FLAT ROLLED PRODUCTS

KAISER ALUMINUM

PLATE CAPABILITIES

Availabilities in this document are subject to change without notice

AVAILABILITY FOR ALLOYS: 2024 2124 2219

Thickness (in.)		Width (in.)		Length (in.)			
Minimum	Maximum	Minimum	Maximum	Minimum	Maximum (per finished width)		
					<=60.5"	60.6" - 74"	>74"
0.250	0.270	24	62.0	90	216	216	
0.271	0.500	24	62.0	90	350	350	
0.501	0.749	24	66.0	90	358	358	
0.750	1.500	24	84.5	90	358	358	358
1.501	2.000	24	84.5	90	358	358	358
2.001	3.000	24	84.5	90	344	344	206
3.001	4.000	24	60.5	90	334		

Please inquire about thicknesses greater than 4.000".

AVAILABILITY FOR ALLOY: 6061

Thickness (in.)		Width (in.)		Length (in.)				
Minimum	Maximum	Minimum	Maximum	Minimum	Maximum (per finished width)			
					<=60.5"	60.6" - 74"	74.1" - 86"	86.1" - 96.5"
0.250	0.270	24	62.0	90	221	221		
0.271	0.500	24	66.0	90	350	350		
0.501	0.749	24	66.0	90	365	365		
0.750	1.500	24	84.5	90	365	365	365	
1.501	1.999	24	84.5	90	365	365	365	365
2.000	2.999	24	84.5	90	351	351	329	329
3.000	4.000	24	84.5	90	348	348	233	233
4.001	4.500	24	84.5	90	348	348	193	193
4.501	5.000	24	84.5	90	342	325	171	171
5.001	5.500	24	84.5	90	342	286	145	145
5.501	6.000	24	74.0	90	342	253		
6.001	6.500	24	74.0	90	342	225		
6.501	7.000	24	74.0	90	342	208		
7.001	7.500	24	74.0	90	317	188		
7.501	7.750	24	74.0	90	303	178		
7.751	8.000	24	74.0	90	290	169		
8.001	8.500	24	74.0	90	267	153		

AVAILABILITY FOR ALLOY: 7050

Thickness (in.)		Width (in.)		Length (in.)				
Minimum	Maximum	Minimum	Maximum	Minimum	Maximum (per finished width)			
					<=50.0"	50.1" - 61"	61.1" - 74"	74.1" - 84.5"
0.250	0.270	24	62.0	90	216	216	216	
0.271	0.500	24	62.0	90	350	350	350	
0.501	0.749	24	66.0	90	368	368	368	
0.750	1.500	24	84.5	90	358	358	358	358
1.501	2.000	24	84.5	90	358	358	358	351
2.001	3.150	24	84.5	90	344	344	341	166

Please inquire about thicknesses greater than 3.150".

FLAT ROLLED PRODUCTS

KAISER ALUMINUM

PLATE CAPABILITIES

AVAILABILITY FOR ALLOY: 7075							
Thickness (in.)		**Width** (in.)		**Length** (in.)			
Minimum	**Maximum**	**Minimum**	**Maximum**	**Minimum**	**Maximum** (per finished width)		
					<=60.5”	**60.6” - 74”**	**>74”**
0.250	0.270	24	62.0	90	216	216	
0.271	0.500	24	62.0	90	350	350	
0.501	0.749	24	66.0	90	358	358	
0.750	1.500	24	84.5	90	358	358	358
1.501	2.000	24	84.5	90	358	358	358
2.001	3.000	24	84.5	90	344	344	206
3.001	4.000	24	60.5	90	334		
Please inquire about thicknesses greater than 4.000”.							

AVAILABILITY FOR ALLOY: 7175							
Thickness (in.)		**Width** (in.)		**Length** (in.)			
Minimum	**Maximum**	**Minimum**	**Maximum**	**Minimum**	**Maximum** (per finished width)		
					<=60.5”	**60.6” - 74”**	**>74”**
0.25	0.270	24	62	90	216	216	
0.271	0.500	24	62	90	350	350	
0.501	0.749	24	66	90	358	358	
0.750	1.500	24	84.5	90	358	358	358
1.501	2.000	24	84.5	90	358	358	358
2.001	2.999	24	84.5	90	344	344	206
3.000	3.937	24	60.5	90	334		

AVAILABILITY FOR ALLOY: 7475							
Thickness (in.)		**Width** (in.)		**Length** (in.)			
Minimum	**Maximum**	**Minimum**	**Maximum**	**Minimum**	**Maximum** (per finished width)		
					<=60.5”	**60.6” - 74”**	**>74”**
0.250	0.270	24	62.0	90	216	216	
0.271	0.500	24	62.0	90	350	350	
0.501	0.749	24	66.0	90	358	358	
0.750	1.500	24	84.5	90	358	358	358
1.501	2.000	24	84.5	90	358	358	358
2.001	2.999	24	84.5	90	344	344	206
3.000	4.000	24	60.5	90	334		
Please inquire about thicknesses greater than 4.000”.							

FLAT ROLLED PRODUCTS

KAISER ALUMINUM

SHEET & COIL CAPABILITIES

HEAT TREAT SHEET ALLOYS & TEMPERS

2014	2014A	2024	2219	6061	7075	7475
T4	T4	T3	T31	T4	W	W
T6	T6	T4 (T-form)	T37	T41	T6	T61
	O-Temper	T81	T81	T6	T73	T761
	Special	T351	T87		T76	
	Inquiry	T361				
		T861				

Notes

All alloys available in -O and -F tempers.

Available in Bare and Alclad.

O-temper “Hi-Form” available up through 0.130”.

6061 available as Bare only.

HEAT TREAT SHEET DIMENSIONAL CAPABILITIES

Thickness (in.)		Width (in.)				Length (in.)	
		Coil		Flat Sheet		Flat Sheet	
From	Through	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
0.008	0.029	12	60	36	60	90	240
0.030	0.130	12	60	36	62	60	300
0.131	0.249			36	62	60	225

Notes

All T Temper coil is tension leveled through .071” thick.

Tempers T37, T87, T361 and T861 are available in flat sheet only 0.040” - 0.249”.

Alclad 2014 and 2219 special inquiry below 0.040”.

HOT ROLLED TREAD SHEET & PLATE

Thickness	Width		Length	
	Minimum	Maximum	Minimum	Maximum
Up to 0.250”	36.0	60.5	72.0	245.0
Over 0.250”	36.0	60.5	72.0	225.0

Notes

Gauges Available 0.125”, 0.156”, 0.188”, 0.250”, 0.375” and 0.500”.

Non-standard gauges subject to special availability.

Pattern B 6061-F, O, T4, T6 (ASTM B632).

FLAT ROLLED PRODUCTS

ORDER WEIGHTS

MINIMUM ORDER WEIGHTS FOR STANDARD SIZES (lbs.)

Alloy	Coiled Sheet				Flat Sheet				Plate up to 2.999"					Plate 3" and over				
	Width				Width				Width					Thickness				
	<= 46.0"	46.01"-49.00"	49.01"-57.00"	57.01"-63.00"	<=46.0"	46.01"-49.00"	49.01"-57.00"	57.01"-63.00"	<=46.0"	46.01"-49.00"	49.01"-57.00"	57.01"-66.00"	66.01"-85.00"	3.00"-4.99"	5.00"-5.99"	6.00"-6.99"	7.00"-7.99"	8" and over
2014/2014A	3,000	3,500	3,250		2,500	3,250	3,500	3,750	2,500	3,250	3,250	3,250	3,000	5,500	5,500	5,500	5,500	5,500
2024	3,000	3,500	4,000	4,000	2,750	3,250	3,500	3,750	2,750	3,000	3,250	3,500	3,000	5,500	5,500	5,500	5,500	5,500
2124									2,500	3,000	3,000	3,000	3,000	5,500	5,500	5,500	5,500	5,500
2219	2,500	3,000	3,000	3,000	2,500	3,500	3,500	3,500	2,750	3,000	3,250	3,250	4,000	5,500	5,500	5,500	5,500	5,500
6061	3,750	4,500	4,500	4,500	3,500	4,250	4,250	5,000	4,500	5,000	5,000	5,000	5,000	10,000	8,000	8,000	9,000	10,000
7050									3,250	3,500	3,500	3,250	3,250	6,500	6,000	6,000	4,500	5,000
7075	3,250	3,250	3,250	4,000	2,750	3,250	3,250	3,750	3,000	3,000	3,250	3,500	3,250	6,000	6,000	6,000	5,000	5,000
7175									3,000	3,000	3,000	3,000	3,000	5,000	5,000	5,000	5,000	5,000
7475	2,500	3,500	3,500	3,500	2,500	3,000	3,000	3,250	2,750	3,000	3,000	3,000	3,000	5,000	5,000	5,000	5,000	5,000
6061 Tread Plate					3,750	4,500	4,500	5,000	3,750	4,500	4,500	5,000						

MINIMUM ORDER WEIGHTS FOR NON-STANDARD SIZES (lbs.)

Alloy	Coiled Sheet				Flat Sheet				Plate up to 2.999"					Plate 3" and over				
	Width				Width				Width					Thickness				
	<= 46.0"	46.01"-49.00"	49.01"-57.00"	57.01"-63.00"	<=46.0"	46.01"-49.00"	49.01"-57.00"	57.01"-63.00"	<=46.0"	46.01"-49.00"	49.01"-57.00"	57.01"-66.00"	66.01"-85.00"	3.00"-4.99"	5.00"-5.99"	6.00"-6.99"	7.00"-7.99"	8" and over
2014/2014A	6,000	7,000	6,500		5,000	6,500	7,000	7,500	5,000	6,500	6,500	6,500	6,000	5,500	5,500	5,500	5,500	5,500
2024	6,000	7,000	8,000	8,000	5,500	6,500	7,000	7,500	5,500	6,000	6,500	7,000	6,000	5,500	5,500	5,500	5,500	5,500
2124									5,000	6,000	6,000	6,000	6,000	5,500	5,500	5,500	5,500	5,500
2219	5,000	6,000	6,000	6,000	5,000	7,000	7,000	7,000	5,500	6,000	6,500	6,500	8,000	5,500	5,500	5,500	5,500	5,500
6061	7,500	9,000	9,000	9,000	7,000	8,500	8,500	10,000	9,000	10,000	10,000	10,000	10,000	10,000	8,000	8,000	9,000	10,000
7050									6,500	7,000	7,000	6,500	6,500	6,500	6,000	6,000	4,500	5,000
7075	6,500	6,500	6,500	8,000	5,500	6,500	6,500	7,500	6,000	6,000	6,500	7,000	6,500	6,000	6,000	6,000	5,000	5,000
7175									6,000	6,000	6,000	6,000	6,000	5,000	5,000	5,000	5,000	5,000
7475	5,000	7,000	7,000	7,000	5,000	6,000	6,000	6,500	5,500	6,000	6,000	6,000	6,000	5,000	5,000	5,000	5,000	5,000
6061 Tread Plate					7,500	9,000	9,000	10,000	7,500	9,000	9,000	10,000						

AEROSPACE PLATE

KAISER ALUMINUM

SUMMARY OF SPECIFICATIONS

ALLOY	TEMPER	OWNER	SPECIFICATION	REV	SPEC. MAX THICKNESS
2014	O	SAE	AMS 4028	G	1.000
		ASTM	ASTM B 209	07	0.499
	T651	SAE	AMS 4029	K	4.000
		SAE	AMS-QQ-A-250/3		4.000
		ASTM	ASTM B 209	07	4.000
		Boeing	DMS 1580	A	3.000
		Boeing	MMS 1112	6	3.000
2014A	T651	BSI	BS L. 93	2	5.512
2024	O	SAE	AMS 4035	K	1.750
		SAE	AMS-QQ-A-250/4	A	1.750
		ASTM	ASTM B 209	07	0.499
	T351	Airbus	ABM 1-1005	1	4.000
		French National	AIR 9048-630	1	3.150
		SAE	AMS 4037	N	4.000
		SAE	AMS-QQ-A-250/4	A	4.000
		Aerospatiale	ASN-A3011	K	3.937
		ASTM	ASTM B 209	07	4.000
		Cessna	CMMP 025	R	4.000
		European	EN 2419	P2	3.150
		BSI	BS L. 97	2	5.512
		German Aerospace	WL 3.1354	1	5.512
	T851	SAE	AMS-QQ-A-250/4	A	1.499
		ASTM	ASTM B 209	07	1.499
		Northrop Grumman	GM2007	C	6.000
2124	T851	SAE	AMS 4101	C	6.000
		SAE	AMS-QQ-A-250/29		6.000
		Eclipse	EAC MS1002	F	6.000
		Eclipse	EAC MS1003	E	6.000
		Lockheed	FMS-3002	A	6.000
		Lockheed	FMS-3008	B	6.000
		Boeing	MB0170-072	F	6.000
		Boeing	MMS 149	L	6.000
2219	O	SAE	AMS 4031	G	2.000
		SAE	AMS-QQ-A-250/30		2.000
		ASTM	ASTM B 209	07	2.000
	T37	SAE	AMS-QQ-A-250/30		5.000
		ASTM	ASTM B 209	07	5.000
	T851	SAE	AMS 4295	B	6.000
		SAE	AMS-QQ-A-250/30		6.000
		ASTM	ASTM B 209	07	6.000
	T87	SAE	AMS-QQ-A-250/30		5.000
		ASTM	ASTM B 209	07	5.000
6061	O	SAE	AMS 4025	K	3.000
		SAE	AMS-QQ-A-250/11		3.000
		ASTM	ASTM B 209	07	3.000
	T451	SAE	AMS 4026	L	3.000
		SAE	AMS-QQ-A-250/11		3.000
		ASME	ASME SB 209	2004	3.000
		ASTM	ASTM B 209	07	3.000
	T651	SAE	AMS 4027	M	6.000
		SAE	AMS-QQ-A-250/11		6.000
		ASME	ASME SB 209	2004	6.000
		ASTM	ASTM B 209	07	6.000
		US Gov't.	MIL-DTL-46027	J	6.000
		BAe Systems	OAS-STD-9520	A	1.500
		BAe Systems	OAS-STD-9521	A	1.001
		BAe Systems	OAS-STD-9522	A	0.750
		BAe Systems	OAS-STD-9523	A	2.000

ALLOY	TEMPER	OWNER	SPECIFICATION	REV	SPEC. MAX THICKNESS
7050	F	Otto Fuchs	OFWN 4037	4	8.000
	T7451	Airbus	AIMS 03-02-022	6	7.874
		SAE	AMS 4050	H	8.000
		Aerospatiale	ASN-A3048	K	5.906
		Bombardier	BAMS 516-003	NC	8.000
		Boeing	BMS 7-323D TYPE I	D	8.500
		Boeing	BMS 7-323D TYPE III	D	8.500
		Cessna	CMMP 025	R	8.000
		Boeing	DMS 2233	G	6.000
		Boeing	DMS 2459	C	8.000
		Eclipse	EAC MS1004	E	8.000
		Eclipse	EAC MS1005	E	8.000
		Lockheed	LMA-M7050B	C	8.000
		Embraer	MEP 02-014	L	8.500
		Boeing	MMS 1420	G	6.000
		German Aero	WL 3.4144	1	5.906
	T7651	Airbus	ABM 3-1029	5	4.724
		SAE	AMS 4201	E	3.000
		Bombardier	BAMS 516-001	NC	3.000
		Cessna	CMMP 025	R	5.000
		Boeing	DMS 2233	G	3.000
		Eclipse	EAC MS MP 0162	E	6.000
7075	O	SAE	AMS 4044	K	2.000
		SAE	AMS-QQ-A-250/12		2.000
		ASTM	ASTM B 209	07	2.000
		McDonnell Douglas	STM0815-01	A	4.000
	T651	SAE	AMS 4045	J	4.000
		SAE	AMS-QQ-A-250/12		4.000
		ASTM	ASTM B 209	07	4.000
		Cessna	CMMP 025	R	3.000
	T7351	Aerospatiale	AIR 9048-690	1	3.937
		SAE	AMS 4078	G	4.000
		SAE	AMS-QQ-A-250/12		4.000
		ASTM	ASTM B 209	07	4.000
		Cessna	CMMP 025	R	5.000
		Eclipse	EAC MS1011	E	4.000
		Boeing	MMS 159	N	4.000
		Fokker	TH 5.316/5	15	4.724
		German Aero	WL 3.4364	1	3.934
	T7651	SAE	AMS-QQ-A-250/24	A	2.000
		SAE	AMS-QQ-A-250/25	A	1.000
		ASTM	ASTM B 209	07	2.000
7175	T7351	Airbus	AIMS 03-02-008	4	3.937
		Aerospatiale	ASN-A3050	L	3.937

This list is not necessarily up to date. Kaiser Aluminum may not be approved to produce every item listed.

