INTERNATIONAL STANDARD

ISO 6361-2

Fourth edition
2014-09-15

Wrought aluminium and aluminium alloys — Sheets, strips and plates —

Part 2: Mechanical properties

Aluminium et alliages d'aluminium corroyés — Tôles, bandes et tôles épaisses —

Partie 2: Propriétés mécaniques

Reference number
ISO 6361-2:2014(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 79, *Light metals and their alloys*, Subcommittee SC 6, *Wrought aluminium and aluminium alloys*.

This fourth edition cancels and replaces the third edition (ISO 6361-2:2011), which has been technically revised.

ISO 6361 consists of the following parts, under the general title *Wrought aluminium and aluminium alloys — Sheets, strips and plates*:

— *Part 1: Technical conditions for inspection and delivery*

— *Part 2: Mechanical properties*

— *Part 3: Strips: Tolerances on shape and dimensions*

— *Part 4: Sheets and plates: Tolerances on shape and dimensions*

— *Part 5: Chemical composition*

Wrought aluminium and aluminium alloys — Sheets, strips and plates —

Part 2: Mechanical properties

1 Scope

In conjunction with ISO 6361-1, this part of ISO 6361 specifies the mechanical properties of wrought aluminium and aluminium alloy sheets, strips, and plates for general engineering applications.

It applies to flat-rolled products.

The chemical composition of these materials is given in ISO 6361-5.

The designations of aluminium and aluminium alloys and the temper designations used in this part of ISO 6361 are in accordance with ISO 2107.

NOTE In certain countries, for purposes of mechanical properties, the thickness limit can be lowered to 0,15 mm by agreement between the purchaser and the supplier, in the case of sheets and strips.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 6361-1, *Wrought aluminium and aluminium alloys — Sheets, strips and plates — Part 1: Technical conditions for inspection and delivery*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6361-1 apply.

4 Tensile testing

For the selection of the specimens and tensile testing, see ISO 6361-1.

5 Bend testing

For the selection of the specimens and bend testing, see ISO 6361-1.

6 Mechanical properties

6.1 Tensile test

Values for mechanical properties of aluminium and aluminium alloys are given in Tables 1 to 63. For elongation, two different gauge lengths are used. The choice of the gauge length for elongation measurements (A or A_{50mm}) is at the discretion of the producer, unless otherwise agreed.

NOTE A is the percentage elongation on a gauge length of $5{,}65\sqrt{S_o}$. A_{50mm} is the percentage elongation on a gauge length of 50 mm.

Test results shall be rounded in accordance with the rules given in Annex A.

6.2 Bend test

Sheet, strip, and plate shall be capable of being bent cold through an angle of 180°, as applicable, around a pin having a radius equal to k times the thickness, t, of the sheet, strip, or plate (for example 0,5t) without cracking. The values of the minimum bend radii for different alloys, tempers, and thicknesses are given in Tables 1 to 63.

NOTE The explanations of the numbered notes in Tables 1 to 63 are given after Table 63.

Table 1 — Aluminium 1050

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H112	≥4,0	6,5	85		45		10				
	6,5	13,0	80		45		10				
	13,0	25,0	70		35		16				
	25,0	50,0	65		30		22				
	50,0	75,0	65		20		22				
O	≥0,2	0,5	60	100			15		≥0,2	6,0	0t
	0,5	0,8	60	100			20				
	0,8	1,3	60	100	20		25				
	1,3	6,5	60	100	20		30				
	6,5	50,0	60	100	20		28				
H12 or H22[3]	≥0,2	0,3	80	120			2		≥0,2	0,8	0t
	0,3	0,5	80	120			3		0,8	6,0	0,5t
	0,5	0,8	80	120			4				
	0,8	1,3	80	120	65		6				
	1,3	2,9	80	120	65		8				
	2,9	12,0	80	120	65		9				
H14 or H24[3]	≥0,2	0,3	95	125			1		≥0,2	0,8	0,5t
	0,3	0,5	95	125			2		0,8	6,0	1t
	0,5	0,8	95	125			3				
	0,8	1,3	95	125	75		4				
	1,3	2,9	95	125	75		5				
	2,9	12,0	95	125	75		6				

Table 1 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H16 or H26[3]	≥0,2	0,5	120	145			1		≥0,2	4,0	2t
	0,5	0,8	120	145			2				
	0,8	1,3	120	145	85		3				
	1,3	4,0	120	145	85		4				
H18	≥0,2	0,5	125				1				
	0,5	0,8	125				2				
	0,8	1,3	125				3				
	1,3	3,0	125				4				

Table 2 — Aluminium 1050A

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O	≥0,2	0,5	65	95	20		20				
	0,5	1,5	65	95	20		22				
	1,5	3,0	65	95	20		26				
	3,0	6,0	65	95	20		29				
	6,0	12,5	65	95	20		35				
	12,5	25,0	65	95	20		32	32			
H14	≥0,2	0,5	105	145	85		2				
	0,5	1,5	105	145	85		3				
	1,5	3,0	105	145	85		4				
	3,0	6,0	105	145	85		5				
H24	≥0,2	0,5	105	145	75		3				
	0,5	1,5	105	145	75		4				
	1,5	3,0	105	145	75		5				
	3,0	6,0	105	145	75		8				
H18	≥0,2	0,5	140	120	120		1				
	0,5	1,5	140	120	120		2				
	1,5	3,0	140	120	120		2				

Table 3 — Aluminium 1070, 1080, and 1085

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H112	≥4,0	6,5	75		35		13				
	6,5	13,0	70		35		15				
	13,0	25,0	60		25		20				
	25,0	50,0	55		20		25				
	50,0	75,0	55		15		25				
O	≥0,2	0,3	55	95			15		≥0,2	6,0	0t
	0,3	0,5	55	95			20				
	0,5	0,8	55	95			25				
	0,8	1,3	55	95	15		30				
	1,3	13,0	55	95	15		35				
	13,0	50,0	55	95	15		30				
H12 or H22[3]	≥0,2	0,3	70	110			2		≥0,2	6,0	0t
	0,3	0,5	70	110			3				
	0,5	0,8	70	110			4				
	0,8	1,3	70	110	55		6				
	1,3	2,9	70	110	55		8				
	2,9	12,0	70	110	55		9				
H14 or H24[3]	≥0,2	0,3	85	120			1		≥0,2	0,8	0,5t
	0,3	0,5	85	120			2		0,8	6,0	1t
	0,5	0,8	85	120			3				
	0,8	1,3	85	120	65		4				
	1,3	2,9	85	120	65		5				
	2,9	12,0	85	120	65		6				
H16 or H26[3]	≥0,2	0,5	100	135			1		≥0,2	0,8	1t
	0,5	0,8	100	135			2		0,8	6,0	1,5t
	0,8	1,3	100	135	75		3				
	1,3	4,0	100	135	75		4				
H18	≥0,2	0,5	120				1				
	0,5	0,8	120				2				
	0,8	1,3	120				3				
	1,3	3,0	120				4				

Table 4 — Aluminium 1070A

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O/H111	0,2	0,5	60	90	15		23		0,2	0,5	0t
	0,5	1,5	60	90	15		25		0,5	1,5	0t
	1,5	3,0	60	90	15		29		1,5	3,0	0t
	3,0	6,0	60	90	15		32		3,0	6,0	0,5t
	6,0	12,5	60	90	15		35		6,0	12,5	0,5t
	12,5	25,0	60	90	15			32			
H112	≥6,0	12,5	70		20		20				
	12,5	25,0	70					20			
H12	0,2	0,5	80	120	55		5		0,2	0,5	0,5t
	0,5	1,5	80	120	55		6		0,5	1,5	0,5t
	1,5	3,0	80	120	55		7		1,5	3,0	0,5t
	3,0	6,0	80	120	55		9				
	6,0	12,5	80	120	55		12				
H14	0,2	0,5	100	140	70		4		0,2	0,5	0,5t
	0,5	1,5	100	140	70		4		0,5	1,5	0,5t
	1,5	3,0	100	140	70		5		1,5	3,0	1t
	3,0	6,0	100	140	70		6				
	6,0	12,5	100	140	70		7				
H16	0,2	0,5	110	150	90		2		0,2	0,5	1t
	0,5	1,5	110	150	90		2		0,5	1,5	1t
	1,5	4,0	110	150	90		3		1,5	4,0	1t
H18	0,2	0,5	125		105		2				
	0,5	1,5	125		105		2				
	1,5	3,0	125		105		2				
H22	0,2	0,5	80	120	50		7		0,2	0,5	0,5t
	0,5	1,5	80	120	50		8		0,5	1,5	0,5t
	1,5	3,0	80	120	50		10		1,5	3,0	0,5t
	3,0	6,0	80	120	50		12				
	6,0	12,5	80	120	50		15				
H24	0,2	0,5	100	140	60		5		0,2	0,5	0,5t
	0,5	1,5	100	140	60		6		0,5	1,5	0,5t
	1,5	3,0	100	140	60		7		1,5	3,0	1t
	3,0	6,0	100	140	60		9				
	6,0	12,5	100	140	60		11				
H26	0,2	0,5	110	150	80		3				
	0,5	1,5	110	150	80		3				
	1,5	4,0	110	150	80		4				

Table 5 — Aluminium 1080A

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O/H111	0,2	0,5	60	90	15		26		0,2	0,5	0t
	0,5	1,5	60	90	15		28		0,5	1,5	0t
	1,5	3,0	60	90	15		31		1,5	3,0	0t
	3,0	6,0	60	90	15		35		3,0	6,0	0,5t
	6,0	12,5	60	90	15		35		6,0	12,5	0,5t
H112	≥6,0	12,5	70				20				
	12,5	25,0	70					20			
H12	0,2	0,5	80	120	55		5		0,2	0,5	0,5t
	0,5	1,5	80	120	55		6		0,5	1,5	0,5t
	1,5	3,0	80	120	55		7		1,5	3,0	0,5t
	3,0	6,0	80	120	55		9				
	6,0	12,5	80	120	55		12				
H14	0,2	0,5	100	140	70		4		0,2	0,5	0,5t
	0,5	1,5	100	140	70		4		0,5	1,5	0,5t
	1,5	3,0	100	140	70		5		1,5	3,0	1t
	3,0	6,0	100	140	70		6				
	6,0	12,5	100	140	70		7				
H16	0,2	0,5	110	150	90		2		0,2	0,5	1t
	0,5	1,5	110	150	90		2		0,5	1,5	1t
	1,5	4,0	110	150	90		3		1,5	4,0	1t
H18	0,2	0,5	125		105		2				
	0,5	1,5	125		105		2				
	1,5	3,0	125		105		2				
H22	0,2	0,5	80	120	50		8		0,2	0,5	0,5t
	0,5	1,5	80	120	50		9		0,5	1,5	0,5t
	1,5	3,0	80	120	50		11		1,5	3,0	0,5t
	3,0	6,0	80	120	50		13				
	6,0	12,5	80	120	50		15				
H24	0,2	0,5	100	140	60		5		0,2	0,5	0,5t
	0,5	1,5	100	140	60		6		0,5	1,5	0,5t
	1,5	3,0	100	140	60		7		1,5	3,0	1t
	3,0	6,0	100	140	60		9				
	6,0	12,5	100	140	60		11				
H26	0,2	0,5	110	150	80		3				
	0,5	1,5	110	150	80		3				
	1,5	4,0	110	150	80		4				

