

## Table of Contents

Aluminium Tube Catalogs.....	- 2 -
Aluminium Micro-channel Tube.....	- 3 -
➤ Product Category.....	- 3 -
➤ Product Dimension Control Range.....	- 3 -
➤ Tolerance.....	- 3 -
➤ Coating Standard and Corrosion Resistance.....	- 4 -
Aluminium Drawn Tube.....	- 4 -
➤ Product Category.....	- 5 -
➤ Applications of Aluminium Drawn Tubes.....	- 6 -
Aluminium High Frequency Welded Tube.....	- 7 -
➤ Product Category.....	- 7 -
➤ Automotive applications .....	- 8 -
➤ HVAC&R applications .....	- 8 -
➤ Industrial applications .....	- 8 -
Seamless Aluminium Tube.....	- 9 -
➤ Specifications.....	- 9 -
➤ Applications.....	- 10 -
Aluminium Extruded Tube.....	- 10 -
➤ Specifications.....	- 10 -
● Aluminium extruded round tube/pipe.....	- 10 -
● Aluminium extruded square tube & pipe.....	- 10 -
● Aluminium extruded rectangular tube.....	- 11 -
● Aluminium extruded flat tube.....	- 11 -
Composite Aluminium Tube.....	- 11 -
➤ Specifications.....	- 11 -
➤ Applications.....	- 12 -
Aluminium Header Pipe.....	- 12 -
➤ Types of Aluminium Condenser Header Pipe.....	- 12 -
➤ Specifications.....	- 13 -
➤ Applications.....	- 14 -
Aluminium Multi-Channel Tube.....	- 15 -
➤ Specifications.....	- 15 -

# Aluminium Tube Catalogs

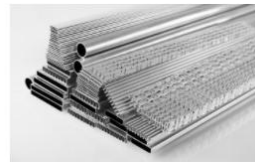
Aluminium tube is also called aluminium pipe. Due to its versatility and ideal performance, aluminium has been used in many industries such as aerospace, construction, general manufacturing, medical and transportation. Aluminium tubes can be made into square, rectangular, circular shapes and customized to the size and external shape required by customers.



Aluminium Micro Channel Tube



Aluminium Drawn Tube



Aluminium High Frequency  
Welded Tube



Seamless Aluminium Tube



Aluminium Extruded Tube











Composite Aluminium Tube



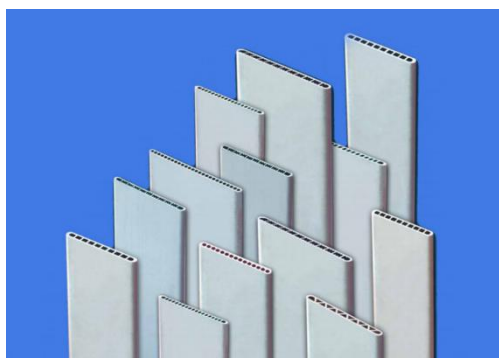
Aluminium Header Pipe



Aluminium Multi-Channel Tube

-  Aluminium Micro-channel Tube
-  Aluminium Drawn Tube
-  Aluminium High Frequency Welded Tube
-  Seamless Aluminium Tube
-  Aluminium Extruded Tube
-  Composite Aluminium Tube
-  Aluminium Header Pipe
-  Aluminium Multi-Channel Tube

## Aluminium Micro-channel Tube



Aluminium Micro-channel Tube is a kind of high precision extruded aluminium tube, also called multi-port extrusion tube (MPE tube) and aluminium micro multi-channel tube. This flat and rectangular extruded tube is made of several channels that increase the heat transfer through a higher surface per volume ratio.