AEROSPACE PLATE

SUMMARY OF SPECIFICATIONS

ALLOY	TEMPER	OWNER	SPECIFICATION	REV	SPEC. MAX THICKNESS
7475	O	Lockheed Martin	5PTM7T13	C	0.499
	O1	Agusta	199-19-005	B	7.874
	OP	Boeing	DMS 2184	L	1.500
	T7351	SAE	AMS 4202	D	4.000
		Bombardier	BAMS 516-002	NC	4.000
		Cessna	CMMP 025	R	4.000
		Boeing	DMS 2184	L	4.000
		Eclipse	EAC MS1006	E	4.000
		Lockheed	FMS-3004	C	4.000
		Embraer	MEP 02-013 - std	P	4.000
		Embraer	MEP 02-013 - Type I	P	4.000
		Embraer	MEP 02-013 - Type II	P	4.000
		Embraer	MEP 02-013 - Type III	P	4.000
		German Aero	WL 3.4384	1	3.937
	T7651	SAE	AMS 4089	D	1.500
		Boeing	DMS 2184	L	1.500
USI		SAE	AMS STD 2154 CL A		All
		Boeing (All)	BSS 7055 CL A	A	All
		Northrop Grumman	GSS 16100	G	All
		ASTM	ASTM B594 CL A	6	All
		Boeing	BAC5439	H	All
		Boeing	PS21211	K	All
		Cessna	CST1006	C	All
		McDonnell Douglas	DPS4713	AH	All

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AEROSPACE PLATE

SPECIFICATIONS BY ALLOY

ALLOY	TEMPER	SPECIFICATION
2014	O	AMS4028
		ASTMB209
	T651	AMS4029
		AMSQA2503
		ASTMB209
		DMS1580
		MMS1112
2014A	T4	EN2395
		L156
	T651	L93
2024	O	AMS4035
		AMS4040
		AMSQA2504
		AMSQA2505
		ASTMB209
	T3	AMS4041
		AMSQA2505
		ASTMB209
	T351	ABM11005
		AIR9048630
		AMS4037
		AMS4041
		AMSQA2504
		AMSQA2505
		ASNA3011
		ASTMB209
		CMMP025
		DAN422
		EN2419
		L97
		WL31354
		WL31364
	T851	AMSQA2504
		ASTMB209
		GM2007
2124	F	AMSQA25029
		MMS149
	T851	AMS4101
		AMSQA25029
		EACMS1002
		EACMS1003
		FMS3002
		FMS3008
		MB0170072
		MMS149
2219	O	AMS4031
		AMSQA25030
		ASTMB209
	T37	AMSQA25030
		ASTMB209
	T851	AMS4295
		AMSQA25030
		ASTMB209
	T87	AMSQA25030
		ASTMB209

ALLOY	TEMPER	SPECIFICATION
6061	O	AMS4025
		AMS4027
		AMSQA25011
		ASMESB209
		ASTMB209
	T4	AMS4026
		AMSQA25011
		ASMESB209
		ASTMB209
	T451	AMS4026
		AMSQA25011
		ASMESB209
		ASTMB209
	T6	ASTMB632
	T651	AMS4027
		AMS4078
		AMSQA25011
		ASMESB209
		ASTMB209
		EN10204
7050	F	OFWN4037
	T7451	AIMS302000
		AIMS302022
		AMS4050
		ASNA3048
		BAMS516003
		BMS7323TY1
		BMS7323TY3
		CMMP025
		DAN422
		DMS2233
		DMS2459
		EACMS1004
		EACMS1005
		LMAM7050
		MEP02014
		MMS1420
		WL34144
	T7651	ABM31029
		AMS4201
		BAMS516001
		CMMP025
		DMS2233
		EACMSMP162

This list is not necessarily up to date. Kaiser Aluminum may not be approved to produce every item listed.

AEROSPACE PLATE

SPECIFICATIONS BY ALLOY

ALLOY	TEMPER	SPECIFICATION
7075	O	AMS4044
		AMS4048
		AMSQA25012
		AMSQA25013
		ASTMB209
		STM081501
	T651	AMS4045
		AMS4048
		AMS4049
		AMS4078
		AMSQA25012
		AMSQA25013
		ASTMB209
		CMMP025
		MMS159
	T7351	AIR9048690
		AMS4078
		AMSQA25012
		ASTMB209
		CMMP025
		DAN422
		EACMS1011
		EN10204
		MMS159
		TH53165
		WL34364
	T7651	AMSQA25024
		AMSQA25025
		ASTMB209
7175	T7351	AIMS302000
		AIMS302008
		ASNA3050
		EN10204
		IGC0432105
7475	O	5PTM7T13
	O1	19919005
	OP	DMS2184
	T7351	AMS4202
		BAMS516002
		CMMP025
		DAN422
		DIN29546
		DMS2184
		EACMS1006
		FMS3004
		MEP02013
		WL34384
	T7651	AMS4089
		DMS2184

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AEROSPACE FLAT SHEET

KAISER ALUMINUM

SUMMARY OF SPECIFICATIONS

ALLOY	TEMPER	OWNER	SPECIFICATION	REV	DESCRIPTION
2014	O	SAE	AMS-QQ-A-250/3		Alclad 2014 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
	T3	SAE	AMS-QQ-A-250/3		Alclad 2014 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Boeing	D6-83818		Boeing Polished Skin Standards
		Boeing	DMS 2130	A	Premium Polished Skin Quality
		Boeing	DMS 2174	B	MRS Requirements
	T6	SAE	AMS 4029	K	Bare 2014-T6 Sheet & T651 Plate
		SAE	AMS-QQ-A-250/3		Alclad 2014 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
2014A	F	Boeing	BAC M 196	A	Alclad 2014A-F Sheet
		BSI	BS L 156		Bare 2014A-T4 Sheet
		BSI	BS L 158		Bare 2014A-T4 Close Tol. Sheet
		BSI	BS L 164		Alclad 2014A-T4 Sheet
		BSI	BS L166		Alclad 2014A-T4 Close Tol. Sheet
		British Standards	EN 2088	2005	Alclad 2014A-T4 Sheet
		British Standards	EN 2089	2005	Bare 2014A-T6/T62 Sheet
		British Standards	EN 2395	2005	Bare 2014A-T4 Sheet
	T3	BSI	BS L 163		Alclad 2014A-T3 Sheet
	T4	Airbus	ABM 1-6013	1	Bare 2014A-T4 Close Tol. Sheet
		Airbus	ABM 1-7018	1	Alclad 2014A-T4 Close Tol.Sheet
		French Standards	AIR 9048-020	1	Bare 2014A-T4 Sheet
		BSI	BS L 156		Bare 2014A-T4 Sheet
		BSI	BS L 158		Bare 2014A-T4 Close Tol. Sheet
		BSI	BS L 164		Alclad 2014A-T4 Sheet
		BSI	BS L166		Alclad 2014A-T4 Close Tol. Sheet
		British Standards	EN 10204-3.1	2004	Test Report Specification
		British Standards	EN 2087	2005	Alclad 2014A-T6 Sheet
		British Standards	EN 2088	2005	Alclad 2014A-T4 Sheet
		British Standards	EN 2089	2005	Bare 2014A-T6/T62 Sheet
		British Standards	EN 2395	2005	Bare 2014A-T4 Sheet
		British Aerospace	MM 0551	1	Alclad 2014A-T4/T42 Close Tol.
		British Aerospace	MM 0552	3	Alclad 2014A-T6/T62 Close Tol.
		British Aerospace	MM 0553	2	Alclad 2014A-T4/T42 Close Tol.
		British Aerospace	MM 0554	1	Alclad 2014A-T6/T62 Close Tol.
		Hawker Siddeley	S07-1007	1	Alclad 2014A-T4 Sheet
		Hawker Siddeley	S07-1020	1	Bare 2014A-T4 Sheet
	T6	Airbus	ABM 1-6014	1	Bare 2014A-T6 Close Tol. Sheet
		Airbus	ABM 1-7019	1	Alclad 2014A-T6 Close Tol.Sheet
		BSI	BS L 157		Bare 2014A-T6 Sheet
		BSI	BS L 159		Bare 2014A-T6 Close Tol. Sheet
		BSI	BS L 165		Alclad 2014A-T6 Sheet
		BSI	BS L 167		Alclad 2014A-T6 Close Tol. Sheet
		British Standards	EN 10204-3.1	2004	Test Report Specification
		British Standards	EN 2087	2005	Alclad 2014A-T6 Sheet
		British Standards	EN 2089	2005	Bare 2014A-T6/T62 Sheet
		British Aerospace	MM 0552	3	Alclad 2014A-T6/T62 Close Tol.
		British Aerospace	MM 0554	1	Alclad 2014A-T6/T62 Close Tol.
		Hawker Siddeley	S07-1008	1	Alclad 2014A-T6 Sheet
		Hawker Siddeley	S07-1021	1	Bare 2014A-T6 Sheet
2024	F	Airbus	ABM 1-7068	1	Alclad 2024-T42 Close Tol. Sheet
		Airbus	AIMS 03-04-000	3	Alum. Sheet & Plate to 12 mm.
		Airbus	AIMS 03-04-010	5	Alclad 2024-T42 Sheet
		French Standards	AIR 9048-130	1	Alclad 2024-O Sheet
		SAE	AMS 4040	M	Alclad 2024-O Sheet & Plate
		SAE	AMS-QQ-A-250/5	A	Alclad 2024 Sheet & Plate
		Aerospatiale	ASN-A3042	E	Alclad 2024-T42 Sheet

ALLOY	TEMPER	OWNER	SPECIFICATION	REV	DESCRIPTION
2024	F	British Aerospace	BAEM 1010	2	Alclad 2024-T42 (O,F) Sheet
		BSI	BS L 110	1	Alclad 2024-F Sheet
		Dassault	CR 1.1.0.55	C	Bare & Alclad Sheet
		German Aerospace	DAN 424	1288	German Sheet Requirements
		Hawker Siddeley	S07-1010	1	Alclad 2024-F & O Temper Sheet
		German Aerospace	WL 3.1364	1	Alclad 2024 Sheet & Plate
	O	Airbus	ABM 1-6015	2	Bare 2024-T3 Sheet
		Airbus	ABM 1-7068	1	Alclad 2024-T42 Close Tol.Sheet
		Airbus	AIMS 03-04-000	3	Alum. Sheet & Plate to 12 mm.
		Airbus	AIMS 03-04-010	5	Alclad 2024-T42 Sheet
		French Standards	AIR 9048-100	1	Bare 2024-O Sheet
		French Standards	AIR 9048-130	1	Alclad 2024-O Sheet
		SAE	AMS 4035	K	Bare 2024-O Sheet & Plate
		SAE	AMS 4040	M	Alclad 2024-O Sheet & Plate
		SAE	AMS 4274	A	Alclad 2024-O Hi-Form Sheet
		SAE	AMS 4276	A	Bare 2024-O Hi-Form Sheet
		SAE	AMS-QQ-A-250/4	A	Bare 2024 Sheet & Plate
		SAE	AMS-QQ-A-250/5	A	Alclad 2024 Sheet & Plate
		Aerospatiale	ASN-A3042	E	Alclad 2024-T42 Sheet
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		British Aerospace	BAEM 1010	2	Alclad 2024-T42 (O,F) Sheet
		British Aerospace	BAEM 4075	1	Alclad 2024-T4 Sheet
		Bombardier	BAMS 516-010	NC	Bare & Alclad 2024-O Hi-Form
		Boeing	BMS 7-305	A	Alclad 2024-O Hi-Form Sheet
		BSI	BS L 109	1	Alclad 2024-T3 Sheet
		BSI	BS L 110	1	Alclad 2024-F Sheet
		Cessna	CMMP 021	A	Hi-Form O-Temper Sheet
		Cessna	CMMP 025	R	Metal Procurement Requirements
		Dassault	CR 1.1.0.55	C	Bare & Alclad Sheet
		Boeing	D6-83818		Boeing Polished Skin Standards
		German Aerospace	DAN 34	0189	Specification for Chem. Milling
		German Aerospace	DAN 424	1288	German Sheet Requirements
		German Standards	DIN 29 546	13	German Aluminum Specification
		Boeing	DMS 1949	D	Premium Skin Quality
		Boeing	DMS 2130	A	Premium Polished Skin Quality
		Boeing	DMS 2411		Hi-Form 6061, 2XXX & 7XXX
		British Standards	EN 10204-3.1	2004	Test Report Specification
		Embraer	MEP 02-015	B	Embraer Alclad 2024-O Hi-Form
		Rohr	RMS 171		Bare 2024- Hi-Form Sheet
		Hawker Siddeley	S07-1010	1	Alclad 2024-F & O Temper Sheet
		Fokker	TH 5.322	21	Alclad 2024 Sheet
		German Aerospace	WL 3.1354	1	Bare 2024 Sheet & Plate
		German Aerospace	WL 3.1364	1	Alclad 2024 Sheet & Plate
	T3	Bell	299-947-040	N	2024-T3 Sheet for Rotor Blades
		Bell	299-947-157	E	MRS for Bell Helicopter
		Airbus	ABM 1-6015	2	Bare 2024-T3 Sheet
		Airbus	ABM 1-7067	1	Alclad 2024-T3 Close Tol. Sheet
		Airbus	AIMS 03-04-000	3	Alum. Sheet & Plate to 12 mm.
		Airbus	AIMS 03-04-009	2	Alclad 2024-T351 Sheet
		Airbus	AIMS 03-04-014	2	Alclad 2024-T3 Sheet
		French Standards	AIR 9048-110	1	Bare 2024-T3 Sheet
		French Standards	AIR 9048-140	1	Alclad 2024-T3 Sheet
		SAE	AMS 4037	N	Bare 2024-T3/T351 Sheet & Plate
		SAE	AMS 4041	Q	Alclad 2024-T3/T351 Sheet & Plate
		SAE	AMS 4101	C	Bare 2124-T851 Plate
		SAE	AMS-QQ-A-250/4	A	Bare 2024 Sheet & Plate
		SAE	AMS-QQ-A-250/5	A	Alclad 2024 Sheet & Plate

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AEROSPACE FLAT SHEET

KAISER ALUMINUM

SUMMARY OF SPECIFICATIONS

ALLOY	TEMPER	OWNER	SPECIFICATION	REV	DESCRIPTION
2024	T3	Aerospatiale	ASN-A3010	H	Bare 2023-T3 Sheet
		Aerospatiale	ASN-A3012	M	Alclad 2024-T3 Sheet
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		British Aerospace	BAEM 1009	2	Alclad 2024-T3 Sheet
		British Aerospace	BAEM 4006	1	Alclad 2024-T3 Sheet
		Bombardier	BATS 2505	NC	MRS Testing Specification
		BSI	BS 25359	3	Raytheon MRS Sheet
		BSI	BS L 109	1	Alclad 2024-T3 Sheet
		Cessna	CCM-41	C	Alclad 2024-T3 Sheet
		Cessna	CMMP 025	R	Metal Procurement Requirements
		Dassault	CR 1.1.0.55	C	Bare & Alclad Sheet
		Dassault	CR 1.1.0.8	J	Alclad 2024-F, H111, T3 Sheet
		Boeing	D6-83818		Polished Skin Standards
		German Aerospace	DAN 424	1288	German Sheet Requirements
		German Standards	DIN 29 546	13	German Aluminum Specification
		Boeing	DMS 1949	D	Premium Skin Quality
		Boeing	DMS 2130	A	Premium Polished Skin Quality
		Boeing	DMS 2174	B	MRS Requirements
		Eclipse	EAC MS1013	A	Bare 2024-T3 Stretched Sheet
		British Standards	EN 10204-3.1	2004	Test Report Specification
		British Standards	EN 2090	2005	Alclad 2024-T3 Sheet
		Lockheed	FMS-3022	A	MRS Sheet
		Embraer	MEP 02-015	B	Embraer Alclad 2024-O Hi-Form
		Rohr	RMS 145	C	Rohr Chemical Milling (MRS)
		Hawker Siddeley	S07-1009	1	Alclad 2024 Close Tol. Sheet
		Hawker Siddeley	S07-1029	2	Bare 2024-T3 Sheet
		Fokker	TH 5.312	22	2024 Sheet & Plate
		Fokker	TH 5.322	21	Alclad 2024 Sheet
		German Aerospace	WL 3.1354	1	Bare 2024 Sheet & Plate
		German Aerospace	WL 3.1364	1	Alclad 2024 Sheet & Plate
	T351	Airbus	AIMS 03-04-000	3	Alum. Sheet & Plate to 12 mm.
		Airbus	AIMS 03-04-009	2	Alclad 2024-T351 Sheet
		French Standards	AIR 9048-120	1	Bare 2024-T351 Sheet
		French Standards	AIR 9048-140	1	Alclad 2024-T3 Sheet
		SAE	AMS 4041	Q	Alclad 2024-T3/T351 Sheet & Plate
		SAE	AMS-QQ-A-250/5	A	Alclad 2024 Sheet & Plate
		Aerospatiale	ASN-A3012	M	Alclad 2024-T3 Sheet
		British Aerospace	BAEM 1009	2	Alclad 2024-T3 Sheet
		BSI	BS L 109	1	Alclad 2024-T3 Sheet
		German Aerospace	DAN 34	0189	Specification for Chem. Milling
		German Aerospace	DAN 424	1288	German Sheet Requirements
		German Standards	DIN 29 546	13	German Aluminum Specification
		British Standards	EN 10204-3.1	2004	Test Report Specification
		Hawker Siddeley	S07-1009	1	Alclad 2024 Close Tol. Sheet
		German Aerospace	WL 3.1354	1	Bare 2024 Sheet & Plate
		German Aerospace	WL 3.1364	1	Alclad 2024 Sheet & Plate
	T4	Airbus	AIMS 03-04-000	3	Alum. Sheet & Plate to 12 mm.
		Airbus	AIMS 03-04-024	2	Alclad 2024-T4 (T-Form) Sheet
		Airbus	AIMS 03-04-044	2	Alclad 2024-T4 (T62) Sheet
		SAE	AMS 4279	B	Alclad 2024-T4 (T-Form) Sheet
		SAE	AMS 4297	A	Bare 2024-T4 (T-Form) Sheet
		SAE	AMS-QQ-A-250/4	A	Bare 2024 Sheet & Plate
		SAE	AMS-QQ-A-250/5	A	Alclad 2024 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Boeing	BMS 7-363		Bare & Alclad 2024-T4 (T-Form)
		Cessna	CMMP 020		Bare & Alclad 2024-T4 (T-Form)
		Cessna	CMMP 025	R	Metal Procurement Requirements

