ADDENDUM TO 2018 TAN SHEETS

Tempers for Aluminum and Aluminum Alloy Products Metric Edition **July 16, 2025**

New and Revised Registrations Since Publication of 2018 Tan Sheets

Registered			Product	Thickness, mm		Tensile Strength, MPa			Elongation Percent in[21]		Remarks[2]
Alloy Temper	By	Date		Over	Thru	Basis[1]	Ult.	Yield	50 mm	5D or 5.65 $\sqrt{A}$	
2033-T3	Eural Gnutti S.p.A.	5/11/2024	Bar, Rod & Wire	3.20 30.00	30.00 80.00	Min[6] Min[6]	370 340	240 220	7 7	7 7	Cold Finished.
2033-T351	Eural Gnutti S.p.A.	5/11/2024	Bar, Rod & Wire	3.20	80.00	Min[6]	370	240	5	5	Cold Finished.
2033-T6	Eural Gnutti S.p.A.	5/11/2024	Extruded Bar, Rod & Wire	3.20 80.00	80.00 250.00	Min[6] Min[6]	370 340	250 220	8 8	8 8	
2033-T6	Eural Gnutti S.p.A.	5/11/2024	Extruded Profiles	3.20	40.00	Min[6]	340	220	8	8	
2033-T6510	Eural Gnutti S.p.A.	5/11/2024	Extruded Bar, Rod & Wire	3.20 80.00	80.00 250.00	Min[6] Min[6]	370 340	250 220	8 8	8 8	
2033-T6510	Eural Gnutti S.p.A.	5/11/2024	Extruded Profiles	3.20	40.00	Min[6]	340	220	8	8	
2033-T6511	Eural Gnutti S.p.A.	5/11/2024	Extruded Bar, Rod & Wire	3.20 80.00	80.00 250.00	Min[6] Min[6]	370 340	250 220	8 8	8 8	
2033-T6511	Eural Gnutti S.p.A.	5/11/2024	Extruded Profiles	3.20	40.00	Min[6]	340	220	8	8	
2033-T8	Eural Gnutti S.p.A.	5/11/2024	Bar, Rod & Wire	3.20	80.00	Min[6]	370	270	8	8	Cold Finished.
2043-T85	Universal Alloy	02/07/2019	Extrusion	1.00 6.30 12.50 25.00	6.30 12.50 25.00 60.00	*Min[6] *Min[6] *Min[6] *Min[6]	525 540 550 565	485 505 515 540	6 7 - -	- - 6 6	*Tentative Cross-sectional area less than or equal to 15000 mm2 and circle size less than or equal to 410 mm. Solution heat treated and cold worked in the range 3-6% and artificially aged. Stress Corrosion Resistance For ST specimens taken from section thicknesses 20 mm and greater, See footnote 4b.

Unless specified below, for all referenced footnotes refer to the Yellow and/or Tan Sheets as applicable.

FN 4.b. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: b. 240 MPa.

FN 4.e. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: e. 310 MPa.

FN 9 Long Transverse

FN 10 Short Transverse

FN 15.b. Material shall be capable of demonstrating exfoliation corrosion resistance. Exfoliation corrosion resistance shall be determined in accordance with ASTM G34 and material shall not exhibit exfoliation corrosion greater than that illustrated by Photo EB, Figure 2. The applicable sample plane for testing is indicated by one of the following locations: b. At the T/10 plane.

ADDENDUM TO 2018 TAN SHEETS

Tempers for Aluminum and Aluminum Alloy Products Metric Edition **July 16, 2025**

New and Revised Registrations Since Publication of 2018 Tan Sheets

Registered			Product	Thickness, mm		Tensile Strength, MPa			Elongation Percent in[21]		Remarks[2]
Alloy Temper	By	Date		Over	Thru	Basis[1]	Ult.	Yield	50 mm	5D or 5.65 $\sqrt{A}$	
											Exfoliation Corrosion Resistance See footnote 15b. Note: ASTM G85 Annex A2 Dry-Bottom MASTMAASIS Method for 2 weeks.
2050 T34	Constellium	01/25/2016 Revised 08/04/17 Revised 02/01/2019	Plate	12.50	165.00	Min[9]	345	235	-	15	Solution heat treated and cold worked 3-4.5%.
2050-T84	Constellium	11/21/2022	Plate	165.00 180.00	180.00 200.00	*Min[6] *Min[9] *Min[10] *Min[6] *Min[9] *Min[10]	485 485 470 475 475 455	455 435 400 450 425 395	- - - - - -	3 3 1.5 3 2 1.5	*Tentative Solution heat treated and cold worked approximately 3-4.5% and artificially aged. Stress Corrosion Resistance For thicknesses 165.00 – 200.00 mm. Direct C-rings and Tensile specimens machined and tested in accordance with ASTM G47 shall show no evidence of stress corrosion failure when tested in the short transverse direction at 310 MPa and exposed for 30 days. Fracture Toughness[14] – Min K_{IC} For thicknesses 165.00 – 180.00 mm L-T direction 24 MPa√m T-L direction 20 MPa√m S-L direction 18 MPa√m For thicknesses 180.00 – 200.00 mm L-T direction 22 MPa√m T-L direction 18 MPa√m S-L direction 16 MPa√m