Table 6 — Aluminium 1100, 1100A, 1200, and 1230A

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H112	≥4,0	6,5	95		50		9				
	6,5	13,0	90		50		9				
	13,0	50,0	85		35		14				
	50,0	75,0	80		25		20				
O	≥0,2	0,5	75	105	25		17		≥0,2	6,0	0t
	0,5	0,8	75	105	25		22				
	0,8	1,3	75	105	25		22				
	1,3	6,5	75	105	25		30				
	6,5	75,0	75	105	25		28	25			
H12 or H22[3]	≥0,2	0,3	95	125	75		2		≥0,2	6,0	0,5t
	0,3	0,5	95	125	75		3				
	0,5	0,8	95	125	75		4				
	0,8	1,3	95	125	75		6				
	1,3	2,9	95	125	75		8				
	2,9	12,0	95	125	75		9				
H14 or H24[3]	≥0,2	0,3	120	145	95		1		≥0,2	6,0	1t
	0,3	0,5	120	145	95		2				
	0,5	0,8	120	145	95		3				
	0,8	1,3	120	145	95		4				
	1,3	2,9	120	145	95		5				
	2,9	12,0	120	145	95		6				
H16 or H26[3]	≥0,2	0,5	135	165	115		1		≥0,2	4,0	2t
	0,5	0,8	135	165	115		2				
	0,8	1,3	135	165	115		3				
	1,3	4,0	135	165	115		4				
H18	≥0,2	0,5	150		130		1				
	0,5	0,8	150		130		2				
	0,8	1,3	150		130		3				
	1,3	3,0	150		130		4				

Table 7 — Alloy 2014

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O[4]	≥0,4	0,5		220		140	16		≥0,4	1,6	0,5t
	0,5	13,0		220		140	16		1,6	2,9	1t
	13,0	25,0		220		140	10	9	2,9	6,0	1,5t

Table 7 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
T3	≥0,4	0,5	395		245		14		≥0,4	0,5	1,5t
	0,5	6,0	395		245		14		0,5	1,6	2,5t
	6,0	6,3	395		240		14		1,6	2,9	3t
	6,3	12,0	395		235		13		2,9	6,0	3,5t
T4	≥0,4	0,5	395		240		14		≥0,4	0,5	1,5t
	0,5	6,0	395		240		14		0,5	1,6	2,5t
	6,0	6,3	400		250		14		1,6	2,9	3t
	6,3	12,0	400		250		14		2,9	6,0	3,5t
T451[5]	≥6,0	13,0	400		250		14				
	13,0	25,0	400		250		14				
	25,0	50,0	400		250		12	10			
	50,0	80,0	395		250		8	7			
T42[6]	≥0,4	0,5	400				14				
	0,5	25,0	400		235		14				
T6	≥0,4	0,5	440		390		6		≥0,4	0,5	3t
	0,5	1,0	440		390		6		0,5	1,6	3,5t
	1,0	6,0	440		390		7		1,6	2,9	4,5t
	6,0	6,3	450		395		7		2,9	6,0	5t
	6,3	12,0	450		395		7				
T62[7]	≥0,4	0,5	440				6				
	0,5	1,0	440		390		6				
	1,0	6,5	460		400		7				
	6,5	13,0	460		410		7				
	13,0	25,0	460		410		6				
T651	≥6,0	13,0	460		405		7				
	13,0	25,0	460		405		7	6			
	25,0	50,0	460		405		4	5			
	50,0	60,0	450		390		2	3			
	60,0	80,0	435		380		2	1			
	80,0	100,0	405		380			1			

Table 8 — Alloy 2014A

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O	≥0,35	3,2		220		140	16	13			
	3,2	6,0		220		140	16	12			
	6,0	12,0		220		140	16	12			
	12,0	12,5		220		140	16	12			
	12,5	25,0		220		140	12	9			
T3 or T4	≥0,35	0,5	395		240		14				
	0,5	1,0	395		240		14				
	1,0	1,6	395		240		14				
	1,6	6,0	395		240		14				
	6,0	6,3	395		240		14				
	6,3	12,0	395		235		13				
T6	≥0,35	0,5	440		380		6				
	0,5	1,0	440		380		6				
	1,0	1,6	440		380		7				
	1,6	6,0	440		390		7				
	6,0	6,3	440		390		7				
	6,3	12,0	440		390		7				
T451	≥6,0	6,3	395		240		14				
	6,3	12,0	395		240		14				
	12,0	12,5	400		250		14				
	12,5	25,0	400		250		14	12			
	25,0	40,0	400		250			10			
	40,0	50,0	400		250			8			
	50,0	60,0	395		250			7			
	60,0	80,0	390		240			7			
T651	≥6,0	6,3	450		395		7				
	6,3	12,0	450		395		7				
	12,0	12,5	450		395		7				
	12,5	25,0	460		405		7	6			
	25,0	40,0	460		405			5			
	40,0	50,0	450		390			3			
	50,0	60,0	450		390			3			
	60,0	80,0	435		380			1			
	80,0	100,0	405		350			1			

Table 9 — Alloy 2017

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O[4]	≥0,4	0,5		215			12		≥0,4	1,6	0,5t
	0,5	25,0		215		110	12		1,6	2,9	1t
									2,9	6,0	1,5t
T3	≥0,4	0,5	375				12		≥0,4	0,5	1,5t
	0,5	1,6	375		215		15		0,5	1,6	2,5t
	1,6	2,9	375		215		17		1,6	2,9	3t
	2,9	6,0	375		215		15		2,9	6,0	3,5t
T351	≥6,0	25,0	375		215		12				
	25,0	50,0	375		215		12				
	50,0	80,0	355		195		11				
	80,0	100,0	355		195		10				
T4	≥0,4	0,5	355				12		≥0,4	0,5	1,5t
	0,5	1,6	355		195		15		0,5	1,6	2,5t
	1,6	2,9	355		195		17		1,6	2,9	3t
	2,9	6,0	355		195		15		2,9	6,0	3,5t
T451	≥6,0	25,0	355		195		12				
	25,0	50,0	355		195		12				
	50,0	80,0	355		195		11				
	80,0	100,0	355		195		10				
T42[6]	≥0,4	0,5	355				12				
	0,5	1,6	355		195		15				
	1,6	2,9	355		195		17				
	2,9	6,5	355		195		15				
	6,5	25,0	335		195		12				

Table 10 — Alloy 2017A

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O	≥0,35	3,2		225		145	12				
	3,2	6,0		225		145	13				
	6,0	12,0		225		145	13				

Table 10 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
T4	0,35	6,0	390		245		14				
	6,0	12,0	390		260		13				
T451	6,0	12,0	390		260		13				
	12,0	25,0	390		250		13	12			
	25,0	40,0	390		250			12			
	40,0	60,0	385		240			10			
	60,0	80,0	385		240			10			
	80,0	120,0	370		240			8			
	120,0	150,0	350		240			4			

Table 11 — Alloy 2618A

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
T851	≥6,0	12,5	420		375		5				
	12,5	40,0	420		375			5			
	40,0	80,0	410		370			5			
	80,0	100,0	405		365			4			
	100,0	140,0	395		360			4			

Table 12 — Alloy 2219

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O[4]	≥0,5	13,0		220		110	12		≥0,5	6,5	2t
	13,0	50,0		220		110	11	10	6,5	13,0	3t
									13,0	25,0	4t
T31[9]	≥0,5	1,0	315		200		8				
	1,0	6,5	315		195		10				
T351[8]	≥6,5	12,5	315		195		10				
	12,5	50,0	315		195		10				
	50,0	80,0	305		195		10				
	80,0	100,0	290		195		9				

Table 12 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
T37[10]	≥0,5	1,0	340		260		6				
	1,0	12,5	340		255		6				
	12,5	60,0	340		255		5				
	60,0	80,0	325		250		5				
	80,0	100,0	310		240		3				
T62[7]	≥0,5	1,0	370		250		6				
	1,0	6,5	370		250		7				
	6,5	13,0	370		250		8				
	13,0	25,0	370		250		8				
	25,0	50,0	370		250		7				
T81	≥0,5	1,0	425		315		6				
	1,0	6,5	425		315		7				
T851	≥6,5	13,0	425		315		8				
	13,0	25,0	425		315		8	7			
	25,0	50,0	425		315		7	6			
	50,0	80,0	425		310		6	5			
	80,0	100,0	415		305		5	4			
	100,0	130,0	405		295			4			
	130,0	150,0	395		290			3			
T87	≥0,5	1,0	440		360		5				
	1,0	12,5	440		350		6				
	12,5	60,0	440		350		7	6			
	60,0	80,0	440		350		6	5			
	80,0	100,0	425		345		5	3			
	100,0	120,0	420		340			2			

Table 13 — Alloy 2024

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O[4]	≥0,4	0,5		220		140	12		≥0,4	0,5	0t
	0,5	13,0		220		140	12		0,5	1,6	0,5t
	13,0	25,0		220		95	12		1,6	2,9	2t
	25,0	45,0		220				10	2,9	6,0	3t
T3	≥0,4	0,5	440				12		≥0,4	0,5	2t
	0,5	6,5	440		295		15		0,5	2,9	3t
									2,9	6,5	4t

Table 13 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
T351[8]	≥6,5	13,0	440		290		12				
	13,0	25,0	435		290		8	7			
	25,0	40,0	425		290		7	6			
	40,0	50,0	425		290		6	5			
	50,0	80,0	415		290		4	3			
	80,0	100,0	395		285		4	3			
	100,0	120,0	395		285			2			
	120,0	150,0	380		260			2			
T361[11]	≥0,4	0,5	460				8		≥0,4	1,6	3t
	0,5	1,6	460		345		8		1,6	2,9	4t
	1,6	6,5	470		355		9		2,9	6,0	5t
	6,5	12,0	460		345		9				
T4	≥0,4	0,5	425		275		12		≥0,4	0,5	2t
	0,5	6,0	425		275		15		0,5	2,9	3t
									2,9	6,0	4t
T42[6]	≥0,4	0,5	430				12				
	0,5	6,5	430		265		15				
	6,5	13,0	430		265		12				
	13,0	25,0	420		265		8				
T62[7]	≥0,4	0,5	440				5				
	0,5	13,0	440		345		5				
	13,0	25,0	430		345		5				
T81	≥0,25	6,5	460		400		5				
T851	≥6,5	13,0	460		400		5				
	13,0	25,0	455		400		5				
	25,0	40,0	455		395		5				
T861	≥0,4	0,5	480				3				
	0,5	1,6	480		430		3				
	1,6	6,5	490		460		4				
	6,5	12,0	480		440		4				