ALLOY	TEMPER	OWNER	SPECIFICATION	REV	DESCRIPTION
2024	T4	Eclipse	E410-MS-0006	A	Eclipse Bare 2024-T4 (T-Form)
	T81	SAE	AMS-QQ-A-250/4	A	Bare 2024 Sheet & Plate
		SAE	AMS-QQ-A-250/5	A	Alclad 2024 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Boeing	D6-83818		Boeing Polished Skin Standards
		Boeing	DMS 2130	A	Premium Polished Skin Quality
		Boeing	DMS 2174	B	MRS Requirements
		Rohr	RMS 145	C	Rohr Chemical Milling (MRS)
2219	O	SAE	AMS 4031	G	Bare 2219-0 Sheet & Plate
		SAE	AMS 4096	B	Alclad 2219-O Sheet & Plate
		SAE	AMS 4295	B	Bare 2219 Sheet & Plate
		SAE	AMS-QQ-A-250/30		Bare 2219 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Boeing	BMS 7-110	F	Alclad 2219 Sheet & Plate
		Dassault	CR 1.1.0.39	E	Chemical Milling Requirements
		Dassault	CR 1.1.0.55	C	Bare & Alclad Sheet
		Dassault	CR 1.1.0.82		Alclad 2219-O Sheet
		Dassault	CR1.1.081		Bare 2219 Sheet
		Boeing	D6-83818		Boeing Polished Skin Standards
		Boeing	DMS 1719	D	Alclad 2219 Sheet & Plate
		Rohr	RMS 162		Bare 2219-O Hi-Form Sheet
	T31	Airbus	AIMS 03-04-000	3	Alum. Sheet & Plate to 12 mm.
		Airbus	AIMS 03-04-041	1	Bare 2219-T31/T81 Sheet
		SAE	AMS 4095	C	Alclad 2219-T3/T351 Sheet & Plate
		SAE	AMS-QQ-A-250/30		Bare 2219 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Boeing	BMS 7-110	F	Alclad 2219 Sheet & Plate
		Boeing	DMS 1719	D	Alclad 2219 Sheet & Plate
		Boeing	DMS 2174	B	MRS Requirements
		Rohr	RMS 145	C	Rohr Chemical Milling (MRS)
		Lockheed	STM07-101	E	Alclad 2219 Sheet
	T81	SAE	AMS 4094	C	Alclad 2219-T81/T851 Sheet & Plate
		SAE	AMS-QQ-A-250/30		Bare 2219 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Boeing	BMS 7-110	F	Alclad 2219 Sheet & Plate
		Boeing	DMS 1719	D	Alclad 2219 Sheet & Plate
		Boeing	DMS 2174	B	MRS Requirements
		Rohr	RMS 145	C	Rohr Chemical Milling (MRS)
		Lockheed	STM07-101	E	Alclad 2219 Sheet
	T87	SAE	AMS-QQ-A-250/30		Bare 2219 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
6061	H111	Aerospatiale	ASN-A3001	D	Bare 6061-T42 Sheet (O & H111)
	O	Airbus	AIMS 03-04-000	3	Alum. Sheet & Plate to 12 mm.
		Airbus	AIMS 03-04-042	2	Bare 6061-T62 Sheet
		SAE	AMS 4025	L	Bare 6061-O Sheet & Plate
		SAE	AMS-QQ-A-250/11	A	Bare 6061 Sheet & Plate
		Aerospatiale	ASN-A3001	D	Bare 6061-T42 Sheet (O & H111)
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Boeing	BMS 7-312		Bare 6061-O Hi-Form Sheet
		Cessna	CMMP 021	A	High Form O-Temper Sheet
		Cessna	CMMP 025	R	Metal Procurement Requirements
		German Aerospace	DAN 424	1288	German Sheet Requirements
		Boeing	DMS 2411		Hi-Form 6061, 2XXX & 7XXX
		German Aerospace	WL 3.3214	1	6061 Sheet & Plate
	O1	SAE	AMS 4025	L	Bare 6061-O Sheet & Plate
		SAE	AMS-QQ-A-250/11	A	Bare 6061 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys

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AEROSPACE FLAT SHEET

KAISER ALUMINUM

SUMMARY OF SPECIFICATIONS

ALLOY	TEMPER	OWNER	SPECIFICATION	REV	DESCRIPTION
6061	T4	Airbus	ABM 2-6027	2	6061-T4 Sheet
		Airbus	AIMS 03-04-000	3	Alum. Sheet & Plate to 12 mm.
		Airbus	AIMS 03-04-042	2	Bare 6061-T62 Sheet
		French Standards	AIR 9048-220	1	Bare 6061-T4 Sheet
		SAE	AMS 4026	M	Bare 6061-T4/T451 Sheet & Plate
		SAE	AMS-QQ-A-250/11	A	Bare 6061 Sheet & Plate
		ASME	ASME SB 209	2004	Boiler Plate Spec. (6061)
		Aerospatiale	ASN-A3046	D	Bare 6061-T4 Sheet
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Boeing	BAC M 120	C	6061-T4 & T42 Sheet
		Cessna	CMMP 025	R	Metal Procurement Requirements
		Dassault	CR 1.1.0.55	C	Bare & Alclad Sheet
		German Aerospace	DAN 424	1288	German Sheet Requirements
		German Standards	DIN 29 546	13	German Aluminum Specification
		British Standards	EN 10204-3.1	2004	Test Report Specification
		British Standards	EN 2694	2005	Bare 6061 Sheet
		British Standards	EN 3341	2005	Bare 6061-T4/T42 Sheet
		German Aerospace	WL 3.3214	1	6061 Sheet & Plate
	T6	French Standards	AIR 9048-240	1	Bare 6061-T6 Sheet
		SAE	AMS 4027	N	Bare 6061-T6/T651 Sheet & Plate
		SAE	AMS-QQ-A-250/11	A	Bare 6061 Sheet & Plate
		ASME	ASME SB 209	2004	Boiler Plate Spec. (6061)
		Aerospatiale	ASN-A3047	C	Bare 6061-T6 Sheet
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		ASTM	ASTM B 632	02	Bare 6061 Tread Sheet & Plate
		German Aerospace	DAN 424	1288	German Sheet Requirements
		German Standards	DIN 29 546	13	German Aluminum Specification
		British Standards	EN 2694	2005	Bare 6061 Sheet
		German Aerospace	WL 3.3214	1	6061 Sheet & Plate
	T651	German Aerospace	DAN 424	1288	German Sheet Requirements
		German Standards	DIN 29 546	13	German Aluminum Specification
		German Aerospace	WL 3.3214	1	6061 Sheet & Plate
7075	F	SAE	AMS-QQ-A-250/12		Bare 7075 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
	O	SAE	AMS 4044	L	Bare 7075-O Sheet & Plate
		SAE	AMS 4048	M	Alclad 7075-O Sheet & Plate
		SAE	AMS 4277	A	Bare 7075-O Hi-Form Sheet
		SAE	AMS 4278	B	Alclad 7075-O Hi-Form Sheet
		SAE	AMS-QQ-A-250/12		Bare 7075 Sheet & Plate
		SAE	AMS-QQ-A-250/13		Alclad 7075 Sheet & Plate
		SAE	AMS-QQ-A-250/5	A	Alclad 2024 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Bombardier	BAMS 516-011	NC	Bare & Alclad 7075-O Hi-Form
		Boeing	BMS 7-302	B	Alclad 7075-O Hi-Form
		Boeing	BMS 7-305	A	2024-O Hi-Form Sheet
		Cessna	CMMP 021	A	Hi-Form O-Temper Sheet
		Cessna	CMMP 025	R	Metal Procurement Requirements
		Boeing	D6-83818		Boeing Polished Skin Standards
		German Aerospace	DAN 424	1288	German Sheet Requirements
		Boeing	DMS 2130	A	Premium Polished Skin Quality
		Boeing	DMS 2411		Hi-Form 6061, 2XXX & 7XXX
		British Standards	EN 2092	2005	Alclad 7075-T6 Sheet
		Fokker	TH 5.324	16	Alclad 7075 Sheet
		German Aerospace	WL 3.4374	1	Alclad 7075 Sheet & Plate
	T6	Bell	299-947-157	E	MRS for Bell Helicopter
		French Standards	AIR 9048-280	1	Alclad 7075-T6 Sheet
		SAE	AMS 4045	J	Bare 7075-T6/T651 Sheet & Plate
		SAE	AMS 4049	K	Alclad 7075-T6/T651 Sheet & Plate
		SAE	AMS-QQ-A-250/12		Bare 7075 Sheet & Plate
		SAE	AMS-QQ-A-250/13		Alclad 7075 Sheet & Plate
		Aerospatiale	ASN-A3051	D	Alclad 7075-T6 Sheet
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Bombardier	BATS 2505	NC	MRS Testing Specification
		Cessna	CMMP 025	R	Metal Procurement Requirements
		Boeing	D6-83818		Boeing Polished Skin Standards
		German Aerospace	DAN 424	1288	German Sheet Requirements
		German Standards	DIN 29 546	13	German Aluminum Specification
		Boeing	DMS 1949	D	Premium Skin Quality
		Boeing	DMS 2174	B	MRS Requirements
		British Standards	EN 2092	2005	Alclad 7075-T6 Sheet
		Fokker	TH 5.324	16	Alclad 7075 Sheet
		German Aerospace	WL 3.4374	1	Alclad 7075 Sheet & Plate
	T73	SAE	AMS-QQ-A-250/12		Bare 7075 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Cessna	CMMP 025	R	Metal Procurement Requirements
		Boeing	DMS 2174	B	MRS Requirements
	T76	SAE	AMS-QQ-A-250/24	A	Bare 7075-T76/T7651 Sheet & Plate
		SAE	AMS-QQ-A-250/25	A	Alclad 7075-T76/T7651 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Boeing	DMS 2174	B	MRS Requirements
7475	F	German Aerospace	DAN 424	1288	German Sheet Requirements
		British Standards	EN 3332	2005	Alclad 7475-T762 Sheet
		British Standards	EN 3333	2005	Bare 7475-T762 Sheet
	O	German Aerospace	DAN 424	1288	German Sheet Requirements
		Boeing	DMS 2234	A	Alclad 7475 Sheet
		Boeing	DMS 2281		Bare 7475 Sheet
		British Standards	EN 3332	2005	Alclad 7475-T762 Sheet
		British Standards	EN 3333	2005	Bare 7475-T762 Sheet
		Embraer	MEP 02-012	G	Embraer Bare & Alclad 7475 Sheet
	T16	SAE	AMS 4207	B	Alclad 7475-T61 Sheet
		Boeing	DMS 2234	A	Alclad 7475 Sheet
	T761	French Standards	AIR 9048-290	1	Bare 7475-T761 Sheet
		SAE	AMS 4085	C	Bare 7475-T761 Sheet
		SAE	AMS 4100	D	Alclad 7475-T761 Sheet
		Bombardier	BATS 2505	NC	MRS Testing Specification
		Boeing	DMS 2174	B	MRS Requirements
		Boeing	DMS 2233	G	7050 Plate
		Boeing	DMS 2234	A	Alclad 7475 Sheet
		Boeing	DMS 2281		Bare 7475 Sheet
		British Standards	EN 2803	2005	Alclad 7475-T761 Sheet
		German Aerospace	WL 3.4377	1	Alclad 7475 Sheet

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AEROSPACE COIL

SUMMARY OF SPECIFICATIONS

ALLOY	TEMPER	OWNER	SPECIFICATION	REV	DESCRIPTION
2014	O	SAE	AMS-QQ-A-250/3		Alclad 2014 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
	T3	SAE	AMS-QQ-A-250/3		Alclad 2014 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
	T4	SAE	AMS-QQ-A-250/3		Alclad 2014 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
	T6	SAE	AMS-QQ-A-250/3		Alclad 2014 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
2014A	F	Boeing	BAC M 196	A	Alclad 2014A-F Sheet
		BSI	BS L 164		Alclad 2014A-T4 Sheet
		BSI	BS L166		Alclad 2014A-T4 Close Tol. Sheet
	T4	BSI	BS L 164		Alclad 2014A-T4 Sheet
		BSI	BS L166		Alclad 2014A-T4 Close Tol. Sheet
2024	F	SAE	AMS-QQ-A-250/5	A	Alclad 2024 Sheet & Plate
		BSI	BS L 110	1	Alclad 2024-F Sheet
	O	Airbus	AIMS 03-04-000	3	Alum. Sheet & Plate to 12 mm.
		Airbus	AIMS 03-04-010	5	Alclad 2024-T42 Sheet
		French National	AIR 9048-130	1	Alclad 2024-O Sheet
		SAE	AMS 4035	K	Bare 2024-O Sheet & Plate
		SAE	AMS 4040	M	Alclad 2024-O Sheet & Plate
		SAE	AMS 4274	A	Alclad 2024-O Hi-Form Sheet
		SAE	AMS 4276	A	Bare 2024-O Hi-Form Sheet
		SAE	AMS-QQ-A-250/4	A	Bare 2024 Sheet & Plate
		SAE	AMS-QQ-A-250/5	A	Alclad 2024 Sheet & Plate
		Aerospatiale	ASN-A3042	E	Alclad 2024-T42 Sheet
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		British Aerospace	BAEM 4075	1	Alclad 2024-T4 Sheet
		Boeing	BMS 7-305	A	Alclad 2024-O Hi-Form Sheet
		BSI	BS L 110	1	Alclad 2024-F Sheet
		Cessna	CMMP 021	A	Hi-Form O-Temper Sheet
		Cessna	CMMP 025	R	Metal Procurement Requirements
		German Aerospace	DAN 424	1288	German Sheet Requirements
		Boeing	DMS 2411		Hi-Form 6061, 2XXX & 7XXX
		Embraer	MEP 02-015	B	Embraer Alclad 2024-O Hi-Form
		Piper Aircraft	PMS-M1101	P	Alclad 2024 Sheet & Plate
		Rohr	RMS 171		Bare 2024- Hi-Form Sheet
		Rohr	RMS 172		Alclad 2024-O Hi-Form Sheet
		German Aero	WL 3.1364	1	Alclad 2024 Sheet & Plate
	T3	Airbus	AIMS 03-04-000	3	Alum. Sheet & Plate to 12 mm.
		SAE	AMS 4037	N	Bare 2024-T3/T351 Sheet & Plate
		SAE	AMS 4041	Q	Alclad 2024-T3/T351 Sheet & Plate
		SAE	AMS-QQ-A-250/4	A	Bare 2024 Sheet & Plate
		SAE	AMS-QQ-A-250/5	A	Alclad 2024 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Cessna	CMMP 025	R	Metal Procurement Requirements
		German Aerospace	DAN 424	1288	German Sheet Requirements
		Fokker	TH 5.312	22	2024 Sheet & Plate
		German Aero	WL 3.1354	1	Bare 2024 Sheet & Plate
	T4	SAE	AMS 4297	A	Bare 2024-T4 (T-Form) Sheet
		SAE	AMS-QQ-A-250/4	A	Bare 2024 Sheet & Plate
	T81	SAE	AMS-QQ-A-250/4	A	Bare 2024 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
2219	O	SAE	AMS 4031	G	Bare 2219-O Sheet & Plate
		SAE	AMS 4096	B	Alclad 2219-O Sheet & Plate
		SAE	AMS-QQ-A-250/30		Bare 2219 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Boeing	BMS 7-110	F	Alclad 2219 Sheet & Plate

