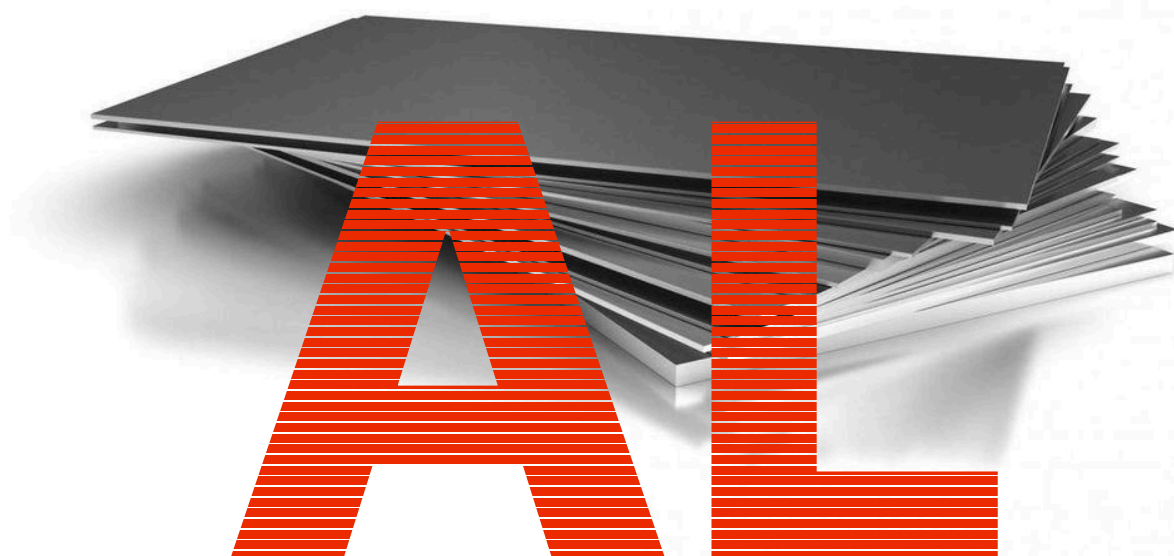


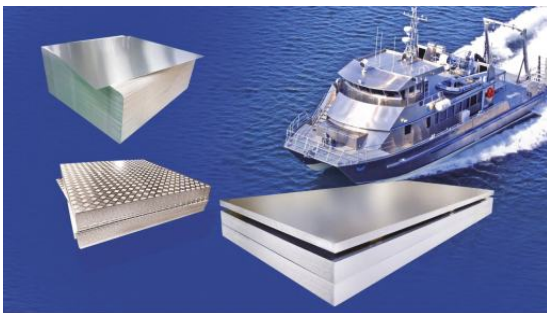


ScaleArtis Group

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ScaleArtis Group



COMPANY PROFILE

ScaleArtis Group

PURSUING EXCELLENCE



ScaleArtis Group is highly innovated technologically driven company with fundamental experience in trading of metal, cable and wire, electronic products and industrial equipment in EU region, Baltic countries, Middle East.

Metal trading is the main activity of ScaleArtis Group. Our suppliers are the largest metallurgical certified producers in Europe and Asia. We implemented quality control systems in all stages of products supply – from internal quality control of raw materials to additional testing of final products in world recognized certified test centers and laboratories

We supply aluminum, copper alloys products (copper, bronze, brass), titanium and special steel products.

ScaleArtis Group is official representative in EU of certified ISO AS EN 9120 producer of high quality aluminum plate, bars, forgings, special profiles.

Our products are widely used in machinery manufacturing, military industry, aerospace, ship building, automotive, and high-tech electronic industries.

Aluminum products provided by ScaleArtis Group can meet the highest requirements of clients as well as all products can be produced by special order of end users.

