

# BS EN 755-2:2016 — Tracked Changes

compares BS EN 755-2:2016  
with BS EN 755-2:2013



## BSI Standards Publication

### Aluminium and aluminium alloys — Extruded rod/bar, tube and profiles

---

Part 2: Mechanical properties

## IMPORTANT — PLEASE NOTE

This is a tracked changes copy and uses the following colour coding:

- |   |   |
|---|---|
| Text example 1  | — indicates added text (in green)           |
| Text example 2  | — indicates removed text (in red)           |
|  | — indicates added graphic figure or table   |
|  | — indicates removed graphic figure or table |

### About Tracked Changes

This document is a PDF containing a Tracked Changes version of BS EN 755-2, which compares BS EN 755-2:2016 with BS EN 755-2:2013.

The original version of BS EN 755-2:2016, appended at the end of this document, should be considered the version of record for this publication.

© The British Standards Institution 2020  
Published by BSI Standards Limited 2020

ISBN 978 0 539 08204 3

### Amendments/corrigenda issued since publication

Date	Text affected

**National foreword**

This British Standard is the UK implementation of  
~~EN 755-2:2013~~, ~~EN 755-2:2016~~. It supersedes  
~~BS EN 755-2:2008~~ BS EN 755-2:2013 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee NFE/35, Light metals and their alloys.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution ~~2013~~ 2016.  
Published by BSI Standards Limited ~~2013~~ 2016

ISBN ~~978 0 580 82480 7~~ 978 0 580 90367 0

ICS 77.150.10

**Compliance with a British Standard cannot confer immunity from legal obligations.**

This British Standard was published under the authority of the Standards Policy and Strategy Committee on ~~31 October 2013~~ ~~31 March 2016~~.

**Amendments/~~corrigenda~~ issued since publication**

Date	Text affected

---

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

EN 755-2

October 2013 March 2016

ICS 77.150.10

Supersedes EN 755-2:2008/2013

English Version

Aluminium and aluminium alloys - Extruded rod/bar,  
tube and profiles - Part 2: Mechanical properties

Aluminium et alliages d'aluminium - Barres, tubes  
et profilés filés - Partie 2 : Caractéristiques  
mécaniques

Aluminium und Aluminiumlegierungen -  
Stranggepresste Stangen, Rohre und Profile - Teil 2:  
Mechanische Eigenschaften

This European Standard was approved by CEN on 22 August 2013/10 January 2016.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

**Contents**

	Page
<b>European foreword .....</b>	<b>iii</b>
<b>1 Scope .....</b>	<b>1</b>
<b>2 Normative references .....</b>	<b>1</b>
<b>3 Mechanical property limits .....</b>	<b>1</b>
<b>3.1 General.....</b>	<b>1</b>
<b>3.2 Elongation .....</b>	<b>1</b>
<b>3.3 Reference list of the tables of mechanical properties of the relevant aluminium and aluminium alloys .....</b>	<b>2</b>
<b>3.4 Tables of mechanical properties .....</b>	<b>6</b>
<b>Annex A (informative) List of tempers used in Tables 1 to 61 (extract of EN 515) .....</b>	<b>63</b>
<b>Bibliography .....</b>	<b>65</b>

## **Foreword European foreword**

This document (~~EN 755-2:2013~~ EN 755-2:2016) has been prepared by Technical Committee CEN/TC 132 "Aluminium and aluminium alloys", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by ~~April 2014~~ September 2016, and conflicting national standards shall be withdrawn at the latest by ~~April 2014~~ September 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

~~CEN/TC 132 affirms its policy that if a patentee refuses to grant licences on standardized products under reasonable and not discriminatory conditions, this product will be removed from the corresponding document.~~

This document supersedes ~~EN 755-2:2008~~ EN 755-2:2013.

CEN/TC 132 decided to revise ~~EN 755-2:2008~~ EN 755-2:2013 as follows:

- ~~addition of the alloys EN AW-6026 and EN AW-6064A in new Tables 25 and 26;~~
- ~~EN 10002-1 was replaced by EN ISO 6892-1;~~
- ~~editorial corrections in Tables 7, 22, 47, 49, 54 and 59.~~
- reorganization of the list of the tables of mechanical properties of the relevant aluminium and aluminium alloys;
- addition of the alloy EN AW-2618A [AlCu2Mg1,5Ni] in a new Table 9;
- correction of the alloy EN AW-6026 [Al MgSiBi] in a new Table 36;
- addition of the alloy EN AW-6056 [Al Si1MgCuMn] in a new Table 38;
- Modification of the Alloy EN AW-6060 [Al MgSi] in Table 39: Extruded profile T6 and T66 wall thickness-border from 3 mm to 5 mm;
- Modification of the Alloy EN AW-6063 [Al Mg0,7Si] in Table 45: Extruded profile T5 wall thickness-border from 3 mm to 10 mm;
- The former Table 26 was moved, and is now Table 48.

