



# ALL METAL SERVICES

**DIRECT RAW  
MATERIAL SUPPLIES**  
Now Available  
From  
Belgaum - India

Material Supplies

STOCKHOLDING AND  
PROCESSING OF RAW  
MATERIALS TO THE

# AEROSPACE AND DEFENCE INDUSTRIES



# Welcome

Established in 1974, All Metal Services (AMS) became part of the Reliance Steel and Aluminium Group during 2014. AMS are now part of the largest metal stockholding group in the world with revenues exceeding 10 billion dollars.

AMS offer total material management solutions to leading OEMs and their subcontractors on a truly global basis.

- // ALUMINIUM
- // STEEL
- // TITANIUM
- // NICKEL ALLOYS
- // ALUMINIUM BRONZE



Bar Cutting



Quality Inspection



Globally Integrated I.T. Systems



Bar Coding and Specialised Packing



# ABOUT ALL METAL SERVICES

With an annual turnover in excess of \$300m, our team of more than 300 staff operate from 9 strategically located sites, each situated to best serve the needs of our international customer base.

Sites in London, Belfast, Birmingham, Bolton and Bristol are complemented by our global service centres in France, India, Malaysia and China. We also support customers throughout North America with consignment stock held, processed and delivered by partner companies within the Reliance group.

Our customers have access to one of the widest and most comprehensive ranges of aerospace metals that includes:

- // ALUMINIUM
- // STEEL
- // TITANIUM
- // NICKEL ALLOYS
- // ALUMINIUM BRONZE

All of our service centres have state of the art processing equipment offering full or cut-to-size materials, with the further option of utilising our centrally located in-house machining and water-jet cutting facilities for your more complex items.

At All Metal Services, we believe in working in partnership with our customers to offer a uniquely tailored service that meets their specific demands. We have a proven and award winning track record of successfully managing the requirements of the world's leading OEMs and their multi-tiered supply chains whilst offering a cost of purchase that allows our customers to remain competitive in today's global marketplace.

**OUR COMMITMENT TO EACH OF OUR CUSTOMERS IS THAT WE WILL STRIVE FOR EXCELLENCE IN ALL THAT WE DO.**

All Metal Services Ltd  
EST. 1974



4 mtr bed CNC machine



Customer specific packing



Plate cutting up to 600mm thick



Measuring performance



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# PROCESSES

## PLATE CUTTING

All Metal Services is equipped to provide the Aerospace and Defence Industries with the latest technology in plate sawing and with 17 plate saws we can offer:

- Cut to size blanks with a tolerance of +/- 0.2mm
- 6 metre maximum length
- Cutting of up to 600mm thick plate
- Profiled shapes as well as standard rectangles
- All plate hard stamped with identification references
- Bespoke packaging requirements accommodated
- Nesting facility to maximise utilisation

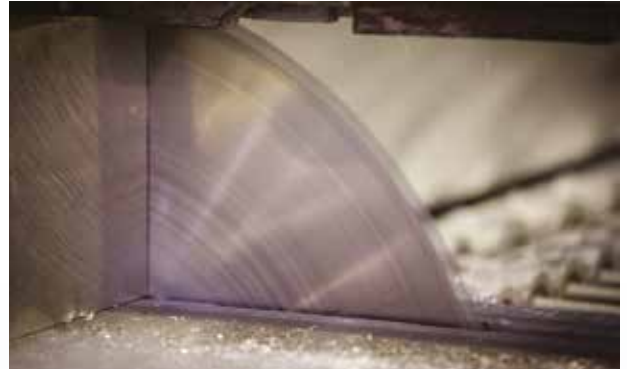


Plate Cutting

## CUT TO SIZE SHEET

We are able to offer cut to size aluminium, steel and titanium sheet up to 6mm thick.

- Stocking up to 6 mtr x 2 mtr size sheets
- Cut to size tolerance of +/- 0.1mm
- Shearing up to 5 mtr length
- Nesting facility to maximise utilisation
- Profiled and finished part size
- Identification to match customer requirements
- Vacuum handling equipment

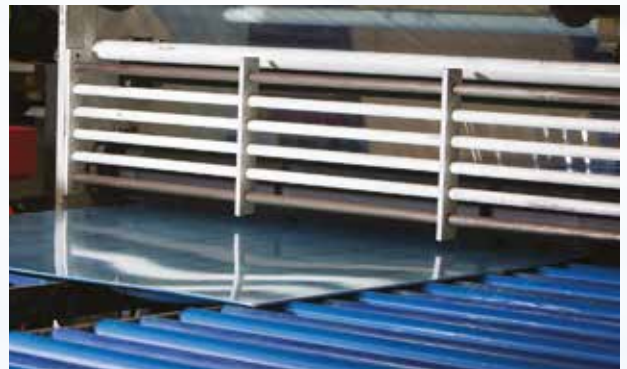


Cut to Size Sheet

## PLASTIC COATING

We can offer plastic coating for prime or cut to size sheet.

- 2 mtr maximum width
- Coating on one or both sides
- A variety of different grades of coating (e.g Nitto)

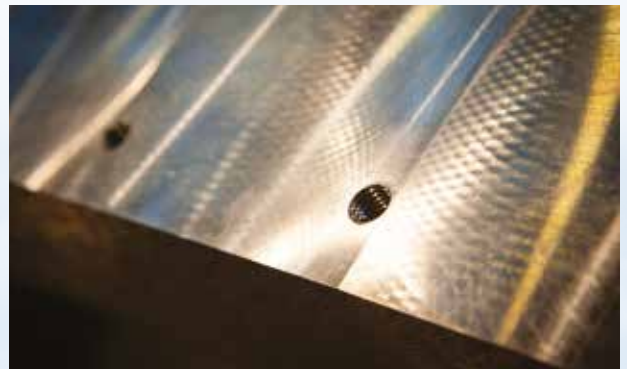


Plastic Coating

## CNC MACHINING

We are equipped with CNC machining facilities and can offer the following:

- Surface machining up to 4 mtr x 2 mtr
- Full billet preparation
- Nesting facilities to reduce lead times and maximise material utilisation
- Drilling / Tapping / Counter-boring



CNC Machining



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## BAR CUTTING

We operate automatic band saws enabling the supply of the following:

- Up to 400mm dia
- Cut to size billets
- Tolerance of +/- 0.5mm
- All billets hard stamped
- Deburring facilities
- Chamfering of bar ends



Bar Cutting

## WATERJET CUTTING

- Up to 200mm thick
- 4 mtr x 3 mtr bed
- Virtually any shape
- Can dramatically improve material utilisation



Waterjet Cutting

## TUBE CUTTING

All Metal Services specialise in supplying drawn seamless tubes for fuel and hydraulic applications. Additionally we also supply extruded heavy wall tubing.