Table 14 — Alloy 2124

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
T851	≥38,0	51,0	455		393			5			
	51,0	76,0	448		393			4			
	76,0	102,0	448		386			4			
	102,0	127,0	441		379			4			
	127,0	152,0	434		372			4			

Table 15 — Alloys 3003 and 3203

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H112	≥4,0	13,0	120		70		8				
	13,0	50,0	110		40		12				
	50,0	75,0	100		40		18				
O	≥0,2	0,3	95	135			18		≥0,2	6,0	0t
	0,3	0,8	95	135	35		20				
	0,8	1,3	95	135	35		22				
	1,3	6,5	95	135	35		25				
	6,5	75,0	95	135	35		23				
H12 or H22[3]	≥0,2	0,3	120	155			2		≥0,2	6,0	0,5t
	0,3	0,5	120	155			3				
	0,5	0,8	120	155			4				
	0,8	1,3	120	155	85		5				
	1,3	2,9	120	155	85		6				
	2,9	4,0	120	155	85		7				
	4,0	6,5	120	155	85		8				
	6,5	12,0	120	155	85		9				
H14 or H24[3]	≥0,2	0,3	140	180			1		≥0,2	2,9	1t
	0,3	0,5	140	180	115		2		2,9	6,0	1,5t
	0,5	0,8	140	180	115		3				
	0,8	1,3	140	180	115		3				
	1,3	2,9	140	180	115		5				
	2,9	4,0	140	180	115		5				
	4,0	6,5	140	180	115		5				
	6,5	12,0	140	180	115		8				

Table 15 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H16 or H26[3]	≥0,2	0,5	165	205			1		≥0,2	1,3	2t
	0,5	0,8	165	205			2		1,3	2,9	2,5t
	0,8	1,3	165	205	145		3		2,9	4,0	3t
	1,3	4,0	165	205	145		4				
H18	≥0,2	0,5	180		165		1				
	0,5	0,8	180		165		2				
	0,8	1,3	180		165		2				
	1,3	3,0	180		165		4				

Table 16 — Alloy 3103

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O	≥0,2	0,5	90	130	35		17				
	0,5	1,5	90	130	35		19				
	1,5	3,0	90	130	35		21				
	3,0	6,0	90	130	35		24				
	6,0	12,5	90	130	35		28				
	12,5	50,0	90	130	35		28	25			
H14	≥0,2	0,5	140	180	120		2				
	0,5	1,5	140	180	120		2				
	1,5	3,0	140	180	120		3				
	3,0	6,0	140	180	120		4				
	6,0	12,5	140	180	120		5				
	12,5	25,0	140	180	120		5	5			
H24[3]	≥0,2	0,5	140	180	110		4				
	0,5	1,5	140	180	110		4				
	1,5	3,0	140	180	110		5				
	3,0	6,0	140	180	110		6				
	6,0	12,5	140	180	110		8				
H18	≥0,2	0,5	185		165		1				
	0,5	1,5	185		165		2				
	1,5	3,0	185		165		2				

Table 17 — Alloys 3004 and 3104

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O	≥0,2	0,5	155	195			10		≥0,2	0,8	0t
	0,5	0,8	155	195			14		0,8	3,0	0,5t
	0,8	1,3	155	195	60		16				
	1,3	3,0	155	195	60		18				
H12 or H22[3] or H32	≥0,5	0,8	195	245			3		≥0,5	0,8	0,5t
	0,8	1,3	195	245	145		4		0,8	3,0	1t
	1,3	3,0	195	245	145		5				
H14 or H24[3] or H34	≥0,2	0,5	225	265			1		≥0,2	0,8	1t
	0,5	0,8	225	265			3		0,8	3,0	1,5t
	0,8	1,3	225	265	175		3				
	1,3	3,0	225	265	175		4				
H16 or H26[3] or H36	≥0,2	0,5	245	285			1		≥0,2	0,8	2t
	0,5	0,8	245	285			2		0,8	3,0	2,5t
	0,8	1,3	245	285	195		3				
	1,3	3,0	245	285	195		4				
H18 or H28[3] or H38	≥0,2	0,5	265		215		1				
H19 or H29 or H39	≥0,2	0,5	275				1				

Table 18 — Alloy 3005

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O	≥0,3	0,5	120	165			14		≥0,3	1,6	0t
	0,5	0,8	120	165			16				
	0,8	1,6	120	165	45		18				
H12 or H22[3]	≥0,3	0,5	135	185			1		≥0,3	1,6	1t
	0,5	0,8	135	185			2				
	0,8	1,6	135	185	120		2				
H14 or H24[3]	≥0,3	0,8	165	215			1		≥0,3	0,8	1,5t
	0,8	1,6	165	215	145		2		0,8	1,6	2t
H16 or H26[3]	≥0,3	0,8	195	245			1		≥0,3	0,5	2t
	0,8	1,6	195	245	165		2		0,8	1,6	3t
H18	≥0,3	0,8	225				1				
	0,8	1,6	225		205		2				

Table 19 — Alloy 3105

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O/H111	0,2	0,5	100	155	40		14		0,2	0,5	0t
	0,5	1,5	100	155	40		15		0,5	1,5	0t
	1,5	3,0	100	155	40		17		1,5	3,0	0,5t
H12	0,2	0,5	130	180	105		3		0,2	0,5	1,5t
	0,5	1,5	130	180	105		4		0,5	1,5	1,5t
	1,5	3,0	130	180	105		4		1,5	3,0	1,5t
H14	0,2	0,5	150	200	130		2		0,2	0,5	2,5t
	0,5	1,5	150	200	130		2		0,5	1,5	2,5t
	1,5	3,0	150	200	130		2		1,5	3,0	2,5t
H16	0,2	0,5	175	225	160		1				
	0,5	1,5	175	225	160		2				
	1,5	3,0	175	225	160		2				
H18	0,2	0,5	195		180		1				
	0,5	1,5	195		180		1				
	1,5	3,0	195		180		1				
H19	0,2	0,5	215		190		1				
	0,5	1,5	215		190		1				
H22[3]	0,2	0,5	130	180	105		6				
	0,5	1,5	130	180	105		6				
	1,5	3,0	130	180	105		7				
H24[3]	0,2	0,5	150	200	120		4		0,2	0,5	2,5t
	0,5	1,5	150	200	120		4		0,5	1,5	2,5t
	1,5	3,0	150	200	120		5		1,5	3,0	2,5t
H26[3]	0,2	0,5	175	225	150		3				
	0,5	1,5	175	225	150		3				
	1,5	3,0	175	225	150		3				
H28	0,2	0,5	195		170		2				
	0,5	1,5	195		170		2				

Table 20 — Alloy 4006

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O	0,2	0,5	95	130	40		17		0,2	0,5	0t
	0,5	1,5	95	130	40		19		0,5	1,5	0t
	1,5	3,0	95	130	40		22		1,5	3,0	0t
	3,0	6,0	95	130	40		25		3,0	6,0	1,0t

Table 20 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H12	0,2	0,5	120	160	90		4		0,2	0,5	1,5t
	0,5	1,5	120	160	90		4		0,5	1,5	1,5t
	1,5	3,0	120	160	90		5		1,5	3,0	1,5t
H14	0,2	0,5	140	180	120		3		0,2	0,5	2,0t
	0,5	1,5	140	180	120		3		0,5	1,5	2,0t
	1,5	3,0	140	180	120		3		1,5	3,0	2,0t
T4[12]	0,2	0,5	120	160	55		14				
	0,5	1,5	120	160	55		16				
	1,5	3,0	120	160	55		18				
	3,0	6,0	120	160	55		21				

Table 21 — Alloy 4007

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O/H111	0,2	0,5	110	150	45		15				
	0,5	1,5	110	150	45		16				
	1,5	3,0	110	150	45		19				
	3,0	6,0	110	150	45		21				
	6,0	12,5	110	150	45		25				
H12	0,2	0,5	140	180	110		4				
	0,5	1,5	140	180	110		4				
	1,5	3,0	140	180	110		5				

Table 22 — Alloy 4015

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O/H111	0,2	3,0		150	45		20				
H12	0,2	0,5	120	175	90		4				
	0,5	3,0	120	175	90		4				
H14	0,2	0,5	150	200	120		2				
	0,5	3,0	150	200	120		3				
H16	0,2	0,5	170	220	150		1				
	0,5	3,0	170	220	150		2				
H18	0,2	3,0	200	250	180		1				

Table 23 — Alloy 5005

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H112	≥4,0	13,0	120				8				
	13,0	50,0	110				12				
	50,0	75,0	100				18				
O	≥0,5	0,8	105	145	35		16		≥0,5	6,0	0t
	0,8	1,3	105	145	35		19				
	1,3	2,9	105	145	35		21				
	2,9	75,0	105	145	35		22	20			
H12	≥0,5	0,8	125	165	95		2		≥0,5	6,0	0,5t
	0,8	1,3	125	165	95		2				
	1,3	2,9	125	165	95		4				
	2,9	4,0	125	165	95		5				
	4,0	6,5	125	165	95		5				
	6,5	12,0	125	165	95		7				
H22[3] or H32	≥0,5	0,8	120	155			3		≥0,5	6,0	0,5t
	0,8	1,3	120	155	85		4				
	1,3	2,9	120	155	85		6				
	2,9	4,0	120	155	85		7				
	4,0	6,5	120	155	85		8				
	6,5	12,0	120	155	85		9				
H14	≥0,5	0,8	145	185	120		2		≥0,5	2,9	1t
	0,8	1,3	145	185	120		2		2,9	6,0	1,5t
	1,3	2,9	145	185	120		3				
	2,9	4,0	145	185	120		4				
	4,0	6,5	145	185	120		4				
	6,5	12,0	145	185	120		5				
H24[3] or H34	≥0,5	0,8	140	180	105		3		≥0,5	2,9	1t
	0,8	1,3	140	180	105		4		2,9	6,0	1,5t
	1,3	2,9	140	180	105		5				
	2,9	4,0	140	180	105		5				
	4,0	6,5	140	180	105		5				
	6,5	12,0	140	180	105		8				
H16	≥0,5	0,8	165	205	145		2		≥0,5	1,3	2t
	0,8	1,3	165	205	145		2		1,3	2,9	2,5t
	1,3	4,0	165	205	145		3		2,9	4,0	3t
H26[3] or H36	≥0,5	0,8	155	195			1		≥0,5	1,3	2t
	0,8	1,3	155	195	125		2		1,3	2,9	2,5t
	1,3	4,0	155	195	125		3		2,9	4,0	3t