EN 755 ~~comprises the following parts under the general title "~~Aluminium and aluminium alloys — Extruded rod/bar, tube and profiles": ~~comprises the following parts:~~

- Part 1: Technical conditions for inspection and delivery
- Part 2: Mechanical properties
- Part 3: Round bars, tolerances on dimensions and form
- Part 4: Square bars, tolerances on dimensions and form
- Part 5: Rectangular bars, tolerances on dimensions and form
- Part 6: Hexagonal bars, tolerances on dimensions and form

- *Part 7: Seamless tubes, tolerances on dimensions and form*
- *Part 8: Porthole tubes, tolerances on dimensions and form*
- *Part 9: Profiles, tolerances on dimensions and form*

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## 1 Scope

This European Standard specifies the mechanical property limits resulting from tensile testing applicable to aluminium and aluminium alloy extruded rod/bar, tube and profile.

Technical conditions for inspection and delivery, including product and testing requirements, are specified in EN 755-1. Temper designations are defined in EN 515. The chemical composition limits for these materials are given in EN 573-3.

## 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.

EN 755-1, *Aluminium and aluminium alloys- Extruded rod/bar, tube and profiles - Part 1: Technical conditions for inspection and delivery*

EN ISO 6892-1, *Metallic materials - Tensile testing - Part 1: Method of test at room temperature (ISO 6892-1)*

## 3 Mechanical property limits

### 3.1 General

The mechanical properties shall be in conformity with those specified in Table 1 to Table 5961 or those agreed upon between supplier and purchaser and stated in the order document.

Table 1 to Table 5961 contain limits of mechanical property values obtained by tensile testing according to EN ISO 6892-1 after sampling and test piece preparation according to EN 755-1.

NOTE The mechanical properties refer to test pieces taken in the longitudinal direction. Mechanical properties of test pieces taken in other directions can differ from those for the longitudinal direction quoted in this standard.

Brinell hardness values given in Table 1 to Table 5961 expressed as HBW values are for information only.

### 3.2 Elongation

If not otherwise agreed, the A value shall be used.

The A value for elongation is the % elongation measured over a gauge length of  $5,65\sqrt{S_0}$  (where  $S_0$  is the initial cross-sectional area of the test-piece), and expressed in percent.

For certain products the supplier may choose (if not otherwise specified in the order documents) to use the elongation based on  $A_{50mm}$ . Consequently, values for the  $A_{50mm}$  are included in the following tables.

The  $A_{50mm}$  value is the elongation measured over a gauge length of 50 mm and expressed in percent. Test pieces and their location in the specimen are given in EN 755-1.

### 3.3 Reference list of the tables of mechanical properties of the relevant aluminium and aluminium alloys

		Page
Table 1	Aluminium EN AW-1050A	7
Table 2	Aluminium EN AW-1070A	8
Table 3	Aluminium EN AW-1200	9
Table 4	Aluminium EN AW-1350	10
Table 5	Alloy EN AW-2007	11
Table 6	Alloy EN AW-2011 and EN AW-2011A	12
Table 7	Alloy EN AW-2014 and EN AW-2014A	13
Table 8	Alloy EN AW-2017A	14
Table 9	Alloy EN AW-2024	15
Table 10	Alloy EN AW-2030	16
Table 11	Alloy EN AW-3102	17
Table 12	Alloy EN AW-3003	18
Table 13	Alloy EN AW-3103	19
Table 14	Alloy EN AW-5005 and EN AW-5005A	20
Table 15	Alloy EN AW-5019	21
Table 16	Alloy EN AW-5049	22
Table 17	Alloy EN AW-5051A	23
Table 18	Alloy EN AW-5251	24
Table 19	Alloy EN AW-5052	25
Table 20	Alloy EN AW-5154A	26
Table 21	Alloy EN AW-5454	27
Table 22	Alloy EN AW-5754	28
Table 23	Alloy EN AW-5083	29
Table 24	Alloy EN AW-5086	30
Table 25	Alloy EN AW-6026	30
Table 26	Alloy EN AW-6064A	31
Table 27	Alloy EN AW-6101A	32
Table 28	Alloy EN AW-6101B	33
Table 29	Alloy EN AW-6005 and EN AW-6005A	34
Table 30	Alloy EN AW-6106	35