Unless specified below, for all referenced footnotes refer to the Yellow and/or Tan Sheets as applicable.

FN 4.b. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: b. 240 MPa.

FN 4.e. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: e. 310 MPa.

FN 9 Long Transverse

FN 10 Short Transverse

FN 15.b. Material shall be capable of demonstrating exfoliation corrosion resistance. Exfoliation corrosion resistance shall be determined in accordance with ASTM G34 and material shall not exhibit exfoliation corrosion greater than that illustrated by Photo EB, Figure 2. The applicable sample plane for testing is indicated by one of the following locations: b. At the T/10 plane.

ADDENDUM TO 2018 TAN SHEETS

Tempers for Aluminum and Aluminum Alloy Products Metric Edition **July 16, 2025**

New and Revised Registrations Since Publication of 2018 Tan Sheets

Registered			Product	Thickness, mm		Tensile Strength, MPa			Elongation Percent in[21]		Remarks[2]
Alloy Temper	By	Date		Over	Thru	Basis[1]	Ult.	Yield	50 mm	5D or 5.65 $\sqrt{A}$	
2074-T8	Constellium	04/11/2025	Sheet & Plate	0.80	12.70	*Min[6] *Min[9]	415 400	370 345	8 8	7 7	*Tentative Stress Corrosion Resistance Material shall be capable of passing the stress corrosion cracking test as described in ASTM G47 when tested in the LT direction at a stress of 275 MPa for 40 days.
2077-T4	Eural Gnutti S.p.A.	5/11/2024	Extruded Bar, Rod & Wire	3.20 75.00 150.00 200.00	75.00 150.00 200.00 250.00	Min[6] Min[6] Min[6] Min[6]	400 390 370 360	270 260 240 220	10 9 8 7	10 9 8 7	
2077-T4511	Eural Gnutti S.p.A.	5/11/2024	Extruded Bar, Rod & Wire	3.20 75.00 150.00 200.00	75.00 150.00 200.00 250.00	Min[6] Min[6] Min[6] Min[6]	400 390 370 360	270 260 240 220	10 9 8 7	10 9 8 7	
2077-T6	Eural Gnutti S.p.A.	5/11/2024	Bar, Rod & Wire	3.20	80.00	Min[6]	480	400	5	5	Cold Finished.
2077-T6	Eural Gnutti S.p.A.	5/11/2024	Extruded Bar, Rod & Wire	3.20 150.00 200.00	150.00 200.00 250.00	Min[6] Min[6] Min[6]	455 420 400	380 280 270	5 8 8	5 8 8	
2077-T651	Eural Gnutti S.p.A.	5/11/2024	Bar, Rod & Wire	3.20	80.00	Min[6]	480	400	5	5	Cold Finished.
2077-T6511	Eural Gnutti S.p.A.	5/11/2024	Extruded Bar, Rod & Wire	3.20 150.00 200.00	150.00 200.00 250.00	Min[6] Min[6] Min[6]	455 420 400	380 280 270	5 8 8	5 8 8	

Unless specified below, for all referenced footnotes refer to the Yellow and/or Tan Sheets as applicable.

FN 4.b. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: b. 240 MPa.

FN 4.e. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: e. 310 MPa.

FN 9 Long Transverse

FN 10 Short Transverse

FN 15.b. Material shall be capable of demonstrating exfoliation corrosion resistance. Exfoliation corrosion resistance shall be determined in accordance with ASTM G34 and material shall not exhibit exfoliation corrosion greater than that illustrated by Photo EB, Figure 2. The applicable sample plane for testing is indicated by one of the following locations: b. At the T/10 plane.