Table 23 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H18	≥0,5	0,8	185		165		2				
	0,8	1,3	185		165		2				
	1,3	3,0	185		165		2				
H38	≥0,5	0,8	180		165		2				
	0,8	1,3	180		165		2				
	1,3	3,0	180		165		4				

Table 24 — Alloy 5010

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O/H111	≥0,2	0,5	90	130	35		17		≥0,2	0,5	0t
	0,5	1,5	90	130	35		19		0,5	1,5	0t
	1,5	3,0	90	130	35		21		1,5	3,0	0t
	3,0	6,0	90	130	35		24		3,0	6,0	1t
H12	≥0,2	0,5	110	155	85		2		≥0,2	0,5	1,5t
	0,5	1,5	110	155	85		3		0,5	1,5	1,5t
	1,5	3,0	110	155	85		4		1,5	3,0	2t
	3,0	6,0	110	155	85		5				
H14	≥0,2	0,5	140	175	115		2		≥0,2	0,5	2t
	0,5	1,5	140	175	115		2		0,5	1,5	2t
	1,5	3,0	140	175	115		3		1,5	3,0	2,5t
	3,0	6,0	140	175	115		4				
H16	≥0,2	0,5	155	195	140		1		≥0,2	0,5	2,5t
	0,5	1,5	155	195	140		2		0,5	1,5	2,5t
	1,5	4,0	155	195	140		2		1,5	4,0	2,5t
H18	≥0,2	0,5	175		160		1				
	0,5	1,5	175		160		2				
	1,5	3,0	175		160		2				
H19	≥0,2	0,5	190		170		1				
	0,5	1,5	190		170		1				
	1,5	3,0	190		170		1				
H22	≥0,2	0,5	110	155	75		4		≥0,2	0,5	1t
	0,5	1,5	110	155	75		5		0,5	1,5	1t
	1,5	3,0	110	155	75		6		1,5	3,0	1t
	3,0	6,0	110	155	75		7				

Table 24 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H24	≥0,2	0,5	135	175	105		3		≥0,2	0,5	1,5t
	0,5	1,5	135	175	105		4		0,5	1,5	1,5t
	1,5	3,0	135	175	105		5		1,5	3,0	2t
H26	≥0,2	0,5	155	195	130		2		≥0,2	0,5	2t
	0,5	1,5	155	195	130		3		0,5	1,5	2t
	1,5	4,0	155	195	130		3		1,5	4,0	2,5t
H28	≥0,2	0,5	175		150		1				
	0,5	1,5	175		150		2				
	1,5	3,0	175		150		3				

Table 25 — Alloy 5110A

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O	≥0,2	0,3	85	125			10		≥0,2	6,0	0t
	0,3	0,5	85	125			15				
	0,5	1,3	85	125			20				
	1,3	6,0	85	125			25				
H12 or H22[3]	≥0,2	0,3	110	145			2		≥0,2	6,0	0,5t
	0,3	0,5	110	145			3				
	0,5	0,8	110	145			4				
	0,8	1,3	110	145			6				
	1,3	2,9	110	145			8				
	2,9	6,0	110	145			9				
H14 or H24[3]	≥0,2	0,3	125	165			1		≥0,2	6,0	1t
	0,3	0,5	125	165			2				
	0,5	0,8	125	165			3				
	0,8	1,3	125	165			4				
	1,3	2,9	125	165			5				
	2,9	6,0	125	165			6				
H16 or H26[3]	≥0,2	0,5	145	185			1		≥0,2	4,0	2t
	0,5	0,8	145	185			2				
	0,8	1,3	145	185			3				
	1,3	4,0	145	185			4				
H18	≥0,2	0,5	165				1				
	0,5	0,8	165				2				
	0,8	1,3	165				3				
	1,3	3,0	165				4				

Table 26 — Alloy 5021

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H18 or H38	≥0,15	0,5	260				3				
H19 or H39	≥0,15	0,5	270				1				

Table 27 — Alloy 5026

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O/H111	≥4,0	10,0	245	300	120		12				
	10,0	50,0	245	300	120			11			
	50,0	100,0	245	300	120			10			
	100,0	200,0	230	285	120			9			
	200,0	350,0	210	270	90			6			
H14	≥5,0	12,5	250	300	200		10				
	12,5	15,0	250	300	200			10			
H24[3]	≥3,0	12,5	300	340	220		5				
	12,5	20,0	300	340	220			4			
H34	≥5,0	12,5	250	300	200		10				
	12,5	15,0	250	300	200			10			

Table 28 — Alloy 5040

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H24[3]/H34	≥0,8	1,8	220	260	170		6				
H26[3]/H36	≥1,0	2,0	240	280	205		5				

Table 29 — Alloy 5042

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H18 or H38	≥0,15	0,5	300				3				
H19 or H39	≥0,15	0,5	315				1				

Table 30 — Alloy 5049

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O/H111	0,2	0,5	190	240	80		12		0,2	0,5	0,5t
	0,5	1,5	190	240	80		14		0,5	1,5	0,5t
	1,5	3,0	190	240	80		16		1,5	3,0	1t
	3,0	6,0	190	240	80		18		3,0	6,0	1t
	6,0	12,5	190	240	80		18				
	12,5	100,0	190	240	80			17			
H112	≥6,0	12,5	210		100		12				
	12,5	25,0	200		90			10			
	25,0	40,0	190		80			12			
	40,0	80,0	190		80			14			
H12	0,2	0,5	220	270	170		4				
	0,5	1,5	220	270	170		5				
	1,5	3,0	220	270	170		6				
	3,0	6,0	220	270	170		7				
	6,0	12,5	220	270	170		9				
	12,5	40,0	220	270	170			9			
H14	0,2	0,5	240	280	190		3				
	0,5	1,5	240	280	190		3				
	1,5	3,0	240	280	190		4				
	3,0	6,0	240	280	190		4				
	6,0	12,5	240	280	190		5				
	12,5	25,0	240	280	190			5			
H16	0,2	0,5	265	305	220		2				
	0,5	1,5	265	305	220		3				
	1,5	3,0	265	305	220		3				
	3,0	6,0	265	305	220		3				

Table 30 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H18	0,2	0,5	290		250		1				
	0,5	1,5	290		250		2				
	1,5	3,0	290		250		2				
H22[3]/H32	0,2	0,5	220	270	130		7		0,2	0,5	1,5t
	0,5	1,5	220	270	130		8		0,5	1,5	1,5t
	1,5	3,0	220	270	130		10		1,5	3,0	2t
	3,0	6,0	220	270	130		11				
	6,0	12,5	220	270	130		10				
	12,5	40,0	220	270	130			9			
H24[3]/H34	0,2	0,5	240	280	160		6		0,2	0,5	2,5t
	0,5	1,5	240	280	160		6		0,5	1,5	2,5t
	1,5	3,0	240	280	160		7		1,5	3,0	2,5t
	3,0	6,0	240	280	160		8				
	6,0	12,5	240	280	160		10				
	12,5	25,0	240	280	160			8			
H26[3]/H36	0,2	0,5	265	305	190		4				
	0,5	1,5	265	305	190		4				
	1,5	3,0	265	305	190		5				
	3,0	6,0	265	305	190		6				
H28[3]/H38	0,2	0,5	290		230		3				
	0,5	1,5	290		230		3				
	1,5	3,0	290		230		4				

Table 31 — Alloy 5449

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O/H111	0,5	1,5	190	240	80		14				
	1,5	3,0	190	240	80		16				
H22[3]	0,5	1,5	220	270	130		8				
	1,5	3,0	220	270	130		10				
H24[3]	0,5	1,5	240	280	160		6				
	1,5	3,0	240	280	160		7				
H26[3]	0,5	1,5	265	305	190		4				
	1,5	3,0	265	305	190		5				
H28[3]	0,5	1,5	290		230		3				
	1,5	3,0	290		230		4				

Table 32 — Alloy 5050

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O/H111	0,2	0,5	130	170	45		16		0,2	0,5	0t
	0,5	1,5	130	170	45		17		0,5	1,5	0t
	1,5	3,0	130	170	45		19		1,5	3,0	0,5t
	3,0	6,0	130	170	45		21				
	6,0	12,5	130	170	45		20				
	12,5	50,0	130	170	45			20			
H112	≥6,0	12,5	140		55		12				
	12,5	40,0	140		55			10			
	40,0	80,0	140		55			10			
H12	0,2	0,5	155	195	130		2				
	0,5	1,5	155	195	130		2				
	1,5	3,0	155	195	130		4				
H14	0,2	0,5	175	215	150		2				
	0,5	1,5	175	215	150		2				
	1,5	3,0	175	215	150		3				
	3,0	6,0	175	215	150		4				
H16	0,2	0,5	195	235	170		1				
	0,5	1,5	195	235	170		2				
	1,5	3,0	195	235	170		2				
	3,0	4,0	195	235	170		3				
H18	0,2	0,5	220		190		1				
	0,5	1,5	220		190		2				
	1,5	3,0	220		190		2				
H22[3]/H32	0,2	0,5	155	195	110		4		0,2	0,5	1t
	0,5	1,5	155	195	110		5		0,5	1,5	1t
	1,5	3,0	155	195	110		7		1,5	3,0	1,5t
	3,0	6,0	155	195	110		10				
H24[3]/H34	0,2	0,5	175	215	135		3		0,2	0,5	1,5t
	0,5	1,5	175	215	135		4		0,5	1,5	1,5t
	1,5	3,0	175	215	135		5		1,5	3,0	2t
	3,0	6,0	175	215	135		8				
H26[3]/H36	0,2	0,5	195	235	160		2				
	0,5	1,5	195	235	160		3				
	1,5	3,0	195	235	160		4				
	3,0	4,0	195	235	160		6				
H28[3]/H38	0,2	0,5	220		180		1				
	0,5	1,5	220		180		2				
	1,5	3,0	220		180		3				