- Precision cutting to length of thin wall tubes
- Sawing of extruded tubes
- Deburring
- Bore Cleaning
- Kitting
- Custom Packing
- Bar coded labelling
- Special inspection techniques including Eddy Current testing at source



Tube Cutting



Tube Cutting



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## 3RD PARTY APPROVALS

EN ISO 9001

AS9100

AS9120

## AMS ARE ALSO APPROVED SUPPLIERS TO

Airbus

Aircelle

ASCO

BAE Systems

Bombardier

Dassault

Embraer

Eurocopter

FACC

Fokker Aerospace

GE Aviation

GKN Aerospace

Honeywell

Meggitt

Moog

Leonardo

Rolls Royce

Ruag

Spirit Aerosystems

Sonaca

UTC Aerospace Systems

## KEY SUPPLIERS

### STEELS

ATI

Bohler

Liberty Steel

Universal Stainless

Arconic

Carpenter Technology

DEW

Gloria Material Technology Corp

Outokumpu

### ALUMINIUM

ALERIS

ARCONIC

CONSTELLIUM

AMAG

KAISER

UAC

KUMZ

ALRO

### TITANIUM

TIMET

VSMPO

ATI

SUMITOMO

ARCONIC

### YELLOW METALS

LE BRONZE INDUSTRIEL

## EXPORT MARKETS

Argentina

Australia

Austria

Belgium

Brazil

Bulgaria

Canada

Chile

PR China

Czech Republic

Denmark

Finland

France

Germany

Greece

Hungary

Indonesia

India

Israel

Italy

Japan

Republic of Korea

Malaysia

Mexico

Morocco

Netherlands

New Zealand

Norway

Poland

Portugal

Republic of Ireland

Romania

Singapore

South Africa

Spain

Switzerland

Sweden

Taiwan

Thailand

Tunisia

Turkey

UAE

USA





# ALUMINIUM PLATE

## SPECIFICATIONS BY COUNTRY

	Specification	Alloy	Temper	
<b>USA</b>	AMS 4025/4026/4027	6061	0/T451/T651	
	AMS 4028/4029	2014	0/T651	
	AMS 4035/4037	2024	0/T351	
	AMS 4044/4045/4078	7075	0/T651/T7351	
	AMS 4050/4201	7050	T7451/T7651	
	AMS 4089/4090/4202	7475	T7651/T651/T7351	
	AMS 4101	2124	T851	
	AMS 4203/4204/4205	7010	T7351/T7651/T7451	
	AMS 4252	7150	T7751	
	AMS QQ-A-250/4	2024	0/T351/T851	
	AMS QQ-A-250/11	6061	0/F/T451/T651	
	AMS QQ-A-250/12	7075	0/F/T651/T7351	
	AMS QQ-A-250/24	7075	T7651	
	AMS QQ-A-250/29	2124	T351/T851	
	AMS QQ-A-250/30	2219	0/T351/T37/T87/T851	
	<b>FRANCE</b>	AIR 9048.610/620	2214	T451/T451(T651)/T651
		AIR 9048.630	2024	T351
AIR 9048.640		2618A	T351(T851)/T851	
AIR 9048.680/690/700/710		7075	T651/T7351/T7351/T7651	
AIR 9048.720/730		7475	T7351/T7651	
AIR 9048.740		7050	T7451	
<b>GERMANY</b>	3.1354	2024	T351/T851	
	3.1924	2618A	T651	
	3.3214	6061	T451/T651	
	3.4144	7050	T7451	
	3.4364	7075	T651/T7351	
	3.4384	7475	T7351	
<b>UNITED KINGDOM</b>	3.4394	7010	T7451	
	L93	2014A	T651	
	L95*	7075	T651	
	L97	2024	T351	
	L115	6082	T651	
	DTD 5010	2014A	T651	
	DTD 5120	7010	T7651	
	DTD 5130	7010	T7451	
<b>EUROPE</b>	EN 2123	2618A	T351/T851	
	EN 2124	2214	T451/T651	
	EN 2126	7075	W51(T651)	
	EN 2419	2024	T351	
	EN 2422	2124	T351	
	EN 2511	7075	T7351	
	EN 2512	7175	T7351	
	EN 2684/2687	7010	W51(T7651)/T7451	
	EN 2805/4457	7475	T7651/T7351	
	EN 3982/3983	7050	T7451/T7651	
	EN 4213	6061	T651	
	EN 4214	7010	T651	
EN 6000 !	2024	T351		

Notes:

- () normal end use temper;
- ! close tolerance flatness;
- HDT High Damage Tolerance;
- ¥ source must be Boeing approved
- \* similar to, but not direct equivalent of 7075; the T7451 temper was formerly known as T73651
- # AIMS 03-05-030 7050-t7651 ! is an alternative rib material



