

DLS

Dalishen Aluminum Co., Ltd
Dalishen Heat Transfer Co., Ltd



DLS Group
Dalishen Aluminum Co., Ltd

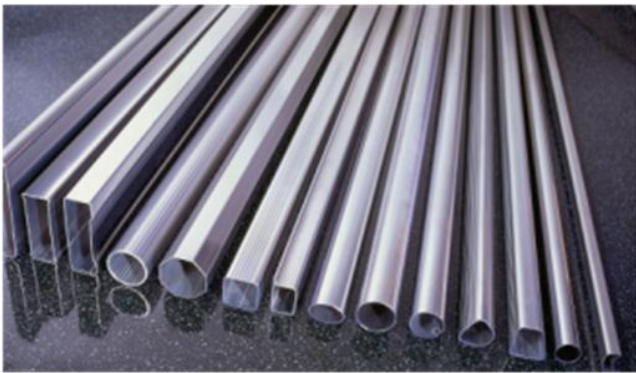
ADVANCED ALUMINIUM MATERIAL PROVIDER



Dalishen Aluminum Co., Ltd
Dalishen Heat Transfer Co., Ltd

DLS Aluminum Co., Ltd

DLS Aluminum is a technology driven enterprise aiming to provide high quality materials and components for aluminum heat exchangers what focus on Automotive industry. We have successfully achieved advanced multi-layer alloying, higher machining performance, high precision tolerance control and lower consumption during heat-exchanger manufacture process in order to ensure provide value-added heat transfer strip in the lightweight material aluminum to Automotive consumers. Our strength is in the world-class level technology and service.





Dalishen Aluminum Co., Ltd
Dalishen Heat Transfer Co., Ltd



Danyang Headquarter :

DLS Aluminum

Founded in 2010

Registered Capital RMB 611,000,000



Headquarter/ Manufacture site / Quality/R&D

Address: No.8 West Shengchang Road,
Danyang Development Zone, Jiangsu
Province, China

Marketing/ Sales/ Customer Service/Operation



Dalishen Aluminum Co., Ltd
Dalishen Heat Transfer Co., Ltd

Milestone



Initial Construction of flat rolled project



SOP of flat rolled products



Go to stock market

2010

2012

2014

2015

Integrally acquired Aleris Canada and relocated equipment back to China



SOP of heat transfer products, capacity is 250,000 Ton





Dalishen Aluminum Co., Ltd
Dalishen Heat Transfer Co., Ltd

Overseas Acquisition



DLS acquired Canadian ALERIS in 2010. ALERIS originated from the USA and Canada weapons laboratories during World War II. It has over 70 years experience in production and R&D technology. ALERIS is the material supplier of Airbus , AUDI and VW. It is one of the largest special aluminum producer of the world and tied for the world's five major aluminum provider Juxtaposed Alcoa, Alcan, Nowe Ritz and Hydro Aluminium.

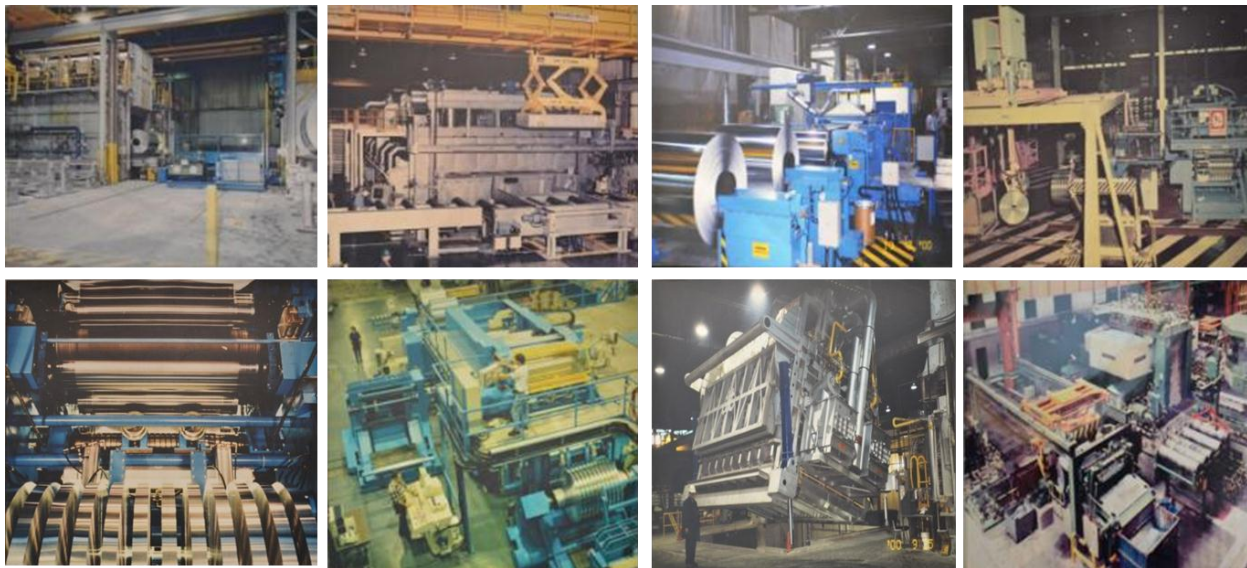
Overseas Acquisition



中国人在短短的 6 个月时间内把加拿大三河市一个花了 50 年时间建起来的工厂内的设备全部拆运回国，创造了一个可怕的奇迹！”