Table 31	Alloy EN AW-6008	[Al SiMgV]	36
Table 32	Alloy EN AW-6110A	[Al Mg0,9Si0,9MnCu(A)]	37
Table 33	Alloy EN AW-6012	[Al MgSiPb]	38
Table 34	Alloy EN AW-6014	[Al Mg0,6SiV]	39
Table 35	Alloy EN AW-6018	[Al Mg1SiPbMn]	40
Table 36	Alloy EN AW-6023	[Al Si1Sn1MgBi]	41
Table 37	Alloy EN AW-6351	[Al Si1Mg0,5Mn]	42
Table 38	Alloy EN AW-6060	[Al MgSi]	43
Table 39	Alloy EN AW-6360	[Al SiMgMn]	44
Table 40	Alloy EN AW-6061	[Al Mg1SiCu]	45
Table 41	Alloy EN AW-6261	[Al Mg1SiCuMn]	46
Table 42	Alloy EN AW-6262	[Al Mg1SiPb]	47
Table 43	Alloy EN AW-6262A	[Al Mg1SiSn]	48
Table 44	Alloy EN AW-6063	[Al Mg0,7Si]	49
Table 45	Alloy EN AW-6063A	[Al Mg0,7Si(A)]	50
Table 46	Alloy EN AW-6463	[Al Mg0,7Si(B)]	51
Table 47	Alloy EN AW-6065	[Al Mg1Bi1Si]	52
Table 48	Alloy EN AW-6081	[Al Si0,9MgMn]	53
Table 49	Alloy EN AW-6082	[Al Si1MgMn]	54
Table 50	Alloy EN AW-6182	[Al Si1MgZr]	55
Table 51	Alloy EN AW-7003	[Al Zn6Mg0,8Zr]	56
Table 52	Alloy EN AW-7005	[Al Zn4,5Mg1,5Mn]	57
Table 53	Alloy EN AW-7108	[Al Zn5Mg1Zr]	58
Table 54	Alloy EN AW-7108A	[Al Zn5Mg1Zr(A)]	59
Table 55	Alloy EN AW-7020	[Al Zn4,5Mg1]	60
Table 56	Alloy EN AW-7021	[Al Zn5,5Mg1,5]	61
Table 57	Alloy EN AW-7022	[Al Zn5Mg3Cu]	62
Table 58	Alloy EN AW-7049A	[Al Zn8MgCu]	63
Table 59	Alloy EN AW-7075	[Al Zn5,5MgCu]	64

		Page
Table 1	Aluminium EN AW-1050A	[Al 99,5] 7
Table 2	Aluminium EN AW-1070A	[Al 99,7] 7
Table 3	Aluminium EN AW-1200	[Al 99,0] 8
Table 4	Aluminium EN AW-1350	[Al 99,5] 8
Table 5	Alloy EN AW-2007	[Al Cu4PbMgMn] 9
Table 6	Alloy EN AW-2011 and EN AW-2011A	[Al Cu6BiPb] and [Al Cu6BiPb(A)] 9
Table 7	Alloy EN AW-2014 and EN AW-2014A	[Al Cu4SiMg] and [Al Cu4SiMg(A)] 10
Table 8	Alloy EN AW-2017A	[Al Cu4MgSi(A)] 11
Table 9	Alloy EN AW-2618A	[AlCu2Mg1,5Ni] 12
Table 10	Alloy EN AW-2024	[Al Cu4Mg1] 13
Table 11	Alloy EN AW-2030	[Al Cu4PbMg] 14
Table 12	Alloy EN AW-3102	[Al Mn0,2] 15
Table 13	Alloy EN AW-3003	[Al Mn1Cu] 16
Table 14	Alloy EN AW-3103	[Al Mn1] 17
Table 15	Alloy EN AW-5005 and EN AW-5005A	[Al Mg1(B)] and [Al Mg 1(C)] 18
Table 16	Alloy EN AW-5019	[Al Mg5] 19
Table 17	Alloy EN AW-5049	[Al Mg2Mn0,8] 20
Table 18	Alloy EN AW-5051A	[Al Mg2] 20
Table 19	Alloy EN AW-5251	[Al Mg2Mn0,3] 21
Table 20	Alloy EN AW-5052	[Al Mg2,5] 22
Table 21	Alloy EN AW-5154A	[Al Mg3,5(A)] 23
Table 22	Alloy EN AW-5454	[Al Mg3Mn] 24
Table 23	Alloy EN AW-5754	[Al Mg3] 25
Table 24	Alloy EN AW-5083	[Al Mg4,5Mn0,7] 26
Table 25	Alloy EN AW-5086	[Al Mg4] 27
Table 26	Alloy EN AW-6101A	[Al MgSi(A)] 27
Table 27	Alloy EN AW-6101B	[Al MgSi(B)] 28
Table 28	Alloy EN AW-6005 and EN AW-6005A	[Al SiMg] and [Al SiMg(A)] 29
Table 29	Alloy EN AW-6106	[Al MgSiMn] 30
Table 30	Alloy EN AW-6008	[Al SiMgV] 30
Table 31	Alloy EN AW-6110A	[Al Mg0,9Si0,9MnCu(A)] 31
Table 32	Alloy EN AW-6012	[Al MgSiPb] 32