PRODUCT INTRODUCTION

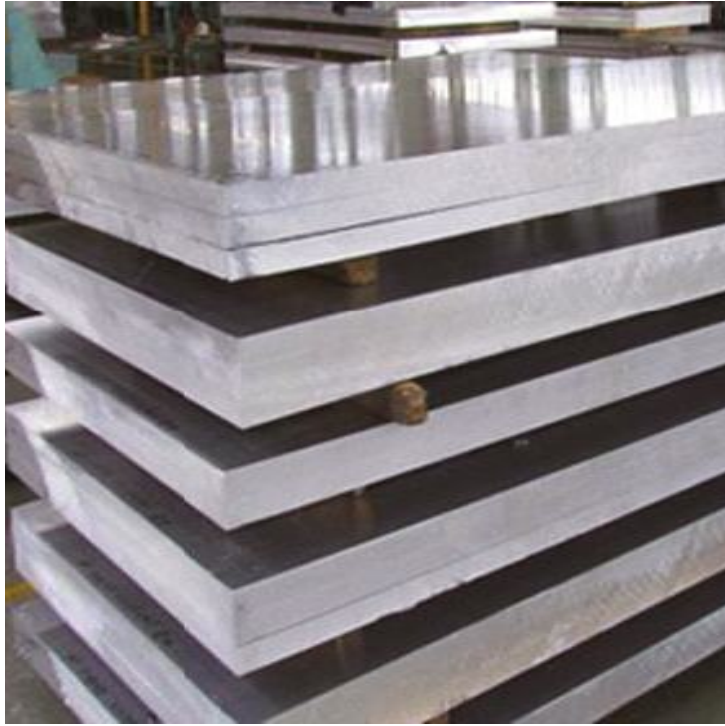
Aluminum Sheet/Plate/Coil Series

MAIN PRODUCTS

Aluminum Sheet/Plate/Coil

Series	Alloy	Temper	Standards	Thickness Range
1xxx Series	1060/1050	O/H24/H18		0.1-10mm
2xxx Series	2024	T3/T4/O/T351		0.5-150mm
		H112		10-370mm
	2024	T351		10-180mm
	2024	T352	AMS4037 AMS-QQ-A-250/4B	190-550mm
3xxx Series	3003/3A21	OH24	ASTM B209	0.5-100mm
5xxx Series	5052/5083/5A06/5754	O/H32/H24/H112/F		0.5-250mm
6xxx Series	6061/6063/6082	T6		1.0-6.0mm
	6061	T651	AMS4027	8.0-245mm
		T652	ASTM B209	250-550mm
7xxx Series	7A04	T6		6.0-180mm
	7A04	T651		6.0-180mm
	7075	T651	AMS4045/AMS-QQ-A-250/12A	6.0-180mm
		T652	ASTM B209	200-550mm
Aviation Material Series	2024	T351/T3	AMS 4101/AMS-QQ-A-250/29	25.4-152.4mm
	7075	T651	AMS4045/AMS-QQ-A-250/12	10-101.6mm
		T7351	AM94078/AMS-QQ-A-250/12	10-101.6mm
		T6	AM94078/AMS-QQ-A-250/12	12-100mm
	7175	T7351	AIMS 03-02-008/ASNA 3050	12-100mm
	7475	T7351	AMS4202/BAMS 516-002 MEP 02-013 STANDARDTYPE	10-101.6mm
	7055	T7951	AIMS 03-02-024	19-30mm
Aldad	2024	O/T3/T361		0.5-8mm
	7075	T6/T651		0.5-8mm

2 SERIES ALUMINUM SHEET/PLATE



PRODUCT INTRODUCTION

2024 aluminum alloy belongs to Al-Cu-Mg series aluminum alloy, is a kind of high-strength duralumin, can be strengthened by heat treatment, spot welding is good, cutting performance is good, corrosion resistance is not high, often using anodic oxidation treatment and painting method or surface aluminum layer to improve its corrosion resistance.

Chemical Composition

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al	Others
2024	0.5	0.5	3.8-4.9	0.3-0.9	1.2-1.8	0.1	0.25	0.15	Reminder	0.1

Mechanical Properties

Temper	Specified thickness mm		Tensile strength R_m MPa		Yield strength $R_{p0.2}$ MPa		Elongation min. %		Bend radius ^a		Hardness HBW ^a
	over	up to	min.	max.	min.	max.	A 50min	A	180°	90°	
0	≥ 0.4	1.5		220		140	12		0.5t	0t	55
	1.5	3.0		220		140	13		2.0t	1.0t	55
	3.0	6.0		220		140	13		3.0t	1.5t	55
	6.0	9.0		220		140	13			2.5t	55
	9.0	12.5		220		140	13			4.0t	55
	12.5	25.0		220				11			55
T351,T4	≥ 0.4	1.5	425		275		12		4.0t		120
	1.5	6.0	425		275		14		5.0t		120
T3	≥ 0.4	1.5	435		290		12		4.0t ^b	4.0t ^b	123
	1.5	3.0	435		290		14		4.0t ^b	4.0t ^b	123
	3.0	6.0	440		290		14		5.0t ^b	5.0t ^b	124
	6.0	12.5	440		290		13			8.0t ^b	124
	12.5	40.0	430		290			11			122
	40.0	80.0	420		290			8			120
	80.0	100.0	400		285			7			115
	100.0	120.0	380		270			5			110
	120.0	150.0	360		250			5			104