ADDENDUM TO 2018 TAN SHEETS

Tempers for Aluminum and Aluminum Alloy Products Metric Edition **July 16, 2025**

New and Revised Registrations Since Publication of 2018 Tan Sheets

Registered			Product	Thickness, mm		Tensile Strength, MPa			Elongation Percent in[21]		Remarks[2]
Alloy Temper	By	Date		Over	Thru	Basis[1]	Ult.	Yield	50 mm	5D or 5.65 $\sqrt{A}$	
2081-T84	Kaiser	11/16/2018	Plate	25.00	50.00	*Min[6]	525	505	-	7	*Tentative
						*Min[9]	525	485	-	6	
											Solution heat treated and cold worked 2-5%.
				50.00	76.00	*Min[6]	510	490	-	5	
						*Min[9]	515	470	-	5	
						*Min[10]	495	425	-	2	
				76.00	100.00	*Min[6]	505	485	-	5	
						*Min[9]	510	460	-	3	
						*Min[10]	490	425	-	2	
2297-T87	McCook Metals Constellium	06/21/2000 Revised 06/03/2004 Revised 01/12/2022	Plate	40.00	50.00	Min[6]	440	400	-	9	Stress Corrosion Resistance 30 days at 310 MPa when tested in the ST direction per ASTM G47 in the thickness range of 80.00-130.00 mm. Product outside this thickness rage will continue to exhibit capability of 30 days at 205 MPa.
						Min[9]	455	415	-	7	
						Min[10]	450	395	-	2	
				50.00	60.00	Min[6]	435	395	-	8	Exfoliation Corrosion Resistance See footnote 15.b.
						Min[9]	440	400	-	6	
						Min[10]	440	385	-	2	
				60.00	80.00	Min[6]	425	395	-	8	Fracture Toughness[14] – Min K_{Ic} For thicknesses over 40.00 thru 80.00 mm
						Min[9]	440	400	-	6	L-T direction 35 MPa √m
						Min[10]	425	380	-	2	T-L direction 30 MPa √m S-L direction 22 MPa √m
				80.00	100.00	Min[6]	430	395	-	4	For thicknesses over 80.00 thru 100.00 mm
						Min[9]	430	395	-	3	L-T direction 34 MPa √m
						Min[10]	405	370	-	1.5	T-L direction 30 MPa √m S-L direction 22 MPa √m
				100.00	125.00	Min[6]	420	385	-	4	For thicknesses over 100.00 thru 125.00 mm
						Min[9]	420	385	-	3	L-T direction 33 MPa √m
						Min[10]	400	360	-	1.5	T-L direction 29 MPa √m S-L direction 20 MPa √m

Unless specified below, for all referenced footnotes refer to the Yellow and/or Tan Sheets as applicable.

FN 4.b. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: b. 240 MPa.

FN 4.e. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: e. 310 MPa.

FN 9 Long Transverse

FN 10 Short Transverse

FN 15.b. Material shall be capable of demonstrating exfoliation corrosion resistance. Exfoliation corrosion resistance shall be determined in accordance with ASTM G34 and material shall not exhibit exfoliation corrosion greater than that illustrated by Photo EB, Figure 2. The applicable sample plane for testing is indicated by one of the following locations: b. At the T/10 plane.

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New and Revised Registrations Since Publication of 2018 Tan Sheets

Registered			Product	Thickness, mm		Tensile Strength, MPa			Elongation Percent in[21]		Remarks[2]
Alloy Temper	By	Date		Over	Thru	Basis[1]	Ult.	Yield	50 mm	5D or 5.65 $\sqrt{A}$	
				125.00	160.00	Min[6] Min[9] Min[10]	415 415 395	380 380 360	- - -	4 3 1.5	For thicknesses over 125.00 thru 160.00 mm L-T direction 32 MPa √m T-L direction 27 MPa √m S-L direction 20 MPa √m
2397-T87	Alcoa Revised Arconic	02/12/2003 Revised 08/17/2005 Revised 08/02/2018	Plate	80.00	100.00	Min[6] Min[9] Min[10]	425 425 415	395 395 370	- - -	4 4 1.5	Stress Corrosion Resistance See footnote 4.b. Exfoliation Corrosion Resistance See footnote 15.b. Fracture Toughness[14] – Min K_{Ic} For thickness over 80.00 thru 100.00 L-T direction 34 MPa √m T-L direction 30 MPa √m S-L direction 22 MPa √m
6061-T651	Constellium	09/09/2019	Plate	152.00 203.00 254.00	203.00 254.00 305.00	*Min[9] *Min[9] *Min[9]	290 280 275	250 235 220	- - -	8 7 7	*Tentative
6089-T6511	Kaiser	04/18/2025	Rod & Bar	25.00 100.00	100.00 200.00	*Min[6] *Min[6]	340 315	295 275	- -	7 6	*Tentative
7140-T7351	Constellium	02/17/2025	Plate	100.00 120.00 160.00	120.00 160.00 180.00	*Min[6] *Min[9] *Min[10] *Min[6] *Min[9] *Min[10] *Min[6] *Min[9] *Min[10]	470 475 455 470 475 450 460 470 440	415 405 370 415 405 370 405 400 365	- - - - - - - - -	9 6 4 9 5 4 8 5 4	*Tentative Stress Corrosion Resistance See footnote 4e. Fracture Toughness[14] – Min K_{IC} or K_Q For thicknesses over 100.00 thru 120.00 mm L-T direction 38 MPa√m T-L direction 27 MPa√m S-L direction 30 MPa√m