Table 33 — Alloy 5251

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O/H111	0,2	0,5	160	200	60		13		0,2	0,5	0t
	0,5	1,5	160	200	60		14		0,5	1,5	0t
	1,5	3,0	160	200	60		16		1,5	3,0	0,5t
	3,0	6,0	160	200	60		18				
	6,0	12,5	160	200	60		18				
	12,5	50,0	160	200	60			18			
H12	0,2	0,5	190	230	150		3		0,2	0,5	2t
	0,5	1,5	190	230	150		4		0,5	1,5	2t
	1,5	3,0	190	230	150		5		1,5	3,0	2t
	3,0	6,0	190	230	150		8				
	6,0	12,5	190	230	150		10				
	12,5	25,0	190	230	150			10			
H14	0,2	0,5	210	250	170		2		0,2	0,5	2,5t
	0,5	1,5	210	250	170		2		0,5	1,5	2,5t
	1,5	3,0	210	250	170		3		1,5	3,0	2,5t
	3,0	6,0	210	250	170		4				
	6,0	12,5	210	250	170		5				
H16	0,2	0,5	230	270	200		1		0,2	0,5	3,5t
	0,5	1,5	230	270	200		2		0,5	1,5	3,5t
	1,5	3,0	230	270	200		3		1,5	3,0	3,5t
	3,0	4,0	230	270	200		3				
H18	0,2	0,5	255		230		1				
	0,5	1,5	255		230		2				
	1,5	3,0	255		230		2				
H22[3]/H32	0,2	0,5	190	230	120		4		0,2	0,5	1,5t
	0,5	1,5	190	230	120		6		0,5	1,5	1,5t
	1,5	3,0	190	230	120		8		1,5	3,0	1,5t
	3,0	6,0	190	230	120		10				
	6,0	12,5	190	230	120		12				
	12,5	25,0	190	230	120			12			
H24[3]/H34	0,2	0,5	210	250	140		3		0,2	0,5	2t
	0,5	1,5	210	250	140		5		0,5	1,5	2t
	1,5	3,0	210	250	140		6		1,5	3,0	2t
	3,0	6,0	210	250	140		8				
	6,0	12,5	210	250	140		10				

Table 33 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H26[3]/H36	0,2	0,5	230	270	170		3		0,2	0,5	3t
	0,5	1,5	230	270	170		4		0,5	1,5	3t
	1,5	3,0	230	270	170		5		1,5	3,0	3t
	3,0	4,0	230	270	170		7				
H28[3]/H38	0,2	0,5	255		200		2				
	0,5	1,5	255		200		3				
	1,5	3,0	255		200		3				

Table 34 — Alloys 5052

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H112	4,0	6,5	195		110		9				
	6,5	13,0	195		110		7				
	13,0	50,0	175		65		12				
	50,0	75,0	175		65		16				
O	0,2	0,3	170	215			14		≥0,2	0,8	0t
	0,3	0,5	170	215	65		15		0,8	2,9	0,5t
	0,5	0,8	170	215	65		17		2,9	6,0	1t
	0,8	1,3	170	215	65		17				
	1,3	2,9	170	215	65		19				
	2,9	6,5	170	215	65		19				
	6,5	75,0	170	215	65		18				
H12 or H22[3] or H32	0,2	0,3	215	265			3		≥0,2	0,8	0,5t
	0,3	0,5	215	265			4		0,8	2,9	1t
	0,5	0,8	215	265			5		2,9	6,0	1,5t
	0,8	1,3	215	265	155		5				
	1,3	2,9	215	265	155		7				
	2,9	6,5	215	265	155		9				
	6,5	12,0	215	265	155		11				
H14 or H24[3] or H34	0,2	0,5	235	285	180		3		≥0,2	0,8	1t
	0,5	0,8	235	285	180		4		0,8	2,9	1,5t
	0,8	1,3	235	285	180		4		2,9	6,0	2t
	1,3	2,9	235	285	180		6				
	2,9	6,5	235	285	180		6				
	6,5	12,0	235	285	180		10				

Table 34 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H16 or H26[3] or H36	0,2	0,8	255	305			3		≥0,2	0,8	2t
	0,8	4,0	255	305	205		4		0,8	1,3	2,5t
									1,3	4,0	3t
H18 or H38	0,2	0,8	270		220		3				
	0,8	3,0	270		220		4				
H19 or H39	0,15	0,5	285				1				

Table 35 — Alloys 5154 and 5254

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H112	≥4,0	6,5	235		125		8				
	6,5	13,0	225		125		8				
	13,0	50,0	205		75		11				
	50,0	75,0	205		75		15				
O	≥0,5	0,8	205	285			12		≥0,5	0,8	1t
	0,8	1,3	205	285	75		14		0,8	2,9	1,5t
	1,3	2,9	205	285	75		16		2,9	6,0	2t
	2,9	75,0	205	285	75		18				
H12 or H22[3] or H32	≥0,5	0,8	255	295			5		≥0,5	0,8	1,5t
	0,8	1,3	255	295	175		5		0,8	2,9	2t
	1,3	6,5	255	295	175		8		2,9	6,0	2,5t
	6,5	12,0	255	295	175		12				
H14 or H24[3] or H34	≥0,5	0,8	275	315			4		≥0,5	0,8	2t
	0,8	1,3	275	315	205		4		0,8	2,9	2,5t
	1,3	4,0	275	315	205		6		2,9	6,0	3t
	4,0	6,5	275	315	205		7				
	6,5	12,0	275	315	205		10				
H16 or H26[3] or H36	≥0,5	0,8	295	335			3		≥0,5	0,8	3t
	0,8	1,3	295	335	225		3		0,8	1,3	3,5t
	1,3	2,9	295	335	225		4		1,3	4,0	4t
	2,9	4,0	295	335	225		5				
H18 or H38	≥0,5	0,8	315				3				
	0,8	1,3	315		240		3				
	1,3	3,0	315		240		4				

Table 36 — Alloy 5154A

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O/H111	0,2	0,5	215	275	85		12		0,2	0,5	0,5t
	0,5	1,5	215	275	85		13		0,5	1,5	0,5t
	1,5	3,0	215	275	85		15		1,5	3,0	1t
	3,0	6,0	215	275	85		17				
	6,0	12,5	215	275	85		18				
	12,5	50,0	215	275	85			16			
H112	≥6,0	12,5	220		125		8				
	12,5	40,0	215		90			9			
	40,0	80,0	215		90			13			
H12	0,2	0,5	250	305	190		3				
	0,5	1,5	250	305	190		4				
	1,5	3,0	250	305	190		5				
	3,0	6,0	250	305	190		6				
	6,0	12,5	250	305	190		7				
	12,5	40,0	250	305	190			6			
H14	0,2	0,5	270	325	220		2				
	0,5	1,5	270	325	220		3				
	1,5	3,0	270	325	220		3				
	3,0	6,0	270	325	220		4				
	6,0	12,5	270	325	220		5				
	12,5	25,0	270	325	220			4			
H18	0,2	0,5	310		270		1				
	0,5	1,5	310		270		1				
	1,5	3,0	310		270		1				
H19	0,2	0,5	330		285		1				
	0,5	1,5	330		285		1				
H22[3]/H32	0,2	0,5	250	305	180		5		0,2	0,5	1,5t
	0,5	1,5	250	305	180		6		0,5	1,5	1,5t
	1,5	3,0	250	305	180		7		1,5	3,0	2,0t
	3,0	6,0	250	305	180		8				
	6,0	12,5	250	305	180		10				
	12,5	40,0	250	305	180			9			
H24[3]/H34	0,2	0,5	270	325	200		4		0,2	0,5	2,5t
	0,5	1,5	270	325	200		5		0,5	1,5	2,5t
	1,5	3,0	270	325	200		6		1,5	3,0	3t
	3,0	6,0	270	325	200		7				
	6,0	12,5	270	325	200		8				
	12,5	25,0	270	325	200			7			

Table 36 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H26[3]/H36	0,2	0,5	290	345	230		3				
	0,5	1,5	290	345	230		3				
	1,5	3,0	290	345	230		4				
	3,0	6,0	290	345	230		5				
H28[3]/H38	0,2	0,5	310		250		3				
	0,5	1,5	310		250		3				
	1,5	3,0	310		250		3				

Table 37 — Alloy 5454

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H112	≥3,0	12,0	215		100		8				
	12,0	25,0	215		100			9			
O	≥0,5	0,8	215	285	85		12				
	0,8	1,3	215	285	85		14				
	1,3	2,9	215	285	85		16				
	2,9	50,0	215	285	85		18	16			

Table 38 — Alloy 5754

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O	≥0,2	0,5	190	240	80		12				
	0,5	1,5	190	240	80		14				
	1,5	3,0	190	240	80		16				
	3,0	6,0	190	240	80		18				
H24[3] or H34	≥0,2	0,5	240	280	160		6				
	0,5	1,5	240	280	160		6				
	1,5	3,0	240	280	160		7				
	3,0	6,0	240	280	160		8				
H38	≥0,2	0,5	290		230		3				
	0,5	1,5	290		230		3				
	1,5	3,0	290		230		4				

Table 39 — Alloy 5456

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O	1,2	6,3	290	365	130	205	16				
	6,3	80,0	285	360	125	205	16	14			
	80,0	120,0	275		120			12			
	120,0	160,0	270		115			12			
	160,0	200,0	265		105			10			
H32	4,0	12,5	315	405	230		12				
	12,5	40,0	305	385	215			10			
	40,0	80,0	285	370	200			10			
H112	6,3	12,5	290		130		12				
	12,5	40,0	290		130			10			
	40,0	80,0	285		125			10			
H116[13]	1,6	12,5	315		230		10				
	12,5	30,0	315		230			10			
	30,0	40,0	305		215			10			
	40,0	80,0	285		200			10			
	80,0	110,0	275		170			10			
H321[13]	2,5	4,0	330	405	235		10				
	4,0	12,5	315	405	230		12				
	12,5	40,0	305	385	215			10			
	40,0	80,0	285	370	200			10			

Table 40 — Alloy 5059

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O/H111/ H112	≥3,0	6,0	330	380	160		24		≥3,0	6,0	1,5t
	6,0	12,5	330	380	160		24		6,0	12,5	4t
	12,5	40,0	330	380	160			24			
H116/ H321[14]	≥3,0	6,0	370		270		10		≥3,0	6,0	3t
	6,0	12,5	370		270		10		6,0	12,5	6t
	12,5	20,0	370		270			10			
	20,0	40,0	360		260			10			

Table 41 — Alloy 5070

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O/H111	0,5	6,0	270	350	125			18	0,5	6,0	1t

Table 42 — Alloy 5082

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H18 or H38	≥0,2	0,5	335				1				
H19 or H39	≥0,2	0,5	355				1				

Table 43 — Alloy 5182

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H18 or H38	≥0,2	0,5	345				1				
H19 or H39	≥0,2	0,5	365				1				

Table 44 — Alloy 5083

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H112	≥4,0	6,5	275		125		12				
	6,5	40,0	275		125		12	10			
	40,0	75,0	275		125		12	10			
O	≥0,5	0,8	275	350	125	200	16		≥0,5	12,0	2t
	0,8	40,0	275	350	125	200	16	14			
	40,0	80,0	270	345	115	200	16	14			
	80,0	100,0	260		110		16	12			
H22[3] or H32	≥0,5	0,8	305	380	215		8		≥0,5	1,3	2,5t
	0,8	2,9	310	380	235	305	8		1,3	2,9	3t
	2,9	12,0	305	380	215	295	10		2,9	6,5	4t
									6,5	12,0	5t
H321[14]	≥4,0	13,0	305	385	215	295	12				
	13,0	40,0	305	385	215	295	11				
	40,0	80,0	285	385	200	295	11				