Typical use

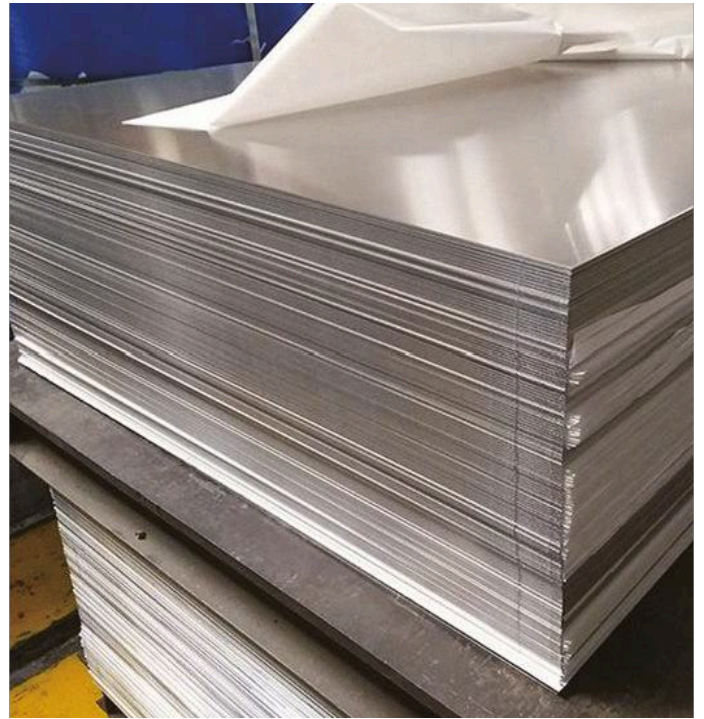
Aero space and railway vehicles



5 SERIES ALUMINUM SHEET/PLATE 5A06

PRODUCT INTRODUCTION

5A06 belongs to Al-Mg alloy, is a kind of rust-proof aluminum, good strength in non-heat treatment alloy, corrosion resistance, good machinability. Beautiful surface after anodizing. Good arc welding performance. It has good corrosion resistance and weldability, good cold workability and medium strength. It is one of the most promising alloys.



Chemical Composition

Alloy	Si	Fe	Cu	Mn	Mg	Be	Zn	Ti	Al	Others
5A06	0.4	0.4	0.1	0.5-0.8	5.8-6.8	0.0001-0.005	0.2	0.02-0.1	Reminder	0.1

Mechanical Properties

Temper	Specified thickness mm		Tensile strength R_m MPa		Yield strength $R_{p0.2}$ MPa		Elongation min. %		Hardness HBW ^a
	over	up to	min.	max.	min.	max.	A 50min	A	
H112	5	300	170	190	70	80	7		55

Typical use

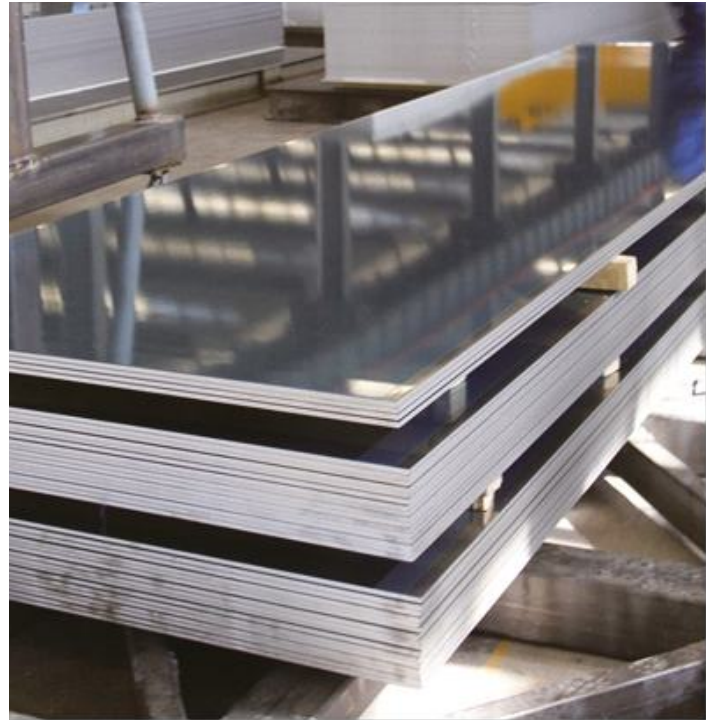
5A06 is widely used in the production of armor plates and high-strength structural parts. Storage tanks, pressure vessels (such as liquid tank trucks, refrigerated trucks, refrigerated containers), refrigeration units, TV towers, drilling equipment, transportation equipment, etc.