Unless specified below, for all referenced footnotes refer to the Yellow and/or Tan Sheets as applicable.

FN 4.b. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: b. 240 MPa.

FN 4.e. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: e. 310 MPa.

FN 9 Long Transverse

FN 10 Short Transverse

FN 15.b. Material shall be capable of demonstrating exfoliation corrosion resistance. Exfoliation corrosion resistance shall be determined in accordance with ASTM G34 and material shall not exhibit exfoliation corrosion greater than that illustrated by Photo EB, Figure 2. The applicable sample plane for testing is indicated by one of the following locations: b. At the T/10 plane.

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Registered			Product	Thickness, mm		Tensile Strength, MPa			Elongation Percent in[21]		Remarks[2]
Alloy Temper	By	Date		Over	Thru	Basis[1]	Ult.	Yield	50 mm	5D or 5.65 $\sqrt{A}$	
				180.00	200.00	*Min[6]	460	400	-	7	For thicknesses over 120.00 thru 160.00 mm
						*Min[9]	470	395	-	4	L-T direction 36 MPa√m
						*Min[10]	440	365	-	4	T-L direction 27 MPa√m
				200.00	230.00	*Min[6]	460	400	-	7	S-L direction 30 MPa√m
						*Min[9]	470	395	-	4	
						*Min[10]	440	365	-	4	For thicknesses over 160.00 thru 180.00 mm
											L-T direction 34 MPa√m
				230.00	250.00	*Min[6]	455	395	-	6	T-L direction 27 MPa√m
						*Min[9]	460	385	-	4	S-L direction 30 MPa√m
						*Min[10]	435	360	-	4	
											For thicknesses over 180.00 thru 200.00 mm
											L-T direction 32 MPa√m
											T-L direction 26 MPa√m
											S-L direction 30 MPa√m
											For thicknesses over 200.00 thru 230.00 mm
											L-T direction 30 MPa√m
											T-L direction 26 MPa√m
											S-L direction 30 MPa√m
											For thicknesses over 230.00 thru 250.00 mm
											L-T direction 30 MPa√m
											T-L direction 26 MPa√m
											S-L direction 30 MPa√m
7140-T7451	Alcan Revised Constellium	06/15/2005 04/16/2024	Plate	100.00	120.00	Min[6]	490	455	-	8	Stress Corrosion Resistance
						Min[9]	505	450	-	4	See footnote 4.b.
						Min[10]	475	415	-	3	
											Exfoliation Corrosion Resistance
											See footnote 15.b.

Unless specified below, for all referenced footnotes refer to the Yellow and/or Tan Sheets as applicable.

FN 4.b. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: b. 240 MPa.

FN 4.e. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: e. 310 MPa.

FN 9 Long Transverse

FN 10 Short Transverse

FN 15.b. Material shall be capable of demonstrating exfoliation corrosion resistance. Exfoliation corrosion resistance shall be determined in accordance with ASTM G34 and material shall not exhibit exfoliation corrosion greater than that illustrated by Photo EB, Figure 2. The applicable sample plane for testing is indicated by one of the following locations: b. At the T/10 plane.

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New and Revised Registrations Since Publication of 2018 Tan Sheets