### ➤ Product Category

- Aluminium Micro-channel Tube
- Aluminium Multi-Port Tube
- Parallel Flow Aluminium Flat Tube
- Zinc-coated Aluminium Tube
- Pre-Flux Coated Aluminium Tube
- Si Flux Coated Aluminium Tube
- Large Multi-channel Tube(width range 50-200mm)
- Double Row Joint Multi-channel Flat Tube

### ➤ Product Dimension Control Range

Item	Range
Fixed length	200mm-4000mm
Width (micro-channel tubes)	8mm-60mm
Width (large multi-channel)	60-200mm
Thickness	1mm-5mm
Wall thickness	0.15mm-0.6mm
Thickness of zinc spraying	5g/m <sup>2</sup> -15g/m <sup>2</sup>
Thickness of flux coating	8g/m <sup>2</sup> -25g/m <sup>2</sup>

### ➤ Tolerance

Width	Thickness	Wall Thicknesses	Length	Straightness (side)	Straightness (front)	Twisty
±0.04mm	±0.03mm	±0.05mm	±0.30mm	≤L*0.2%	≤L*0.25%	≤L*0.15%

➤ **Coating Standard and Corrosion Resistance**

Corrosion resistance (common alloy)	Salt spray test: ≥750 hours
Zn Coating standard	8±2g/m <sup>2</sup> , 10±2g/m <sup>2</sup> , 13±2g/m <sup>2</sup>
Flux Coating standard	10-15±2g/m <sup>2</sup>

➤ **Applications**

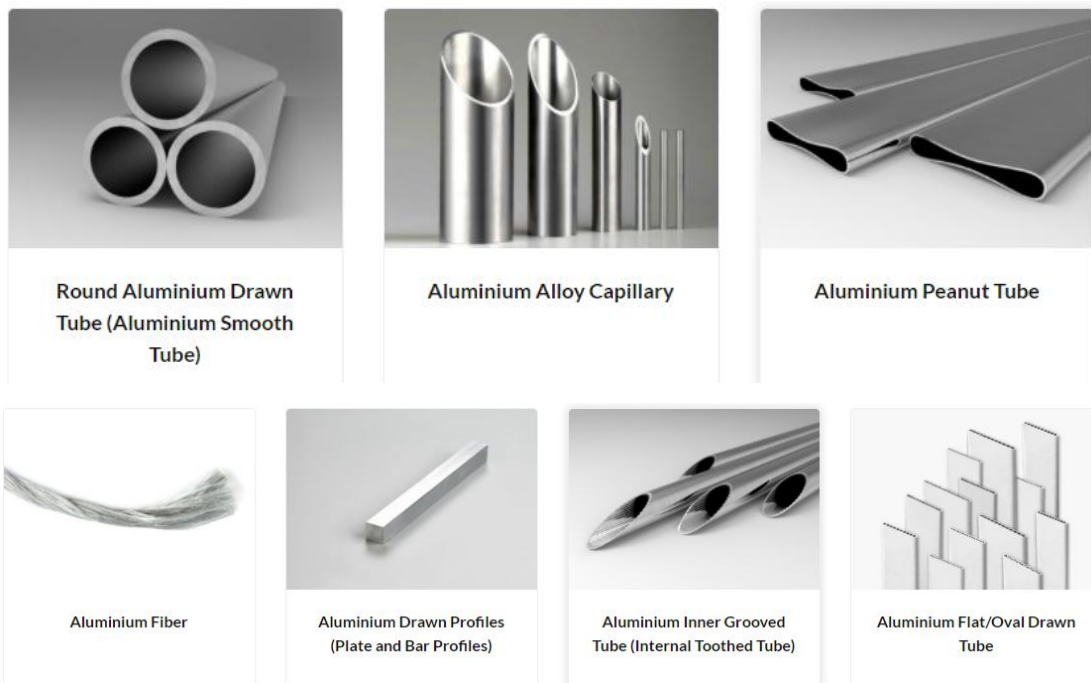
- Heat transfer for the automotive market
- Heat transfer for the HVAC&R (heating, ventilation, air conditioning, and refrigeration) market
- Air conditioning installation
- Industrial production
- Solar thermal

## Aluminium Drawn Tube



Precision aluminium drawn tubes are the lightweight solution for standard heat exchangers manufactured with the mechanically expanded round tube, flat oval tubes, and other shapes of the tube as customized specification.