5 SERIES ALUMINUM SHEET/PLATE 5083

PRODUCT INTRODUCTION

5083 belongs to Al-Mg alloy, is a kind of rust-proof aluminum, good strength in non-heat treatment alloy, corrosion resistance, good machinability. Beautiful surface after anodizing. Good arc welding performance. It has good corrosion resistance and weldability, good cold workability and medium strength. It is one of the most promising alloys.



Chemical Composition

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al	Others
5083	0.4	0.4	0.1	0.4-0.1	4.0-4.9	0.05-0.25	0.25	0.15	Reminder	0.15

Mechanical Properties

Temper	Specified thickness		Tensile strength R_m MPa		Yield strength $R_{t0.2}$ MPa		Elongation min. %		Bend radius ^a		Hardness HBW ^a
	over	up to	min.	max.	min.	max.	A 50min	A	180°	90°	
H321 ^b	≥ 1.5	3.0	305		215		8		3.0 r	2.0 r	89
	3.0	6.0	305		215		10			2.5 r	89
	6.0	12.5	305		215		12			4.0 r	89
	12.5	40.0	305		215			10			89
	40.0	80.0	285		200			10			83
F ^a	≥ 2.5	250.0	250								
	250	350	245								
H111	0.2	0.5	275	350	125		11		1.0 r	0.5 r	75
	0.5	1.5	275	350	125		12		1.0 r	1.0 r	75
	1.5	3.0	275	350	125		13		1.5 r	1.0 r	75
	3.0	6.3	275	350	125		15			1.5 r	75
	6.3	12.5	270	345	115		16			2.5 r	75
	12.5	50.0	270	345	115			15			75
H22	0.2	0.5	305	380	215		5		2.0 r	0.5 r	89
	0.5	1.5	305	380	215		6		2.0 r	1.5 r	89
	1.5	3.0	305	380	215		7		3.0 r	2.0 r	89
	3.0	6.0	305	380	215		8			2.5 r	89
	6.0	12.5	305	380	215		10			3.5 r	89
	12.5	40.0	305	380	215			9			89

Typical use

5083 aluminum plate is widely used in welding parts, chemical industry, refrigeration engineering, mold, pressure vessels, shipbuilding industry.



6 SERIES ALUMINUM SHEET/PLATE

PRODUCT INTRODUCTION

6061 aluminum alloy belongs to Al-Mg-Si series aluminum alloy, which can be strengthened by heat treatment, has good formability, corrosion resistance, weldability, machinability, good oxidation effect, and has medium strength, which can still maintain good operability after annealing.



Chemical Composition

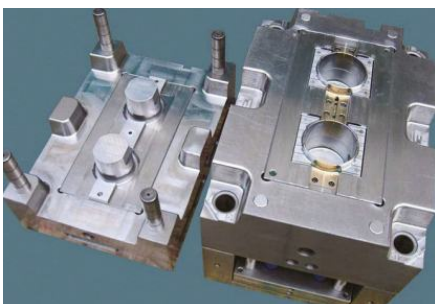
Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al	Others
6061	0.4-0.8	0.7	0.15-0.4	0.15	0.8-1.2	0.04-0.35	0.25	0.15	Reminder	0.15

Mechanical Properties

Temper	Specified thickness		Tensile strength		Yield strength		Elongation min.		Bend radius ^a		Hardness HBW ^a
	mm		R_m MPa		$R_{p0.2}$ MPa		%		180°	90°	
	over	up to	min.	max.	min.	max.	A 50min	A			
T651	≥ 0.4	1.5	290		240		6				88
	1.5	3.0	290		240		7				88
	3.0	6.0	290		240		10				88
	6.0	12.5	290		240		9				88
	12.5	40.0	290		240			8			88
	40.0	80.0	290		240			6			88
	80.0	100.0	290		240			5			88
	100.0	150.0	275		240			5			84
	150.0	250.0	265		230			4			81
	250.0	350.0	260		220			4			80
	350.0	400.0	260		220			2			80

Typical use

6061 aluminum plate is mainly used in aerospace fixing device, electrical fixing device, communication field, but also widely used in automatic mechanical parts, precision machining, mold manufacturing, electronics and precision instruments, SMT, PC board soldering vehicle and so on.



7 SERIES ALUMINUM SHEET/PLATE

PRODUCT INTRODUCTION

7075 aluminum alloy is a cold treatment forging alloy, is to eliminate the internal stress, after processing will not deformation, warping, all super thick 7075 aluminum plate by ultrasonic detection, can be guaranteed

The 7075 aluminum plate has high thermal conductivity, which can shorten the molding time and improve the work efficiency. 7075 zinc-containing elements belong to the aviation series, is an Al-Zn-Mg-Cu alloy, belongs to the super-hard aluminum alloy, has good wear resistance. Very high strength properties can be achieved by heat treatment. The 7075 aluminum alloy in the series is particularly excellent, known as the best aluminum alloy products, high strength, far better than any soft steel. The alloy also has good mechanical properties and anode reaction.