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# ALUMINIUM PLATE

## SPECIFICATIONS BY COMPANY

	Specification	Alloy	Temper
<b>AIRBUS</b>	ASN-A-3005/3098/3101	7010	T651/T7451/T7651
	ASN-A-3009	7075	T7351
	ASN-A-3011	2024	T351
	ASN-A-3050	7175	T7351
	ASN-A-3355	2618A	T851
	AIMS 03-02-004/020	2024	T351/T351HDT !
	AIMS 03-02-008	7175	T7351 !
	AIMS 03-02-009	7475	T7351 !
	AIMS 03-02-011/026	7150	T651/T7751 !
	AIMS 03-02-015/016/028	7449	T651/T7951/T7651 !
	AIMS 03-02-017	7055	T7751 !
	AIMS 03-02-019	7040/7050	T7451 !
	AIMS 03-02-021	2618A	T851
	AIMS 03-02-022	7010/7050	T7451 !
	AIMS 03-02-023	7040	T7651 !
	AIMS 03-02-024/027	7055	T7951HDT !
	AIMS 03-02-025	7085	T7651 !
	AIMS 03-02-029	7010/7050	T7651 !#
	AIMS 03-02-031	2027	T351 !
	AIMS 03-02-032	2124	T851
	AIMS 03-02-033	7056	T7951 !
	AIMS 03-02-035	2024A	T351 !
	ABM1-1005	2024	T351
	ABM1-1006	2618A	T351(T651)
	ABM3-1029/1030	7010	W51(T7651)
	ABM3-1031	7150	W51(T651)
	ABM1-1006/BAEM 1103	2618A	T351/T651
	ABM3-1029/BAEM 1213	7010	W51(T7651)
	ABM3-1030/BAEM 1218	7010	W51(T7651)
	ABM3-1031/BAEM 1219	7150	T651
	ABM3-1074	7075	W51(T651)/T651
<b>BOEING</b>	AMS QQ-A-250/4	2024	T351
	BMS 7-323 types I & III	7050	T7451
	AMS QQ-A-250/121	7075	T7351
	MMS 149	2124	T351/T851
	MMS 159	7075	T7351
	MMS 1420	7050	T7451
	MMS 1580	2014	T651
	DMS 2116	2124	T851
	DMS 2184	7475	T7351
	DMS 2233	7050	W51(T7651)(T7451)
<b>BOMBARDIER</b>	BAMS/CMS 516-001	7050	T7651
	BAMS/CMS 516-002	7475	T7351
	BAMS/CMS 516-003	7050	T7451
	BAMS/CMS 516-006	7150	T7751
	BAMS/CMS 516-021	7040	T7451
	BAMS/CMS 516-017	7055	T7751
<b>DASSAULT</b>	CR 1.1.0.31	2214	T451/T651
	CR 1.1.0.36	2024	T351
	CR 1.1.0.42	2618A	T351/T651
	CR 1.1.0.76	7075	T651/T7351
	CR 1.1.0.87	7010	T7451
	CR 1.1.0.98	7050	T7451
<b>EMBRAER</b>	MEP 02-013	7475	T7351
	MEP 02-014	7050	T7451
	MEP 02-038	7140	T7651
	MEP 02-039	7085	T7451
<b>ROLLS ROYCE</b>	MSRR 8016	2618A	T651

### Notes:

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- ! close tolerance flatness;
- HDT High Damage Tolerance;
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- \* similar to, but not direct equivalent of 7075; the T7451 temper was formerly known as T73651
- # AIMS 03-05-030 7050-T7651 I is an alternative rib material



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# ALUMINIUM SHEET

## SPECIFICATIONS BY COUNTRY

	Specification	Alloy	Temper	
<b>USA</b>	AMS QQ-A-250/2	3003	O/H14	
	AMS QQ-A-250/3	2014 clad	O/ T4/ T6	
	AMS QQ-A-250/4	2024	O/T3	
	AMS QQ-A-250/5	2024 clad	O/T3	
	AMS QQ-A-250/11	6061	O/ T4/ T6	
	AMS QQ-A-250/12	7075	O/T6	
	AMS QQ-A-250/13	7075 clad	O/T6	
	AMS QQ-A-250/24	7075	T76	
	AMS QQ-A-250/25	7075 clad with 7072	T76	
	AMS QQ-A-250/26	7075 clad with 7011	T76	
	AMS QQ-A-250/30	2219	O(T62)/T31 (T81 )/T37(T87)	
	AMS 4085	7475	T761	
	AMS 4096	2219 clad	O	
	AMS 4100	7475 clad	T761	
	AMS 4347	6013	T4	
	<b>FRANCE</b>	AIR 9048.010/.030/	2014	F(T42)/(T62)/
		AIR 9048.020/.040/.050	2014	T4/T6/T451
AIR 9048.060/.080/		2014 clad	F(T42)/F(T62)/	
AIR 9048.070/.090		2014 clad	T4/T6	
AIR 9048.100/.110/.120		2024	F(T42)/T3/T351	
AIR 9048.130/.140		2024 clad	F(T42)/T3	
AIR 9048.150		2618A	H28(T62)	
AIR 9048.170		2618A clad	H28(T62)	
AIR 9048.190/.200		5086	O/H111/H22/H32	
AIR 9048.210/.220/		6061	O/H111(T42)/T4/	
AIR 9048.230/.240		6061	O/H111(T62)/T6	
AIR 9048.260/.270		7075	T6/T76	
AIR 9048.280		7075 clad	T6	
AIR 9048.290	7475	T76		
<b>GERMANY</b>	3.1254	2014A	T4/T6	
	3.1354	2024	O(T42)/ T3	
	3.1364	2024 clad	O(T42)/ T3	
	3.3214	6061	O(T62)/ T6	
	3.4364	7075	T6	
	3.4374	7075 clad	O(T62)/ T6	
	3.4377	7475 clad	T76	
<b>UNITED KINGDOM</b>	L16/17	1200	H4/0	
	L59/60/61	3103	H6/H2/0	
	L80/81	5251	O/H6	
	L88	7075 clad	T6	
	L109/110	2024 clad	T3/F(T42)	
	L113	6082	T4/T6	
	L156/157/158*/159*	2014A	T4/T6/T4/T6	
	L163/164/165	2014A clad	T3/F(T42)/ T4/T6	
	L166*/167*	2014A clad	F(T42)/ T4/T6	
	DTD5070	2618A clad	T6	



