

THE LINDE GROUP

*Linde*

# Spiral-welded aluminium pipes.

Outstanding quality across a  
broad application spectrum.

# 1,000 km

Over 1,000 km of spiral-welded pipes produced since 1976.

## Applications

Linde Engineering's spiral-welded aluminium piping systems are fabricated to support all pressure vessel requirements and standards, including EN 13445 and ASME. In addition, they are built to pass other pressure and third-party approval tests.

### Main applications:

- Gas-insulated high-voltage switchgear and transmission lines
- Cryogenic processing plants (for example gas treatment plants and air separation units)

## Fabrication excellence

Linde Engineering's optimised welding technique guarantees a joint efficiency of  $V=1.0$ . The surface is clean and free of oil and grease, making these pipes suitable for use in conjunction with oxygen.

The production process is also designed for flexibility as separate individual cutting lengths can be manufactured within one production lot.

## Benefits

- Flexible sizing with adjustment in 0.1 mm increments (inch specifications also available)
- Separate cutting lengths during production
- Time-saving fabrication with automatic ultrasonic testing and marking for continuously high quality
- Ideal for leak-free systems with high operating pressures
  - If required, additional testing is possible:
    - Hydrostatic pressure test according to pressure vessel requirements
    - Radiography and X-rays
    - Third-party approval
- Linde standardised sizes in EN-AW 5083-O can be delivered in small quantities with short lead times



Gas-insulated high-voltage transmission line in tunnel. Reference: Siemens Erlangen, 380 KV GIL for the Paulaner brewery in Langwied, Munich.

## Technical data and tolerances

Material	EN AW 5754-0 EN AW 5083-0	equivalent to SB 209 5754-0 equivalent to SB 209 5083-0
Diameter sizing	273 mm up to 1200 mm	
Wall thickness	4 mm up to 10 mm: $\pm 0.3$ mm Diameter 273 mm up to 360 mm Diameter 360 mm up to 1200 mm	4–6 mm wall thickness 4–10 mm wall thickness
Production length	3.5 m up to 19 m	
Outside diameter (calculated from the circumference)	< 400 mm: $\pm 1$ mm	> 400 mm: $+2/-1$ mm
Out-of-roundness	Max. 1 % of outside diameter	
Deviation from straight line	1 mm per metre	
Ordered length	-0/+10 mm	
Acceptance criteria for welds	DIN EN ISO 10042	
Weld reinforcement	<b>Inside:</b> wall thickness < 7 mm: max. 0.8 mm wall thickness > 7 mm: max. 0.8–1 mm	<b>Outside:</b> max 2.5 mm
Non-destructive examination	Ultrasonic testing of spiral weld, 100% visual examination, dimensional checks	
Material certificate according to EN 10204/3.1 in line with the respective pressure vessel code (2014/68/EU)		

## Pipes in stock

Linde standardised sizes 11 m length to EN AW 5083-0 (material according to ASME) available at short notice:

Diameter (mm)	Wall thickness (mm)
273	4
324	4
406	4
406	8
508	4
508	10
610	5
711	6
813	6
941	6
941	8
1016	8
1118	8
1220	10

Read more:

[linde-engineering.com/aluminium-pipes](https://www.linde-engineering.com/aluminium-pipes)

Published by:

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# Collaborate. Innovate. Deliver.

Linde's Engineering Division is a leading player in the international plant engineering business. Across the globe, we have delivered more than 4,000 plants and cover every step in the design, project management and construction of turnkey industrial facilities. Our proven process and technology know-how plays an indispensable role in the success of our customers across multiple industries – from crude oil, natural gas extraction and refining to chemical and metal processing.

At Linde, we value trusted, lasting business relationships with our customers. We listen carefully and collaborate closely with you to meet your needs. This connection inspires us to develop innovative process technologies and equipment at our high-tech R&D centres, labs and pilot plants – designed in close collaboration with our strategic partners and delivered with passion by our employees working in more than 100 countries worldwide.

From the desert to the Arctic, from small- to world-scale, from standardised to customised builds, our specialists develop plant solutions that operate reliably and cost-effectively under all conditions. You can always rely on us to deliver the solutions and services that best fit your needs – anywhere in the world.

Discover how we can contribute to your success at [www.linde-engineering.com](http://www.linde-engineering.com)

Get in touch with our component manufacturing team:

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## Core competencies at a glance

### Plant engineering

- Air separation plants
- LNG and natural gas processing plants
- Petrochemical plants
- Hydrogen and synthesis gas plants
- Adsorption and membrane plants
- Cryogenic plants
- Carbon capture and utilisation plants
- Furnaces, fired heaters, incinerators

### Component manufacturing

- Coldboxes and modules
- Coil-wound heat exchangers
- Plate-fin heat exchangers
- Cryogenic columns
- Cryogenic storage tanks
- Liquefied helium tanks and containers
- Air-heated vaporisers
- Water bath vaporisers
- Spiral-welded aluminium pipes

### Services

- Revamps and plant modifications
- Plant relocations
- Spare parts
- Operational support, troubleshooting and immediate repairs
- Long-term service contracts
- Expert reviews for plants, operations and spare part inventory
- Operator training