Chemical Composition

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others
7075	0.4	0.5	1.2-2.0	0.3	2.1-2.9	0.18-0.28	5.10-6.10	0.2	0.15

Mechanical Properties

Temper	Specified thickness		Tensile strength		Yield strength		Elongation min.		Bend radius ^a		Hardness HBW ^a
	mm		R_m MPa		$R_{p0.2}$ MPa		%		180°	90°	
	over	up to	min.	max.	min.	max.	A 50min	A			
T651 ^a	≥ 0.4	0.8	525		460		6			4.5 t^b	157
T6	0.8	1.5	540		460		6			5.5 t^b	160
	1.5	3.0	540		470		7			6.5 t^b	161
	3.0	6.0	545		475		8			8.0 t^b	163
	6.0	12.5	540		460		8			12.0 t^b	160
	12.5	25.0	540		470			6			161
	25.0	50.0	530		460			5			158
	50.0	60.0	525		440			4			155
	60.0	80.0	495		420			4			147
	80.0	90.0	490		390			4			144
	90.0	100.0	460		360			3			135
	100.0	120.0	410		300			2			119
	120.0	150.0	360		260			2			104
	150.0	200.0	360		240			2			
	200.0	300.0	360		220			1			

Typical use

7075 is mainly used in the manufacture of aircraft structures such as aircraft, lower wing wall panels, stringer, etc., but also widely used in mold processing, mechanical equipment, Fixture, aerospace industry, blow molding (bottle) mold, ultrasonic plastic welding mold, golf ball head, shoe mold, paper plastic mold, foam molding mold, dewaxing mold, mechanical equipment, for the production of high-end aluminum alloy bicycle frame.



PRODUCT INTRODUCTION

Aluminum Extruded Bar series

MAIN PRODUCTS				
Aluminum Round Bar / Square Bar / Hexagon Bar				
Alloy Series	Alloy	Temper	Standards	Diameter Range
1xxx Series	1050	O/H112	EN755-2	Square Side length: 6-160
	1060	O/H112	EN755-2	Round Diameter:3-350 Square Side length:6-160
2xxx Series	2A14	T351/T4/T451/T6/T651/T6511/T7351	EN755-2	Round Diameter:3-350 Square Side length:6-160
	2017/2017A	O/H111/T4/T4511	EN755-2	Round Diameter:3-350 Square Side length:6-160
	2024	T4/T6/T3511/T4511	EN755-2	Round Diameter:3-350 Square Side length:6-160
5xxx Series	5052	F/H12/H14/H22/H24/H32/H34/H38 H111/H112	EN755-2	Square Side length:6-160
	5083	O/H112	EN755-2	Round Diameter:3-350 Square Side length:6-160
6xxx Series	6060	T4/T5/T6/T66/T6511	EN755-2	Round Diameter:3-350 Square Side length:6-160
	6061		EN755-2	Round Diameter:3-350 Square Side length:6-160
	6063		EN755-2	Round Diameter:3-350 Square Side length:6-160
	6082		EN755-2	Round Diameter:3-350 Square Side length:6-160
	6463		EN755-2	Round Diameter:3-350 Square Side length:6-160
7xxx Series	7075	T3/T351/T4/T451/T6/T651/T6511/T7351	EN755-2	Round Diameter:3-350 Square Side length:6-160
	7A04	T1/T6		Round Diameter:3-350 Square Side length:6-160

2 SERIES ALUMINUM BAR

PRODUCT INTRODUCTION

2024 aluminum alloy belongs to Al-Cu-Mg series aluminum alloy, is a kind of high strength duralumin, can be strengthened by heat treatment, spot welding is good, cutting performance is good, corrosion resistance is not high, often using anodic oxidation treatment and painting method or surface aluminum layer to improve its corrosion resistance.



Chemical Composition

Alloy	Si	Fe	Cu	Mn	Mg	Fe+Ni	Zn	Ti	Al	Others
2024	0.5	0.5	3.8-4.9	0.3-0.9	1.2-1.8	0.5	0.25	0.15	Reminder	0.1

Mechanical Properties

Extruded rod/bar									
Temper	Dimensions mm		R_m MPa		$R_{p0.2}$ MPa		A %	A_{50mm} %	HBW Typical value
	D^a	S^b	min.	max.	min.	max.	min.	min.	
O,H111	≤200	≤200		250		150	12	10	47
T3,T3510, T3511,T4	≤50	≤50	450		310		8	6	120
	50<D≤100	50<S≤100	440		300		8		120
	100<D≤200	100<S≤200	420		280		8		120
	200<D≤250	200<S≤250	400		270		8		120
T8,T8510, T8511	≤150	≤150	455		380		5	4	130

Typical use

Aero space and railway vehicles



6 SERIES ALUMINUM BAR

PRODUCT INTRODUCTION

6061 aluminum alloy belongs to Al-Mg-Si series aluminum alloy Ordinary duraluminum-alloy, a heat-treatable alloy, has good formability, corrosion resistance, weldability, machinability, good oxidation effect, while having moderate strength, after annealing can still maintain good operability.