		Page
Table 33	Alloy EN AW-6014	33
Table 34	Alloy EN AW-6018	34
Table 35	Alloy EN AW-6023	34
Table 36	Alloy EN AW-6026	35
Table 37	Alloy EN AW-6351	36
Table 38	Alloy EN AW-6056	37
Table 39	Alloy EN AW-6060	38
Table 40	Alloy EN AW-6360	39
Table 41	Alloy EN AW-6061	40
Table 42	Alloy EN AW-6261	41
Table 43	Alloy EN AW-6262	42
Table 44	Alloy EN AW-6262A	42
Table 45	Alloy EN AW-6063	43
Table 46	Alloy EN AW-6063A	44
Table 47	Alloy EN AW-6463	45
Table 48	Alloy EN AW-6064A	46
Table 49	Alloy EN AW-6065	46
Table 50	Alloy EN AW-6081	47
Table 51	Alloy EN AW-6082	48
Table 52	Alloy EN AW-6182	49
Table 53	Alloy EN AW-7003	49
Table 54	Alloy EN AW-7005	50
Table 55	Alloy EN AW-7108	50
Table 56	Alloy EN AW-7108A	51
Table 57	Alloy EN AW-7020	52
Table 58	Alloy EN AW-7021	52
Table 59	Alloy EN AW-7022	53
Table 60	Alloy EN AW-7049A	54
Table 61	Alloy EN AW-7075	55

### 3.4 Tables of mechanical properties

**Table 1 — Aluminium EN AW-1050A [Al 99,5]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	60	-	20	-	25	23	20
O, H111	all	all	60	95	20	-	25	23	20
Extruded tube									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$t$	mm	min.	max.	min.	max.			
F <sup>c</sup> , H112	all		60		20	-	25	23	20
O, H111	all		60	95	20	-	25	23	20
Extruded profile									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$t$	mm	min.	max.	min.	max.			
F <sup>c</sup> , H112	all		60		20	-	25	23	20
<sup>a</sup> $D$ = Diameter for round bar. <sup>b</sup> $S$ = Width across flats for square and hexagonal bar, thickness for rectangular bar. <sup>c</sup> F Temper: property values are for information only.									

**Table 2 — Aluminium EN AW-1070A [Al 99,7]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	60	-	23		25	23	18
Extruded tube									
Not specified									
Extruded profile									
Not specified									
<sup>a</sup> $D$ = Diameter for round bar. <sup>b</sup> $S$ = Width across flats for square and hexagonal bar, thickness for rectangular bar. <sup>c</sup> F Temper: property values are for information only.									

**Table 3 — Aluminium EN AW-1200 [Al 99,0]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		A % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
F <sup>c</sup> ,	all	all	75	-	25	-	20	18	23
Extruded tube									
Temper	Wall thickness $t$ mm		$R_m$ MPa		$R_{p0,2}$ MPa		A % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> ,	all	all	75	-	25	-	20	18	23
Extruded profile									
Temper	Wall thickness $t$ mm		$R_m$ MPa		$R_{p0,2}$ MPa		A % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> ,	all	all	75	-	25	-	20	18	23
<sup>a</sup> $D$ = Diameter for round bar.									
<sup>b</sup> $S$ = Width across flats for square and hexagonal bar, thickness for rectangular bar.									
<sup>c</sup> F Temper: property values are for information only.									