—— 加拿大《三河日报》

Overseas Acquisition



Acquired US UNITED Heavy hot rolling mill, United States Mai Sita cold rolling mill, Germany Achenbach cold finishing mill, Germany SMS composite production line, German Kampf splitter and other top-level international special aluminum processing equipment. Based on the most advanced electronic control system to conduct a comprehensive upgrade , the entire production line is already a global leader.



Business Segments

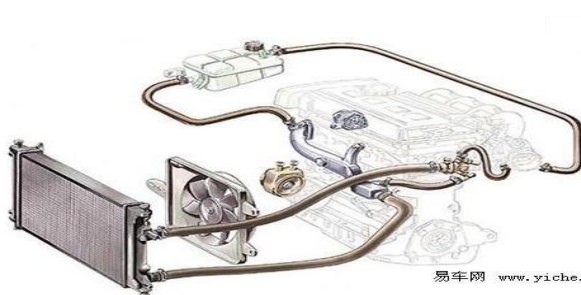
1) Heat Transfer Material

Alloy Grade: DFH111、DFH121、DFH131、DFH141、DFH151、DFH161

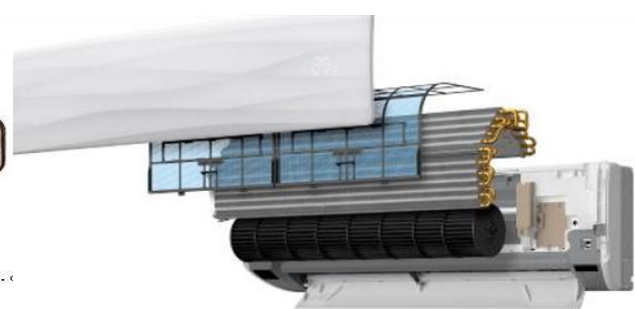
Alloy status: O、H14、H16、H24

Dimension: Thickness (0.005~3.0) * Width (8~1550) mm

Application: Radiator, Condenser, Oil cooler, Evaporator, Charger air cooler, HVAC, Power station
Etc.



易车网 www.yiche.com



Segment marketing future

Heat exchangers made of aluminum alloy foil and vehicle production was positively correlated , in 2014 global vehicle production of about 85 million , according to 95% of the vehicle using a heat exchanger made of aluminum composite foil (Note: 5% due to the operating environment of heavy truck bad , still use copper foil produced by the heat exchanger) , taking into account the 25% of the heat reserve market , in 2014 the global heat exchanger brazed aluminum composite foil consumption is about 1 million tons , with an average annual growth in production and consumption rate of 16%.

2014 China's auto output 23.89 million , an aluminum composite foil consumption 250,000 tons, which includes a heat exchanger retail market 50,000 tons. In China, the automotive industry is the largest field of aluminum composite foil consumption , but also the most mature industry , but subject to the installed capacity of domestic enterprises and technology , high-end material is still dependent on imports .

Customer:



2) Automotive Body and BIW Material

Alloy Grade: 2117、2036、5052、5754、5182、5083、5383、6016、6181、6082、7020

Alloy status: O、T4、T6 H24、H32、H321、H34、H36

Dimension: Thickness (0.5~12) * Width (1000~2600) * Length (1000~12000) mm

Application: Chassis, BIW, Body, Engine Cover, Roof Frame, Fender, Door, Spoiler, Trunk lid Etc.



Automotive Industrial Policy

- The EU requires that in 2020, the automobiles CO₂ / km have to be reached 90g, 2016 years can not exceed 100 km fuel consumption 4.5L; the new US federal law enacted: 2016 cars required to achieve fuel consumption of 100 kilometers 7.6L, 2025 years should be reduced to 4.5L. Japan provides: 100 km fuel consumption of cars in 2015 should reach $\leq 5.5L$, 2015 shall be the amount of CO₂ emissions down 29% compared with 2010.
- "new material" five "plan" states: Automotive 6016,6022,6111 aluminum alloy sheet to achieve a thickness of 0.7 ~ 2.0mm, width 1600 ~ 2300mm automotive aluminum plate industrialization.
- 2014, 7 state ministries jointly developed the "key material upgrading project implementation plan." Support high-quality aluminum plate automobile industry, key technologies capture large ingot, plate-shaped, tissue and surface state control, heat treatment, forming an annual output of 50,000 tons aluminum car body panels and the ability to achieve large-scale application.