Chemical Composition

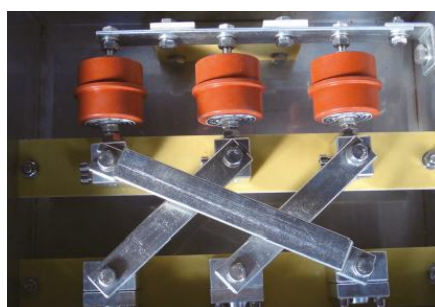
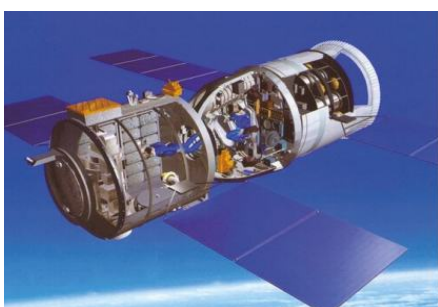
Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al	Others
6061	0.4-0.8	0.7	0.15-0.4	0.15	0.8-1.2	0.04-0.35	0.25	0.15	Reminder	0.15

Mechanical Properties

Extruded rod/bar 6061									
Temper	Dimensions mm		R_m MPa		$R_{p0.2}$ MPa		A %	A_{50mm} %	HBW Typical value
	D^a	S^b	min.	max.	min.	max.	min.	min.	
O,H111	≤200	≤200		150		110	16	14	30
T4°	≤200	≤200	180		110		15	13	65
T6°	≤200	≤200	260		240		8	6	95
Extruded rod/bar 6063									
O,H111	≤200	≤200		130			18	16	25
T4°	≤150	≤150	130		65		14	12	50
	150<D≤200	150<S≤200	120		65		12		50
T5	≤200	≤200	175		130		8	6	65
T6°	≤150	≤150	215		170		10	8	75
	150<D≤200	150<S≤200	195		160		10		75
T66°	≤200	≤200	245		200		10	8	80

Typical use

6061 aluminum plate is mainly used in aerospace fixing device, electrical fixing device, communication field, but also widely used in automatic mechanical parts, precision machining, mold manufacturing, electronics and precision instruments, SMT, PC board soldering vehicle and so on.



7 SERIES ALUMINUM BAR

PRODUCT INTRODUCTION

7075 aluminum alloy belongs to Al-Zn-Mg-Cu series alloy, containing zinc belongs to the aviation series, is a cold treatment forging alloy, belongs to the super hard aluminum alloy, high strength, high hardness, far better than soft steel, has good wear resistance and corrosion resistance. Known as the best aluminum alloy products, this alloy and has good mechanical and anode reaction.



Chemical Composition

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al	Others
7075	0.4	0.5	1.2-2.0	0.3	2.1-2.9	0.18-0.28	5.10-6.10	0.2	Reminder	0.15

Mechanical Properties

Extruded rod/bar 7075									
Temper	Dimensions mm		R_m MPa		$R_{0.02}$ MPa		A %	A_{50mm} %	HBW Typical value
	D^a	S^b	min.	max.	min.	max.	min.	min.	
O,H111	≤ 200	≤ 200		275		165	10	8	60
T6,T6510, T6511	≤ 25	≤ 25	540		480		7	5	150
	$25 < D \leq 100$	$25 < S \leq 100$	560		500		7		150
	$100 < D \leq 150$	$100 < S \leq 150$	530		470		6		150
	$150 < D \leq 200$	$150 < S \leq 200$	470		400		5		150
T73,T73510, T73511C	≤ 25	≤ 25	485		420		7	5	135
	$25 < D \leq 75$	$25 < S \leq 75$	475		405		7		135
	$75 < D \leq 100$	$75 < S \leq 100$	470		390		6		135
	$100 < D \leq 150$	$100 < S \leq 150$	440		360		6		135

Typical use

7075 is widely used in mold processing, machinery and equipment, fixture, aerospace industry, blow molding (bottle) mold, ultrasonic plastic welding mold, golf ball head, shoe mold, paper plastic mold, foam molding mold, dewaxing mold, mechanical equipment, for the production of high-end aluminum alloy bicycle frame.