➤ **Product Category**



1. **Round Aluminium Drawn Tube**

✧ Specifications of round tube

<b>Outer Diameter</b>	Φ4.0 ~ Φ60 mm
<b>Wall Thickness</b>	0.2 ~ 2.5 mm
<b>Aluminium Alloy</b>	1050/1060/3003/3103/3A21/5049, 5086/6063, etc.

✧ Specifications of round coil

<b>Outer Diameter</b>	Φ4.0 ~ Φ15.88 mm
<b>Wall Thickness</b>	0.22 ~ 1.5 mm
<b>Aluminium Alloy</b>	1060/1070/1100/3003/6063

2. **Drawn Flat/Oval Tube**

3. **Aluminium Inner Grooved Tube(Internal Thread Tube)**

✧ Specifications of Inner Grooved Tube

Specifica tions	Bottom Wall Thic	Groove H eight (m	Tooth Numb	Helix angle (degree)	Groove top a ngle (degree)	Weight per met
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OD:	kness (mm)	mm	er			er
Φ5.0 ~ Φ15.88 mm	0.35-1	0.05-0.3	20-70	0 ~ 25	30 ~ 135	
φ5mm	0.35-0.5	0.05-0.25	40-50	18°	50°	23±3
φ7mm	0.4-0.5	0.05-0.25	40-50	18°	50°	28±3
Φ7.94mm	0.4-0.5	0.05-0.25	40-50	18°	50°	40±3
Φ9.52mm	0.45-0.55	0.05-0.25	45-55	18°	50°	45±3
<b>Aluminium Alloy:</b> 1060, 3003, 3103, AA3003H, etc.						

#### 4. Aluminium Capillary

#### 5. Aluminium Peanut Tube

#### 6. Aluminium Drawn Profiles (plate and bar profiles)

#### 7. Aluminium Fiber

##### ✧ Characteristics of Aluminium Fiber

- ✓ Density: 2.71g/m<sup>3</sup>
- ✓ Appearance: Silvery
- ✓ Melting point: 660°C
- ✓ Boiling point: 2467°C
- ✓ Thermal Expansion: 23.1 μm/mK @ 25°C
- ✓ Poisson Ratio: 0.35
- ✓ Vickers Hardness: 167 Mpa.
- ✓ Thermal Conductivity: 2.37W/cm
- ✓ Electronegativity: 1.5 Paulings

##### ➤ Applications of Aluminium Drawn Tubes

- HVAC&R: air conditioner, refrigeration, and another cooling system, (heat exchanger, evaporator, condenser, air cooler, water tank)
- Automotive: connection tubing, car engine manifolds
- Precision equipment
- Solar thermal
- Other industrial applications

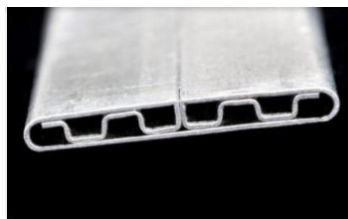
## Aluminium High Frequency Welded Tube



**Aluminium High Frequency Welded Tubes** are manufactured by forming a flat strip of aluminium into a tubular shape and then joining the edges by a high-frequency-welding process, and seam welded without the use of any filler material. The welded tube is then adjusted in size until reaching the exact size and tolerances.

The welded tube is a kind of composite tube. The main difference between extruded and drawn tubes is the possibility to have a weldable layer material of different aluminium alloys. Generally, the core material is 3003 and the clad weldable alloy is 4343 or 4045. It is widely used in tubes for heat exchanger production to enable furnace or flame to braze and to give sacrificial corrosion resistance.