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# ALUMINIUM SHEET

## SPECIFICATIONS BY COMPANY

	Specification	Alloy	Temper	
<b>AIRBUS</b>	ASN-A-3001/3046/3047	6061	O/T4/T6	
	ASN-A-3010/3045/3362/3373	2024	T3/T42/T351/T3	
	ASN-A-3012/3042/3374	2024 clad	T3/T42/T3	
	ASN-A-3043	2618A	T62	
	ASN-A-3044	5056	O/HIII	
	ASN-A-3051	7075 clad	T6	
	ASN-A-3397	7475 spf	O	
	ASN-A-3399	5083 spf	O	
	AIMS 03-04-009/013A/022AI	2024 clad cmq	T351	
	AIMS 03-04-010/012A/023A7	2024 clad	O/F(T42)	
	0352/037a2	2024 clad	O/F(T42)	
	AIMS 03-04-011A/014/031A'	2024 clad	T3	
	AIMS 03-04-016A	5083 spf	F/O	
	AIMS 03-04-019A	7475 spf	T4(T762)	
	AIMS 03-04-022	2524	T351	
	AIMS 03-04-0242	2024 clad	T4	
	AIMS 03-04-027A	6056	T78	
	AIMS 03-04-029A	7475 clad cmq	T761	
	AIMS 03-04-030A	7475 clad	O(T762)	
	AIMS 03-04-033	7449 cmq	T7651	
	AIMS 03-04-034A	6013/6056 clad cmq	T4(T62)	
	AIMS 03-04-036	2618A clad	H28(T62)	
	AIMS 03-04-038	2024	T3	
	AIMS 03-04-040AI	6013/6156	T4(T62)	
	AIMS 03-04-041A	2219 cmq	T31(T81)	
	AIMS 03-04-042	6061	O(T62)/ T4(T62)	
	AIMS 03-04-059	7475	T761	
	AIMS 03-04-047	6063	T6	
	BAEM 0003/0004	2024 clad	T3/T4	
	BAEM 0120/ABM2-6027	6061	T4(T42)	
	BAEM 0133/ABM2-6028	6061	T4(T62)	
	BAEM 0155/0196/0197	2014A clad	F(T62)/F(T42)/O0(T42)(T62)	
	BAEM 0163/0164	2024 clad	T3/T4	
	BAEM 0194/0195/1005/1006	2014A	F(T42)/O0(T42)(T62)/T4/T6	
	BAEM 1007/ABM1-7018*	2014A clad	T4	
	BAEM 1008/ABM1-7019*	2014A clad	T6	
	BAEM 1009/ABM1-7067*	2024 clad	T3	
	BAEM 1010/ABM1-7068*	2024 clad	O(T42)	
	BAEM 1020/ABM1-6013*	2014A	T4	
	BAEM 1021/ABM1-6014*	2014A	T6	
	BAEM 1029/ABM1-6015	2024	T3	
	BAEM 4001/ABM3-7045	7050 clad	T76	
	BAEM 4049	2618A clad	F(T62)	
	<b>BOEING</b>	BMS 7-302	7075 bare/clad	O high formability
		BMS 7-305	2024 clad	O high formability
		DMS 2234	7475 clad	O(T61)(T761)
	<b>DASSAULT</b>	CR I.I.0.7	2024	F(T42)/ T3
CR I.I.0.8		2024 clad	F(T42)/ T3	
CR I.I.0.13		2014	F(T42)/ T4(T4/ T6)	
CR I.I.0.18		5754	O/HIII	
CR I.I.0.26		2017A	F(T42)/ T3	
CR I.I.0.48/60		2014 clad	T6/F(T42)/ T4(T4/ T6)	
CR I.I.0.56		5086	O/HIII	
CR I.I.0.61		6061	Q(T42)/ T4/ T6	
<b>EMBRAER</b>	MEP 02-012	7475	T76	
	MEP 02-015	2024 clad	O/T3/T4 high formability	
	MEP 02-019	2524 clad	O type1/T3 type2	
	MEP 02-028	2024 clad	F high formability	

Notes:

- () normal end use temper;
- ! close tolerance flatness;
- HDT High Damage Tolerance;
- ¥ source must be Boeing approved
- \* similar to, but not direct equivalent of 7075; the T7451 temper was formerly known as T73651
- # AIMS 03-05-030 7050-t7651 I is an alternative rib material



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# ALUMINIUM BAR & TUBE

## ALUMINIUM BAR INTERNATIONAL DESIGNATION

	UK	US FEDERAL AMS-QQ-A	AMS	ASN-A	Product Forms
2014A-T4511	LI02	200/2>			Round, Flat
6082-T6 T6511	LIII				Round, Flat
6082 T4				3097	
7075-T73 T73511	LI60	200/11	4167		Round, Flat
2014A-T6 T6511	LI68				Round, Flat
2024-T3511	ABS5055A				Round, Flat
2618A-T8511				3357	Round
2618A-T6511	DTD5014A MSRR8018				Round, Flat
2024 -T3 T3511 T8511		200/3	4152	3351	Round, Flat
2024-T351		225/6	4120	3058	Round, Flat
2026/7-T3511	AIMS03-05-018				Flat
5086-H111				3015/3018	Round
6061-T6/T6511		200/8		3277	Round, Flat
6061-T651		225/8	4117		Round, Flat
6061-T4			4116/4161		Round, Flat
7075-T6/T6511		200/11		3055	Round, Flat
7075-O/T651/T7351		225/9	4124		Round, Flat
7050-T74511			4342		Round, Flat
7050-T74511	ABS5239A				Round, Flat
7175-T73511				3388	Round
7449-T79511	AIMS03-05-015				Flat

## ALUMINIUM TUBE INTERNATIONAL DESIGNATION

	BS	AIRBUS (ABM) or BS BAe (BACM) or Hawker Siddeley (S)	US FEDERAL AMS-WW-T	AMS
5251 - O	L56			
2014A-T6	L63			
2014A-T4	LI05	S07-1011/1012		
6082 - T4/T6	L114			
6061-T6		ABM2 - 3025/3026 SL17	700/6 AMS-T-7081	4083
6061-T4		ABM2 - 3023		
6061 - O		BACMI71	700/6	
2024 - O/T3/T4		ABMI-3008/3009	700/3	4088
5052 - O			700/4	4071
7075 - T6			700/7	
3003 - H14			700/2	