WAREHOUSE DISPLAY

ScaleArtis Group

Advanced Equipment



Plate/Sheet stock





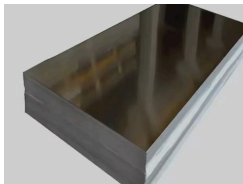
Plate/Sheet/Coil Stock



Bar Stock



Aluminum alloys for defence industry



Bulletproof Equipment
Weapons And Ammunition
Military Vehicles
Military Aircraft
Military Facilities
Warships

Aluminum Alloy 7050



Aluminum alloy 7050 is a high-strength aluminum alloy specifically designed for high-load applications that require a combination of high strength, corrosion resistance, and good machinability. This alloy is widely used in the military industry due to its unique properties.

Composition

The main alloying elements in alloy 7050 are zinc, magnesium and copper. It is this combination that gives the alloy high strength, toughness and excellent corrosion resistance.

Al	Zn	Mg	Cu	Zr	Si	Fe	Mn	Ti	Cr	Others
Rest	5,7-6,7	1,9-2,6	2,0-2,6	0,08-0,15	≤0,12	≤0,15	≤0,10	≤0,06	≤0,04	≤0,15

Properties

- **High Strength:** Alloy 7050 has a very high strength, comparable to some steel alloys.
- **Excellent Toughness:** The alloy has a high fracture toughness, which makes it resistant to cracking.
- **Good corrosion resistance:** The alloy is resistant to many chemicals and atmospheric phenomena.
- **High Fatigue Strength:** The alloy is able to withstand long load cycles without losing strength.

Characteristic	Meaning	Unit of measure
Tensile strength	515-550	Mpa
Yield strength	465-500	Mpa
Elongation at break	12-15	%
Brinell hardness	150-170	HB

COMPOSITION AND PROPERTIES

Aviation Industry:

- Structural elements of aircraft: fuselage frames, wing skin, spars.
- Chassis and engine parts: Components subject to high loads.

Military equipment:

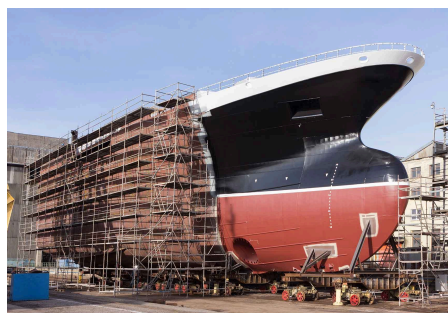
- Armor Hull: Composed of composite materials to increase strength.
- Armament details: Some components of weapons where high strength and lightness are required.

Shipbuilding:

- Structural elements: In places that require high strength and corrosion resistance.

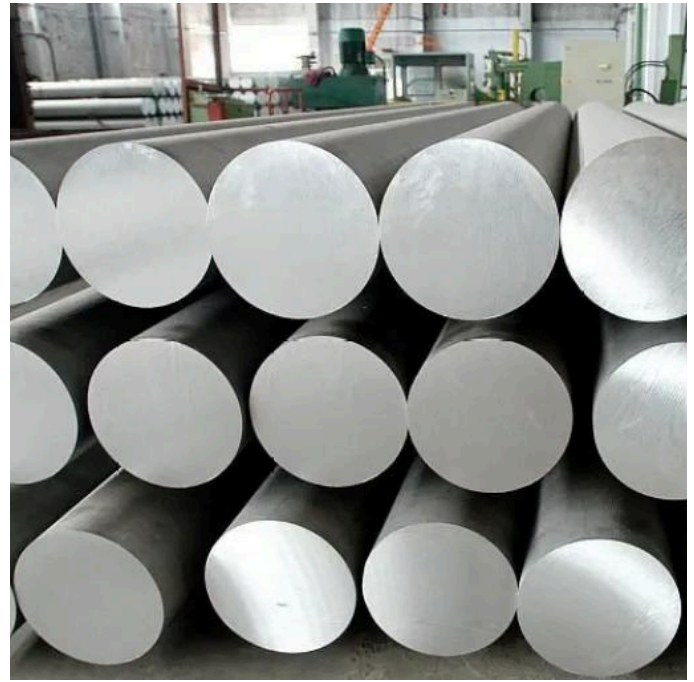
ASSORTMENT

- Sheets 0.5-180mm
- Bars 3-350 mm
- Profile
- Forging



Aluminum Alloy 5083

5083 belongs to the Al-Mg alloy series, which has a wide range of applications, especially in the construction industry, and is the most promising alloy. Good corrosion resistance, excellent weldability, good cold workability, and moderate strength. The main alloying element of 5083 is magnesium, which has good formability, corrosion resistance, weldability, and moderate strength. It is used to manufacture aircraft fuel tanks, oil pipes, rivets, hardware products, armor, etc