Customer :

CIMC 中集



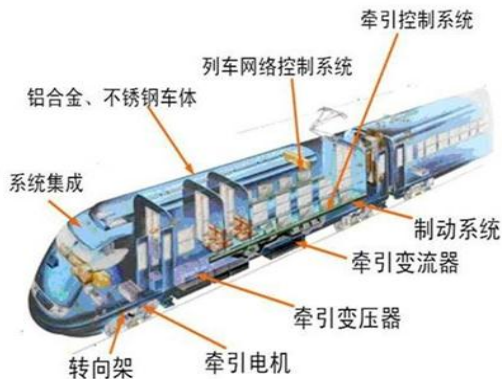
3) Rail Transportation

Alloy Grade: 5052、5754、5083、5383、5A03、6082

Alloy status: O、H111、H24、H32、H321、T6

Dimension: Thickness (0.5~100) * Width (1000~3100) * Length (1000~13000) mm

Application: High Speed Rail / EMU / Metro front, insulation plates, sandwich material , power equipment , assemblies , wheels, suspension systems, brakes , traction facilities , body structure Etc.





Segment marketing future

"Thirteen Five" period, the city as the center of the area Intercity High Speed Rail plan to reach 19,500 km , of which 2016--2020 was completed mileage of 11,000 km , passenger rail mileage will reach total completed 17,000 kilometers , more than "ten five " 16,000 kilometers up 7% , with an average annual mileage of 3400 km completed . Thus, the aluminum body of the EMU market demand continue to be optimistic . Foreign high -speed rail project in cooperation with China and will facilitate Chinese aluminum high-speed rail EMU manufacturing and consumption of sustainable development of aluminum alloy sheet , aluminum alloy sheet with an average annual consumption growth will continue to maintain 12% -15 % level.

Customer:

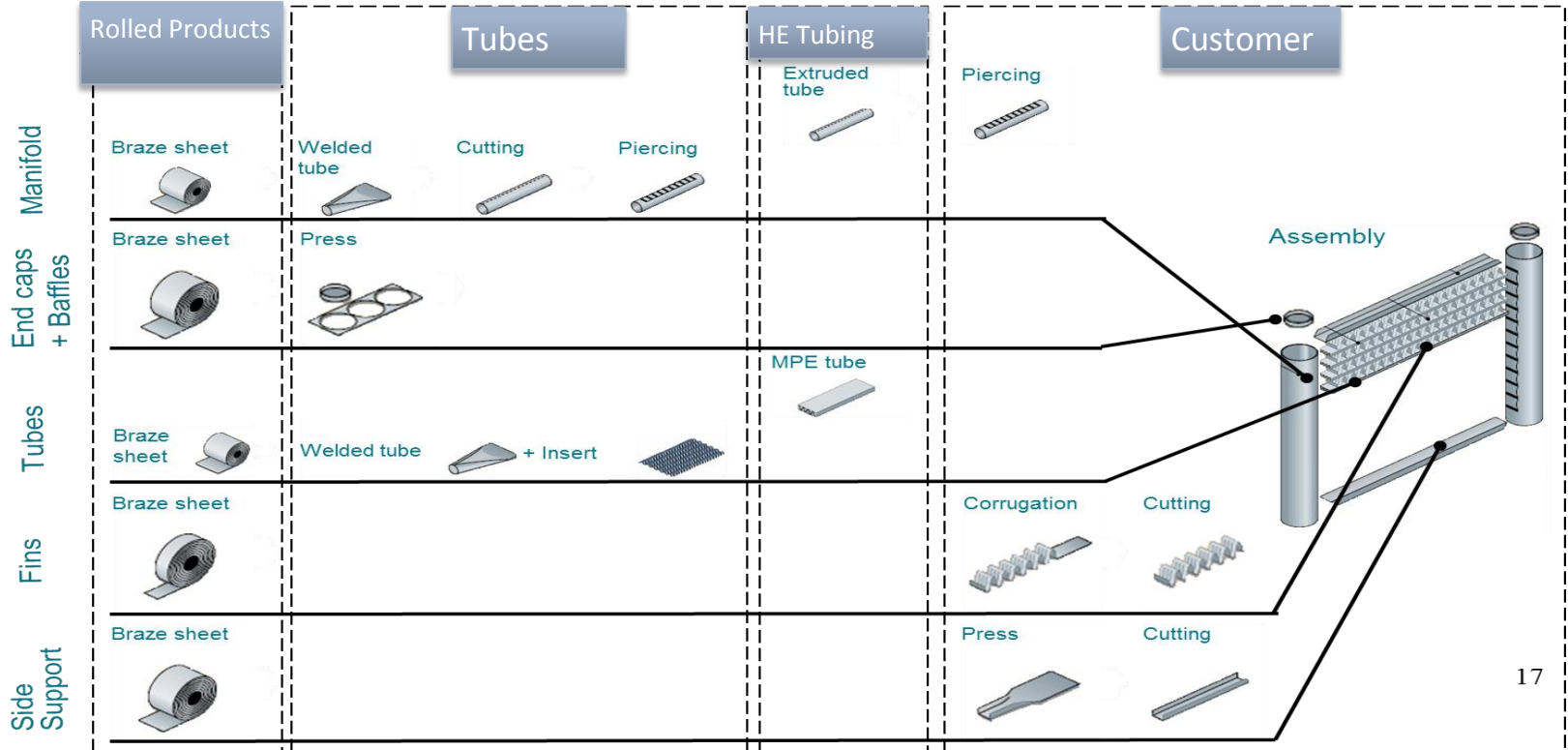




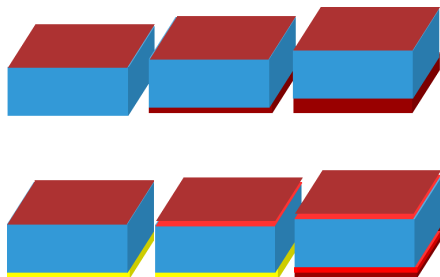
Technology Capability



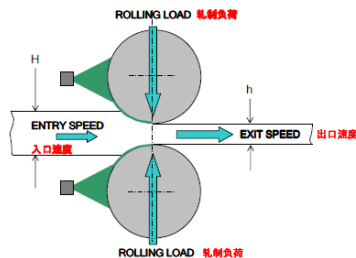
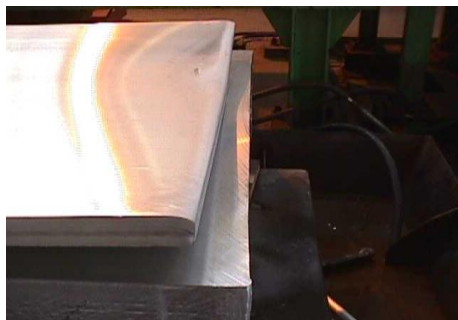
Full Product Range for HEX Systems