### ➤ Product Category



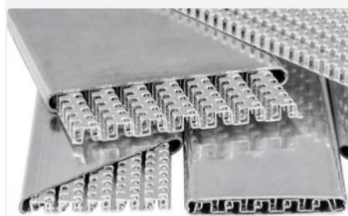
Aluminium Battery Case For New Energy Automotive



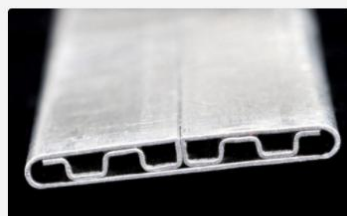
Round/D-type Aluminium Welded Tubes For Condenser Collectors (Header Pipe)



Aluminium Flat Oval Welded Tube For Radiators (Radiator Tube)



Aluminium Welded Tubes With Inserted Turbulators



Aluminium Folded Multi-channel Tube

1. Flat oval welded tubes for radiators (high frequency welded radiator tube)
2. Tubes with inserted turbulators (high frequency welded intercooler tube)
3. Round tubes for condenser header (parallel-flow condenser high-frequency header pipe)
4. Aluminium folded multi-channel tube
5. Battery case for new energy automotive

➤ **Automotive applications**

- Flat oval aluminium welded tubes for radiators
- Round aluminium welded tube for condenser headers
- Rectangular welded tubes for charge air coolers (CAC tube)
- Thick-walled rectangular aluminium welded tube for oil coolers
- Internal enhancements as dimples or turbulators to increase the heat transfer
- Headers/manifolds for mobile A/C condensers and battery coolers
- Small-diameter welded aluminium tubes for connector lines

➤ **HVAC&R applications**

- Used as aluminium headers/manifolds for stationary condensers
- Inner-groove welded tubes with high heat transfer performance
- Mechanically expanded heat exchangers

➤ **Industrial applications**

- For industrial applications, where strength and formability are important factors, high-strength materials available for high-pressure applications, such as 5xxx-series alloys with advantages of high strength and good dimensional stability can be utilized.
- Electrical conduits.
- Ladders and scaffolding.
- Special aluminium welded tubes for orthopedical equipment, sports adventure equipment, garden, and forestry.
- Welded tubes with high resistant to corrosion for the desalination industry.



## Seamless Aluminium Tube



An extruded tube is brought to final dimensions by the hot extrusion process and can be seamless or non-seamless (structural tube). Compared to a slit tube (structural tube), an aluminium seamless tube/pipe is a tube that does not have any welding seam.

Our specialized process for seamless tubing manufacturing begins with either an extruded hollow tube or a solid bar drilled to our exacting specifications. CHAL seamless tubes are produced using two methods. One method pushes a hollow aluminium billet through a die and mandrel press with tremendous force at high temperatures. The other method pushes a solid billet through a piercer press and then a mandrel pierces and extrudes the billet in a second forward stroke. Regardless of the method used, the tube will have no weld or seam, making it ideal for anodizing and other finishing procedures.

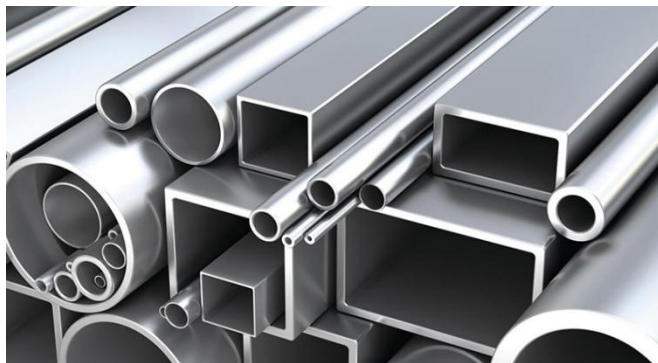
### ➤ Specifications

<b>Products Name</b>	Seamless Aluminium Tube/Pipe (extruded seamless tube and drawn seamless tube)
<b>Outer Diameter</b>	8~ Φ280mm
<b>Wall Thickness</b>	0.1~ 20mm
<b>Alloy Grade</b>	2011, 2024, 3003, 5052, 6061, 6063, 7075, etc.
<b>Surface Treatment</b>	<ol style="list-style-type: none"> <li>1) Mill finished</li> <li>2) Anodizing: shiny anodized, frosty anodized</li> <li>3) Electrophoretic coating: shiny electrophoretic, frosty electrophoretic</li> <li>4) Electrophoretic color powder coating: normal color, special color</li> <li>5) Fluorocarbon powder spraying: normal color, special paper</li> <li>6) Polished</li> </ol>