Notes:  
\* with peripheral coarse grain control > 2014 Alloy





# ALL METAL SERVICES



Type	Generic Name	BS Spec.	US Spec.	German Spec.	Euro Spec.	Related Spec.
Stainless	15/5PH VAR/ESR		AMS 5659	W1.4545	Z7CNU15.05	ABS-5455, ABS 5750
Stainless	17/4PH AIR		AMS 5643	W1.4542	Z7CNU17.04	MSRR6601
Stainless	17/4PH VAR/ESR		AMS 5622	W1.4548	Z7CNU17.04	
Stainless	13/8Mo		AMS 5629	W1.4534		ABS-5442 A / C
Stainless	S80	S80		W1.4044	Z15CN17.03	431
Stainless	S130	S130	AMS 5646	W1.4546	Z6CNNb18.10	MSRR6522/3/4/5
Stainless	S143 TO S145	S143 TO S145	AMS 5719			MSRR6647, FV520B
Stainless	JETHETE M152	JETHETE M152	AMS 5719	W1.4939	Z12CNDV12	MSRR6502/3
Stainless	440C		AMS 5618/5630	W1.4125	Z100CD17	UNS44004
Stainless	304		AMS 5639			
Stainless	304L		AMS 5647			
Stainless	303		AMS 5638	W1.4305	EZ6NCT25	MIL-S-7720
Stainless	303 Se		AMS 5738	W1.4305	Z8CND17.04	
Stainless	321	S129	AMS 5645			
Stainless	A286		AMS 5731/2,5895	W1.4943		EN2303
Stainless	Z8CND17.04			W1.4418		
Stainless	CUSTOM 455		AMS 5617			
Stainless	CUSTOM 465		AMS 5936			ABS-5268, MLX17
Stainless	NITRONIC 60		AMS 5848			
Stainless	BG-42		AMS 5749			
Alloy	4130		AMS 6348/70			MIL-S-5626
Alloy	4140		AMS 6382		40CD4	MIL-S-5000,BMS 7-28
Alloy	4340 AIRMELT	S149	AMS 6409/15			
Alloy	4340 VAR		AMS 6414			BMS 7-26, 300M
Alloy	4340Mod	S155	AMS 6417/19 6257			BMS 7-122
Alloy	4330Mod		AMS 6411			
Alloy	9310 AIRMELT		AMS 6260			
Alloy	9310 VAR		AMS 6265			
Alloy	8620		AMS 6274			
Alloy	8740	S147	AMS 6322			
Alloy	30NCD16			W1.6747	30NCD16	
Alloy	35NCD16				35NCD16	MAT 135
Alloy	32CDV13		AMS 6481	W1.7765	32CDV13	
Alloy	S97	S97				S140/153/154 MSRR6043
Alloy	S154	S154				S140/153/154 MSRR6043
Alloy	S98/S99	S98/S99		W1.6745		
Alloy	S106	S106				MSRR6001/2/3 MAT 123
Alloy	S132	S132		W1.8523	40CDV12	MSRR6011/12 MAT122
Alloy	S156	S156		W1.6722/3	16NCD17	MSRR6009/10/55
Alloy	S157	S157		W1.6657	16NCD13	
Alloy	S162	S162	AMS 6512	W1.6359		DTD 5212, MAT 102

OUR STOCK PROFILE IS CONSTANTLY EVOLVING SO IF YOU CANNOT IDENTIFY THE GRADE YOU REQUIRE, PLEASE CALL US



# STEEL SHEET, PLATE & TUBE

## STEEL SHEET & PLATE

Type	BS Spec.	US Spec.	German Spec.	Similar Gen. Eng. Spec.	Related Specs.
Carbon	S510		1.1151	EN3A/CR4/MILD STEEL	MSRR 6057
Carbon	S511			EN2A deep draw	MSRR 6058
Carbon	S514/515		1.1169	EN14A	
Stainless	S527	AMS 5512	1.4546	Type347S17	MSRR 6523 / EN3488
Stainless	S532/533				MSRR 6628 / BACM II
Alloy	S534/5	AMS 6350	1.7214	4130	
Stainless		AMS 5510	1.4541/44	Type 321	ASNA3106
Stainless		AMS 5512	1.5446	Type 347	MIL-S-6721
Stainless		AMS 5513	1.4301	Type 304	FED-QQ-S-766
Stainless		AMS 5517	1.4310	Type 301 1/4 H	MIL-S-5059
Stainless		AMS 5518	1.4310	Type 301 1/2H	MIL-S-5059
Stainless		AMS 5519	1.4310	Type 301 FH	MIL-S-5059
Stainless		AMS 5525			A286
Stainless		AMS 5528		17-7 PH	MIL-S-25043 / EN2540
Stainless		AMS 5604	1.4548	17-4 PH	
Stainless		AMS 5862	1.4542	15-5 PH	
Stainless				Jethete	MSRR 6504
Alloy		AMS 6345	1.7216	AISI 4130 norm.	MIL-S-18729
Alloy		AMS 6350/1	1.7214	AISI 4130 ann.	MIL-S-18729
Alloy		AMS 6359		AISI4340	
Alloy				FV607	MSRR 6514

## STEEL TUBE

Type	BS Spec.	US Spec.	European Spec.	Similar Gen. Eng. Spec.	Related Specs.
Carbon	T45		TU52B E355		E355/Tu52B
Alloy	T60	AMS6371		4130	MIL-T-6736
Carbon	T64				
Stainless	T66	AMS5556	Z10CNNb 18.11	Type 347	EN3680
Stainless	T68		Z10CNNb 18.11	Type 347	
Stainless	T72	AMS5556	Z10CNNb 18.11	Type 347	MSRR6524/ EN3680
Stainless		AMS 5561		21/06/2009	BMS 7-185
Stainless		AMS 5565		Type 304	MIL-T-8504/6
Stainless			Z10CNT18.11	Type 321	1.4541
Alloy			15CDV6		1.7734
Alloy			25CD4S		1.7214
Alloy		AISI4130			MIL-T-6736B / AMS6371