**Table 4 — Aluminium EN AW-1350 [Al 99,5]**

Extruded rod/bar <sup>d</sup>									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		A % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	60	-	-	-	25	23	20
Extruded tube <sup>d</sup>									
Temper	Wall thickness $t$ mm		$R_m$ MPa		$R_{p0,2}$ MPa		A % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	60	-	-	-	25	23	20
Extruded profile <sup>d</sup>									
Temper	Wall thickness $t$ mm		$R_m$ MPa		$R_{p0,2}$ MPa		A % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	60	-	-	-	25	23	20
<sup>a</sup> $D$ = Diameter for round bar.									
<sup>b</sup> $S$ = Width across flats for square and hexagonal bar, thickness for rectangular bar.									
<sup>c</sup> F Temper: property values are for information only.									
<sup>d</sup> Electrical conductivity $\gamma \geq 35,4$ MS/m.									

**Table 5 — Alloy EN AW-2007 [Al Cu4PbMgMn]**

Extruded rod/bar										
Temper	Dimensions mm			$R_m$ MPa		$R_{p0,2}$ MPa		A % min	$A_{50\text{ mm}}$ % min	<b>Hardness</b> Typical value HBW
	$D^a$	$S^b$	min	max	min	max				
T4, T4510, T4511 <sup>c</sup>	$\leq 80$	$\leq 80$	37 0	- -	25 0	- -	8	6	95	
	$80 < D \leq 200$	$80 < S \leq 200$	34 0	- -	22 0	- -	8	-		
	$200 < D \leq 250$	$200 < S \leq$	30	-	20	-	7	-		
Extruded tube										
Temper	Wall thickness mm			$R_m$ MPa		$R_{p0,2}$ MPa		A % min	$A_{50\text{ mm}}$ % min	<b>Hardness</b> Typical value HBW
	$t$	mm	min	max	min	max				
T4, T4510, T4511	$\leq 25$			37	-	25	-	8	6	95
Extruded profile										
Temper	Wall thickness mm			$R_m$ MPa		$R_{p0,2}$ MPa		A % min	$A_{50\text{ mm}}$ % min	<b>Hardness</b> Typical value HBW
	$t$	mm	min	max	min	max				
T4, T4510, T4511	$\leq 30$			37	-	25	-	8	6	95

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 6 — Alloy EN AW-2011 [Al Cu6BiPb] and Alloy EN AW-2011A [Al Cu6BiPb(A)]**

Extruded rod/bar											
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		A % min	$A_{50\text{ mm}}$ % min	<b>Hardness</b> Typical value HBW		
	$D^a$	$S^b$	min	max.	min.	max.					
T4 <sup>c</sup>	$\leq 200$	$\leq$	27	-	125	-	14	12	95		
T6 <sup>c</sup>	$\leq 75$	$\leq 60$	31 0	-	230	-	8	6	110		
	$75 < D \leq 200$	-			195	-	6	-	110		
Extruded tube											
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		A % min	$A_{50\text{ mm}}$ % min	<b>Hardness</b> Typical value HBW		
	$t$	mm	min	max.	min	max.					
T6 <sup>c</sup>	$\leq 25$		31	-	230	-	6	4	110		
Extruded profile											
Not specified											

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 7 — Alloy EN AW-2014 [Al Cu4SiMg] and Alloy EN AW-2014A [Al Cu4SiMg(A)]**