Registered			Product	Thickness, mm		Tensile Strength, MPa			Elongation Percent in[21]		Remarks[2]
Alloy Temper	By	Date		Over	Thru	Basis[1]	Ult.	Yield	50 mm	5D or 5.65 $\sqrt{A}$	
				120.00	160.00	Min[6]	490	455	-	7	
						Min[9]	495	450	-	4	
						Min[10]	475	415	-	3	
				160.00	180.00	Min[6]	490	450	-	6	
						Min[9]	495	440	-	4	
						Min[10]	470	405	-	3	
				180.00	200.00	Min[6]	485	450	-	5	
						Min[9]	490	435	-	4	
						Min[10]	470	400	-	3	
				200.00	230.00	Min[6]	485	450	-	5	
						Min[9]	490	435	-	4	
						Min[10]	460	400	-	3	
				230.00	250.00	Min[6]	485	450	-	4	
						Min[9]	485	435	-	3	
						Min[10]	460	400	-	3	
7140-T7651	Alcan Revised Constellium Revised Constellium	08/01/06 03/27/14 02/27/23	Plate	100.00	120.00	Min [6]	510	485	-	6	Stress Corrosion Resistance Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to 180 MPa for 20 days.
						Min [9]	525	475	-	5	
						Min [10]	505	435	-	3	
				120.00	160.00	Min [6]	510	485	-	6	Exfoliation Corrosion Resistance See footnote 15.b.
						Min [9]	515	470	-	3	
						Min [10]	495	425	-	3	
				160.00	180.00	Min [6]	505	475	-	6	Fracture Toughness [14] – Min K_{Ic} MPa√m For thicknesses over 100.00 thru 120.00 mm L-T direction 30 MPa√m T-L direction 24 MPa√m S-L direction 24 MPa√m
						Min [9]	515	470	-	3	
						Min [10]	490	425	-	3	
				180.00	200.00	Min [6]	495	475	-	5	
						Min [9]	510	460	-	3	For thicknesses over 120.00 thru 160.00 mm L-T direction 27 MPa√m T-L direction 23 MPa√m S-L direction 24 MPa√m
						Min [10]	490	420	-	3	

Unless specified below, for all referenced footnotes refer to the Yellow and/or Tan Sheets as applicable.

FN 4.b. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: b. 240 MPa.

FN 4.e. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: e. 310 MPa.

FN 9 Long Transverse

FN 10 Short Transverse

FN 15.b. Material shall be capable of demonstrating exfoliation corrosion resistance. Exfoliation corrosion resistance shall be determined in accordance with ASTM G34 and material shall not exhibit exfoliation corrosion greater than that illustrated by Photo EB, Figure 2. The applicable sample plane for testing is indicated by one of the following locations: b. At the T/10 plane.

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Registered			Product	Thickness, mm		Tensile Strength, MPa			Elongation Percent in[21]		Remarks[2]
Alloy Temper	By	Date		Over	Thru	Basis[1]	Ult.	Yield	50 mm	5D or 5.65 $\sqrt{A}$	
				200.00	230.00	Min [6] Min [9] Min [10]	495 505 475	470 450 415	- - -	4 3 3	For thicknesses over 160.00 thru 180.00 mm L-T direction 26 MPa√m T-L direction 22 MPa√m S-L direction 24 MPa√m
				230.00	250.00	Min [6] Min [9] Min [10]	490 490 470	460 440 405	- - -	4 2 3	For thicknesses over 180.00 thru 200.00 mm L-T direction 24 MPa√m T-L direction 21 MPa√m S-L direction 23 MPa√m For thicknesses over 200.00 thru 230.00 mm L-T direction 22 MPa√m T-L direction 20 MPa√m S-L direction 22 MPa√m For thicknesses over 230.00 thru 250.00 mm L-T direction 20 MPa√m T-L direction 19 MPa√m S-L direction 22 MPa√m
7048-T6511	Kaiser	04/08/2020	Extrusion	1.00	3.20	Min[6]	465	435	10	-	
7055-T76511	Alcoa Revised Arconic	01/15/2001 Revised 06/20/2007 Revised 08/14/2020	Extruded Rod, Bar & Profiles	- 6.30 12.50	6.30 12.50 80.0	Min[6] Min[6] Min[6]	615 620 625	585 585 595	7 9 -	- - 8	Exfoliation Corrosion Resistance See footnote 15.b. For thickness up thru 12.50 mm Cross Sectional Area 7700 square mm max. and Circle Size 250 mm max. For thickness 12.50 – 80.0 mm Cross Sectional Area 17000 square mm max. and Circle Size 390 mm max. Longitudinal Compressive Yield Strength: 600 MPa.
7160-T7351	Constellium	11/08/2018 Revised 02/06/2020	Plate	25.00 40.00	40.00 50.00	Min[6] Min[9] Min[6] Min[9]	510 510 505 505	460 450 460 450	- - - -	11 10 11 10	Stress Corrosion Resistance See footnote 4e. Fracture Toughness[14] – Min K_{IC} or K_Q

Unless specified below, for all referenced footnotes refer to the Yellow and/or Tan Sheets as applicable.

FN 4.b. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: b. 240 MPa.