➤ **Applications**

- Architectural and framing
- Pressure vessels
- Hydraulic cylinders/compressed gas cylinders
- Drive shafts
- Lighting applications
- Bus conductors

## Aluminium Extruded Tube



Aluminium extruded tube & pipe, is formed by hot extrusion. Extrusion is defined as the process of shaping material, by forcing heated aluminium billet to extrude through a shaped opening in a die, combining the differences in die and processing. Extruded tube is available as a seamless or

structural grade product.

➤ **Specifications**

- **Aluminium extruded round tube/pipe**

Size Range OD(mm)	Wall Thickness(mm)
8-150mm	0.5-20mm

- **Aluminium extruded square tube & pipe**

Size Range OD(mm)	Wall Thickness(mm)
8-150mm	0.5-20mm

- **Aluminium extruded rectangular tube**

Size Range OD(mm)		Wall Thickness(mm)
Width	Height	
10-220	1-120	0.5-20mm

- **Aluminium extruded flat tube**

Size Range of aluminium extruded flat tube (mm)			
B±0.05	D ±0.05	T (wall thickness)	L (length)
10-180	5-120	0.3-20	≤5000

## Composite Aluminium Tube



Aluminium composite tube (Al-Al composite tube) refers to as al-al composite tube, making an addition layer of weldable aluminium smoothly attach to the ordinary tube. Generally, the internal material is 3003 or 6061, and the external layer is 4343 or 6063, that the two kinds of aluminium alloy closely joint together. The additional layer makes tubes can be welded with other material. This kind of composite aluminium

tubes is widely used as a condenser header pipe in the air conditioning heat exchanger field.

➤ **Specifications**

<b>Outer Diameter</b>	Φ8 ~ Φ43 mm
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<b>Wall Thickness</b>	1.0 ~ 3.0 mm
<b>T/ID</b>	3.0% ~ 8.0%
<b>Base material</b>	3003, 6063
<b>Brazing layer</b>	4343, 4045
<b>Composite rate</b>	5% ~ 12%

### ➤ Applications

- This kind of aluminium composite tube is mainly used as a header pipe in a heat exchanger.
- High-Frequency Welded Aluminium Flat Tube is widely used in the heat exchanger of auto radiator, intercooler and oil cooler, the radiator of the engine cooling system, the heater or air conditioning system.
- So does aluminium alloy seamless collector tube (base material is 3003 or 6063). The brazing material is 4045 or 4343, which is 5%-10% of the total thickness. The feature is uniformity, high bursting pressure and the stable quality of the heat exchange.

## Aluminium Header Pipe



Aluminium condenser header pipe is also called aluminium condenser manifolds, is one of the important parts of HVAC systems. The primary usage is to uniformly distribute coolant of pipe circuits in air coolers, dry coolers, evaporators, and condensers to avoid creating temperature layers in the passing air stream.