Drawn rod/bar										
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
	$D^a$	$S^b$	min.	max	min.	max.				
O, H111	$\leq 200$	$\leq 200$	-	25	-	135	12	10	45	
T4, T4510, T4511	$\leq 25$	$\leq 25$	370	-	230	-	13	11	110	
	$25 < D \leq 75$	$25 < S \leq 75$	410	-	270	-	12	-	110	
	$75 < D \leq 150$	$75 < S \leq 150$	390	-	250	-	10	-	110	
	$150 < D \leq 200$	$150 < S \leq 200$	350	-	230	-	8	-	110	
T6, T6510, T6511	$\leq 25$	$\leq 25$	415	-	370	-	6	5	140	
	$25 < D \leq 75$	$25 < S \leq 75$	460	-	415	-	7	-	140	
	$75 < D \leq 150$	$75 < S \leq 150$	465	-	420	-	7	-	140	
	$150 < D \leq 200$	$150 < S \leq 200$	430	-	350	-	6	-	140	
	$200 < D \leq 250$	$200 < S \leq 250$	420	-	320	-	5	-	140	
Extruded tube										
Temper	$t$	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
		mm		min.	max	mi	max.			
O, H111		$\leq 20$		-	25	-	135	12	10	45
T4, T4510, T4511		$\leq 20$		370	-	230	-	11	10	110
T6, T6510, T6511		$\leq 10$		415	-	370	-	7	5	140
Extruded profile <sup>c</sup>										
Temper	$t$	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
		mm		min.	ma	min.	max.			
O, H111		all		-	25	-	135	12	10	45
T4, T4510, T4511		$\leq 25$		370	-	230	-	11	10	110
T6, T6510, T6511		$25 < t \leq 75$		410	-	270	-	10	-	110
		$\leq 25$		415	-	370	-	7	5	140
		$25 < t \leq 75$		460	-	415	-	7	-	140

<sup>a</sup>  $D$  = Diameter for round bar.<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.<sup>c</sup> If a profile cross section ~~is comprised of~~ comprises different thicknesses which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 8 — Alloy EN AW-2017A [Al Cu4MgSi(A)]**

Extruded rod/bar										
Temper	Dimensions		$R_m$ mm MPa		$R_{p0,2}$ mm MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value	
	$D^a$	$S^b$	min.	max.	min.	max.				
O, H111	$\leq 200$	$\leq 200$	-	250	-	135	12	10	45	
T4, T4510, , T4511 <sup>c</sup>	$\leq 25$	$\leq 25$	380	-	260	-	12	10	105	
	$25 < D \leq 75$	$25 < S \leq 75$	400	-	270	-	10	-	105	
	$75 < D \leq 150$	$75 < S \leq 150$	390	-	260	-	9	-	105	
	$150 < D \leq 200$	$150 < S \leq 200$	370	-	240	-	8	-	105	
	$200 < D \leq 250$	$200 < S \leq 250$	360	-	220	-	7	-	105	
Extruded tube										
Temper	$t$	Wall thickness		$R_m$ mm MPa		$R_{p0,2}$ mm MPa		$A$ %	$A_{50\text{ mm}}$ % min.	
		mm		min.	max.	min.	max.			
O, H111		$\leq 20$		-	250	-	135	12	10	45
T4, T4510, <del>T4511</del>		$\leq 10$		380	-	260	-	12	10	105
		$10 < t \leq 75$		400	-	270	-	10	8	105
Extruded profile										
Temper	$t$	Wall thickness		$R_m$ mm MPa		$R_{p0,2}$ mm MPa		$A$ %	$A_{50\text{ mm}}$ % min.	
		mm		min.	max.	min.	max.			
T4, T4510,		$\leq 30$		380	-	260	-	10	8	105

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

**Table 9 — Alloy EN AW-~~2024~~<sup>2618A</sup> [Al Cu4Mg1Cu2Mg1.5Ni]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardnes s Typical value HBW</b>
	$D^a$	$S^b$	min.	max.	min.	max.			
0, H111	$\leq 200$	$\leq 200$	-	250	-	135	12	10	45
T4, T4510, T4511 <sup>c</sup>	$\leq 25$	$\leq 25$	380	-	260	-	12	10	105
	$25 < D \leq 75$	$25 < S \leq 75$	400	-	270	-	10	-	105
	$75 < D \leq 150$	$75 < S \leq 150$	390	-	260	-	9	-	105
	$150 < D \leq 200$	$150 < S \leq$ $200$	370	-	240	-	8	-	105
	$200 < D \leq 250$	$200 < S \leq$ $250$	360	-	220	-	7	-	105
	Extruded tube								
Temper	Wall thickness $t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardnes s Typical value HBW</b>	
		min.	max.	min.	max.				
0, H111	$\leq 20$	-	250	-	135	12	10	45	
T4, T4510, T4511 <sup>c</sup>	$\leq 10$	380	-	260	-	12	10	105	
	$10 < t \leq 75$	400	-	270	-	10	8	105	
Extruded profile									
Temper	Wall thickness $t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardnes s Typical value HBW</b>	
		min.	max.	min.	max.				
T4, T4510, T4511 <sup>c</sup>	$\leq 30$	380	-	260	-	10	8	105	