ALLOY	TEMPER	OWNER	SPECIFICATION	REV	DESCRIPTION
2219	O	Boeing	DMS 1719	D	Alclad 2219 Sheet & Plate
		McDonnell Douglas	STM07-101	E	Alclad 2219 Sheet
	T31	SAE	AMS 4095	C	Alclad 2219-T3/T351 Sheet & Plate
		SAE	AMS-QQ-A-250/30		Bare 2219 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Boeing	BMS 7-110	F	Alclad 2219 Sheet & Plate
		Boeing	DMS 1719	D	Alclad 2219 Sheet & Plate
		McDonnell Douglas	STM07-101	E	Alclad 2219 Sheet
	T81	SAE	AMS-QQ-A-250/30		Bare 2219 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		McDonnell Douglas	STM07-101	E	Alclad 2219 Sheet
6061	O	SAE	AMS 4025	L	Bare 6061-O Sheet & Plate
		SAE	AMS-QQ-A-250/11	A	Bare 6061 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Boeing	BMS 7-312		Bare 6061-O Hi-Form Sheet
		Cessna	CMMP 021	A	Hi-Form O-Temper Sheet
		Cessna	CMMP 025	R	Metal Procurement Requirements
		Boeing	DMS 2411		Hi-Form 6061, 2XXX & 7XXX
	T4	SAE	AMS 4026	M	Bare 6061-T4/T451 Sheet & Plate
		SAE	AMS-QQ-A-250/11	A	Bare 6061 Sheet & Plate
		ASME	ASME SB 209	2004	Boiler Plate Spec. (6061)
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Cessna	CMMP 025	R	Metal Procurement Requirements
	T6	SAE	AMS 4027	N	Bare 6061-T6/T651 Sheet & Plate
		SAE	AMS-QQ-A-250/11	A	Bare 6061 Sheet & Plate
		ASME	ASME SB 209	2004	Boiler Plate Spec. (6061)
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Cessna	CMMP 025	R	Metal Procurement Requirements
7075	O	SAE	AMS 4044	L	Bare 7075-O Sheet & Plate
		SAE	AMS 4048	M	Alclad 7075-O Sheet & Plate
		SAE	AMS 4277	A	Bare 7075-O Hi-Form Sheet
		SAE	AMS 4278	B	Alclad 7075-O Hi-Form Sheet
		SAE	AMS-QQ-A-250/12		Bare 7075 Sheet & Plate
		SAE	AMS-QQ-A-250/13		Alclad 7075 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		British Aerospace	BAEM 4144	1	Alclad 7075-T6 & T62 Sheet
		Bombardier	BAMS 516-011	NC	Bare & Alclad 7075-O Hi-Form
		Boeing	BMS 7-302	B	Bare & Alclad 7075-O Hi-Form
		Cessna	CMMP 021	A	Hi-Form O-Temper Sheet
		Cessna	CMMP 025	R	Metal Procurement Requirements
		Boeing	DMS 2411		Hi-Form 6061, 2XXX & 7XXX
	T6	SAE	AMS 4045	J	Bare 7075-T6/T651 Sheet & Plate
		SAE	AMS 4049	K	Alclad 7075-T6/T651 Sheet & Plate
		SAE	AMS-QQ-A-250/12		Bare 7075 Sheet & Plate
		SAE	AMS-QQ-A-250/13		Alclad 7075 Sheet & Plate
		ASTM	ASTM B 209	07	All Sheet & Plate Alloys
		Cessna	CMMP 025	R	Metal Procurement Requirements
7475	O	Boeing	DMS 2234	A	Alclad 7475 Sheet
		Boeing	DMS 2281		Bare 7475 Sheet
		Embraer	MEP 02-012	G	Embraer Bare & Alclad 7475 Sheet
	T761	Airbus	AIMS 03-04-000	3	Alum. Sheet & Plate to 12 mm.
		Airbus	AIMS 03-04-046	2	Alclad 1-Side 7475-T761

This list is not necessarily up to date. Kaiser Aluminum may not be approved to produce every item listed.

KAISER ALUMINUM

REFERENCE

COMPONENTS OF HEAT TREAT ALCLAD SHEET & PLATE

Designation	Component Alloys		Total Specified Thickness of Composite Product (in.)	Sides Clad	Cladding Thickness Per Side – % of Composite Thickness		
	Core	Cladding			Nominal	Minimum	Maximum
Alclad 2014 Sheet & Plate	2014	6003	Up thru 0.024	Both	10.0%	8.0%	
			0.025 - 0.039	Both	7.5%	6.0%	
			0.040 - 0.099	Both	5.0%	4.0%	
			0.100 and over	Both	2.5%	2.0%	3.0%
Alclad 2024 Sheet & Plate	2024	1230	Up thru 0.062	Both	5.0%	4.0%	
			0.063 and over	Both	2.5%	2.0%	3.0%
1.5% Alclad 2024 Sheet & Plate	2024	1230	0.188 and over	Both	1.5%	1.2%	3.0%
Alclad One Side 2024 Sheet & Plate	2024	1230	Up thru 0.062	One	5.0%	4.0%	
			0.063 and over	One	2.5%	2.0%	3.0%
1.5% Alclad One Side 2024 Sheet & Plate	2024	1230	0.188 and over	One	1.5%	1.2%	3.0%
Alclad 2219 Sheet & Plate	2219	7072	Up thru 0.039	Both	10.0%	8.0%	
			0.040 - 0.099	Both	5.0%	4.0%	
			0.100 and over	Both	2.5%	2.0%	3.0%
Alclad 6061 Sheet & Plate	6061	7072	All	Both	5.0%	4.0%	6.0%
Alclad 7075 Sheet & Plate	7075	7072	Up thru 0.062	Both	4.0%	3.2%	
			0.063 - 0.187	Both	2.5%	2.0%	
			0.188 and over	Both	1.5%	1.2%	3.0%
2.5% Alclad 7075 Sheet & Plate	7075	7072	0.188 and over	Both	2.5%	2.0%	4.0%
Alclad One Side 7075 Sheet & Plate	7075	7072	Up thru 0.062	One	4.0%	3.2%	
			0.063 - 0.187	One	2.5%	2.0%	
			0.188 and over	One	1.5%	1.2%	3.0%
2.5% Alclad One Side 7075 Sheet & Plate	7075	7072	0.188 and over	One	2.5%	2.0%	4.0%

Notes

This table does not include all clad products registered with the Aluminum Association.

Cladding composition is applicable only to the aluminum or aluminum alloy bonded to the alloy ingot or slab in preparation to processing the specified composite product. The composition of the cladding may be subsequently altered by diffusion between the core and cladding due to thermal treatment.

The average thickness per side as determined by averaging cladding thickness measurements taken at a magnification of 100 diameters on the cross-section of a transverse sample polished and etched for microscopic examination. Maximum cladding thickness is applicable for thicknesses of 0.500 in. and greater.

FLAT ROLLED PRODUCTS

KAISER ALUMINUM

REFERENCE

ESTIMATED SHEET & PLATE WEIGHT IN POUNDS										
Thickness (in.)	Weight (lbs./sq. ft.)	ESTIMATED WEIGHTS OF VARIOUS SHEET SIZES (based on a density of .100 lb./cu. in.)								
		24" x 72"	36" x 96"	36" x 120"	36" x 144"	48" x 96"	48" x 120"	48" x 144"	60" x 144"	60" x 180"
0.012	0.173	2.1	4.2	5.2	6.2	5.5	6.9	8.3	10.4	13.0
0.016	0.230	2.8	5.5	6.9	8.3	7.4	9.2	11.0	13.8	17.3
0.020	0.288	3.5	6.9	8.6	10.4	9.2	11.5	13.8	17.3	21.6
0.025	0.360	4.3	8.6	10.8	13.0	11.5	14.4	17.3	21.6	27.0
0.032	0.461	5.5	11.1	13.8	16.6	14.8	18.4	22.1	27.7	34.6
0.040	0.576	6.9	13.8	17.3	20.7	18.4	23.0	27.6	34.6	43.2
0.050	0.720	8.6	17.3	21.6	25.9	23.0	28.8	34.6	43.2	54.0
0.063	0.907	10.9	21.8	27.2	32.6	29.0	36.3	43.5	54.4	68.0
0.071	1.022	12.3	24.5	30.7	36.8	32.7	40.9	49.1	61.3	76.7
0.080	1.152	13.8	27.6	34.6	41.5	36.9	46.1	55.3	69.1	86.4
0.090	1.296	15.6	31.1	38.9	46.7	41.5	51.8	62.2	77.8	97.2
0.100	1.440	17.3	34.6	43.2	51.8	46.1	57.6	69.1	86.4	108.0
0.125	1.800	21.6	43.2	54.0	64.8	57.6	72.0	86.4	108.0	135.0
0.160	2.304	27.6	55.3	69.1	82.9	73.7	92.2	110.6	138.2	172.8
0.190	2.736	32.8	65.7	82.1	98.5	87.6	109.4	131.3	164.2	205.2
0.250	3.600	43.2	86.4	108.0	129.6	115.2	144.0	172.8	216.0	270.0
0.313	4.507	54.1	108.2	135.2	162.3	144.2	180.3	216.3	270.4	338.0
0.375	5.400	64.8	129.6	162.0	194.4	172.8	216.0	259.2	324.0	405.0
0.500	7.200	86.4	172.8	216.0	259.2	230.4	288.0	345.6	432.0	540.0
0.625	9.000	108.0	216.0	270.0	324.0	288.0	360.0	432.0	540.0	675.0
0.750	10.800	129.6	259.2	324.0	388.8	345.6	432.0	518.4	648.0	810.0
0.875	12.600	151.2	302.4	378.0	453.6	403.2	504.0	604.8	756.0	945.0
1.000	14.400	172.8	345.6	432.0	518.4	460.8	576.0	691.2	864.0	1,080.0
1.250	18.000	216.0	432.0	540.0	648.0	576.0	720.0	864.0	1,080.0	1,350.0
1.500	21.600	259.2	518.4	648.0	777.6	691.2	864.0	1,036.8	1,296.0	1,620.0
1.750	25.200	302.4	604.8	756.0	907.2	806.4	1,008.0	1,209.6	1,512.0	1,890.0
2.000	28.800	345.6	691.2	864.0	1,036.8	921.6	1,152.0	1,382.4	1,728.0	2,160.0
2.250	32.400	388.8	777.6	972.0	1,166.4	1,036.8	1,296.0	1,555.2	1,944.0	2,430.0
2.500	36.000	432.0	864.0	1,080.0	1,296.0	1,152.0	1,440.0	1,728.0	2,160.0	2,700.0
2.750	39.600	475.2	950.4	1,188.0	1,425.6	1,267.2	1,584.0	1,900.8	2,376.0	2,970.0
3.000	43.200	518.4	1,036.8	1,296.0	1,555.2	1,382.4	1,728.0	2,073.6	2,592.0	3,240.0
4.000	57.600	691.2	1,382.4	1,728.0	2,073.6	1,843.2	2,304.0	2,764.8	3,456.0	4,320.0
5.000	72.000	864.0	1,728.0	2,160.0	2,592.0	2,304.0	2,880.0	3,456.0	4,320.0	5,400.0
6.000	86.400	1,036.8	2,073.6	2,592.0	3,110.4	2,764.8	3,456.0	4,147.2	5,184.0	6,480.0
7.000	100.800	1,209.6	2,419.2	3,024.0	3,628.8	3,225.6	4,032.0	4,838.4	6,048.0	7,560.0
8.000	115.200	1,382.4	2,764.8	3,456.0	4,147.2	3,686.4	4,608.0	5,529.6	6,912.0	8,640.0
9.000	129.600	1,555.2	3,110.4	3,888.0	4,665.6	4,147.2	5,184.0	6,220.8	7,776.0	9,720.0
10.000	144.000	1,728.0	3,456.0	4,320.0	5,184.0	4,608.0	5,760.0	6,912.0	8,640.0	10,800.0

TABLE 7.2 Mechanical Property Limits—Heat-Treatable Alloys ① ⑭

ALLOY AND TEMPER	SPECIFIED THICKNESS ② in.	TENSILE STRENGTH—ksi				ELONGATION PERCENT MIN. in 2 in. or 4D ③
		ULTIMATE		YIELD		
		min.	max.	min.	max.	
2014						
2014-O	0.020–0.499	..	32.0	..	16.0	16
Sheet and plate	0.500–1.000	..	32.0	..	..	10
2014-T3	0.020–0.039	59.0	..	35.0	..	14
Flat Sheet	0.040–0.249	59.0	..	36.0	..	14
2014-T4	0.020–0.249	59.0	..	35.0	..	14
Coiled Sheet						
2014-T451 ⑦ ⑧	0.250–0.499	58.0	..	36.0	..	14
Plate	0.500–1.000	58.0	..	36.0	..	14
	1.001–2.000	58.0	..	36.0	..	12
	2.001–3.000	57.0	..	36.0	..	8
2014-T42 ④ ⑩	0.020–1.000	58.0	..	34.0	..	14
Sheet and plate						
2014-T6 and T62 ④ ⑩	0.020–0.039	64.0	..	57.0	..	6
Sheet	0.040–0.249	66.0	..	58.0	..	7
2014-T62 ④ ⑩ and T651 ⑦	0.250–.0499	67.0	..	59.0	..	7
Plate	0.500–1.000	67.0	..	59.0	..	6
	1.001–2.000	67.0	..	59.0	..	4
	2.001–2.500	65.0	..	58.0	..	2
	2.501–3.000	63.0	..	57.0	..	2
	3.001–4.000	59.0	..	55.0	..	1
ALCLAD 2014 ⑥						
Alclad 2014-O	0.020–0.499	..	30.0	..	14.0	16
Sheet and Plate	0.500–1.000	..	32.0 ⑤	..	..	10
Alclad 2014-T3	0.020–0.024	54.0	..	33.0	..	14
Flat sheet	0.025–0.039	55.0	..	34.0	..	14
	0.040–0.249	57.0	..	35.0	..	15
Alclad 2014-T4	0.020–0.024	54.0	..	31.0	..	14
Coiled sheet	0.025–0.039	55.0	..	32.0	..	14
	0.040–0.128	57.0	..	34.0	..	15
	0.129–0.249	57.0	..	34.0	..	15
Alclad 2014-T451 ⑦ ⑧	0.250–0.499	57.0	..	36.0	..	15
Plate	0.500–1.000	58.0 ⑤	..	36.0 ⑤	..	14
	1.001–2.000	58.0 ⑤	..	36.0 ⑤	..	12
	2.001–3.000	57.0 ⑤	..	36.0 ⑤	..	8
Alclad 2014-T42 ④ ⑩	0.020–0.024	54.0	..	31.0	..	14
Sheet and plate	0.025–0.039	55.0	..	32.0	..	14
	0.040–0.128	57.0	..	34.0	..	15
	0.129–0.249	57.0	..	34.0	..	15
	0.250–0.499	57.0	..	34.0	..	15
	0.500–1.000	58.0 ⑤	..	34.0 ⑤	..	14
Alclad 2014-T6 and	0.020–0.024	62.0	..	54.0	..	7
T62 ④ ⑩ Sheet	0.025–0.039	63.0	..	55.0	..	7
	0.040–0.249	64.0	..	57.0	..	8
Alclad 2014-T62 ④ ⑩	0.250–0.499	64.0	..	57.0	..	8
and T651 ⑦ Plate	0.500–1.000	67.0 ⑤	..	59.0 ⑤	..	6
	1.001–2.000	67.0 ⑤	..	59.0 ⑤	..	4
	2.001–2.500	65.0 ⑤	..	58.0 ⑤	..	2
	2.501–3.000	63.0 ⑤	..	57.0 ⑤	..	2
	3.001–4.000	59.0 ⑤	..	55.0 ⑤	..	1
2024						
2024-O	0.010–0.499	..	32.0	..	14.0	12
Sheet and plate	0.500–1.750	..	32.0	..		12
2024-T3 ⑧	0.008–0.009	63.0	..	42.0	..	10
Sheet	0.010–0.020	63.0	..	42.0	..	12
	0.021–0.128	63.0	..	42.0	..	15
	0.129–0.249	64.0	..	42.0	..	15
2024-T351 ⑦ ⑧	0.250–0.499	64.0	..	42.0	..	12
Plate	0.500–1.000	63.0	..	42.0	..	8
	1.001–1.500	62.0	..	42.0	..	7
	1.501–2.000	62.0	..	42.0	..	6
	2.001–3.000	60.0	..	42.0	..	4
	3.001–4.000	57.0	..	41.0	..	4
2024-T361 ⑧ ⑪	0.020–0.062	67.0	..	50.0	..	8
Flat sheet and plate	0.063–0.249	68.0	..	51.0	..	9
	0.250–0.499	66.0	..	49.0	..	9
	0.500	66.0	..	49.0	..	10