**ALL METAL  
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## TITANIUM PRODUCTS

	UK	US	German	ABS	Code	AIMS	Other
<b>Grade 1</b>							
<b>Sheet</b>	TA1		3.72024				
<b>Grade 2</b>							
<b>(99.6%)</b>							
<b>Sheet</b>	TA2	AMS4902 AMS-T-9046 CP 3 MIL-T-9046 CP 3	3.7034	5142	A	03-18-002	ASN-A 3201 T40
<b>Plate</b>	N/A	AMS4902					
<b>Bar</b>	TA3	N/A		5773	A	03-18-013	
<b>Tube</b>	N/A	AMS4941,4942		5012	A	03-23-001	
<b>Grade 4</b>							
<b>(99.6%)</b>							
<b>Sheet</b>	TA6	AMS4901 AMS-T-9046 CP I MIL-T-9046 CP I	3.7064	5142	B	03-18-015	T60
<b>Plate</b>	N/A	AMS4901	3.7064				
<b>Bar</b>	TA7	AMS4921	3.7064				
<b>Grade 5</b>							
<b>(6Al/4V)</b>							
<b>Sheet</b>	TA10,59	AMS4911	3.7164	5326	A	03-18-003	TA6V
				5326	C	03-18-004	
<b>Plate</b>	2TA56	AMS4911 AMS-T-9046 ABI MIL-T-9046 ABI	3.7164	5125	A	03-18-001	ASN-A 3304
				5125	B	03-18-006	
				5125	C	03-18-007	
<b>Bar</b>	3TA11,12	AMS4928,65,67 AMS6931 AMS-T-9047 MIL-T-9047G	3.7164	5453	A	03-18-010	BS7252 ISO5832 ASN-A-3307
<b>Grade 9</b>							
<b>(3Al/2.5V)</b>							
<b>Tube</b>	N/A	AMS4944,45		5004		03-15-001	



## YELLOW METALS

Type	UK Spec.	US Spec.	Related Spec.	Product Forms
Silicon Aluminium Bronze CuAl7Si2		AMS 4631/4	QQ-C-465 C64200	ROUND
Aluminium Bronze CuAl10Ni5Fe4	B23 (DTD197A)		CAI04 2.0966	ROUND, FLAT HEXAGON
Nickel Aluminium Bronze Silicon Aluminium Bronze CuAl6Si2Fe	NES 833 (DGS 1043) NES 834 (DGS 1044)	AMS 4590 AMS 4640	QQ-C-465 C63000 CAI07	VARIOUS ROUND
Phosphor Bronze CuSn5	NES838	AMS 4625	PBI02 C51000	VARIOUS
Phosphor Bronze CuSn8P	DTD265A		PBI04 C52100	VARIOUS
Brass (cartridge) CuZn30	CZI06		C26000 2.0265	FLAT
Brass (lead) CuZn39Pb3	CZI21		C35300 2.0321	ROUND, FLAT HEXAGON
Brass (free cutting) CuZn36Pb3	CZI24	AMS 4610	C36000 2.0375	ROUND HEXAGON
Brass CuZn35Pb2	CZI31 (DTD627)			ROUND
Brass (naval) CuZn38Sn1	CZI12		C46400 2.053	ROUND
Brass (high tensile) CuZn40Mn1Pb1FeSn	CZI15			ROUND
Brass (lead Muntz metal) CuZn39Pb0.5	CZI37		C36500 2.0371	ROUND
Brass (yellow) CuZn37	CZI08		C27400	ROUND
Tungum CuZnBAIINiSiI	DTD5019 CZI27		C17200	TUBE
Copper Beryllium CuBe2		AMS4533		ROUND



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# NICKEL ALLOYS / MISC. PRODUCTS

Type	BS Spec.	US Spec. (AMS)	German Spec.	French Spec.	Related Spec. R.R. Spec. MSRR	Gen. Eng. Spec.	Comments
Stainless	DTD 189 A						Locking Wire
Carbon	S201						Spring Steel Wire
Magnetic							DTD 5092/5102
Soft Iron							
Nickel Alloy	HR206	5872		NCK20D	7036	C263	
Nickel Alloy		5886	2.465	NCK20D	7035		C263
Nickel Alloy		5666	2.4856	NC22DNb			INCONEL 625
Nickel Alloy		5662	2.4668	NC19FeNb	7115		INCONEL718
Nickel Alloy		5663	2.4668	NC19FeNb			INCONEL 718HT
Nickel Alloy	HR5		2.463	NC20T	7004		NIMONIC 75
Nickel Alloy	HRI/60I		2.4631	NC20TA	7011/7013		NIMONIC 80A



All Metal Services Motorsport Division. Established in 1974, All Metal Services has become the world's largest independent distributor and processor of raw materials to the aerospace industry. As part of our ongoing Strategy to work only in the aerospace and high tech sectors, we now have a motorsport division.

Specialising in the supply of Aluminum, Titanium, Steels and Aluminum Bronze.

Our dedicated Motorsports Division based at our Birmingham facility have many years of experience within the Motorsport industry both on a professional and personal basis. Operating our own fleet of vehicles, the facility is ideally located to deliver material across the U.K. on a same day / next day basis.

We are proud to offer a wide range of materials developed with the motorsport industry in mind and only sourced from internationally recognised manufacturers from across Europe and the U.S.A. All of our materials are fully certified to internationally recognised aerospace specifications and can include ultrasonic testing.

Our staff of qualified engineers and metallurgists are available to support our client both on and off site

With 9 U.K. and International locations supported by 17 bar saws, 17, plate saws, waterjet cutting and multiple CNC machines centres, our clients worldwide are able to maximize these resources.

STEELS		
CODE	ROUND BAR <small>STAINLESS STEEL NI CRMO HIGH STRENGTH &amp; MARAGING STEELS PRECIPITATION HARDENING STEELS</small>	FLAT BAR <small>STAINLESS STEEL PRECIPITATION HARDENING</small>
S80	•	•
S82	•	
S98	•	
S99	•	
S130	•	•
S143	•	•
S144		•
S145	•	•
S154	•	
303		•
304		•
S155/ 4340/ 300M	•	
S162	•	
13-8	•	•
15-5	•	•
17-4	•	•

YELLOW METALS		
CODE	ROUND BAR	Please enquire for your specific requirements
Ni/AL BRONZE	•	

ALUMINUM ALLOY				
CODE	PLATE <small>THICKNESS RANGE 6MM - 152.4MM</small>	SHEET CLAD BARE <small>THICKNESS RANGE 6MM - 305MM</small>	ROUND BAR <small>DIAMETER RANGE 6MM - 152.4MM</small>	FLAT BAR <small>MIN/MAX WIDTH 12.7MM-304MM MIN/MAX THICKNESS 6.35MM-139.7MM</small>
2014A	•	•	•	•
2024	•	•	•	•
2124	•			
2618	•	•	•	
6061	•			
6082	•	•	•	
7010/	•			
7050	•			
7040	•			
7055	•		•	
7075	•	•	•	•
7175	•		•	
7475	•			