Table 44 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H34	≥1,2	3,0	345	405	270	340	6				
	3,0	6,0	345	405	270	340	8				
H116[14]	≥1,5	12,5	305		215		10				
	12,5	30,0	305		215		10				
	30,0	40,0	305		215		10				
	40,0	80,0	285		200		10				

Table 45 — Alloy 5383

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O/H111	0,2	0,5	290	360	145		11		0,2	0,5	1t
	0,5	1,5	290	360	145		12		0,5	1,5	1t
	1,5	3,0	290	360	145		13		1,5	3,0	1,5t
	3,0	6,0	290	360	145		15				
	6,0	12,5	290	360	145		16				
	12,5	50,0	290	360	145			15			
	50,0	80,0	285	355	135			14			
	80,0	120,0	275		130			12			
	120,0	150,0	270		125			12			
H112	≥6,0	12,5	290		145		12				
	12,5	40,0	290		145			10			
	40,0	80,0	285		135			10			
H116/ H321[14]	≥1,5	3,0	305		220		8		≥1,5	3,0	3t
	3,0	6,0	305		220		10				
	6,0	12,5	305		220		12				
	12,5	40,0	305		220			10			
	40,0	80,0	285		205			10			

Table 45 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H22[3]/H32	0,2	0,5	305	380	220		5		0,2	0,5	2t
	0,5	1,5	305	380	220		6		0,5	1,5	2t
	1,5	3,0	305	380	220		7		1,5	3,0	3t
	3,0	6,0	305	380	220		8				
	6,0	12,5	305	380	220		10				
	12,5	40,0	305	380	220			9			
H24[3]/H34	0,2	0,5	340	400	270		4				
	0,5	1,5	340	400	270		5				
	1,5	3,0	340	400	270		6				
	3,0	6,0	340	400	270		7				
	6,0	12,5	340	400	270		8				
	12,5	25,0	340	400	270			7			

Table 46 — Alloy 5086

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H112	≥4,0	6,5	255		125		7				
	6,5	13,0	245		125		8				
	13,0	25,0	245		110		10				
	25,0	50,0	245		100		14				
	50,0	75,0	235		100		14				
O	≥0,5	1,3	245	305	100		15		≥0,5	0,8	1,5t
	1,3	6,5	245	305	100		18		0,8	2,9	2t
	6,5	50,0	245	305	100		16		2,9	12,0	2,5t
H116/ H321[14]	≥1,5	3,0	275		195		8		≥1,5	3,0	2t
	3,0	6,0	275		195		9				
	6,0	12,5	275		195		10				
	12,5	50,0	275		195			9			
H22[3] or H32	≥0,5	1,3	275	325	195		6		≥0,5	0,8	2t
	1,3	6,5	275	325	195		8		0,8	2,9	2,5t
	6,5	12,0	275	325	195		12		2,9	12,0	3t
H24[3] or H34	≥0,5	0,8	305	355	235		4		≥0,5	1,3	2,5t
	0,8	1,3	305	355	235		5		1,3	2,9	3t
	1,3	6,5	305	355	235		6		2,9	6,0	4t
	6,5	12,0	305	355	235		10				

Table 46 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H26[3] or H36	≥0,5	0,8	325	375	265		3		≥0,5	1,3	3t
	0,8	1,3	325	375	265		4		1,3	2,9	4t
	1,3	4,0	325	375	265		6		2,9	4,0	5t
H18 or H38	≥0,15	1,3	345		285		3				

Table 47 — Alloy 5088

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O/H111	3,0	6,0	280		135			26	3,0	6,0	1,5t
	6,0	12,5	280		135			26	6,0	12,5	1,5t

Table 48 — Alloy 6016

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
T4	≥0,4	3,0	170	250	80	140	24		≥0,4	3,0	0,5t
T6	≥0,4	3,0	260	300	180	260	10				

Table 49 — Alloy 6025

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O	≥0,2	1,0	160	220	60		8		≥0,2	1,0	0t
	1,0	5,0	160	220	60		10		1,0	5,0	0t
H21	≥0,2	1,0	170	220	100		4		≥0,2	1,0	0,5t
	1,0	5,0	170	220	100		5		1,0	5,0	1t
H32	≥0,2	0,8	180	230	135		2		≥0,2	0,8	0,5t
	0,8	1,5	180	230	135		3		0,8	1,5	0,5t
	1,5	5,0	180	230	135		4		1,5	5,0	1t
NOTE This alloy can be ordered with protection clads in 7072.											

Table 49 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H34	≥0,2	0,5	210	250	165		2		≥0,2	0,5	2t
	0,5	1,3	210	250	165		2		0,5	1,3	2t
	1,3	5,0	210	250	165		3		1,3	5,0	2t
H36	≥0,2	0,5	220	260	185		2		≥0,2	0,5	3t
	0,5	1,3	220	260	185		3		0,5	1,3	3t
	1,3	5,0	220	260	185		4		1,3	5,0	3t
NOTE This alloy can be ordered with protection clads in 7072.											

Table 50 — Alloy 6061

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O[4]	≥0,4	0,5		145			14		≥0,4	0,5	0t
	0,5	2,9		145		85	16		0,5	2,9	0,5t
	2,9	13,0		145		85	18		2,9	6,5	1t
	13,0	25,0		145			18		6,5	12,0	1,5t
	25,0	75,0		145			16				
T4	≥0,4	0,5	205				14		≥0,4	0,5	1t
	0,5	6,5	205		110		16		0,5	6,0	1,5t
T451[5]	≥6,5	13,0	205		110		18				
	13,0	25,0	205		110		17				
	25,0	75,0	205		110		15				
T42[6]	≥0,4	0,5	205				14				
	0,5	6,5	205		95		16				
	6,5	25,0	205		95		18				
	25,0	75,0	205		95		16				
T6	≥0,4	0,5	295				8		≥0,4	0,5	1,5t
	0,5	6,5	295		245		10		0,5	1,6	2t
									1,6	2,9	2,5t
									2,9	6,0	3t

Table 50 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
T651	≥6,5	13,0	295		245		10				
	13,0	25,0	295		245		9				
	25,0	50,0	295		245		8				
	50,0	100,0	295		245		6				
T62[7]	≥0,4	0,5	295				8				
	0,5	13,0	295		245		10				
	13,0	25,0	295		245		9				
	25,0	50,0	295		240		8				
	50,0	75,0	295		240		6				

Table 51 — Alloy 6082

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O[4]	≥0,4	0,5		150		85	14		≥0,4	0,5	0,5t
	0,5	2,9		150		85	16		0,5	2,9	1t
	2,9	13,0		150		85	18		2,9	6,5	1,5t
	13,0	25,0		150			17	16	6,5	12,0	2,5t
T4	≥0,4	0,5	205		110		12		≥0,4	0,5	1,5t
	0,5	6,5	205		110		15		0,5	6,5	2t
T451[5]	≥6,5	13,0	205		110		14				
	13,0	25,0	205		110		14	13			
	25,0	75,0	205		110			12			
T42[6]	≥0,4	0,5	205		95		12				
	0,5	6,5	205		95		15				
	6,5	25,0	205		95		14	13			
	25,0	75,0	205		95		13	12			
T6	≥0,4	0,5	310		260		6		≥0,4	1,6	2,5t
	0,5	6,5	310		260		10		1,6	2,9	3,5t
									2,9	6,5	4,5t
T651	≥6,5	13,0	300		255		9				
	13,0	50,0	295		240		9	8			
	50,0	100,0	295		240			7			
T62[7]	≥0,4	0,5	310		260		6				
	0,5	6,5	310		260		10				
	6,5	25,0	300		255		9	8			
	25,0	50,0	295		240			8			
	50,0	75,0	295		240			7			

Table 52 — Alloy 7204

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O	≥1,5	75,0		245		145	12		≥1,5	2,9	2t
									2,9	6,5	2,5t
									6,5	12,0	3t
T4[15]	≥1,5	75,0	315		195		11		≥1,5	2,9	2,5t
									2,9	6,5	3t
									6,5	12,0	4,5t
T6	≥1,5	75,0	335		275		10		≥1,5	2,9	3t
									2,9	6,5	4t
									6,5	12,0	5t

Table 53 — Alloy 7010[16]

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
T6 T651 T652 T62[7]	6,0	12,5	570		520			6			
	12,5	25,0	570		520			6			
	25,0	50,0	560		510			5			
	50,0	76,0	560		510			5			
	76,0	127,0	550		500			4			
	127,0	152,4	540		490			2			
	152,4	203,2	525		480			2			
	203,2	254,0	505		460			1			
	254,0	300,0	470		435			1			
T76 T7651[17]	6,0	12,5	525		455			6			
	12,5	51,0	525		455			6			
	51,0	63,5	515		450			6			
	63,5	76,0	510		440			5			
	76,0	102,0	505		435			5			
	102,0	127,0	495		425			5			
	127,0	140,0	495		420			4			

Table 53 *(continued)*

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
T74 T7451[18]	6,0	12,5	495		425			6			
	12,5	51,0	495		425			6			
	51,0	63,5	495		425			6			
	63,5	102,0	490		420			6			
	102,0	127,0	475		405			5			
	127,0	140,0	460		395			5			
T73 T7351[19]	6,0	12,5	470		380			7			
	12,5	51,0	470		380			7			
	51,0	76,0	470		380			7			
	76,0	102,0	460		370			7			
	102,0	127,0	455		365			6			
	127,0	140,0	450		360			5			

Table 54 — Alloy 7020[16]

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O[4]	≥0,4	1,5		220		140	12				
	1,5	3,0		220		140	13				
	3,0	6,0		220		140	15				
	6,0	12,5		220		140	12				
T4 T451[20]	≥0,4	1,5	320		210		11				
	1,5	3,0	320		210		12				
	3,0	6,0	320		210		13				
	6,0	12,5	320		210		14				
T6 T651 T62[7]	≥0,4	1,5	350		280		7				
	1,5	3,0	350		280		8				
	3,0	6,0	350		280		10				
	6,0	12,5	350		280		10				
	12,5	40,0	350		280			9			
	40,0	100,0	340		270			8			
	100,0	150,0	330		260			7			
	150,0	175,0	330		260			6			
	175,0	250,0	330		260			5			

Table 55 — Alloy 7021[16)]

Temper	Tensile test								Bend test[2)]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1)] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
T6	≥1,5	3,0	400		350		7				
	3,0	6,0	400		350		8				