FN 4.e. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: e. 310 MPa.

FN 9 Long Transverse

FN 10 Short Transverse

FN 15.b. Material shall be capable of demonstrating exfoliation corrosion resistance. Exfoliation corrosion resistance shall be determined in accordance with ASTM G34 and material shall not exhibit exfoliation corrosion greater than that illustrated by Photo EB, Figure 2. The applicable sample plane for testing is indicated by one of the following locations: b. At the T/10 plane.

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Registered			Product	Thickness, mm		Tensile Strength, MPa			Elongation Percent in[21]		Remarks[2]
Alloy Temper	By	Date		Over	Thru	Basis[1]	Ult.	Yield	50 mm	5D or 5.65 $\sqrt{A}$	
				50.00	80.00	Min[6]	495	450		10	For thicknesses 25.00 thru 80.00 mm
						Min[9]	505	440	-	9	L-T direction 44 MPaVm
						Min[10]	485	405	-	5	T-L direction 37 MPaVm
									-		For thicknesses 50.00 thru 80.00 mm
				80.00	100.00	Min[6]	490	440		10	L-T direction 49 MPaVm
						Min[9]	495	435	-	8	T-L direction 36 MPaVm
						Min[10]	485	400	-	4	S-L direction 38 MPaVm
									-		For thicknesses 80.00 thru 100.00 mm
				100.00	120.00	Min[6]	485	440		10	L-T direction 42 MPaVm
						Min[9]	495	425	-	7	T-L direction 33 MPaVm
						Min[10]	475	400	-	4	S-L direction 37 MPaVm
									-		For thicknesses 100.00 thru 120.00 mm
				120.00	150.00	Min[6]	485	435		10	L-T direction 40 MPaVm
						Min[9]	490	420	-	6	T-L direction 30 MPaVm
						Min[10]	470	400	-	3	S-L direction 34 MPaVm
									-		For thicknesses 120.00 thru 150.00 mm
											L-T direction 31 MPaVm
											T-L direction 27 MPaVm
											S-L direction 29 MPaVm
7160-T7451	Constellium	11/02/2018	Plate	25.00	40.00	*Min[6]	530	490	-	12	*Tentative
						*Min[9]	525	475	-	11	Stress Corrosion Resistance
											See footnote 4b.
				40.00	50.00	*Min[6]	530	490	-	12	
						*Min[9]	525	475	-	10	Fracture Toughness[14] – Min K_{IC} or K_Q
						*Min[10]	505	440	-	5	For thicknesses 25.00 thru 40.00 mm
									-		L-T direction 37 MPaVm
				50.00	80.000	*Min[6]	515	475		11	T-L direction 32 MPaVm
						*Min[9]	515	470	-	10	
						*Min[10]	505	440	-	5	For thicknesses 40.00 thru 50.00 mm
									-		L-T direction 37 MPaVm
				80.00	100.00	*Min[6]	505	470		11	T-L direction 32 MPaVm
						*Min[9]	515	460	-	9	
						*Min[10]	495	425	-	4	

Unless specified below, for all referenced footnotes refer to the Yellow and/or Tan Sheets as applicable.

FN 4.b. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: b. 240 MPa.

FN 4.e. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: e. 310 MPa.

FN 9 Long Transverse

FN 10 Short Transverse

FN 15.b. Material shall be capable of demonstrating exfoliation corrosion resistance. Exfoliation corrosion resistance shall be determined in accordance with ASTM G34 and material shall not exhibit exfoliation corrosion greater than that illustrated by Photo EB, Figure 2. The applicable sample plane for testing is indicated by one of the following locations: b. At the T/10 plane.

ADDENDUM TO 2018 TAN SHEETS

Tempers for Aluminum and Aluminum Alloy Products Metric Edition **July 16, 2025**