TITANIUM ALLOY				
CODE	PLATE <small>THICKNESS RANGE 5MM-101.6MM</small>	SHEET <small>THICKNESS RANGE 0.5MM-4MM</small>	BAR <small>DIAMETER RANGE 6MM-254 MM</small>	TUBE
6Al/4V	•	•	•	

COMMERCIALLY PURE TITANIUM				
CODE	PLATE	SHEET <small>THICKNESS RANGE 0.5MM-4MM</small>	BAR	TUBE
1,2,3&4		•		

TITANIUM ALLOY SEAMLESS TUBE				
CODE	PLATE	SHEET	BAR	TUBE
3 Al/2.5V				•

## UNITED KINGDOM SITES



### SLOUGH

LANDMARK PLACE  
HIGH STREET  
SLOUGH  
SL1 1JL

**TEL** +44 (0)1895 444066

**E-MAIL** [londonsales@allmetal.co.uk](mailto:londonsales@allmetal.co.uk)

### BIRMINGHAM

HEAD OFFICE  
UNIT 5, MIDPOINT PARK  
MINWORTH  
SUTTON COLDFIELD  
B76 1AF

**FACILITY AREA** : 13987m<sup>2</sup> / 130'000Sqr ft

**TEL** +44 (0)1675 430307

**FAX** +44 (0)1675 430346

**E-MAIL** [exportsales@allmetal.co.uk](mailto:exportsales@allmetal.co.uk)

### BOLTON

SPIRIT SERVICE CENTRE AND UK SALES  
UNIT 5, EASTER PARK  
WINGATES INDUSTRIAL PARK  
WESTHOUGHTON  
BOLTON  
BL5 3XY

**FACILITY AREA**: 4647m<sup>2</sup> / 50,000ft<sup>2</sup>

**TEL** +44 (0)1942 840777

**FAX** +44 (0)1942 815229

**E-MAIL** [boltonsales@allmetal.co.uk](mailto:boltonsales@allmetal.co.uk)

### BRISTOL

AIRBUS / GKN SERVICE CENTRE  
UNIT R1, CABOT PARK  
ST ANDREWS ROAD  
AVONMOUTH  
BRISTOL  
BS11 0YW

**FACILITY AREA**: 2323m<sup>2</sup> / 25,000ft<sup>2</sup>

**TEL** +44 (0)1179 822484

**FAX** +44 (0)1179 829686

**E-MAIL** [bristolsales@allmetal.co.uk](mailto:bristolsales@allmetal.co.uk)

### BELFAST

BOMBARDIER SERVICE CENTRE  
UNIT D,  
SYDENHAM BUSINESS PARK  
BELFAST  
BT3 9LE

**FACILITY AREA**: 3066m<sup>2</sup> / 33,000ft<sup>2</sup>

**TEL** +44 (0)2890 739648

**FAX** +44 (0)2890 739649

**E-MAIL** [belfastsales@allmetal.co.uk](mailto:belfastsales@allmetal.co.uk)





## INTERNATIONAL SITES



### INDIA

AEQUS SEZ, NO 39  
437A HATTARGI VILLAGE  
HUKKERI TALUK, BELGAUM  
591243, INDIA  
SALES OFFICE  
**TEL** +91 (0) 831 392 8600  
**E-MAIL** [rfq.ams0091@allmetal.co.uk](mailto:rfq.ams0091@allmetal.co.uk)

### CHINA

12th FENG CHENG ROAD  
SHAANXI XI'AN EXPORT PROCESSING ZONE  
XI'AN  
710016  
CHINA  
FACILITY AREA: 4000m<sup>2</sup> / 43,000ft<sup>2</sup>  
**TEL** +86 (0)29 8612 5300  
**FAX** +86 (0)29 8612 2324  
**E-MAIL** [chinasales@allmetal.co.uk](mailto:chinasales@allmetal.co.uk)

### MALAYSIA AND S.E. ASIA

NO. 2A  
JALAN HAKIM  
HICOM-GLENMARIE INDUSTRIAL PARK  
40150 SHAH ALAM  
SELANGOR DARUL EHSAN  
MALAYSIA  
FACILITY AREA: 3355m<sup>2</sup> / 36,100ft<sup>2</sup>  
**TEL** +60 378 035 643  
**FAX** +60 378 035 634  
**E-MAIL** [malaysiasales@allmetal.co.uk](mailto:malaysiasales@allmetal.co.uk)

### FRANCE

ZA DU GABARDAN  
40240  
LOSSE  
FRANCE  
FACILITY AREA: 3000m<sup>2</sup> / 32,300ft<sup>2</sup>  
**TEL** +33 (0)558 936800  
**FAX** +33 (0)558 939130  
**E-MAIL** [francesales@allmetal.co.uk](mailto:francesales@allmetal.co.uk)

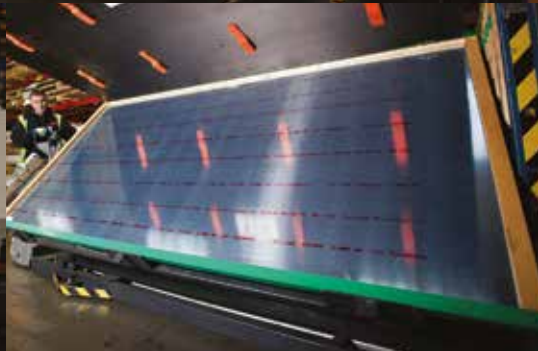


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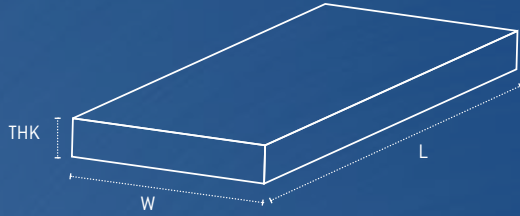
# ALL METAL SERVICES