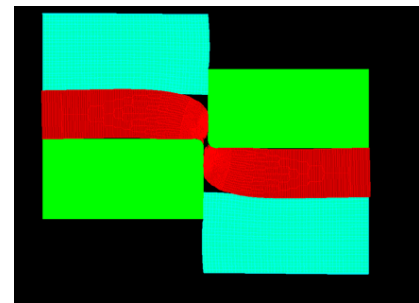
Manufacture Technology



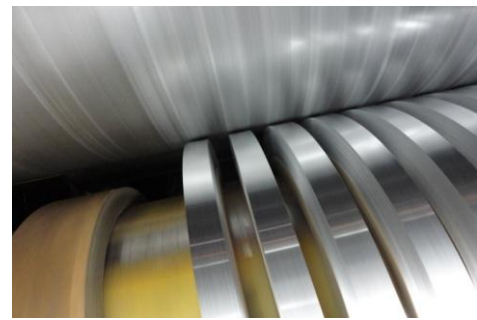
Compositing various alloy



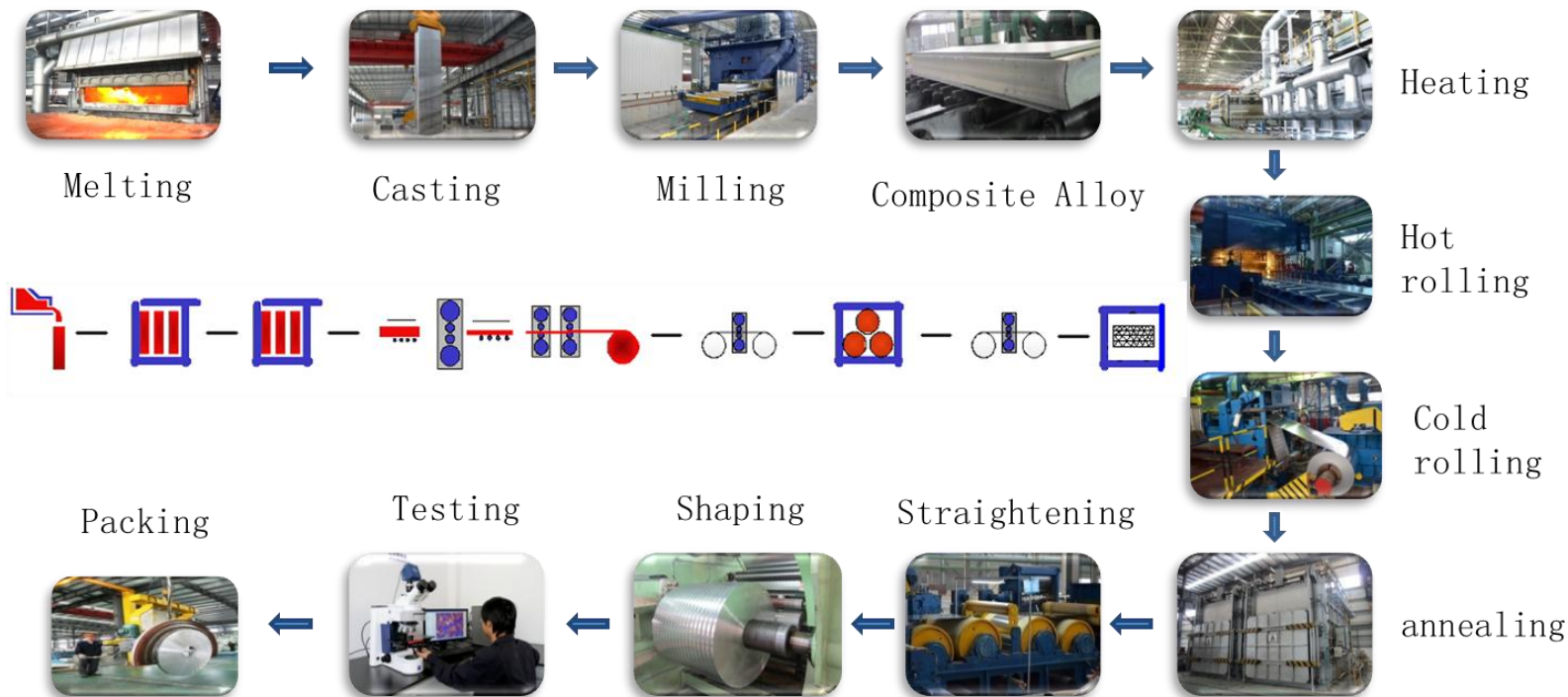
Rolling to customer's thickness



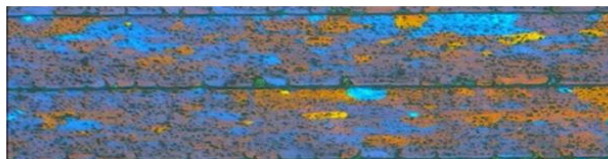
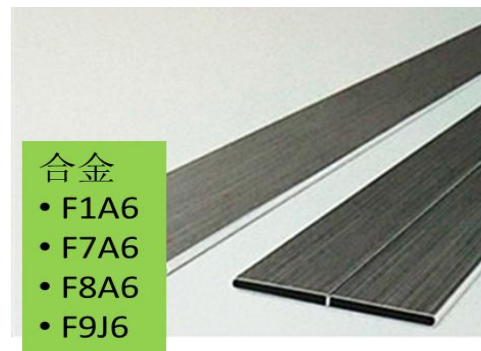
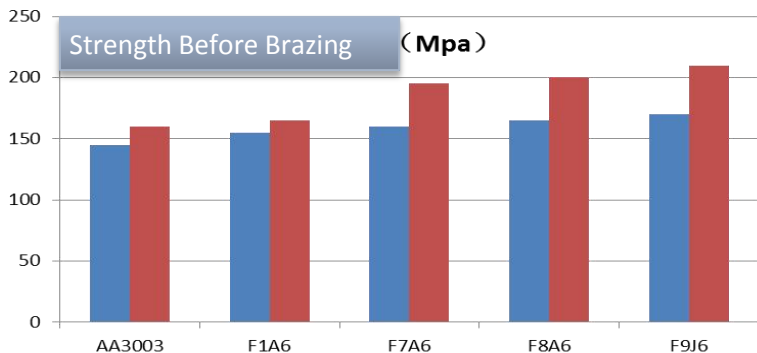
Slitting and cut



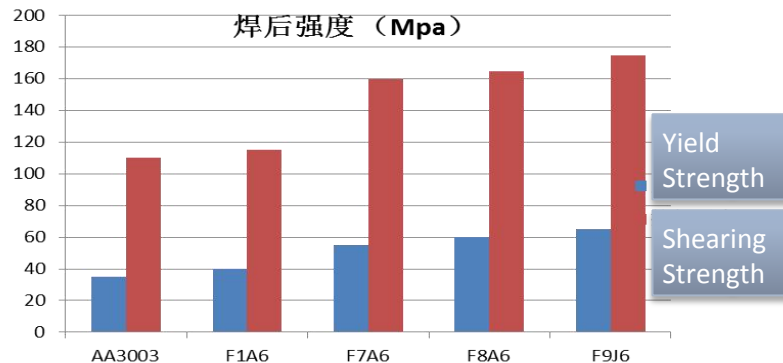
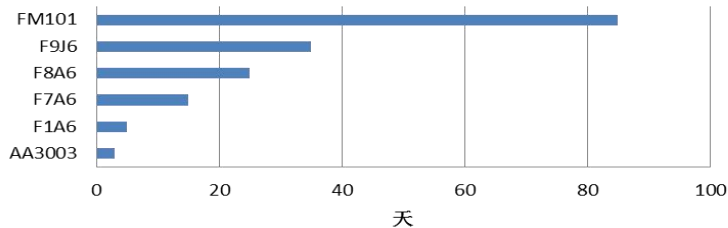
Manufacture Process



