic soda, aluminium fluoride and lime).
- Eliminates the need for 5 tonnes of bauxite ore to be mined.
- Eliminates the generation of nearly 2 tonnes of red mud by-product.
- Minimizes our overall impact on biodiversity.

Novelis is working to integrate sustainability into all aspects of our business.



We have an extensive product range. If the temper or size you're looking for isn't listed, just give us a call. We'll be only too happy to deal with your particular enquiry.



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