Chemical Composition

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al
5083	0.4	0.4	0.1	0.4-1.0	4.0-4.9	0.05-0.25	0.25	0.15	Reminder

5083 H131 Plate Mechanical Properties MIL-DTL-46027

Alloy/Temper	Thickness	T.S Rm/Mpa	Y.S Rp 0.2/Mpa	Elongation %
5083/H131	10-100mm	≥310	≥255	≥8

Typical use

5083-H131 aluminum alloy (MIL-DTL-46027) is a non-heat treated strain hardened aluminum magnesium alloy. This aluminum alloy has very high resistance to cracks and stress corrosion cracking, is easy to weld, corrosion-resistant, and has excellent resistance to fragmentation. The M113 armored personnel transport vehicle, M109 Paladin self-propelled howitzer, and the lower half of the Bradley fighting vehicle are made of 5083 aluminum alloy.



Aluminum alloy 7075



The 7075 aluminum has high thermal conductivity, which can shorten the molding time and improve the work efficiency. 7075 zinc-containing elements belong to the aviation series, is an Al-Zn-Mg-Cu alloy, belongs to the super-hard aluminum alloy, has good wear resistance. Very high strength properties can be achieved by heat treatment. The 7075 aluminum alloy in the series is particularly excellent, known as the best aluminum alloy products, high strength, far better than any soft steel. The alloy also has good mechanical properties and anode reaction.

Chemical Composition

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al
7075	0.4	0.5	1.2-2.0	0.3	2.1-2.9	0.18-0.28	5.1-6.1	0.2	Reminder

7075 Plate Mechanical Properties

MIL-DTL-46027									
Alloy	Temper	Thickness	T.S Rm/Mpa		Y.S Rp 0.2/Mpa		Elongation		Standard
			Standard	Actual	Standard	Actual	Standard	Actual	
7075	T651	T651	≥540	570-590	≥460	495-515	≥8	10-13.5	GB/T 3880
	T7651	T7651	≥538	550-560	≥462	480-490	≥9	10.5-12.5	AMS 4045
	T7351	T7351	≥476	500-520	≥393	420-435	≥7	10-12.5	AMS 4078

Typical use

7075 aluminum alloy is a high-strength and high hardness aluminum alloy material widely used in aviation, aerospace, military, automotive, shipbuilding and other fields. Its excellent mechanical properties and corrosion resistance make it a material for manufacturing structural components and parts.

In the military field, 7075 aluminum alloy is used to manufacture weapons and equipment such as tank armor, warship shells, missile launchers, etc. Its excellent impact resistance and corrosion resistance can improve the combat effectiveness and service life of weapons and equipment.

Military equipment: 7075 aluminum alloy is commonly used to manufacture structural components of military vehicles, equipment, and weapon systems, such as military trucks, armored vehicles, and artillery. Weapon components: used to make gun receivers, handguards, and other parts to enhance the strength and durability of weapons

Aluminum alloy 7A52 (LC52-CS)

7A52 aluminum alloy (formerly known as LC52/5210) is a high-strength aluminum alloy with high specific strength, good fracture toughness, and low cycle fatigue resistance. It is the only aluminum alloy listed in the national military standard and has been widely used in military equipment and facilities, construction, and other fields.

7A52 aluminum alloy is mainly welded using melting inert gas welding (MIG) and friction stir welding (FSW). The commonly used welding wires for welding 7A52 aluminum alloy are ER5356 and ER5A56. The high tendency of hot cracking and weak resistance to stress corrosion during welding are common concerns in the industry. 5B06 welding wire is specially developed for the welding of Long March series carrier rockets, satellite sealed cabins, and pipelines. Compared with 5356 and 5A56 welding wires, the content of Mg and trace elements is increased, and the content of Zn element is controlled, making it have better stress corrosion resistance while improving strength.

Chemical composition

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Zr	Al
LC52 CS	0.25	0.3	0.05-0.2	0.2-0.5	2.0-2.8	0.15-0.25	4.0-4.8	0.05-0.18	0.05-0.15	Reminder

7A52(LC52 CS) Plate Mechanical Properties

GJB 1540-1992

Alloy	Thickness (mm)	T.S Rm/Mpa	Y.S Rp 0.2/Mpa	Elongation %
LC52 CS	5-45	≥410	≥345	≥7

Typical use

The marine environment is characterized by low electrical resistance, corrosive chloride ions, and high salt spray. High strength aluminum alloy 7A52 has become an ideal material for aerospace, light tank structures, and marine machinery due to its high specific strength and stiffness, non-magnetic properties, good low-temperature performance, and excellent processing and mechanical properties.



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