Development Capability- Tube

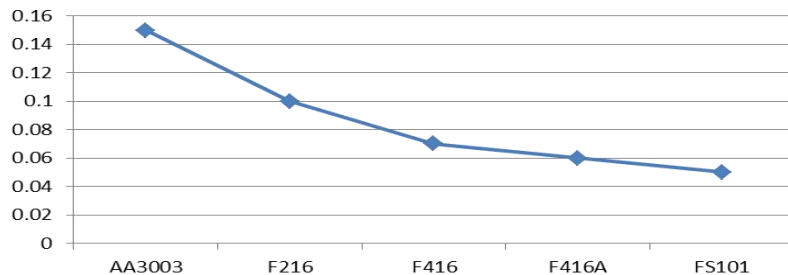


腐蚀穿孔天数



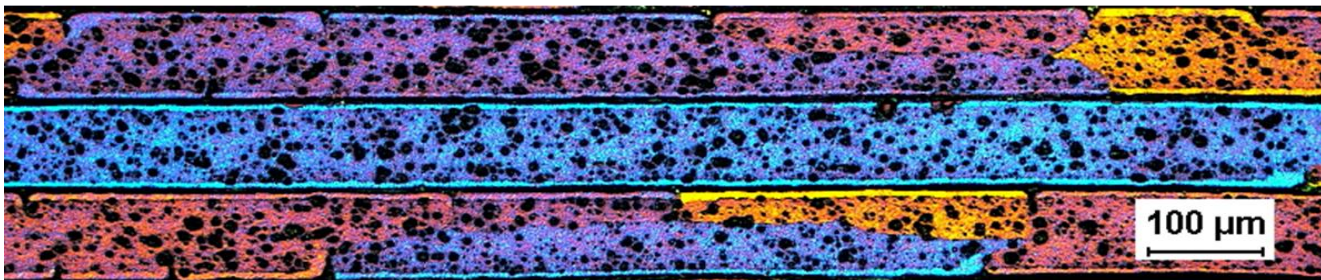
Development Capability- Fin

厚度減薄能力



- AA3003
- F216
- F416
- F416A
- FS101

钎焊后晶粒

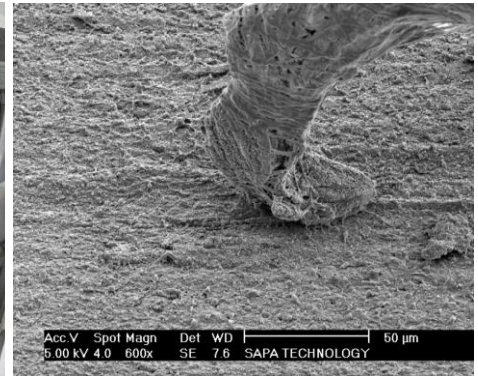


R&D Center

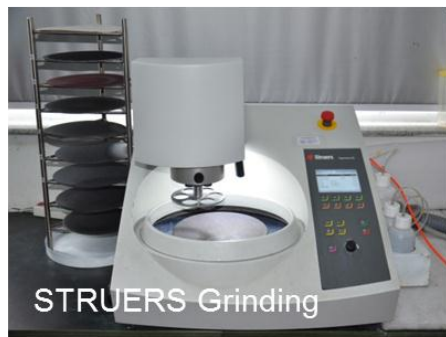
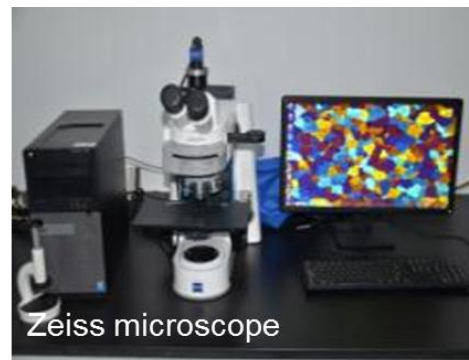
- DLS's common unit for research and development
- 45 specialists in materials technology, technical physics, chemistry and more
- Instruments for structural studies, chemical analysis, mechanical and corrosion testing

- **Technology Areas**

- Brazing Technology
- Chemical Analysis and Environment
- Corrosion
- Engineering Technology
- Heat Management
- Mechanical Properties
- Metallography
- Metallurgy
- Surface Chemistry