Table 56 — Alloy 7022[16)]

Temper	Tensile test								Bend test[2)]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1)] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
T6 T651	≥3,0	12,5	450		370		8				
	12,5	25,0	450		370			8			
	25,0	50,0	450		370			7			
	50,0	100,0	430		350			5			
	100,0	200,0	410		350			3			

Table 57 — Alloy 7050[16)]

Temper	Tensile test								Bend test[2)]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1)] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
T7451[21), 23)]	6,3	51,0	510		441			9			
	51,0	76,0	503		434			8			
	76,0	102,0	496		427			6			
	102,0	127,0	490		421			5			
	127,0	152,0	483		414			4			
	152,0	178,0	476		407			4			
	178,0	203,0	469		400			4			
T7651[22), 23)]	6,3	25,4	524		455			8			
	25,4	38,1	531		462			8			
	38,1	50,8	524		455			8			
	50,8	76,2	524		455			7			

Table 58 — Alloy 7075[16)]

Temper	Tensile test								Bend test[2)]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1)] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O[4)]	≥0,4	0,8		275		145	10		≥0,4	0,8	1t
	0,8	1,5		275		145	10		0,8	1,5	2t
	1,5	3,0		275		145	10		1,5	3,0	3t
	3,0	6,0		275		145	10				
	6,0	12,5		275		145	10				
	12,5	75,0		275				9			
T6 T651 T62[7)]	≥0,4	0,8	525		460		6				
	0,8	1,5	540		460		6				
	1,5	3,0	540		470		7				
	3,0	6,0	540		475		8				
	6,0	12,5	540		460		8				
	12,5	25,0	540		470			6			
	25,0	50,0	530		460			5			
	50,0	60,0	525		440			4			
	60,0	80,0	495		420			4			
	80,0	90,0	490		390			4			
	90,0	100,0	460		360			3			
	100,0	120,0	410		300			2			
	120,0	150,0	360		260			2			
	150,0	200,0	360		240			1			
	200,0	300,0	360		240			1			
T652	150,0	200,0	360		260			2			
	200,0	300,0	360		260			2			
T73 T7351[26)]	≥1,5	3,0	460		385		7				
	3,0	6,0	460		385		8				
	6,0	12,5	475		390		7				
	12,5	25,0	475		390			6			
	25,0	50,0	475		390			5			
	50,0	60,0	455		360			5			
	60,0	80,0	440		340			5			
	80,0	100,0	430		340			5			
T76 T7651[27)]	≥1,5	3,0	500		425		7				
	3,0	6,0	500		425		8				
	6,0	12,5	490		415		7				

Table 59 — Alloy 7475[16)]

Temper	Tensile test								Bend test[2)]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1)] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
T6	≥0,35	6,0	515		440		9				
T651	≥6,0	12,5	530		460		10				
	12,5	25,0	530		470		9				
	25,0	40,0	530		470		9				
T7351[28)]	≥6,0	12,5	490		410		9				
	12,5	25,0	490		410		9				
	25,0	40,0	490		410		9				
	40,0	50,0	480		400		8				
	50,0	60,0	475		390		8				
	60,0	80,0	470		385		8				
	80,0	90,0	445		365		8				
	90,0	100,0	440		355		7				
T76	≥0,35	6,0	490		415		9				
T7651[29)]	≥6,0	12,5	480		410		9				
	12,5	25,0	475		405		8				
	25,0	40,0	475		405		6				

Table 60 — Alloy 7178

Temper	Tensile test								Bend test[2)]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1)] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O[4)]	≥0,4	6,0		275		145	10				
	6,0	13,0		275		145		9			
T6	≥0,4	1,2	570		495		7				
	1,2	6,5	580		505		8				
T651	≥6,5	13,0	580		505		8				
	13,0	25,0	580		505			5			
	25,0	40,0	580		505			3			
	40,0	50,0	550		480			2			
T62[7)]	≥0,4	1,2	570		495		7				
	1,2	6,5	580		505		8				
	6,5	13,0	580		505		8				
	13,0	25,0	580		505			5			
	25,0	40,0	580		505			3			
	40,0	50,0	550		480			2			

Table 61 — Alloy 8011A

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
O/H111	0,2	0,5	85	130	30		19				
	0,5	1,5	85	130	30		21				
	1,5	3,0	85	130	30		24				
	3,0	6,0	85	130	30		25				
	6,0	12,5	85	130	30		30				
H14	0,2	0,5	120	170	110		1				
	0,5	1,5	125	165	110		3				
	1,5	3,0	125	165	110		3				
	3,0	6,0	125	165	110		4				
	6,0	12,5	125	165	110		5				
H16	0,2	0,5	140	190	130		1				
	0,5	1,5	145	185	130		2				
	1,5	4,0	145	185	130		3				
H18	0,2	0,5	160		145		1				
	0,5	1,5	165		145		2				
	1,5	3,0	165		145		2				
H22	0,2	0,5	105	145	90		4				
	0,5	1,5	105	145	90		5				
	1,5	3,0	105	145	90		6				
H24	0,2	0,5	125	165	100		3				
	0,5	1,5	125	165	100		4				
	1,5	3,0	125	165	100		5				
	3,0	6,0	125	165	100		6				
	6,0	12,5	125	165	100		7				
H26	0,2	0,5	145	185	120		2				
	0,5	1,5	145	185	120		3				
	1,5	4,0	145	185	120		4				

Table 62 — Alloy 8021

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H14	≥0,2	0,5	135	185			2				

Table 63 — Alloy 8079

Temper	Tensile test								Bend test[2]		
	Specified thickness mm		Tensile strength MPa		0,2 % proof stress MPa		Elongation[1] min. %		Specified thickness mm		Radius
	over	up to	min.	max.	min.	max.	A_{50mm}	A	over	up to	
H14	≥0,2	0,5	125	175			2				

Notes for Tables 1 to 63

1) For elongation, the following two systems having different gauge lengths are adopted.

The elongation measurement is conducted by the A_{50mm} system, unless specified by the purchaser.

When the A_{50mm} system is not specified, the measurement is conducted by the A system.

where

A is the elongation, in percent, at a gauge length of $5{,}65\sqrt{S_o}$, with S_o the section area of the parallel part;

A_{50mm} is the elongation, in percent, at a 50 mm gauge length.

2) The bend test shall be applied only when requested by the purchaser.

3) For temper grades H22, H24, H26, H28, and H29, the upper limit of tensile strength and the stipulation of proof stress do not apply.

4) The material of temper grade O shall be a basis for materials of temper grades T42 or T62, and when requested by the purchaser, shall guarantee the performance of those materials.

5) A material of which the residual stress is relieved by applying tension to give a permanent deformation of 1,5 % to 3,0 % subsequent to the solution treatment and is thereafter natural-age hardened. The material of temper grade T451 shall guarantee the performance for temper grades T651.

6) The mechanical properties for temper grade T42 shall be applied when the material of temper grade O is subjected to the natural-age hardening process after solution treatment by the purchaser. If the material is cold or hot worked before solution treatment by the purchaser, its mechanical properties may be lower than the specified values.

7) The mechanical properties for temper grade T62 shall be applied when the material of temper grade O is subjected to the artificial-age hardening process after solution treatment by the purchaser. If the material is cold or hot worked before solution treatment by the purchaser, its mechanical properties may be lower than the specified values.

8) The material of temper grade T351 shall guarantee the performance for temper grade T851 by being subjected to the artificial-age hardening process.

9) The material of temper grade T31 shall guarantee the performance for temper grade T81 by being subjected to the artificial-age hardening process.

10) The material of temper grade T37 shall guarantee the performance for temper grade T87 by being subjected to the artificial-age hardening process.

11) The material of temper grade T361 shall guarantee the performance for temper grade T861 by being subjected to the artificial-age hardening process.

12) The T4 temper is not normally supplied by the producers of wrought products, such as circles, strips, and sheets. It is obtained by rapid cooling after heating at a relatively elevated temperature, above

500 °C. This thermal cycle is routinely achieved when enamelling the finished products made out of this alloy, such as frying pans, pressure cookers, pans, etc.

13) Material supplied to the H116 or H321 temper shall be capable of meeting the exfoliation and intergranular corrosion performance as specified in ASTM B928 or EN 13195.

14) Material supplied to that temper shall be capable of exhibiting no evidence of exfoliation corrosion when subjected to ASTM G66 accelerated exfoliation corrosion susceptibility test and intergranular corrosion susceptibility according to ASTM G67.

15) The mechanical properties for temper grade T4 are the values specified, based on reference values obtained by one month of natural ageing at room temperature (approximately 20 °C) after solution treatment.

In the case of the tensile test made before completion of one month of natural ageing, the tensile performance of temper grade T4 may be deemed as guaranteed if the test result of the test piece which has been artificially aged after solution treatment is confirmed to satisfy the tensile performance of temper grade T6.

16) Whenever a new application of this alloy is contemplated, and if this application involves special properties, such as corrosion resistance, toughness, fatigue strength, it is strongly recommended that the user consult the producer in order to make a precise and appropriate selection of the material.

17) For lot-acceptance purposes, alloy 7010 in T76 and T7651 tempers shall comply with the following criteria when tested on the previously selected tensile test specimen:

Electrical conductivity γ MS/m (IACS%)[a]	**Mechanical properties**	**Lot-acceptance status**
$\gamma \geq 22{,}6$ (≥39,0 %)	As specified	Acceptable
$\gamma < 22{,}6$ (<39,0 %)	As specified	Not acceptable The plate may be reheat treated or given additional precipitation heat treatment to develop tensile properties/conductivity, as specified.
[a] For information only (100 % IACS = 1,724 1 × 10^{-2} μΩm).		

18) For lot-acceptance purposes, alloy 7010 in T74 and T7451 tempers shall comply with the following criteria when tested on the previously selected tensile test specimen:

Electrical conductivity γ MS/m (IACS%)[a]	**Mechanical properties**	**Lot-acceptance status**
$\gamma \geq 23{,}2$ (≥40,0 %)	As specified	Acceptable
$\gamma < 23{,}2$ (<40,0 %)	As specified	Not acceptable The plate may be reheat treated or given additional precipitation heat treatment to develop tensile properties/conductivity, as specified.
[a] For information only (100 % IACS = 1,724 1 × 10^{-2} μΩm).		

19) For lot acceptance purposes, alloy 7010 in T73 and T7351 tempers shall comply with the following criteria when tested on the previously selected tensile test specimen:

Electrical conductivity γ MS/m (IACS%)[a]	Mechanical properties	Lot-acceptance status
γ ≥ 23,8 (≥41,0 %)	As specified	Acceptable
γ < 23,8 (<41,0 %)	As specified	Not acceptable The plate may be reheat treated or given additional precipitation heat treatment to develop tensile properties/conductivity, as specified.