For all numbered footnotes, see page KA-SP-AA10-1.09

TABLE 7.2 Mechanical Property Limits—Heat-Treatable Alloys ① ⑭ (continued)

ALLOY AND TEMPER	SPECIFIED THICKNESS ② in.	TENSILE STRENGTH—ksi				ELONGATION PERCENT MIN. in 2 in. or 4D ③
		ULTIMATE		YIELD		
		min.	max.	min.	max.	
2024 (Continued)						
2024-T4	0.010–0.020	62.0	..	40.0	..	12
Sheet	0.021–0.249	62.0	..	40.0	..	15
2024-T42 ④ ⑩	0.010–0.020	62.0	..	38.0	..	12
Sheet and plate	0.021–0.249	62.0	..	38.0	..	15
	0.250–0.499	62.0	..	38.0	..	12
	0.500–1.000	61.0	..	38.0	..	8
	1.001–1.500	60.0	..	38.0	..	7
	1.501–2.000	60.0	..	38.0	..	6
	2.001–3.000	58.0	..	38.0	..	4
2024-T62 ④ ⑩	0.010–0.499	64.0	..	50.0	..	5
Sheet and plate	0.500–3.000	63.0	..	50.0	..	5
2024-T72 ④ ⑩ Sheet	0.010–0.249	60.0	..	46.0	..	5
2024-T81 Flat sheet	0.010–0.249	67.0	..	58.0	..	5
2024-T851 ⑦	0.250–0.499	67.0	..	58.0	..	5
Plate	0.500–1.000	66.0	..	58.0	..	5
	1.001–1.499	66.0	..	57.0	..	5
2024-T861 ⑪	0.020–0.062	70.0	..	62.0	..	3
Flat sheet and plate	0.063–0.249	71.0	..	66.0	..	4
	0.250–0.499	70.0	..	64.0	..	4
	0.500	70.0	..	64.0	..	4
ALCLAD 2024 ⑥						
Alclad 2024-O	0.008–0.009	..	30.0	..	14.0	10
Sheet and plate	0.010–0.032	..	30.0	..	14.0	12
	0.033–0.062	..	30.0	..	14.0	12
	0.063–0.187	..	32.0	..	14.0	12
	0.188–0.499	..	32.0	..	14.0	12
	0.500–1.750	..	32.0 ⑤	..	..	12
Alclad 2024-T3 ⑧	0.008–0.009	58.0	..	39.0	..	10
Sheet	0.010–0.020	59.0	..	39.0	..	12
	0.021–0.062	59.0	..	39.0	..	15
	0.063–0.128	61.0	..	40.0	..	15
	0.129–0.249	62.0	..	40.0	..	15
Alclad 2024-T351 ⑦ ⑧	0.250–0.499	62.0	..	40.0	..	12
Plate	0.500–1.000	63.0 ⑤	..	42.0 ⑤	..	8
	1.001–1.500	62.0 ⑤	..	42.0 ⑤	..	7
	1.501–2.000	62.0 ⑤	..	42.0 ⑤	..	6
	2.001–3.000	60.0 ⑤	..	42.0 ⑤	..	4
	3.001–4.000	57.0 ⑤	..	41.0 ⑤	..	4
Alclad 2024-T361 ⑧ ⑪	0.020–0.062	61.0	..	47.0	..	8
Flat sheet and plate	0.063–0.187	64.0	..	48.0	..	9
	0.188–0.249	64.0	..	48.0	..	9
	0.250–0.499	64.0	..	48.0	..	9
	0.500	66.0 ⑤	..	49.0 ⑤	..	10
Alclad 2024-T4	0.010–0.020	58.0	..	36.0	..	12
Sheet	0.021–0.062	58.0	..	36.0	..	15
	0.063–0.128	61.0	..	38.0	..	15
Alclad 2024-T42 ④ ⑩	0.008–0.009	55.0	..	34.0	..	10
Sheet and plate	0.010–0.020	57.0	..	34.0	..	12
	0.021–0.062	57.0	..	34.0	..	15
	0.063–0.187	60.0	..	36.0	..	15
	0.188–0.249	60.0	..	36.0	..	15
	0.250–0.499	60.0	..	36.0	..	12
	0.500–1.000	61.0 ⑤	..	38.0 ⑤	..	8
	1.001–1.500	60.0 ⑤	..	38.0 ⑤	..	7
	1.501–2.000	60.0 ⑤	..	38.0 ⑤	..	6
	2.001–3.000	58.0 ⑤	..	38.0 ⑤	..	4
Alclad 2024-T62 ④ ⑩	0.010–0.062	60.0	..	47.0	..	5
Sheet and plate	0.063–0.187	62.0	..	49.0	..	5
	0.188–0.499	62.0	..	49.0	..	5
Alclad 2024-T72 ④ ⑩	0.010–0.062	56.0	..	43.0	..	5
Sheet	0.063–0.187	58.0	..	45.0	..	5
	0.188–0.249	58.0	..	45.0	..	5
Alclad 2024-T81	0.010–0.062	62.0	..	54.0	..	5
Flat sheet	0.063–0.187	65.0	..	56.0	..	5
	0.188–0.249	65.0	..	56.0	..	5
Alclad 2024-T851 ⑦	0.250–0.499	65.0	..	56.0	..	5
Plate	0.500–1.000	66.0 ⑤	..	58.0 ⑤	..	5

For all numbered footnotes, see page KA-SP-AA10-1.09

TABLE 7.2 Mechanical Property Limits—Heat-Treatable Alloys ① ⑭ (continued)

ALLOY AND TEMPER	SPECIFIED THICKNESS ② in.	TENSILE STRENGTH—ksi				ELONGATION PERCENT MIN. in 2 in. or 4D ③
		ULTIMATE		YIELD		
		min.	max.	min.	max.	
ALCLAD 2024 (Continued)						
Alclad 2024-T861 ⑪ Flat sheet and plate	0.020–0.062 0.063–0.187 0.188–0.249 0.250–0.499 0.500	64.0 69.0 69.0 68.0 70.0 ⑤	. . . .	58.0 64.0 64.0 62.0 64.0 ⑤	. . . .	3 4 4 4 4
1½% ALCLAD 2024 ⑥						
1½% Alclad 2024-O Sheet and plate	0.188–0.499 0.500–1.750	. . . .	32.0 32.0 ⑤	. . . .	14.0 . .	12 12
1½% Alclad 2024-T3 ⑧ Sheet	0.188–0.249	63	. .	41.0	. .	15
1½% Alclad 2024-T351 ⑦ ⑧ Plate	0.250–0.499 0.500–1.000 1.001–1.500 1.501–2.000 2.001–3.000 3.001–4.000	63.0 63.0 ⑤ 62.0 ⑤ 62.0 ⑤ 60.0 ⑤ 57.0 ⑤	. . . .	41.0 42.0 ⑤ 42.0 ⑤ 42.0 ⑤ 42.0 ⑤ 41.0 ⑤	. . . .	12 8 7 6 4 4
1½% Alclad 2024-T361 ⑧ ⑪ Flat sheet and plate	0.188–0.249 0.250–0.499 0.500	65.0 65.0 66.0 ⑤	. . . . . .	49.0 48.0 49.0 ⑤	. . . . . .	9 9 10
1½% Alclad 2024-T42 Sheet and plate ④ ⑩	0.188–0.249 0.250–0.499 0.500–1.000 1.001–1.500 1.501–2.000 2.001–3.000	61.0 61.0 61.0 ⑤ 60.0 ⑤ 60.0 ⑤ 58.0 ⑤	. . . .	37.0 37.0 38.0 ⑤ 38.0 ⑤ 38.0 ⑤ 38.0 ⑤	. . . .	15 12 8 7 6 4
1½% Alclad 2024-T62 ④ ⑩ Sheet and plate	0.188–0.499	62.0	. .	49.0	. .	5
1½% Alclad 2024-T72 ④ ⑩ Sheet	0.188–0.249	59.0	. .	45.0	. .	5
1½% Alclad 2024-T81 Flat sheet	0.188–0.249	66.0	. .	57.0	. .	5
1½% Alclad 2024-T851 ⑦ Plate	0.250–0.499 0.500–1.000	66.0 66.0 ⑤	. . . .	57.0 58.0 ⑤	. . . .	5 5
1½% Alclad 2024-T861 ⑪ Flat sheet and plate	0.188–0.249 0.250–0.499 0.500	70.0 69.0 70.0 ⑤	. . . . . .	65.0 63.0 64.0 ⑤	. . . . . .	4 4 4
ALCLAD ONE SIDE 2024 ⑥						
Alclad One Side 2024-O Sheet and plate	0.008–0.009 0.010–0.062 0.063–0.499	. . . . . .	31.0 31.0 32.0	. . . . . .	14.0 14.0 14.0	10 12 12
Alclad One Side 2024-T3 ⑧ Sheet	0.010–0.020 0.021–0.062 0.063–0.128 0.129–0.249	61.0 61.0 62.0 63.0	. . . .	40.0 40.0 41.0 41.0	. . . .	12 15 15 15
Alclad One Side 2024-T351 ⑦ ⑧ Plate	0.250–0.499	63.0	. .	41.0	. .	12
Alclad One Side 2024-T361 ⑧ ⑪ Sheet and plate	0.020–0.062 0.063–0.249 0.250–0.499	64.0 66.0 65.0	. . . . . .	48.0 49.0 48.0	. . . . . .	8 9 9
Alclad One Side 2024-T42 ④ ⑩ Sheet and plate	0.010–0.020 0.021–0.062 0.063–0.249 0.250–0.499	59.0 59.0 61.0 61.0	. . . .	35.0 36.0 37.0 37.0	. . . .	12 15 15 12
Alclad One Side 2024-T62 ④ ⑩ Sheet and plate	0.010–0.062 0.063–0.499	62.0 63.0	. . . .	48.0 49.0	. . . .	5 5
Alclad One Side 2024-T72 ④ ⑩ Flat sheet	0.010–0.062 0.063–0.249	58.0 59.0	. . . .	44.0 45.0	. . . .	5 5
Alclad One Side 2024-T81 Flat sheet	0.010–0.062 0.063–0.249	64.0 66.0	. . . .	56.0 57.0	. . . .	5 5
Alclad One Side 2024-T851 ⑦ Plate	0.250–0.499	66.0	. .	57.0	. .	5
Alclad One Side 2024-T861 ⑪ Sheet and plate	0.020–0.062 0.063–0.249 0.250–0.499	67.0 70.0 69.0	. . . . . .	60.0 65.0 63.0	. . . . . .	3 4 4

For all numbered footnotes, see page KA-SP-AA10-1.09

TABLE 7.2 Mechanical Property Limits—Heat-Treatable Alloys ① ⑭ (continued)

ALLOY AND TEMPER	SPECIFIED THICKNESS ② in.	TENSILE STRENGTH—ksi				ELONGATION PERCENT MIN. in 2 in. or 4D ③
		ULTIMATE		YIELD		
		min.	max.	min.	max.	
1½% ALCLAD ONE SIDE 2024 ⑥						
1½% Alclad One Side 2024-O Sheet and plate	0.188–0.499	..	32.0	..	14.0	12
1½% Alclad One Side 2024-T3 ⑧ Sheet	0.188–0.249	63.0	..	41.0	..	15
1½% Alclad One Side 2024-T351 ⑦ ⑧ Plate	0.250–0.499	63.0	..	41.0	..	12
1½% Alclad One Side 2024-T361 ⑧ ⑪ Sheet and plate	0.188–0.249 0.250–0.499	66.0 65.0	.. ..	49.0 48.0	.. ..	9 9
1½% Alclad One Side 2024-T42 ④ ⑩ Sheet and plate	0.188–0.249 0.250–0.499	61.0 61.0	.. ..	37.0 37.0	.. ..	15 12
1½% Alclad One Side 2024-T62 ④ ⑩ Sheet and plate	0.188–0.499	63.0	..	49.0	..	5
1½% Alclad One Side 2024-T72 ④ ⑩ Flat sheet	0.188–0.249	59.0	..	45.0	..	5
1½% Alclad One Side 2024-T81 Flat sheet	0.188–0.249	66.0	..	57.0	..	5
1½% Alclad One Side 2024-T851 ⑦ Plate	0.250–0.499	66.0	..	57.0	..	5
1½% Alclad One Side 2024-T861 ⑪ Sheet and plate	0.188–0.249 0.250–0.499	70.0 69.0	.. ..	65.0 63.0	.. ..	4 4
2036						
2036-T4 Flat sheet	0.025–0.125	42.0	..	23.0	..	20

2124

ALLOY AND TEMPER	SPECIFIED THICKNESS ② in.	AXIS OF TEST SPECIMEN	TENSILE STRENGTH—ksi				ELONGATION PERCENT MIN. in 2 in. or 4D ③
			ULTIMATE		YIELD		
			min.	max.	min.	max.	
2124-T351 ⑦ Plate	1.000–1.499	Longitudinal Long Transverse	61.0 62.0	.. ..	45.0 42.0	.. ..	14 13
	1.500–2.000	Longitudinal Long Transverse Short Transverse	61.0 62.0 58.0	.. .. ..	45.0 42.0 38.0	.. .. ..	14 13 4.5
	2.001–3.000	Longitudinal Long Transverse Short Transverse	61.0 62.0 58.0	.. .. ..	45.0 41.0 38.0	.. .. ..	14 10 4
2124-T851 ⑦ ⑯ Plate	1.000–2.000	Longitudinal Long Transverse Short Transverse	66.0 66.0 64.0 ⑮	.. .. ..	57.0 57.0 55.0 ⑮	.. .. ..	6 5 1.5 ⑮
	2.001–3.000	Longitudinal Long Transverse Short Transverse	65.0 65.0 63.0	.. .. ..	57.0 57.0 55.0	.. .. ..	6 4 1.5
	3.001–4.000	Longitudinal Long Transverse Short Transverse	65.0 65.0 62.0	.. .. ..	56.0 56.0 54.0	.. .. ..	5 4 1.5
	4.001–5.000	Longitudinal Long Transverse Short Transverse	64.0 64.0 61.0	.. .. ..	55.0 55.0 53.0	.. .. ..	5 4 1.5
	5.001–6.000	Longitudinal Long Transverse Short Transverse	63.0 63.0 58.0	.. .. ..	54.0 54.0 51.0	.. .. ..	5 4 1.5

For all numbered footnotes, see page KA-SP-AA10-1.09

TABLE 7.2 Mechanical Property Limits—Heat-Treatable Alloys ① ⑭ (continued)