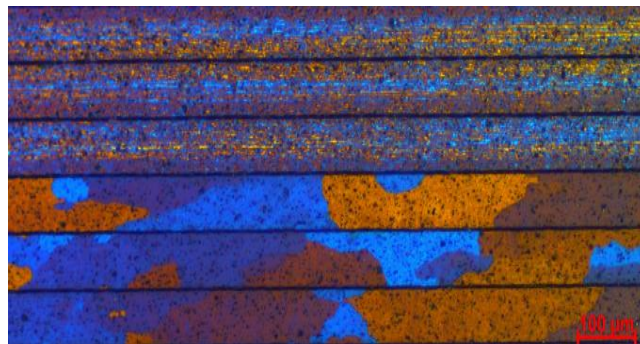


R&D Center



R&D Achievement – Fan Mat'l Alloy翅片材料合金

Thickness	0.1	0.08	0.06	0.05
AA3003	Y	Y	N	N
D304	Y	Y	Y	Y



原材料提供商	用途	合金	厚度 mm	屈服强度 Mpa	抗拉强度 Mpa	延伸率 %	抗塌陷 (<40)
DLS	光料翅片	D304	0.06	189	210	4	28
Saler 1		YYY	0.07	185	193	1.1	36
Saler 2		XXX	0.06	194	200	1	38
DLS	双面复合翅片	F416	0.07	192	201	1.6	35
Saler 1		YYY	0.08	186	194	1.3	36
Saler 2		XXX	0.07	191	200	1.4	34



Manufacture Capability



Machinery Capacity & Capability

- The present plant capacity is 250 000 MT / year
- Recent investments 2016 in order to meet future demands:
 - Surface detection system
 - New Loop slitter
 - Hot mill improvements
 - Upgrade Cladding Line
 - Scalper upgrade
 - Roller Hearth Furnace Production Line
 - Air Cushion continuous heat treatment production line
- The present capabilities are;
 - Thickness range: 0.005 – 250.00mm
 - Width range; 8– 3100.00mm
 - OD: max 13000mm



Production process capability

	Roll	Sheet plate
Thickness	0.005---4.0mm	0.4---250.0mm
Width	8-----1500mm	950-----3100mm
Length	L	Max.13000mm
Inner diameter	100;200;250;300;400;500mm	
MAX outer diameter	2000mm	
Composite layers	Single, Dual view, Multilayer	
Composite Rate	4% to 30%	
Tolerance	4% - 6% +/-1.5%	
	6% - 12% +/-2%	
	12% - 16% +/-2.5%	
	16% - 20% +/-3%	
	20% - 30% +/-4%	

Melting and Casting equipment

Melting and Casting



Shallow bath design , energy efficient regenerative burner , furnace pressure control and other advanced technology , with a full mouth flue gas recovery hood and automatic control.

Equipment

- 35T Melting furnace 2 pcs
- 35T semi-continuous casting machine
- 650X2800 H milling Machine

Casting Ingot Size

Smart width: 900--2800mm
Max Thickness: 340--610mm
Max length: 6500mm



Customizable width
Large size ingot
Large size compositing rate

CNC milling Ingot machine



Heavy metal processing automated production lines base on mechanical, hydraulic and electrical and other new technologies designed.

Hot Rolling equipment

3300mm Roughing Rolling Mill



2800mm precise Rolling Mill (Italy Imported)



3300 +2800mm "1 + 1" form of a continuous hot rolling Mill

Main Hot Rolling Equipment



First time in China to achieve a "vacuum lifting sucker," "roll brushing" and "Robot automatic welding," "Ingot 180 flip" four major functions.



Maximum tensile length is 20m, width is 3 m, the maximum tensile force of 3000 tons ; having set off with protection, automatic measurement function, stretching speed , elongation, tensile strength, and complete pre-stretch stretch and control functions

Main Cold Rolling Equipment

ACHENBACH C2000 Cold Rolling Mill (ALERIS)



C875 Cold Rolling Mill (ALERIS)





Dalishen Aluminum Co., Ltd
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Main Cold Rolling Equipment

C3000Foil Cold Rolling Mill(ALERIS)



C975 COMM Slitting Machine(ALERIS)