New and Revised Registrations Since Publication of 2018 Tan Sheets

Registered			Product	Thickness, mm		Tensile Strength, MPa			Elongation Percent in[21]		Remarks[2]
Alloy Temper	By	Date		Over	Thru	Basis[1]	Ult.	Yield	50 mm	5D or 5.65 $\sqrt{A}$	
				100.00	120.00	*Min[6]	495	460	-		For thicknesses 50.00 thru 80.00 mm
						*Min[9]	510	455	-	10	L-T direction 35 MPa√m
						*Min[10]	485	420	-	8	T-L direction 30 MPa√m
										3	S-L direction 31 MPa√m
				120.00	150.00	*Min[6]	495	455	-		For thicknesses 80.00 thru 100.00 mm
						*Min[9]	505	450	-	9	L-T direction 33 MPa√m
						*Min[10]	475	420	-	5	T-L direction 27 MPa√m
										2	S-L direction 30 MPa√m
											For thicknesses 100.00 thru 120.00 mm
											L-T direction 31 MPa√m
											T-L direction 26 MPa√m
											S-L direction 29 MPa√m
											For thicknesses 120.00 thru 150.00 mm
											L-T direction 29 MPa√m
											T-L direction 24 MPa√m
											S-L direction 27 MPa√m
7160-T7651	Constellium	12/05/2017 Revised 12/19/2018	Plate	25.00	40.00	Min[6]	545	510	-	11	Stress Corrosion Resistance
						Min[9]	540	495	-	11	See footnote 4a.
											Fracture Toughness[14] – Min K_{IC} or K_Q
				40.00	50.00	Min[6]	540	510	-	10	For thicknesses 25.00 thru 50.00 mm
						Min[9]	540	495	-	10	L-T direction 37 MPa√m
						Min[10]	515	455	-	5	T-L direction 32 MPa√m
				50.00	80.000	Min[6]	525	495	-	10	For thicknesses 50.00 thru 80.00 mm
						Min[9]	530	490	-	10	L-T direction 35 MPa√m
						Min[10]	510	450	-	4	T-L direction 30 MPa√m
											S-L direction 32 MPa√m
				80.00	100.00	Min[6]	515	495	-	10	For thicknesses 80.00 thru 100.00 mm
						Min[9]	530	485	-	9	L-T direction 32 MPa√m
						Min[10]	505	440	-	4	T-L direction 29 MPa√m
											S-L direction 31 MPa√m

Unless specified below, for all referenced footnotes refer to the Yellow and/or Tan Sheets as applicable.

FN 4.b. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: b. 240 MPa.

FN 4.e. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: e. 310 MPa.

FN 9 Long Transverse

FN 10 Short Transverse

FN 15.b. Material shall be capable of demonstrating exfoliation corrosion resistance. Exfoliation corrosion resistance shall be determined in accordance with ASTM G34 and material shall not exhibit exfoliation corrosion greater than that illustrated by Photo EB, Figure 2. The applicable sample plane for testing is indicated by one of the following locations: b. At the T/10 plane.

ADDENDUM TO 2018 TAN SHEETS

Tempers for Aluminum and Aluminum Alloy Products Metric Edition **July 16, 2025**

New and Revised Registrations Since Publication of 2018 Tan Sheets

Registered			Product	Thickness, mm		Tensile Strength, MPa			Elongation Percent in[21]		Remarks[2]
Alloy Temper	By	Date		Over	Thru	Basis[1]	Ult.	Yield	50 mm	5D or 5.65 $\sqrt{A}$	
				100.00	120.00	Min[6] Min[9] Min[10]	510 525 505	490 475 440	- - -	10 8 4	For thicknesses 100.00 thru 120.00 mm L-T direction 27 MPa√m T-L direction 26 MPa√m S-L direction 29 MPa√m
				120.00	150.00	Min[6] Min[9] Min[10]	510 515 495	485 470 435	- - -	9 7 4	For thicknesses 120.00 thru 150.00 mm L-T direction 24 MPa√m T-L direction 25 MPa√m S-L direction 26 MPa√m
7085-T711	Aloca Revised Arconic	10/25/2011 Revised 08/02/2018	Plate	12.50	40.00	Min[9]	550	510	-	10	Solution heat treated, stretched 1.5 to 3%, and overaged for ballistic performance. Over 12.50 thru 80.00 plate meets armor plate requirements of MIL-DTL-32375 (MR) Class I Type A. Exfoliation Corrosion Resistance See footnote 15.b.
				40.00	50.00	Min[9]	540	505	-	10	
				50.00	80.00	Min[9]	530	495	-	9	
				80.00	100.00	Min[9]	525	485	-	6	
7085-T721	Alcoa Revised Arconic	10/27/2011 Revised 08/02/2018	Plate	12.50	40.00	Min[9]	470	415	-	10	Solution heat treated, stretched 1.5 to 3%, and overaged for blast performance. Over 12.50 thru 80.00 plate meets armor plate requirements of MIL-DTL-32375 (MR) Class I Type B. Exfoliation Corrosion Resistance See footnote 15.b.
				40.00	50.00	Min[9]	460	405	-	10	
				50.00	80.00	Min[9]	460	400	-	10	
				80.00	100.00	Min[9]	455	395	-	9	

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FN 4.b. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: b. 240 MPa.
FN 4.e. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: e. 310 MPa.
FN 9 Long Transverse
FN 10 Short Transverse
FN 15.b. Material shall be capable of demonstrating exfoliation corrosion resistance. Exfoliation corrosion resistance shall be determined in accordance with ASTM G34 and material shall not exhibit exfoliation corrosion greater than that illustrated by Photo EB, Figure 2. The applicable sample plane for testing is indicated by one of the following locations: b. At the T/10 plane.