[a] For information only (100 % IACS = 1,724 1 × 10^{-2} μΩm).

20) Use of this alloy in the T4 or T451 temper for finished products shall be avoided. The specified mechanical properties are achieved after 3 months of natural ageing at ambient temperature. This natural ageing may be approximated by maintaining the quenched test piece for about 60 h at a temperature between 60 °C and 65 °C.

21) Material that is 20 mm and thicker, when tested in accordance with ASTM G47 in the short transverse direction of stress level of 240 MPa, will exhibit no evidence of stress corrosion cracking. The 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 in footnotes 24 and 25 below.

22) Material that is 20 mm and thicker, when tested in accordance with ASTM G47 in the short transverse direction of stress level of 170 MPa, will exhibit no evidence of stress corrosion cracking. The 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 in footnotes 24 and 25 below.

23) 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 of ASTM G34:2007, Figure 2. The 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.

24) For lot-acceptance purposes, alloy 7050 in the T7451 temper shall comply with the following criteria when tested on the previously selected tensile test specimen:

Electrical conductivity γ MS/m (IACS%)[a]	Mechanical properties	Lot-acceptance status
γ ≥ 22,0 (≥38,0 %)	Per standard requirements and SCF[d] is 220 or less	Acceptable[b]
γ < 22,0 (<38,0 %)	Per standard requirements and SCF[d] is over 220	Not acceptable[c]
	Any level	

[a] For information only (100 % IACS = 1,724 1 × 10^{-2} μΩm).

[b] "Acceptable" lot-acceptance status is based upon the ability of material with the stated level of electrical conductivity and yield strength to demonstrate statistical compliance with its respective corrosion resistance capabilities. For the applicable corrosion resistance capabilities, refer to the mechanical properties section for the product under consideration.

[c] When the lot-acceptance status is "not acceptable", the material is reprocessed (additional precipitation heat treatment or re-solution heat treatment and precipitation heat treatment).

[d] The yield strength/electrical conductivity relationship is as follows: stress corrosion susceptibility factor (SCF) = yield strength (XXX MPa) minus 12 times electrical conductivity [XX.X(MS/m)].

25) For lot-acceptance purposes, alloy 7050 in the T7651 temper shall comply with the following criteria when tested on the previously selected tensile test specimen:

Electrical conductivity γ MS/m (IACS%)[a]	**Mechanical properties**	**Lot-acceptance status**
γ ≥ 21,5 (≥37,0 %)	Per standard requirements and SCF[d] is 250 or less	Acceptable[b]
γ < 21,5 (<37,0 %)	Per standard requirements and SCF[d] is over 250	Not acceptable[c]
	Any level	

[a] For information only (100 % IACS = 1,724 1 × 10^{-2} μΩm).

[b] "Acceptable" lot-acceptance status is based upon the ability of material with the stated level of electrical conductivity and yield strength to demonstrate statistical compliance with its respective corrosion resistance capabilities. For the applicable corrosion resistance capabilities, refer to the mechanical properties section for the product under consideration.

[c] When the lot-acceptance status is "not acceptable", the material is reprocessed (additional precipitation heat treatment or re-solution heat treatment and precipitation heat treatment).

[d] The yield strength/electrical conductivity relationship is as follows: stress corrosion susceptibility factor (SCF) = yield strength (XXX MPa) minus 12 times electrical conductivity [XX.X(MS/m)].

26) For lot-acceptance purposes, alloy 7075 in T73 and T7351 tempers shall comply with the following criteria when tested on the previously selected tensile test specimen:

Electrical conductivity γ MS/m (IACS%)[a]	**Mechanical properties**	**Lot-acceptance status**
γ ≥ 23,2 (≥40,0 %)	Per standard requirements	Acceptable[b]
22,0 ≤ γ < 23,1 (38,0 % to 40,0 %)	Per standard requirements and $R_{p0,2}$ does not exceed a minimum by more than 82 MPa	Acceptable[b]
	Per standard requirements but $R_{p0,2}$ exceeds a minimum by more than 82 MPa	Not acceptable[c]
γ < 22,0 (<38,0 %)	Any level	Not acceptable[c]

[a] For information only (100 % IACS = 1,724 1 × 10^{-2} μΩm).

[b] "Acceptable" lot-acceptance status is based upon the ability of material with the stated level of electrical conductivity and yield strength to demonstrate statistical compliance with its respective corrosion resistance capabilities. For the applicable corrosion resistance capabilities, refer to the mechanical properties section for the product under consideration.

[c] When the lot-acceptance status is "not acceptable", the material is reprocessed (additional precipitation heat treatment or re-solution heat treatment and precipitation heat treatment).

27) For lot-acceptance purposes, alloy 7075 in T76 and T7651 tempers shall comply with the following criteria when tested on the previously selected tensile test specimen:

Electrical conductivity γ MS/m (IACS%)[a]	**Mechanical properties**	**Lot-acceptance status**
γ ≥ 22,0 (≥38,0 %)	Per standard requirements	Acceptable[b]
20,9 ≤ γ < 22 (36,0 % to 37,9 %)	Per standard requirements	Suspect[d]
γ < 20,9 (<36,0 %)	Any level	Not acceptable[c]

[a] For information only (100 % IACS = 1,724 1 × 10^{-2} μΩm).

[b] "Acceptable" lot-acceptance status is based upon the ability of material with the stated level of electrical conductivity and yield strength to demonstrate statistical compliance with its respective corrosion resistance capabilities. For the applicable corrosion resistance capabilities, refer to the mechanical properties section for the product under consideration.

[c] When the lot-acceptance status is "not acceptable", the material is reprocessed (additional precipitation heat treatment or re-solution heat treatment and precipitation heat treatment).

[d] When material in these tempers is found to be suspect, it is either tested for exfoliation corrosion resistance according to ASTM G34 or it is reprocessed (additional precipitation heat treatment or resolution heat treatment, and precipitation heat treatment). Favourable exfoliation corrosion test results shall never be used as acceptance criteria for stress corrosion resistance.

28) For lot-acceptance purposes, alloy 7475 in T7351 temper shall comply with the following criteria when tested on the previously selected tensile test specimen:

Electrical conductivity, γ MS/m (IACS%)[a]	**Mechanical properties**	**Lot-acceptance status**
γ ≥ 23,2 (≥40,0 %)	Per standard requirements	Acceptable[b]
γ ≤ 23,1 (≤39,9 %)	Any level	Not acceptable[c]

[a] For information only (100 % IACS = 1,724 1 × 10^{-2} μΩm).

[b] "Acceptable" lot-acceptance status is based upon the ability of material with the stated level of electrical conductivity and yield strength to demonstrate statistical compliance with its respective corrosion resistance capabilities. For the applicable corrosion resistance capabilities, refer to the mechanical properties section for the product under consideration.

[c] When the lot-acceptance status is "not acceptable", the material is reprocessed (additional precipitation heat treatment or re-solution heat treatment and precipitation heat treatment).

29) For lot-acceptance purposes, alloy 7475 in T7651 temper shall comply with the following criteria when tested on the previously selected tensile test specimen:

Electrical conductivity γ MS/m (IACS%)[a]	**Mechanical properties**	**Lot-acceptance status**
γ ≥ 22,6 (≥39,0 %)	Per standard requirements and $R_{p0,2}$ is 61 MPa or less above specified minimum	Acceptable[b]
	$R_{p0,2}$ exceeds minimum by 62 MPa or more	Not acceptable[c]
γ ≤ 22,5 (≤38,9 %)	Any level	Not acceptable[c]

a For information only (100 % IACS = 1,724 1 × 10^{-2} μΩm).

b "Acceptable" lot-acceptance status is based upon the ability of material with the stated level of electrical conductivity and yield strength to demonstrate statistical compliance with its respective corrosion resistance capabilities. For the applicable corrosion resistance capabilities, refer to the mechanical properties section for the product under consideration.

c When the lot-acceptance status is "not acceptable", the material is reprocessed (additional precipitation heat treatment or re-solution heat treatment and precipitation heat treatment).

Annex A
(normative)

Rules for rounding results obtained by inspection and testing

A.1 Mechanical and chemical properties

The results of mechanical and chemical tests shall be rounded using either the rules specified in the International Standard specifying the method of test or, if the value obtained contains a larger number of significant figures than the guaranteed value, the generally accepted rules for rounding.

A.2 Dimensional characteristics

The results of determinations of dimensions (length, width, thickness, rounding, etc.) and shape (squaring, cambering, straightness, flatness, kinking, circularity, etc.) are not rounded. These shall comply with the specification in the relevant International Standard, taking into account permissible tolerances also given in that International Standard.

A.3 Rounding for determination of compliance

In recording test results, the number representing the results of a test to determine a given property or to determine chemical composition should be expressed to the same number of decimal places as the corresponding number in the relevant International Standard.

The following rules should be used for rounding.

a) When the figure immediately after the last figure to be retained is less than five, the last figure to be retained remains uncharged.

b) When the figure immediately after the last figure to be retained is greater than five, or equal to five and followed by at least one figure other than zero, the last figure to be retained is increased by one.

c) When the figure immediately after the last figure to be retained is equal to five and followed by zeros only, the last figure to be retained remains uncharged if even and is increased by one if odd.

Bibliography

[1] ISO 2107, *Aluminium and aluminium alloys — Wrought products — Temper designations*

[2] ISO 7438, *Metallic materials — Bend test*

[3] ISO 6361-5, *Wrought aluminium and aluminium alloys — Sheets, strips and plates — Part 5: Chemical composition*

[4] ISO 11881, *Corrosion of metals and alloys — Exfoliation corrosion testing of aluminium alloys*

[5] ASTM G34:2007, *Standard Test Method for Exfoliation Corrosion Susceptibility in 2XXX and 7XXX Series Aluminum Alloys (EXCO Test)*

[6] ASTM G47, *Standard Test Method for Determining Susceptibility to Stress-Corrosion Cracking of 2XXX and 7XXX Aluminum Alloy Products*

[7] ASTM G66, *Standard Test Method for Visual Assessment of Exfoliation Corrosion Susceptibility of 5XXX Series Aluminum Alloys (ASSET Test)*

[8] ASTM G67, *Standard Test Method for Determining the Susceptibility to Intergranular Corrosion of 5XXX Series Aluminum Alloys by Mass Loss After Exposure to Nitric Acid (NAMLT Test)*

[9] ASTM B928/B928M, *Standard Specification for High Magnesium Aluminum-Alloy Sheet and Plate for Marine Service and Similar Environments*

[10] EN 13195, *Aluminium and aluminium alloys — Specifications for wrought and cast products for marine applications (shipbuilding, marine and offshore)*

ICS 77.150.10

Price based on 51 pages