Quality System



Material / Quality Tracing System

Accessory Tracing System

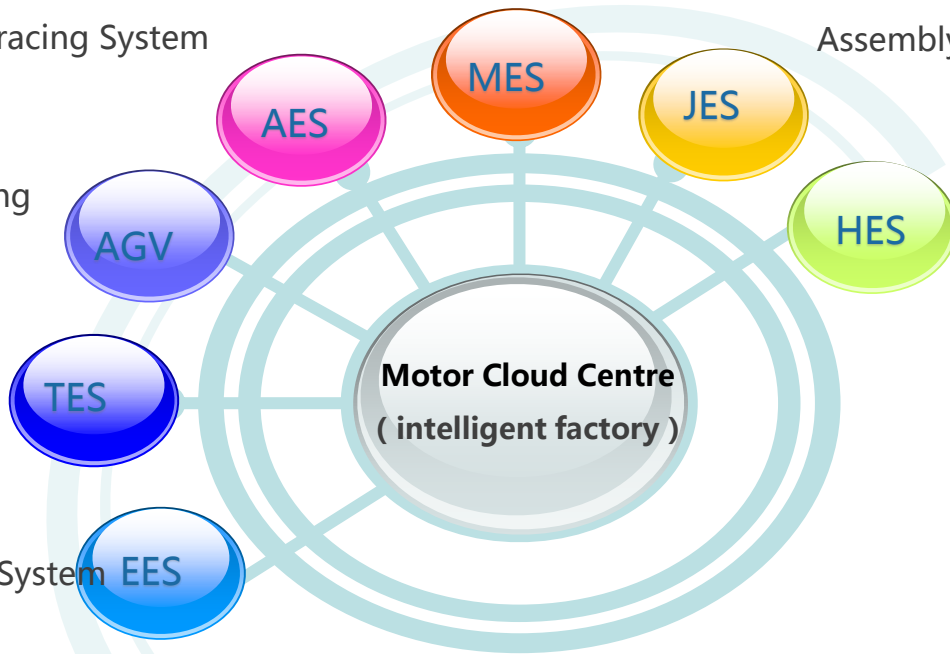
Assembly / Equipment System

Automatic Feeding

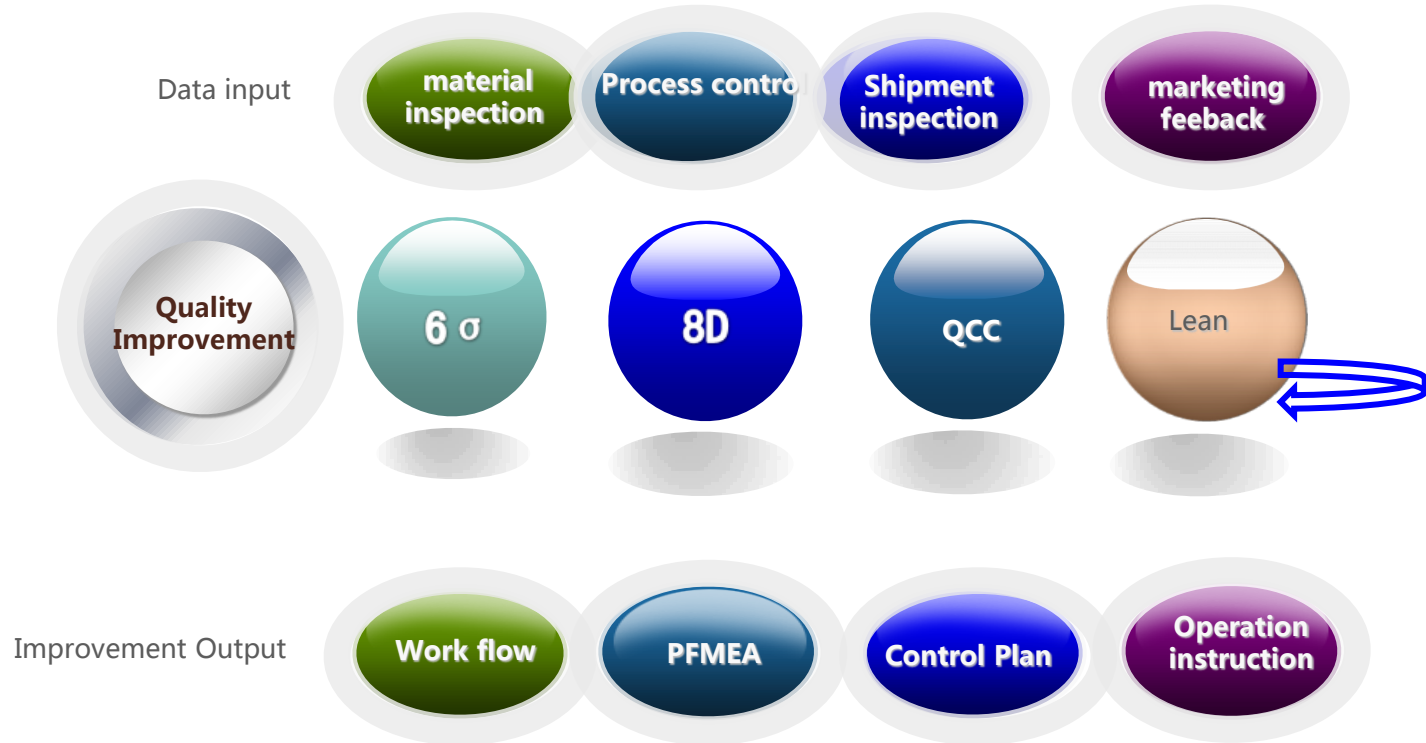
Job Training /
Arrangement System

Temperature & Humanity
Monitoring System

ESD Online Monitoring System



Quality management guarantee – process improvement





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Thanks