### ➤ Types of Aluminium Condenser Header Pipe

- Cladding Aluminium Condenser Header Pipe
- Punched Aluminium Condenser Header Pipe

➤ **Specifications**

● **Round aluminium condenser header pipe**

Size	Code	Drawing No.	Dimensions		
			T Width	Thickness	Material Thickness
P20x1.15	P01-20x1.15A	P20x1.15-01A	20±0.1	17.7±0.1	1.15
P20x1.2	P01-20x1.2B	P20x1.2-01B	20±0.1	17.6±0.1	1.2
P20x1.5	P01-20x1.5C	P20x1.5-01C	20±0.1	17±0.1	1.5
P20x1.12	P01-20x1.12D	P20x1.12-01D	20±0.1	17.76±0.1	1.12
P20x1.0	P01-20x1.0E	P20x1.0-01E	20±0.05	18±0.05	1.0
P20x2.05	P01-20x2.05F	P20x2.05-01F	20±0.05	16±0.05	2.05
P28x1.6	P02-28x1.6A	P28x1.6-02A	28±0.12	24.8±0.12	1.6
P28x1.5	P02-28x1.5C	P28x1.5-02C	28±0.1	25±0.1	1.0
P33.4x1.5	P03-33.4x1.5A	P33.4x1.5-03A	33.40-0.2	30.40-0.2	1.5
P30x1.2	P04-30x1.2A	P30x1.2-04A	30+0.20	27.6+0.20	1.2
P30x1.5	P04-30x1.5B	P30x1.5-04B	30±0.05	27±0.05	1.5
P30x1.6	P04-30x1.6C	P30x1.6-04C	30±0.12	26.8±0.1	1.6
P19x1.3	P05-19x1.3A	P19x1.3-05A	19±0.05	16.4±0.05	1.3
P19x1.2	P05-19x1.2B	P19x1.2-05B	19±0.05	16.6±0.05	1.2
P15.88x1	P06-15.88x1A	P15.88x1-06	15.88±0.05	13.88±0.05	1
P31.6x1.5	P07-31.6x1.5A	P31.6x1.5-07	31.6±0.2	28.60-0.1	1.5
P25x1.8	P08-25x1.8B	P25x1.8-08B	25±0.1	21.4±0.1	1.8
P25x1.5	P08-25x1.5C	P25x1.5-08C	25±0.1	22±0.1	1.5
P38x2	P09-38x2A	P38x2-09A	38±0.15	34±0.1	2
P38x2.2	P09-38x2.2B	P38x2.2-09B	38±0.15	33.6±0.1	2.2
P22x1.3	P10-22x1.3A	P22x1.3-10A	22±0.075	19.4±0.075	1.3
P22x1.27	P10-22x1.27B	P22x1.27-10B	22±0.05	19.46±0.05	1.27
P26x1.9	P11-26x1.9A	P26x1.9-11A	26±0.15	22.2±0.15	1.9
P23x1.7	P12-23x1.7A	P23x1.7-12A	23±0.1	19.6±0.1	1.7
P22.28x0.6	P13-22.28x0.6A	P22.28x0.6-13A	22.28±0.1	21.08±0.1	0.6
P17.5x1.2	P14-17.5x1.2A	P17.5x1.2-14A	17.5±0.1	15.1±0.1	1.2
P23.2x1.3	P15-23.2x1.3A	P23.2x1.3-15A	23.2-23.3	20.6-20.7	1.3
P27x1.3	P16-27x1.3A	P27x1.3-16A	27±0.05	24.4±0.05	1.3
P16x1	P17-16x1A	P16x1-17A	16±0.05	14±0.05	1
P16x1.2	P17-16x1.2B	P16x1.2-17B	16±0.05	13.6±0.05	1

P15.88x0.6	P06-15.88x0.6B	P15.88x0.6-06B	15.88±0.1	14.68±0.1	0.6
P20.15x1.1 5	P18-20.15x1.15 A	P20.15x1.15-18 A	20.15±0.0 5	17.85±0.0 5	1.15
P21x2	P19-21x2A	P21x2-19A	21±0.05	17±0.05	2
P20.1x1.25	P20-20.1x1.25A	P20.1x1.25-20A	20.1±0.05	17.6±0.05	1.25
P32x2.5	P21-32x2.5A	P32x2.5-21A	32±0.15	27±0.15	2.5
P32x2.3	P21-32x2.3C	P32x2.3-21C	32±0.15	27.4±0.15	2.3
P32x1.8	P21-32x1.8B	P32x1.8-21B	32±0.1	28.4±0.1	1.8
P30.26x1.5 5	P22-30.26x1.55 A	P30.26x1.55-22 A	30.26±0.0 5	27.14-27. 2	1.55
P39.4x2.7	P23-39.4x2.7A	P39.4x2.7-23A	39.4±0.15	34±0.1	2.7
P12x1	P24-12x1	P12x1-24A	12±0.05	10±0.05	1.0
P33.3x1.5	P25-33.3x1.5A	P33.3x1.5-25A	33.3±0.1	30.3±0.1	1.5
P22.22x1.6	P26-22.22x1.6A	P22.22x1.6-26A	22.22±0.0 5	19.02±0.0 5	1.6