# USEFUL INFO

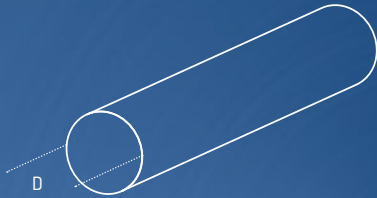
## WEIGHT CALCULATOR

### Plate & Sheet



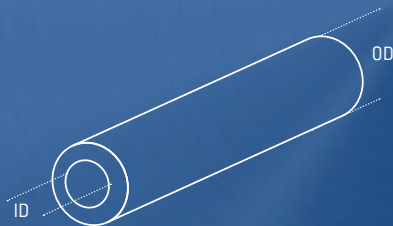
$$\text{THK (mm)} \times \text{W (m)} \times \text{L (m)} \times \text{D.F} = \text{Kgs each}$$

### Round Bar



$$\text{D (mm)}^2 \times \text{D.F} = \text{Kgs / M}$$

### Tube



$$(\text{OD (mm)} - \text{WT (mm)}) \times \text{WT (mm)} \times \text{D.F} = \text{Kgs/M}$$

## DENSITY FACTOR (D.F)

Aluminium	Stainless Steel	Titanium
2.82	7.90	4.51
0.00219	0.0061	0.0035
0.0087	0.0240	0.0140

## CONVERSION CHART\*

inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
0	0.00	2 1/8	53.98	4 1/4	107.95	6 3/8	161.92	8 1/2	215.90
1/8	3.18	2 1/4	57.15	4 3/8	111.12	6 1/2	165.10	8 5/8	219.07
1/4	6.35	2 3/8	60.33	4 1/2	114.30	6 5/8	168.27	8 3/4	222.25
3/8	9.53	2 1/2	63.50	4 5/8	117.47	6 3/4	171.45	8 7/8	225.42
1/2	12.70	2 5/8	66.68	4 3/4	120.65	6 7/8	174.62	9	228.60
5/8	15.88	2 3/4	69.85	4 7/8	123.82	7	177.80	9 1/8	231.77
3/4	19.05	2 7/8	73.03	5	127.00	7 1/8	180.97	9 1/4	234.95
7/8	22.23	3	76.20	5 1/8	130.17	7 1/4	184.15	9 3/8	238.12
1	25.40	3 1/8	79.38	5 1/4	133.35	7 3/8	187.32	9 1/2	241.30
1 1/8	28.58	3 1/4	82.55	5 3/8	136.52	7 1/2	190.50	9 5/8	244.47
1 1/4	31.75	3 3/8	85.73	5 1/2	139.70	7 5/8	193.67	9 3/4	247.65
1 3/8	34.93	3 1/2	88.90	5 5/8	142.87	7 3/4	196.85	9 7/8	250.82
1 1/2	38.10	3 5/8	92.08	5 3/4	146.05	7 7/8	200.02	10	254.00
1 5/8	41.28	3 3/4	95.25	5 7/8	149.22	8	203.20		
1 3/4	44.45	3 7/8	98.43	6	152.40	8 1/8	206.37		
1 7/8	47.63	4	101.60	6 1/8	155.57	8 1/4	209.55		
2	50.80	4 1/8	104.77	6 1/4	158.75	8 3/8	212.72		

\*Errors and omissions excepted [E&OE]

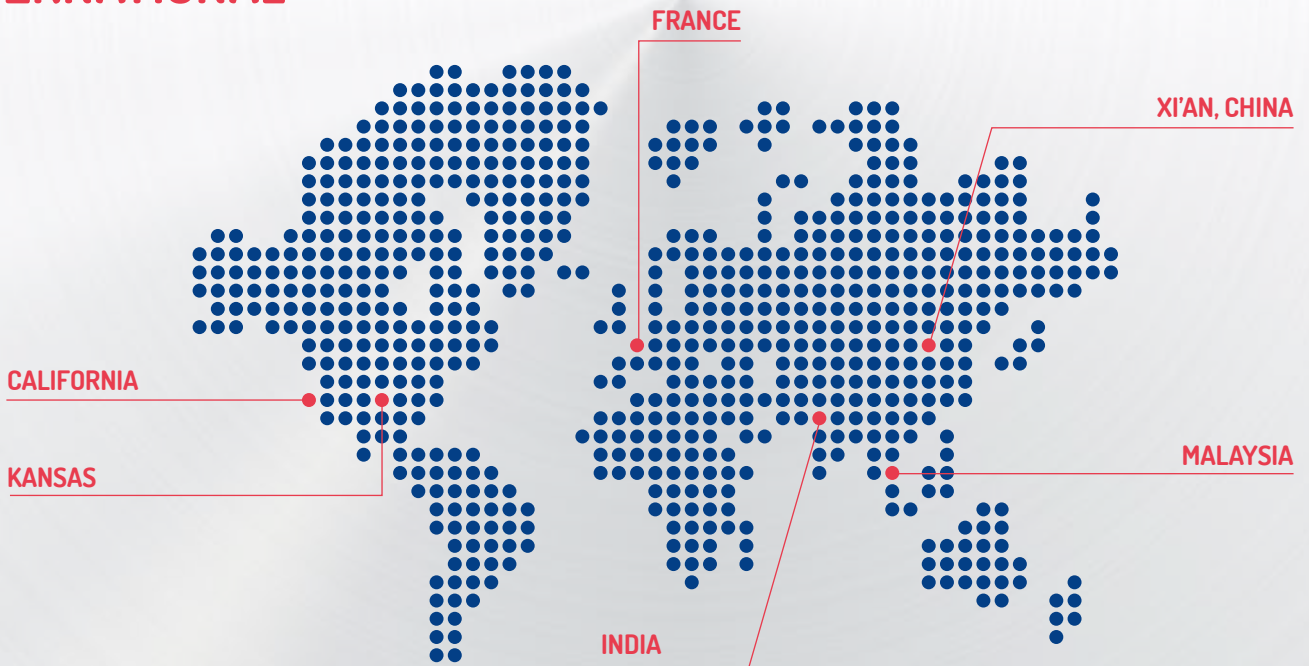


Sites in London, Belfast, Birmingham, Bolton and Bristol are complemented by our global service centres in France, India, Malaysia and China, with customers throughout North America supported by our strategic stock, located in Kansas and California.

## UK



## INTERNATIONAL



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All Metal Services Ltd  
EST. 1974