ADDENDUM TO 2018 TAN SHEETS

Tempers for Aluminum and Aluminum Alloy Products Metric Edition **July 16, 2025**

New and Revised Registrations Since Publication of 2018 Tan Sheets

Registered			Product	Thickness, mm		Tensile Strength, MPa			Elongation Percent in[21]		Remarks[2]
Alloy Temper	By	Date		Over	Thru	Basis[1]	Ult.	Yield	50 mm	5D or 5.65 $\sqrt{A}$	
7099-T731	Kaiser	03/13/2020	Plate	50.00	80.00	*Min[9]	470	400	-	10	*Tentative Solution heat treated, stretched 1.5 to 3%, and artificially aged to meet armor plate requirements. Developed to meet armor plate requirements of MILDTL-32375 (Revision B Amendment 2). Exfoliation Corrosion Resistance See footnote 15.b.
7099-T731	Kaiser	03/13/2020	Plate	50.00	80.00	*Min[9]	470	400	-	10	*Tentative Solution heat treated, stretched 1.5 to 3%, and artificially aged to meet armor plate requirements. Developed to meet armor plate requirements of MILDTL-32375 (Revision B Amendment 2). Exfoliation Corrosion Resistance See footnote 15.b.
A206-T4	Eck Industries	09/14/2020	Sand Casting	-	-	Min	350	215	9	-	Properties are from separate standard cast coupons.
A206-T7	Eck Industries	09/14/2020	Sand Casting	-	-	Min	345	240	2	-	Properties are from separate standard cast coupons.
E357-T6	Eck Industries	02/17/2017	Sand Casting	-	-	Min	276	234	1	-	Values represent properties obtained from separately cast bars and are derived from ASTM B-26, Standard Specification for Aluminum-Alloy Sand Castings.

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FN 4.b. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: b. 240 MPa.
FN 4.e. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: e. 310 MPa.
FN 9 Long Transverse
FN 10 Short Transverse
FN 15.b. Material shall be capable of demonstrating exfoliation corrosion resistance. Exfoliation corrosion resistance shall be determined in accordance with ASTM G34 and material shall not exhibit exfoliation corrosion greater than that illustrated by Photo EB, Figure 2. The applicable sample plane for testing is indicated by one of the following locations: b. At the T/10 plane.

ADDENDUM TO 2018 TAN SHEETS

Tempers for Aluminum and Aluminum Alloy Products Metric Edition **July 16, 2025**

Tentative Removed			
Alloy Temper	**Product**	**By**	**Revised Date**
2397-T87	Plate	Arconic	08/02/2018
7085-T711	Plate	Arconic	08/02/2018
7085-T721	Plate	Arconic	08/02/2018
7160-T7351	Plate	Constellium	02/06/2020
7160-T7651	Plate	Constellium	12/19/2018
2050-T34	Plate	Constellium	02/01/2019

Deactivated Registrations		
Alloy Temper	**Product**	**Date Deactivated**
Alclad 2024-O[2]	Sheet & Plate	04/11/2018
Alclad 2024-T351[2]	Plate	04/11/2018
Alclad 2024-T42[2]	Sheet & Plate	04/11/2018
1 ½% Alclad 2024-O[2]	Sheet & Plate	04/11/2018
1 ½% Alclad 2024-T351[2]	Plate	04/11/2018
1 ½% Alclad 2024-T42[2]	Sheet & Plate	04/11/2018

[++]Deactivation is limited to specific gauge range(s) for the product indicated.

Unless specified below, for all referenced footnotes refer to the Yellow and/or Tan Sheets as applicable.
FN 4.b. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: b. 240 MPa.
FN 4.e. Material shall be capable of passing the stress corrosion cracking test described in ASTM G47 when stressed to: e. 310 MPa.
FN 9 Long Transverse
FN 10 Short Transverse
FN 15.b. Material shall be capable of demonstrating exfoliation corrosion resistance. Exfoliation corrosion resistance shall be determined in accordance with ASTM G34 and material shall not exhibit exfoliation corrosion greater than that illustrated by Photo EB, Figure 2. The applicable sample plane for testing is indicated by one of the following locations: b. At the T/10 plane.