● **D-type Aluminium Condenser Header Pipes (include D and square types)**

Size	Code	Drawing No.	Dimensions		
			T Width	Thicknes s	Material Thicknes s
PD20.4x18	PD01-20.4x18	PD20.4x18-01	20.4±0.1	18±0.1	1.2
PD20x18	PD02-20x18	PD20x18-02	20±0.1	18±0.1	1
PD20.4x18. 5	PD03-20.4x18. 5	PD20.4x18.5-0 3	20.4±0.0 5	18.5±0.05	1
PD25.5x19	PD04-25.5x19	PD25.5x19-04	25.5±0.1	19±0.05	1.2
PD15.1x12. 7	PD05-15.1x12. 7	PD15.1x12.7-0 5	15.1±0.0 5	12.7±0.05	1.2

➤ **Applications**

- automotive refrigerators
- new energy vehicles
- home appliance air conditioners
- construction machinery
- spacecraft mooring
- other heat exchanger cores

## Aluminium Multi-Channel Tube



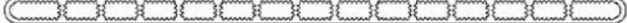










Aluminium multi-channel tube also called aluminium multi-port tube, contains a common aluminium pipe, sharp corner pipe, internal tooth pipe, zinc spraying pipe, conjoined pipe, intercooler flat pipe and other special pipes. It's lightweight, corrosion-resistant, and an excellent choice wherever strength is required.















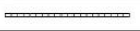

### ➤ Specifications

- Alloy: 1100, 3003, 6063
- Standard: ASTM /GM

Channels	Width(mm)	Thickness(mm)
0-80	8-460	0.25mm-10mm

Model	Specifications	Hole	Kg/m		Class
HG58-005	114.5*1.5	44	0.2983		BG
HG58-006	114.5*1.5	27	0.3630		BG
HG58-007	60*2.5	15	0.1780		BG
HG58-008	121.5*1.5	23	0.2923		BG
HG58-009	48*2.6	18	0.1851		BG
HG58-010	50.8*2	27	0.1347		BG
HG58-011	51.58*7	11	0.3784		BG
HG58-012	114.61*3.9	42	0.5037		BG
HG58-015	203*12	67	1.0980		BG
HG58-016	203*7	67	0.8396		BG
HG58-017	80*1.5	20	0.1638		BG



Model	Specification	No. of holes	Weight/meter	Section
Q2-1	24x6	1	0.1459	
Q2-2	89x7	8	0.2618	
Q2-3	5X5	1	0.0414	
Q2-4	111x4	10	0.5623	
Q2-5	75X4	8	0.452	
Q2-6	50X8	9	0.2674	
Q2-7	51X4	5	0.2321	
Q2-8	20. 4X6	1	0.1018	
Q2-9	20X5	1	0.0988	
Q2-10	80X5	14	0.4288	
Q2-11	20X4	1	0.0956	
Q2-12	33X5. 9	1	0.2341	
Q2-13	28X4	1	0.1268	
Q2-14	28X5	1	0.1646	
Q2-15	80X1. 5	20	0.1645	
Q2-16	20X6	1	0.1268	

Note: Please contact us for the full specification table.

Learn more about aluminium products, visit [www.chaluminium.com](http://www.chaluminium.com).

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