ALLOY AND TEMPER	SPECIFIED THICKNESS ② in.	TENSILE STRENGTH—ksi				ELONGATION PERCENT MIN. in 2 in. or 4D ③
		ULTIMATE		YIELD		
		min.	max.	min.	max.	
2219						
2219-O Sheet and plate	0.020–2.000	..	32.0	..	16.0	12
2219-T31 ⑧ Flat sheet	0.020–0.039 0.040–0.249	46.0 46.0	.. ..	29.0 28.0	.. ..	8 10
2219-T351 ⑦ ⑧ Plate	0.250–2.000 2.001–3.000 3.001–4.000 4.001–5.000 5.001–6.000	46.0 44.0 42.0 40.0 39.0	.. ..	28.0 28.0 27.0 26.0 25.0	.. ..	10 10 9 9 8
2219-T37 ⑧ Flat sheet and plate	0.020–0.039 0.040–2.000 2.001–2.500 2.501–3.000 3.001–4.000 4.001–5.000	49.0 49.0 49.0 47.0 45.0 43.0	.. ..	38.0 37.0 37.0 36.0 35.0 34.0	.. ..	6 6 6 6 5 4
2219-T62 ④ ⑩ Sheet and plate	0.020–0.039 0.040–0.249 0.250–1.000 1.001–2.000	54.0 54.0 54.0 54.0	.. ..	36.0 36.0 36.0 36.0	.. ..	6 7 8 7
2219-T81 Flat sheet	0.020–0.039 0.040–0.249	62.0 62.0	.. ..	46.0 46.0	.. ..	6 7
2219-T851 ⑦ Plate	0.250–1.000 1.001–2.000 2.001–3.000 3.001–4.000 4.001–5.000 5.001–6.000	62.0 62.0 62.0 60.0 59.0 57.0	.. ..	46.0 46.0 45.0 44.0 43.0 42.0	.. ..	8 7 6 5 5 4
2219-T87 Flat sheet and plate	0.020–0.039 0.040–0.249 0.250–1.000 1.001–2.000 2.001–3.000 3.001–4.000 4.001–5.000	64.0 64.0 64.0 64.0 64.0 62.0 61.0	.. ..	52.0 52.0 51.0 51.0 51.0 50.0 49.0	.. ..	5 6 7 6 6 4 3
ALCLAD 2219 ⑥						
Alclad 2219-O Sheet and plate	0.020–0.499 0.500–2.000	.. ..	32.0 32.0 ⑤	.. ..	16.0 16.0 ⑤	12 ..
Alclad 2219-T31 ⑧ Flat sheet	0.040–0.099 0.100–0.249	42.0 44.0	.. ..	25.0 26.0	.. ..	10 10
Alclad 2219-T351 ⑦ ⑧ Plate	0.250–0.499	44.0	..	26.0	..	10
Alclad 2219-T37 ⑧ Flat sheet and plate	0.040–0.099 0.100–0.249 0.250–0.499	45.0 47.0 47.0	.. .. ..	34.0 35.0 35.0	.. .. ..	6 6 6
Alclad 2219-T62 ④ ⑩ Sheet and plate	0.020–0.039 0.040–0.099 0.100–0.249 0.250–0.499 0.500–1.000 1.001–2.000	44.0 49.0 51.0 51.0 54.0 ⑤ 54.0 ⑤	.. ..	29.0 32.0 34.0 34.0 36.0 ⑤ 36.0 ⑤	.. ..	6 7 7 8 8 7
Alclad 2219-T81 Flat sheet	0.020–0.039 0.040–0.099 0.100–0.249	49.0 55.0 58.0	.. .. ..	37.0 41.0 43.0	.. .. ..	6 7 7
Alclad 2219-T851 ⑦ Plate	0.250–0.499	58.0	..	42.0	..	8
Alclad 2219-T87 Flat sheet and plate	0.040–0.099 0.100–0.249 0.250–0.499	57.0 60.0 60.0	.. .. ..	46.0 48.0 48.0	.. .. ..	6 6 7
6061						
6061-O Sheet and plate	0.006–0.007 0.008–0.009 0.010–0.020 0.021–0.128 0.129–0.499 0.500–1.000 1.001–3.000	.. ..	22.0 22.0 22.0 22.0 22.0 22.0 22.0	.. ..	12.0 12.0 12.0 12.0 12.0	10 12 14 16 18 18 16
6061-T4 Sheet	0.006–0.007 0.008–0.009 0.010–0.020 0.021–0.249	30.0 30.0 30.0 30.0	.. ..	16.0 16.0 16.0 16.0	.. ..	10 12 14 16

For all numbered footnotes, see page KA-SP-AA10-1.09

TABLE 7.2 Mechanical Property Limits—Heat-Treatable Alloys ① ⑭ (continued)

ALLOY AND TEMPER	SPECIFIED THICKNESS ② in.	TENSILE STRENGTH—ksi				ELONGATION PERCENT MIN. in 2 in. or 4D ③
		ULTIMATE		YIELD		
		min.	max.	min.	max.	
6061 (Continued)						
6061-T451 ⑦ ⑧ Plate	0.250–1.000 1.001–3.000	30.0 30.0	. . . .	16.0 16.0	. . . .	18 16
6061-T42 ④ ⑩ Sheet and plate	0.006–0.007 0.008–0.009 0.010–0.020 0.021–0.249 0.250–1.000 1.001–3.000	30.0 30.0 30.0 30.0 30.0 30.0	. . . .	14.0 14.0 14.0 14.0 14.0 14.0	. . . .	10 12 14 16 18 16
6061-T6 and T62 ④ ⑩ Sheet	0.006–0.007 0.008–0.009 0.010–0.020 0.021–0.249	42.0 42.0 42.0 42.0	. . . .	35.0 35.0 35.0 35.0	. . . .	4 6 8 10
6061-T62 ④ ⑩ and T651 ⑦ Plate	0.250–0.499 0.500–1.000 1.001–2.000 2.001–4.000 4.001–6.000 ⑨	42.0 42.0 42.0 42.0 40.0	. . . .	35.0 35.0 35.0 35.0 35.0	. . . .	10 9 8 6 6
ALCLAD 6061 ⑥						
Alclad 6061-O Sheet and plate	0.010–0.020 0.021–0.128 0.129–0.499 0.500–1.000 1.001–3.000	. . . .	20.0 20.0 20.0 22.0 ⑤ 22.0 ⑤	. . . .	12.0 12.0 12.0	14 16 18 18 16
Alclad 6061-T4 Sheet	0.010–0.020 0.021–0.249	27.0 27.0	. . . .	14.0 14.0	. . . .	14 16
Alclad 6061-T451 ⑦ ⑧ Plate	0.250–0.499 0.500–1.000 1.001–3.000	27.0 30.0 ⑤ 30.0 ⑤	. . . . . .	14.0 16.0 ⑤ 16.0 ⑤	. . . . . .	18 18 16
Alclad 6061-T42 ④ ⑩ Sheet and plate	0.010–0.020 0.021–0.249 0.250–0.499 0.500–1.000 1.001–3.000	27.0 27.0 27.0 30.0 ⑤ 30.0 ⑤	. . . .	12.0 12.0 12.0 14.0 ⑤ 14.0 ⑤	. . . .	14 16 18 18 16
Alclad 6061-T6 and T62 ④ ⑩ Sheet	0.010–0.020 0.021–0.249	38.0 38.0	. . . .	32.0 32.0	. . . .	8 10
Alclad 6061-T62 ④ ⑩ and T651 ⑦ Plate	0.250–0.499 0.500–1.000 1.001–2.000 2.001–3.000 3.001–4.000 4.001–5.000 ⑨	38.0 42.0 ⑤ 42.0 ⑤ 42.0 ⑤ 42.0 ⑤ 40.0 ⑤	. . . .	32.0 35.0 ⑤ 35.0 ⑤ 35.0 ⑤ 35.0 ⑤ 35.0 ⑤	. . . .	10 9 8 6 6 6

ALLOY AND TEMPER	SPECIFIED THICKNESS ② in.	AXIS OF TEST SPECIMEN	TENSILE STRENGTH—ksi				ELONGATION PERCENT MIN. in 2 in. or 4D ③
			ULTIMATE		YIELD		
			min.	max.	min.	max.	
7050							
7050- T7451 ⑯ ⑰ ⑱ ⑳ Plate	0.250–2.000	Longitudinal Long Transverse	74.0 74.0	. . . .	64.0 64.0	. . . .	10 9
	2.001–3.000	Longitudinal Long Transverse Short Transverse	73.0 73.0 68.0	. . . . . .	63.0 63.0 59.0	. . . . . .	9 8 2
	3.001–4.000	Longitudinal Long Transverse Short Transverse	72.0 72.0 68.0	. . . . . .	62.0 62.0 58.0	. . . . . .	9 6 3
	4.001–5.000	Longitudinal Long Transverse Short Transverse	71.0 71.0 67.0	. . . . . .	61.0 61.0 57.0	. . . . . .	9 5 3
	5.001–6.000	Longitudinal Long Transverse Short Transverse	70.0 70.0 67.0	. . . . . .	60.0 60.0 57.0	. . . . . .	8 4 3
	6.001–7.000	Longitudinal Long Transverse Short Transverse	69.0 69.0 66.0	. . . . . .	59.0 59.0 56.0	. . . . . .	7 4 3
	7.001–8.000	Longitudinal Long Transverse Short Transverse	68.0 68.0 65.0	. . . . . .	58.0 58.0 55.0	. . . . . .	6 4 3

For all numbered footnotes, see page KA-SP-AA10-1.09

TABLE 7.2 Mechanical Property Limits—Heat-Treatable Alloys ① ⑭ (continued)

ALLOY AND TEMPER	SPECIFIED THICKNESS ② in.	AXIS OF TEST SPECIMEN	TENSILE STRENGTH—ksi				ELONGATION PERCENT MIN. in 2 in. or 4D ③
			ULTIMATE		YIELD		
			min.	max.	min.	max.	
7050 (Continued)							
7050-T7651 ⑯ ⑲ ㉑ Plate	0.250–1.000	Longitudinal Long Transverse	76.0 76.0	. . . .	66.0 66.0	. . . .	9 8
	1.001–1.500	Longitudinal Long Transverse	77.0 77.0	. . . .	67.0 67.0	. . . .	9 8
	1.501–2.000	Longitudinal Long Transverse	76.0 76.0	. . . .	66.0 66.0	. . . .	9 8
	2.001–3.000	Longitudinal Long Transverse Short Transverse	76.0 76.0 70.0	. . . . . .	66.0 66.0 60.0	. . . . . .	8 7 1.5

ALLOY AND TEMPER	SPECIFIED THICKNESS ② in.	TENSILE STRENGTH—ksi				ELONGATION PERCENT MIN. in 2 in. or 4D ③
		ULTIMATE		YIELD		
		min.	max.	min.	max.	
7075						
7075-O Sheet and plate	0.015–0.499 0.500–2.000	. . . .	40.0 40.0	. . . .	21.0 . .	10 10
7075-T6 and T62 ④ ⑩ Sheet	0.008–0.011 0.012–0.039 0.040–0.062 0.063–0.125 0.126–0.187 0.188–0.249	74.0 76.0 78.0 78.0 79.0 80.0	. . . .	63.0 67.0 68.0 68.0 69.0 69.0	. . . .	5 8 9 9 9 9
7075-T62 ④ ⑩ and T651⑦ Plate	0.250–0.499 0.500–1.000 1.001–2.000 2.001–2.500 2.501–3.000 3.001–3.500 3.501–4.000	78.0 78.0 77.0 76.0 72.0 71.0 67.0	. . . .	67.0 68.0 67.0 64.0 61.0 58.0 54.0	. . . .	9 7 6 5 5 5 3
7075-T73 Sheet	0.040–0.249	67.0	. .	56.0	. .	8
7075-T7351 ⑦ ⑫ Plate	0.250–1.000 1.001–2.000 2.001–2.500 2.501–3.000 3.001–3.500 3.501–4.000	69.0 69.0 66.0 64.0 63.0 61.0	. . . .	57.0 57.0 52.0 49.0 49.0 48.0	. . . .	7 6 6 6 6 6
7075-T76 ⑬ Sheet	0.063–0.125 0.126–0.249	73.0 73.0	. . . .	62.0 62.0	. . . .	8 8
7075-T7651 ⑦ ⑬ Plate	0.250–0.499 0.500–1.000 1.001–2.000	72.0 71.0 71.0	. . . . . .	61.0 60.0 60.0	. . . . . .	8 6 5
ALCLAD 7075 ⑥						
Alclad 7075-O Sheet and plate	0.008–0.014 0.015–0.062 0.063–0.187 0.188–0.499 0.500–1.000	. . . .	36.0 36.0 38.0 39.0 40.0 ⑤	. . . .	20.0 20.0 20.0 21.0 . .	9 10 10 10 10
Alclad 7075-T6 and T62 ④ ⑩ Sheet	0.008–0.011 0.012–0.039 0.040–0.062 0.063–0.125 0.126–0.187 0.188–0.249	68.0 71.0 72.0 74.0 74.0 76.0	. . . .	58.0 61.0 62.0 64.0 64.0 65.0	. . . .	5 8 9 9 9 9
Alclad 7075-T62 ④ ⑩ and T651 ⑦ Plate	0.250–0.499 0.500–1.000 1.001–2.000 2.001–2.500 2.501–3.000 3.001–3.500 3.501–4.000	75.0 78.0 ⑤ 77.0 ⑤ 76.0 ⑤ 72.0 ⑤ 71.0 ⑤ 67.0 ⑤	. . . .	65.0 68.0 ⑤ 67.0 ⑤ 64.0 ⑤ 61.0 ⑤ 58.0 ⑤ 54.0 ⑤	. . . .	9 7 6 5 5 5 3
Alclad 7075-T73 Sheet	0.040–0.062 0.063–0.187 0.188–0.249	63.0 64.0 66.0	. . . . . .	51.0 52.0 54.0	. . . . . .	8 8 8
Alclad 7075-T7351 ⑦ ⑫ Plate	0.250–0.499 0.500–1.000	66.0 69.0 ⑤	. . . .	54.0 57.0 ⑤	. . . .	8 7

For all numbered footnotes, see page KA-SP-AA10-1.09

TABLE 7.2 Mechanical Property Limits—Heat-Treatable Alloys ① ⑭ (continued)

ALLOY AND TEMPER	SPECIFIED THICKNESS ② in.	TENSILE STRENGTH—ksi				ELONGATION PERCENT MIN. in 2 in. or 4D ③
		ULTIMATE		YIELD		
		min.	max.	min.	max.	
ALCLAD 7075 ⑥ (Continued)						
Alclad 7075-T76 ⑬	0.040–0.062	67.0	..	56.0	..	8
Sheet	0.063–0.125	68.0	..	57.0	..	8
	0.125–0.187	68.0	..	57.0	..	8
	0.188–0.249	70.0	..	59.0	..	8
Alclad 7075-T7651 ⑦ ⑬	0.250–0.499	69.0	..	58.0	..	8
Plate	0.500–1.000	71.0 ⑤	..	60.0 ⑤	..	6
2½% ALCLAD 7075 ⑥						
2½% Alclad 7075-O	0.188–0.499	..	39.0	..	20.0	10
Sheet and plate	0.500–1.000	..	40.0 ⑤	..	..	10
2½% Alclad 7075-T6 and T62 ④ ⑩ Sheet	0.188–0.249	74.0	..	64.0	..	8
2½% Alclad 7075-T62 ④ ⑩	0.250–0.499	74.0	..	64.0	..	9
and T651 ⑦	0.500–1.000	78.0 ⑤	..	68.0 ⑤	..	7
Plate	1.001–2.000	77.0 ⑤	..	67.0 ⑤	..	6
	2.001–2.500	76.0 ⑤	..	64.0 ⑤	..	5
	2.501–3.000	72.0 ⑤	..	61.0 ⑤	..	5
	3.001–3.500	71.0 ⑤	..	58.0 ⑤	..	5
	3.501–4.000	67.0 ⑤	..	54.0 ⑤	..	3
2½% Alclad 7075-T73 Sheet	0.188–0.249	64.0	..	53.0	..	8
2½% Alclad 7075-T7351 ⑦ ⑫	0.250–0.499	65.0	..	54.0	..	8
Plate	0.500–1.000	69.0 ⑤	..	57.0 ⑤	..	7
2½% Alclad 7075-T76 ⑬ Sheet	0.188–0.249	69.0	..	59.0	..	8
2½% Alclad 7075-T7651 ⑦ ⑬	0.250–0.499	68.0	..	58.0	..	8
Plate	0.500–1.000	71.0 ⑤	..	60.0 ⑤	..	6
ALCLAD ONE SIDE 7075 ⑥						
Alclad One Side 7075-O	0.015–0.062	..	38.0	..	21.0	10
Sheet and plate	0.063–0.187	..	39.0	..	21.0	10
	0.188–0.499	..	39.0	..	21.0	10
	0.500–1.000	..	40.0 ⑤	..	..	10
Alclad One Side	0.008–0.011	71.0	..	60.0	..	5
7075-T6 and T62 ④ ⑩ Sheet	0.012–0.039	74.0	..	64.0	..	8
	0.040–0.062	75.0	..	65.0	..	9
	0.063–0.125	76.0	..	66.0	..	9
	0.126–0.187	77.0	..	66.0	..	9
	0.188–0.249	78.0	..	67.0	..	9
Alclad One Side 7075	0.250–0.499	76.0	..	66.0	..	9
T62 ④ ⑩ and T651 ⑦ Plate	0.500–1.000	78.0 ⑤	..	68.0 ⑤	..	7
	1.001–2.000	77.0 ⑤	..	67.0 ⑤	..	6
2½% ALCLAD ONE SIDE 7075 ⑥						
2½% Alclad One Side 7075-O	0.188–0.499	..	39.0	..	21.0	10
Sheet and plate	0.500–1.000	..	40.0 ⑤	..	..	10
2½% Alclad One Side 7075-T6 and T62 ④ ⑩ Sheet	0.188–0.249	76.0	..	65.0	..	8
2½% Alclad One Side 7075	0.250–0.499	76.0	..	65.0	..	9
T62 ④ ⑩ and T651 ⑦	0.500–1.000	78.0 ⑤	..	68.0 ⑤	..	7
Plate	1.001–2.000	77.0 ⑤	..	67.0 ⑤	..	6
7008 ALCLAD 7075 ⑥						
7008 Alclad 7075-O	0.015–0.062	..	40.0	..	21.0	10
Sheet and plate	0.063–0.187	..	40.0	..	21.0	10
	0.188–0.499	..	40.0	..	21.0	10
	0.500–2.000	..	40.0⑤	..	..	10
7008 Alclad 7075-T6 and T62 ④ ⑩ Sheet	0.015–0.039	73.0	..	63.0	..	7
	0.040–0.062	75.0	..	65.0	..	8
	0.063–0.087	75.0	..	65.0	..	8
	0.188–0.249	76.0	..	66.0	..	8
7008 Alclad 7075-T62 ④ ⑩	0.250–0.499	76.0	..	66.0	..	9
and T651 ⑦ Plate	0.500–1.000	78.0 ⑤	..	68.0 ⑤	..	7
	1.001–2.000	77.0 ⑤	..	67.0 ⑤	..	6
	2.001–2.500	76.0 ⑤	..	64.0 ⑤	..	5
	2.501–3.000	72.0 ⑤	..	61.0 ⑤	..	5
	3.001–3.500	71.0 ⑤	..	58.0 ⑤	..	5
	3.501–4.000	67.0 ⑤	..	54.0 ⑤	..	3

For all numbered footnotes, see page KA-SP-AA10-1.09

TABLE 7.2 Mechanical Property Limits—Heat-Treatable Alloys ① ⑭ (continued)

ALLOY AND TEMPER	SPECIFIED THICKNESS ② in.	TENSILE STRENGTH—ksi ULTIMATE min.	ULTIMATE max.	YIELD min.	YIELD max.	ELONGATION PERCENT MIN. in 2 in. or 4D ③
7008 ALCLAD 7075 ⑥ (Continued)						
7008 Alclad 7075-T76 ⑬ Sheet	0.040–0.062	70.0	..	59.0	..	8
	0.063–0.187	71.0	..	60.0	..	8
	0.188–0.249	72.0	..	61.0	..	8
7008 Alclad 7075-T7651 ⑦ ⑬ Plate	0.250–0.499	71.0	..	60.0	..	8
	0.500–1.000	71.0 ⑤	..	60.0 ⑤	..	6
7178						
7178-O Sheet and plate	0.015–0.499	..	40.0	..	21.0	10
	0.500	..	40.0	..	..	10
7178-T6 and T62 ④ ⑩ Sheet	0.015–0.044	83.0	..	72.0	..	7
	0.045–0.249	84.0	..	73.0	..	8
7178-T62 ④ ⑩ and T651 ⑦ Plate	0.250–0.499	84.0	..	73.0	..	8
	0.500–1.000	84.0	..	73.0	..	6
	1.001–1.500	84.0	..	73.0	..	4
	1.501–2.000	80.0	..	70.0	..	3
7178-T76 ⑬ Sheet	0.045–0.249	75.0	..	64.0	..	8
7178-T7651 ⑦ ⑬ Plate	0.250–0.499	74.0	..	63.0	..	8
	0.500–1.000	73.0	..	62.0	..	6
ALCLAD 7178 ⑥						
Alclad 7178-O Sheet and plate	0.015–0.062	..	36.0	..	20.0	10
	0.063–0.187	..	38.0	..	20.0	10
	0.188–0.499	..	40.0	..	21.0	10
	0.500	..	40.0	..	..	10
Alclad 7178-T6 and T62 ④ ⑩ Sheet	0.015–0.044	76.0	..	66.0	..	7
	0.045–0.062	78.0	..	68.0	..	8
	0.063–0.187	80.0	..	70.0	..	8
	0.188–0.249	82.0	..	71.0	..	8
Alclad 7178-T62 ④ ⑩ and T651 ⑦ Plate	0.250–0.499	82.0	..	71.0	..	8
	0.500–1.000	84.0 ⑤	..	73.0 ⑤	..	6
	1.001–1.500	84.0 ⑤	..	73.0 ⑤	..	4
	1.501–2.000	80.0 ⑤	..	70.0 ⑤	..	3
Alclad 7178-T76 ⑬ Sheet	0.045–0.062	71.0	..	60.0	..	8
	0.063–0.187	71.0	..	60.0	..	8
	0.188–0.249	73.0	..	61.0	..	8
Alclad 7178-T7651 ⑦ ⑬ Plate	0.250–0.499	72.0	..	60.0	..	8
	0.500–1.000	73.0 ⑤	..	62.0 ⑤	..	6
7475						
7475-T61 Sheet	0.040–0.249	75.0	..	64.0	..	9

ALLOY AND TEMPER	SPECIFIED THICKNESS ② in.	AXIS OF TEST SPECIMEN	TENSILE STRENGTH—ksi ULTIMATE min.	ULTIMATE max.	YIELD min.	YIELD max.	ELONGATION PERCENT MIN. in 2 in. or 4D ③
7475-T7351 Plate	0.250–1.500	Longitudinal	71.0	..	60.0	..	10
		Long Transverse	71.0	..	60.0	..	9
	1.001–1.500	Short Transverse	67.0 ㉒	..	56.0 ㉒	..	4 ㉒
	1.501–2.000	Longitudinal	70.0	..	58.0	..	10
		Long Transverse	70.0	..	58.0	..	8
		Short Transverse	66.0	..	54.0	..	4
	2.001–2.500	Longitudinal	69.0	..	57.0	..	10
		Long Transverse	69.0	..	57.0	..	8
		Short Transverse	65.0	..	53.0	..	4
	2.501–3.000	Longitudinal	68.0	..	56.0	..	10
		Long Transverse	68.0	..	56.0	..	8
		Short Transverse	65.0	..	53.0	..	3
	3.001–3.500	Longitudinal	65.0	..	53.0	..	10
		Long Transverse	65.0	..	53.0	..	8
		Short Transverse	64.0	..	51.0	..	3
	3.501–4.000	Longitudinal	64.0	..	52.0	..	9
		Long Transverse	64.0	..	52.0	..	7
		Short Transverse	63.0	..	50.0	..	3

For all numbered footnotes, see page KA-SP-AA10-1.09

TABLE 7.2 Mechanical Property Limits—Heat-Treatable Alloys ① ⑭ (concluded)

7475 (Continued)

ALLOY AND TEMPER	SPECIFIED THICKNESS ② in.	TENSILE STRENGTH—ksi				ELONGATION PERCENT MIN. in 2 in. or 4D ③
		ULTIMATE		YIELD		
		min.	max.	min.	max.	
7475-T761 Sheet	0.040–0.249	71.0	..	60.0	..	9

ALLOY AND TEMPER	SPECIFIED THICKNESS ② in.	AXIS OF TEST SPECIMEN	TENSILE STRENGTH—ksi				ELONGATION PERCENT MIN. in 2 in. or 4D ③
			ULTIMATE		YIELD		
			min.	max.	min.	max.	
7475-T7651 Plate	0.250–0.499	Longitudinal	70.0	..	60.0	..	9
		Long Transverse	71.0	..	60.0	..	9
	0.500–1.000	Longitudinal	69.0	..	59.0	..	8
		Long Transverse	70.0	..	59.0	..	8
	1.001–1.500	Longitudinal	69.0	..	59.0	..	6
		Long Transverse	70.0	..	59.0	..	6

ALCLAD 7475 ⑥

ALLOY AND TEMPER	SPECIFIED THICKNESS ② in.	TENSILE STRENGTH—ksi				ELONGATION PERCENT MIN. in 2 in. or 4D ③
		ULTIMATE		YIELD		
		min.	max.	min.	max.	
Alclad 7475-T61 Sheet	0.040–0.062	69.0	..	59.0	..	9
	0.063–0.187	70.0	..	60.0	..	9
	0.188–0.249	72.0	..	61.0	..	9
Alclad 7475-T761 Sheet	0.040–0.062	66.0	..	55.0	..	9
	0.063–0.187	68.0	..	57.0	..	9
	0.188–0.249	70.0	..	60.0	..	9

Footnotes for Table 7.2

(Page numbers and tables noted within footnotes reference pages in Aluminum standards and data 2006.)

① The data base and criteria upon which these mechanical property limits are established are outlined on page 6-1 under "Mechanical Properties."
② Type of specimen used depends on thickness of material; see "Sampling and Testing," pages 4-1 through 4-5
③ D represents specimen diameter.
④ These properties can usually be obtained by the user, when the material is properly solution heat treated or solution and precipitation heat treated from the O (annealed) or F (as fabricated) temper. These properties also apply to samples of material in the O or F tempers, which are solution heat treated or solution and precipitation treated by the producer to determine that the material will respond to proper heat treatment. Properties attained by the user, however, may be lower than those listed if the material has been formed or otherwise cold or hot worked, particularly in the annealed temper, prior to solution heat treatment.
⑤ This table specifies the properties applicable to the test specimens, and since for plate 0.500 or over in thickness the cladding material is removed during preparation of the test specimens, the listed properties are applicable to the core material only. Tensile and yield strengths of the composite plate are slightly lower depending upon the thickness of the cladding.
⑥ See page 6-4 for specific cladding thicknesses.
⑦ For stress-relieved tempers the characteristics and properties other than those specified may differ somewhat from the corresponding characteristics and properties of material in the basic temper.
⑧ Upon artificial aging, T3 /T31, T37, T351, T361 and T451 temper material shall be capable of developing the mechanical properties applicable to the T81, T87, T851, T861 and T651 tempers, respectively.
⑨ The properties for this thickness apply only to the T651 temper.
⑩ This temper is not available from the material producer.
⑪ Tempers T361 and T861 formerly designated T36 and T86, respectively.
⑫ Material in this temper, 0.750 inch and thicker, when tested in accordance with ASTM G47 in the short transverse direction at a stress level of 75 percent of the specified minimum yield strength, will exhibit no evidence of stress corrosion cracking. Capability of individual lots to resist stress corrosion is determined by testing the previously selected tensile test sample in accordance with the applicable lot acceptance criteria outlined on pages 6-7 and 6-8.
⑬ Material in this temper, when tested in accordance with ASTM G34, will exhibit exfoliation less than that shown in Photo EB, Figure 2, of ASTM G34. Also, material 0.750 inch and thicker, when tested in accordance with ASTM G47 in the short transverse direction of stress level of 25 ksi, will exhibit no evidence of stress corrosion cracking. Capability of individual lots to resist exfoliation corrosion and stress corrosion cracking is determined by testing the previously selected tensile test sample in accordance with the applicable lot acceptance criteria outlined on pages 6-7 and 6-8.
⑭ Processes such as flattening, leveling, or straightening coiled products subsequent to shipment by the producer may alter the mechanical properties of the metal (refer to Certification, Section 4).
⑮ Applicable only to 1.500 inch and greater thickness.
⑯ See Table 6.6 for fracture toughness limits.
⑰ T7451 temper, although not previously registered, has appeared in the literature and in some specifications as T73651.
⑱ Material in this temper, 0.750 inch and thicker, when tested in accordance with ASTM G47 in the short transverse direction at a stress level of 35 ksi, will exhibit no evidence of stress corrosion cracking. Capability of individual lots to resist stress corrosion is determined by testing the previously selected tensile test sample in accordance with the applicable lot acceptance criteria outlined on pages 6-7 and 6-8.
⑲ Material in this temper, 0.750 inch and thicker, when tested in accordance with ASTM G47 in the short transverse direction at a stress level of 25 ksi, will exhibit no evidence of stress corrosion cracking. Capability of individual lots to resist stress corrosion is determined by testing the previously selected tensile test sample in accordance with the applicable lot acceptance criteria outlined on pages 6-7 and 6-8.
⑳ Material in this temper, when tested at any plane in accordance with ASTM G34, will exhibit exfoliation less than that shown in Photo EB, Figure 2, of ASTM G34. Capability of individual lots to resist exfoliation corrosion and stress corrosion cracking is determined by testing the previously selected tensile test sample in accordance with the applicable lot acceptance criteria outlined on pages 6-7 and 6-8.
㉑ Material in this temper, when tested at $^{1}/_{10}$ plane in accordance with ASTM G34, will exhibit exfoliation less than that shown in Photo EB, Figure 2, of ASTM G34. Capability of individual lots to resist exfoliation corrosion and stress corrosion cracking is determined by testing the previously selected tensile test sample in accordance with the applicable lot acceptance criteria outlined on pages 6-7 through 6-10.
㉒ Applies to 1.500 in. only.

TABLE 7.7a Sheet and Plate Thickness Tolerances ① (Applicable to All Alloys Not Included in the Aerospace Alloys Table 7.7b or Not Specified for Aerospace Applications)

NOTE: ALSO APPLICABLE TO ALLOYS WHEN SUPPLIED AS ALCLAD.

SPECIFIED THICKNESS, in.		SPECIFIED WIDTH—in.							
		Up thru 39.37	Over 39.37 Thru 59.06	Over 59.06 Thru 78.74	Over 78.74 Thru 98.43	Over 98.43 Thru 118.11	Over 118.11 Thru 137.80	Over 137.80 Thru 157.48	Over 157.48 Thru 177.17
Over	Thru	TOLERANCES—in. plus and minus							
0.0059	0.010	0.0010	0.0015	..	..	..	..	..	..
0.010	0.016	0.0010	0.0015	..	..	..	..	..	..
0.016	0.025	0.0015	0.0020	0.0030	0.0035	..	..	..	..
0.025	0.032	0.0020	0.0025	0.0035	0.0040	..	..	..	..
0.032	0.039	0.0020	0.0030	0.0035	0.0045	0.006	..	..	..
0.039	0.047	0.0025	0.0035	0.0045	0.006	0.007	0.008	..	..
0.047	0.063	0.0030	0.0035	0.0050	0.006	0.007	0.009	..	..
0.063	0.079	0.0035	0.0040	0.006	0.007	0.008	0.010	..	..
0.079	0.098	0.0035	0.0045	0.006	0.007	0.009	0.011	..	..
0.098	0.126	0.0045	0.006	0.007	0.009	0.011	0.013	..	..
0.126	0.158	0.006	0.007	0.009	0.011	0.013	0.015	..	..
0.158	0.197	0.007	0.009	0.011	0.013	0.015	0.018	..	..
0.197	0.248	0.009	0.011	0.013	0.015	0.018	0.022	0.027	..
0.248	0.315	0.012	0.014	0.015	0.018	0.022	0.027	0.035	0.043
0.315	0.394	0.015	0.017	0.020	0.023	0.027	0.033	0.041	0.051
0.394	0.630	0.023	0.023	0.027	0.032	0.035	0.043	0.053	0.065
0.630	0.984	0.031	0.031	0.037	0.043	0.047	0.058	0.070	0.085
0.984	1.575	0.039	0.039	0.047	0.055	0.065	0.075	0.090	0.105
1.575	2.362	0.055	0.055	0.060	0.070	0.085	0.100	0.115	..
2.362	3.150	0.075	0.075	0.085	0.100	0.105	0.125	..	..
3.150	3.937	0.100	0.100	0.115	0.125	0.130	0.160	..	..
3.937	6.299	0.130	0.130	0.145	0.165	..	..	..	..
6.300	8.000	0.160	0.160	0.160	0.165	..	..	..	..

TABLE 7.7b Sheet and Plate Thickness Tolerances ① (Applicable to All Alloys Specified for Aerospace Applications)

(INCLUDES AEROSPACE ALLOYS 2014, 2024, 2124, 2219, 2324, 2419, 7050, 7075, 7150, 7178 and 7475)

NOTE: ALSO APPLICABLE TO ALLOYS WHEN SUPPLIED AS ALCLAD.

SPECIFIED THICKNESS		SPECIFIED WIDTH—in.											
		Up thru 39.37	Over 39.37 thru 47.24	Over 47.24 thru 55.12	Over 55.12 thru 59.06	Over 59.06 thru 70.87	Over 70.87 thru 78.74	Over 78.74 thru 86.61	Over 86.61 thru 98.43	Over 98.43 thru 118.11	Over 118.11 thru 137.80	Over 137.80 thru 157.48	Over 157.48 thru 177.17
Over	Thru	TOLERANCE—in. plus and minus											
0.0059	0.010	0.0010	0.0020	0.0020	0.0020	..	..	..	..	..	..	..	..
0.010	0.016	0.0015	0.0025	0.0025	0.0025	..	..	..	..	..	..	..	..
0.016	0.025	0.0015	0.0025	0.0025	0.0025	..	..	..	..	..	..	..	..
0.025	0.032	0.0015	0.0015	0.0020	0.0030	0.0030	..	..	..	..	..	..	..
0.032	0.039	0.0015	0.0015	0.0020	0.0030	0.0030	0.0035	0.0035	0.007	..	..	..	..
0.039	0.047	0.0020	0.0020	0.0020	0.0030	0.0030	0.0035	0.0035	0.008	0.010	0.011	..	..
0.047	0.063	0.0020	0.0020	0.0030	0.0030	0.0030	0.0035	0.0035	0.009	0.011	0.013	..	..
0.063	0.079	0.0020	0.0020	0.0030	0.0035	0.0035	0.0035	0.0035	0.010	0.013	0.015	..	..
0.079	0.098	0.0025	0.0025	0.0035	0.0040	0.0040	0.0045	0.0045	0.011	0.015	0.018	..	..
0.098	0.126	0.0035	0.0035	0.0035	0.0045	0.0045	0.0045	0.0045	0.013	0.016	0.020	..	..
0.126	0.158	0.0040	0.0040	0.0045	0.007	0.007	0.009	0.009	0.015	0.018	0.022	..	..
0.158	0.197	0.006	0.007	0.007	0.009	0.009	0.011	0.011	0.018	0.022	0.026	..	..
0.197	0.248	0.009	0.012	0.012	0.012	0.017	0.017	0.021	0.021	0.025	0.029	..	..
0.248	0.315	0.012	0.015	0.015	0.015	0.019	0.019	0.024	0.024	0.029	0.033	0.041	0.051
0.315	0.394	0.017	0.018	0.018	0.018	0.022	0.022	0.028	0.028	0.033	0.039	0.047	0.059
0.394	0.630	0.023	0.023	0.023	0.023	0.028	0.028	0.033	0.033	0.039	0.047	0.059	0.070
0.630	0.984	0.031	0.031	0.031	0.031	0.037	0.037	0.043	0.043	0.051	0.060	0.070	0.085
0.984	1.575	0.039	0.039	0.039	0.039	0.047	0.047	0.055	0.055	0.065	0.075	0.090	0.105
1.575	2.362	0.055	0.055	0.055	0.055	0.060	0.060	0.070	0.070	0.090	0.100	0.115	..
2.362	3.150	0.075	0.075	0.075	0.075	0.085	0.085	0.100	0.100	0.110	0.125	..	..
3.150	3.937	0.100	0.100	0.100	0.100	0.115	0.115	0.130	0.130	0.150	0.160	..	..
3.937	6.299	0.130	0.130	0.130	0.130	0.145	0.145	0.165	0.165	..	..	..	..
6.300	8.000	0.160	0.160	0.160	0.160	0.160	0.160	0.165	0.165	..	..	..	..

Footnotes for Tables 7.7a and 7.7b

Note: Capability to provide tighter tolerances may vary with supplier.

① When a dimension tolerance is specified other than as equal bilateral tolerance, the value of the standard tolerance is that which applies to the mean of the maximum and minimum dimension permissible under the tolerance for the dimension under consideration.

TABLE 7.8 Width Tolerances—Sheared Flat Sheet and Plate

SPECIFIED THICKNESS in.	SPECIFIED WIDTH—in.					
	Up thru 6	Over 6 thru 24	Over 24 thru 60	Over 60 thru 96	Over 96 thru 132	Over 132 thru 168
	TOLERANCES ②—in.					
0.006–0.124	±1/16	±3/32	±1/8	±1/8	±5/32	. .
0.125–0.249	±3/32	±3/32	±1/8	±5/32	±3/16	. .
0.250–0.499	+1/4	+5/16	+3/8	+3/8	+7/16	+1/2

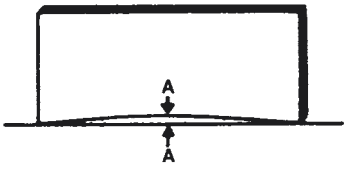
TABLE 7.9 Length Tolerances—Sheared Flat Sheet and Plate

SPECIFIED THICKNESS in.	SPECIFIED LENGTH—in.							
	Up thru 30	Over 30 thru 60	Over 60 thru 120	Over 120 thru 240	Over 240 thru 360	Over 360 thru 480	Over 480 thru 600	Over 600 thru 720
	TOLERANCES ②—in.							
0.006–0.124	±1/16	±3/32	±1/8	±5/32	±3/16	±7/32	±9/32	. .
0.125–0.249	±3/32	±3/32	±1/8	±5/32	±7/32	±1/4	±5/16	. .
0.250–8.000	+1/4	+3/8	+7/16	+1/2	+9/16	+5/8	+11/16	+3/4

TABLE 7.10 Width and Length Tolerances—Sawed Flat Sheet and Plate

SPECIFIED THICKNESS in.	SPECIFIED LENGTH—in.							
	Up thru 30	Over 30 thru 60	Over 60 thru 120	Over 120 thru 240	Over 240 thru 360	Over 360 thru 480	Over 480 thru 600	Over 600 thru 720
	TOLERANCES ②—in.							
0.080–0.249	±1/8	±1/8	±3/16	±1/4	±1/4	±5/16	±3/8	±7/16
0.250–8.000	+1/4	+5/16	+3/8	+1/2	+9/16	+5/8	+3/4	+7/8

TABLE 7.13 Lateral Bow Tolerances—Flat Sheet and Plate

SPECIFIED THICKNESS in.	SPECIFIED WIDTH in.	ALLOWABLE DEVIATION OF A SIDE EDGE FROM A STRAIGHT LINEN  Maximum allowable value of AA						
		SPECIFIED LENGTH—in.						
		Up thru 60	Over 60 thru 90	Over 90 thru 120	Over 120 thru 150	Over 150 thru 180	Over 180 thru 210	Over 210 thru 240
		TOLERANCE—in.						
0.006–0.125	Up thru 4	0.250	0.563	1.000	1.563	2.250	3.000	4.000 ⑤
	Over 4 thru 10	0.094	0.219	0.375	0.563	0.875	1.156	1.500 ⑤
	Over 10 thru 35	0.063	0.125	0.188	0.250	0.375	0.500	0.750 ⑤
	Over 35	0.032	0.063	0.125	0.188	0.250	0.375	0.500 ⑤
0.126–0.249	Over 4 thru 15	0.063	0.125	0.250	0.375	0.563	0.750	1.000 ⑤
	Over 15	0.032	0.063	0.125	0.188	0.250	0.375	0.500 ⑤
0.250–8.000	Up thru 10	0.250	0.563	1.000	1.563	2.250	3.000	4.000 ⑤
	Over 10 thru 18	0.063	0.125	0.250	0.406	0.594	0.781	1.000 ⑤
	Over 18	0.032	0.094	0.125	0.219	0.312	0.438	0.562 ⑤

For all numbered footnotes, see page KA-SP-AA13-1.09

TABLE 7.14 Squareness Tolerances—Flat Sheet and Plate

SPECIFIED LENGTH ft.	SPECIFIED WIDTH—ft.	
	Up thru 3	Over 3
	ALLOWABLE DIFFERENCE IN LENGTH OF DIAGONALS ④ —Inches  Maximum difference between AA and BB	
Up thru 12	$\frac{3}{32}$ × width, ft ③	$\frac{5}{64}$ × width, ft ③
Over 12	$\frac{9}{64}$ × width, ft ③	$\frac{7}{64}$ × width, ft ③

Footnotes for Tables 7.8 through 7.14

① When a dimension tolerance is specified other than as an equal bilateral tolerance, the maximum value of the standard tolerance is that which applies to the mean of the maximum and minimum dimensions permissible under the tolerance for the dimension under consideration.
② Tolerances applicable at ambient mill temperatures. A change in dimension of 0.013 in. per 100 in. per 10°F must be recognized.
③ If specified width is other than an exact multiple of 12 in., tolerance is determined by using the next largest exact multiple. For example, if specified width is 53 in. and specified length is 72 in., the tolerance is $\frac{5}{64}$ in. × 5 = $\frac{25}{64}$ in. This result is then rounded to $\frac{7}{16}$ in. in accordance with footnote ④ .
④ Use values for calculating only. Round result upward to nearest $\frac{1}{16}$ in.
⑤ Also applicable to any 240-inch increment of longer sheet or plate.

TABLE 7.17 Flatness Tolerances—Flat Sheet ②

Alloy (Includes Alclads)	Specified Thickness in.	Longitudinal or Transverse Distance (ft.) Center to Center of Buckles or Edge Waves ③				
		Up thru 2	Over 2 thru 3	Over 3 thru 4	Over 4 thru 6	Over 6
		TOLERANCES, in. ④ ⑤ ⑥				
1060, 1100, 1350, 3003, 3005, 3105, 5005, 5050, 5X57	0.020 thru 0.064	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{5}{16}$	$\frac{3}{8}$
	0.065 thru 0.249	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$
3004, 5052, 5083, 5086, 5252, 5X54, 5456, 5652, brazing sheet, and all heat treatable alloys	0.020 thru 0.064	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$
	0.065 thru 0.249	$\frac{3}{16}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{9}{16}$

① When a dimension tolerance is specified other than as an equal bilateral tolerance, the maximum value of the standard tolerance is that which applies to the mean of the maximum and minimum dimensions permissible under the tolerance for the dimension under consideration.
② Not applicable to cut-to-length sheet, panel flat sheet, coiled sheet, or sheet over 60 in. wide. Flatness tolerances, including coil set flatness tolerances, for these excluded products, should be as agreed upon in advance between producer and purchaser. (See Section 5, Terminology, for a definition of Sheet, Coiled Cut-to-Length).
③ Also applicable to overall length or width of sheet if only one longitudinal and/or transverse buckle or edge wave is present.
④ Allowable deviation from flat with the sheet positioned on flat horizontal surface to minimize deviation.
⑤ Not applicable to O, F and HX8 and harder tempers.
⑥ Not applicable to end or corner turnup.

TABLE 7.18 Flatness Tolerances—Sawed or Sheared Plate

LONGITUDINAL FLATNESS

SPECIFIED THICKNESS, in.	TOLERANCE ① in.—Allowable Deviation from Flat	
	TX51 tempers ②	Other than TX51 tempers ② ⑦
0.250–3.000	3/16 in any 6 ft ③	1/4 in any 6 ft or less
3.001–8.000	1/8 in any 6 ft or less	1/4 in any 6 ft or less

TRANSVERSE FLATNESS

SPECIFIED THICKNESS, in.	TOLERANCE ① in.—Allowable Deviation from Flat				
	Widths over 4 ft thru 6 ft ④		Widths over 2 ft thru 4 ft		Widths 2 ft and less
	TX51 tempers ②	Other than TX51 tempers ② ⑦	TX51 tempers ②	Other than TX51 tempers ② ⑦	All tempers ⑦
0.250–0.624	3/8	1/2	5/16	3/8	Only short-span flatness tolerance applies
0.625–1.500	5/16	3/8	3/16	1/4	
1.501–3.000	3/16	1/4	3/16	3/16	
3.001–8.000	1/8	1/4	1/8	3/16	

SHORT-SPAN FLATNESS ⑤

SPECIFIED THICKNESS, in.	TOLERANCE ⑥ in.—Allowable Deviation from Flat	
	TX51 tempers ②	Other than TX51 tempers ② ⑦
0.250–0.624	.100	.125
0.625–8.000	.075	.090

① As measured with plate resting on a flat surface concave side upward, using a straightedge and a feeler gauge, dial gauge or scale.
② TX51 is a general designation for the following stress-relieved tempers: T351, T451, T651, T851, T7351 and T7651.
③ For pieces ordered to less than 6 ft length, the tolerance is 1/8 in. for the total length.
④ For widths over 6 ft, these tolerances apply for any 6 ft of total width.
⑤ Short-span flatness is the deviation from flat over full span for spans 2 ft and less.
⑥ As measured with the plate resting on a flat surface.
⑦ Not applicable to O, F, and HX8 and harder tempers.

TABLE 7.35 Mechanical Property Limits ① for Tread Plate

ALLOY AND TEMPER	SPECIFIED THICKNESS ② in.	TENSILE STRENGTH—ksi				ELONGATION percent min. in 2 in. or 4D ③
		ULTIMATE		YIELD		
		min.	max.	min.	max.	
6061-O	0.100–0.128	..	22.0	..	12.0	16
	0.129–0.499	..	22.0	..	12.0	18
	0.500–0.625	..	22.0	..	..	18
6061-T4	0.100–0.249	30.0	..	16.0	..	14
	0.250–0.625	30.0	..	16.0	..	16
6061-T42 ④	0.100–0.249	30.0	..	14.0	..	14
	0.250–0.625	30.0	..	14.0	..	16
6061-T6 and T62 ④	0.100–0.188	42.0	..	35.0	..	6
	0.189–0.249	42.0	..	35.0	..	8
	0.250–0.499	42.0	..	35.0	..	10
	0.500–0.625	42.0	..	35.0	..	9

① The data base and criteria upon which these mechanical property limits are established are outlined on page 6-1 under "Mechanical Properties."
② For sheet and plate under 1/2 inch in thickness, the standard 2-inch-wide tension test specimen is used. The raised figures of the pattern are machined off before testing.
③ D represents specimen diameter.
④ This temper is not available from the material producer. These properties can usually be obtained by the user, when the material is properly solution heat treated or solution and precipitation heat treated from the O (annealed) or F (as fabricated) temper. These properties also apply to samples of material in the O or F tempers that are solution heat treated or solution and precipitation treated by the producer to determine that the material will respond to proper heat treatment. Properties attained by the user, however, may be lower than those listed if the material has been formed or otherwise cold or hot worked, particularly in the annealed temper, prior to solution heat treatment.

TABLE 7.37 Thickness Tolerances—Tread Plate

Specified ① Thickness—in.	Tolerances—in.	
	Plus ②	Minus
0.100	0.008	0.012
0.125	0.010	0.015
0.156	0.011	0.019
0.188	0.013	0.023
0.250	0.018	0.030
0.375	0.025	0.045
0.500	0.035	0.060
0.625	0.044	0.075

① Specified thickness does not include height of pattern.
② In case of dispute, allowed plus tolerance shall be determined by weight. The allowed deviation from nominal weight shall not exceed plus 8 percent.

TABLE 7.42 Lateral Bow ③ Tolerances—Tread Plate

SPECIFIED WIDTH in.	TOLERANCE—IN.
	ALLOWABLE DEVIATION OF A SIDE EDGE FROM A STRAIGHT LINE
	SPECIFIED THICKNESS—in.
	0.100–0.625
Up thru 4	1 in any 10 ft.
Over 4 thru 72	⅛ in any 10 ft.

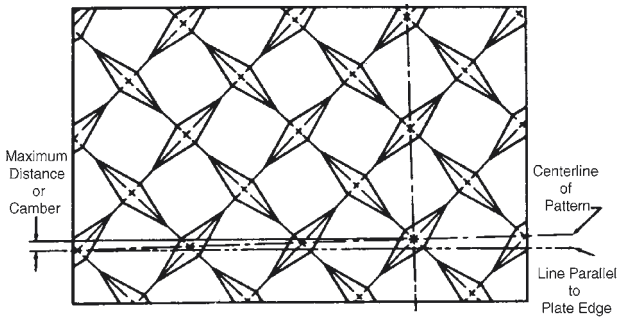
TABLE 7.43 Squareness Tolerances ⑤—Tread Plate

SPECIFIED LENGTH in.	TOLERANCE—in.
	ALLOWABLE DIFFERENCE IN LENGTH OF DIAGONALS
Up thru 144	⅜
Over 144 thru 240	7/16
Over 240	½

Footnotes for Tables 7.41 through 7.43

③ Applicable only to lengths up through 240 inches.
④ The camber of a pattern line is the maximum distance between the center of any figure in a pattern line and a line parallel with the edge of the plate that passes through the center of the figure in the same pattern line nearest to the edge of the floor plate.
⑤ Not resquared.

TABLE 7.41 Camber of Pattern Line ④ Tolerances—Tread Plate



SPECIFIED LENGTH in.	TOLERANCE—in.	
	SPECIFIED WIDTH—in.	
	Up thru 48	Over 48 thru 72
Up thru 24	⅛	⅛
Over 24 thru 72	½	½
Over 72 thru 144	¾	1
Over 144	1	1½