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	Hardne ss Typical value HBW
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
T6, T6511	$D \leq 10$	$S \leq 10$	410	-	330	-	6	4	140
T6, T6511	$10 < D \leq 100$	$10 < S \leq 100$	420	-	360	-	7	5	145
Extruded tube									
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	Hardne ss Typical value HBW
			min.	max.	min.	max.			
T6, T6511	$\leq 10$		410	-	330	-	6	4	140
T6, T6511	$10 < t \leq 100$		420	-	360	-	7	5	145
Extruded profile <sup>c</sup>									
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	Hardne ss Typical value HBW
			min.	max.	min.	max.			
T6, T6511	$\leq 10$		410	-	330	-	6	4	140
T6, T6511	$10 < t \leq 100$		420	-	360	-	7	5	145

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup> Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 10 — Alloy EN AW-2024 [Al Cu4Mg1]**

Extruded rod/bar									
Temper	Dimensions		$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$	Hardness
	mm	MPa	min.	max.	MPa	min.			
	$D^{\text{a}}$	$S^{\text{b}}$							
O, H111	$\leq 200$	$\leq 200$	-	250	-	150	12	10	47
T3, T3510, T3511	$\leq 50$	$\leq 50$	450	-	310	-	8	6	120
	$50 < D \leq 100$	$50 < S \leq 100$	440	-	300	-	8	-	120
	$100 < D \leq 200$	$100 < S \leq 200$	420	-	280	-	8	-	120
	$200 < D \leq 250$	$200 < S \leq 250$	400	-	270	-	8	-	120
T8, T8510, T8511	$\leq 150$	$\leq 150$	455	-	380	-	5	4	130
Extruded tube									
Temper	$t$	Wall thickness		$R_m$		$R_{p0,2}$		$A$	Hardness
		mm	MPa	min.	max.	MPa	min.		
O, H111		$\leq 30$	-	250	-	150	12	10	47
T3, T3510, T3511		$\leq 30$	420	-	290	-	8	6	120
T8, T8510, T8511		$\leq 30$	455	-	380	-	5	4	130
Extruded profile <sup>c</sup>									
Temper	$t$	Wall thickness		$R_m$		$R_{p0,2}$		$A$	Hardness
		mm	MPa	min.	max.	MPa	min.		
O, H111		all	-	250	-	150	12	10	47
T3, T3510, T3511		$\leq 15$	395	-	290	-	8	6	120
		$15 < t \leq 50$	420	-	290	-	8	-	120
T8, T8510, T8511		$\leq 50$	455	-	380	-	5	4	130

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 1011 — Alloy EN AW-2030 [Al Cu4PbMg]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max			
T4, T4510, T4511 <sup>c</sup>	$\leq 80$	$\leq 80$	370	-	250	-	8	6	115
	$80 < D \leq 200$	$80 < S \leq 200$	340	-	220	-	8	-	115
	$200 < D \leq 250$	$200 < S \leq 250$	330	-	210	-	7	-	115
Extruded tube									
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value HBW
			min.	max.	min.	max			
T4, T4510, T4511 <sup>c</sup>	$\leq 25$		370	-	250	-	8	6	115
Extruded profile									
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value HBW
			min.	max.	min.	max			
T4, T4510, T4511 <sup>c</sup>	$\leq 30$		370	-	250	-	8	6	115

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

**Table 4.12 — Alloy EN AW-3102 [Al Mn0,2]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value HBW
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	80	-	30	-	25	23	23
Extruded tube									
Temper	$t$ Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112	all		80	-	30	-	25	23	23
Extruded profile									
Temper	$t$ Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112	all		80	-	30	-	25	23	23

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> F Temper: property values are for information only.

**Table 1213 — Alloy EN AW-3003 [Al Mn1Cu]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	95	-	35	-	25	20	30
O, H111	all	all	95	135	35	-	25	20	30
Extruded tube									
Temper	$t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value HBW	
		min.	max.	min.	max.				
F <sup>c</sup> , H112	all	95	-	35	-	25	20	30	
O, H111	all	95	135	35	-	25	20	30	
Extruded profile									
Temper	$t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value	
		min.	max.	min.	max.				
F <sup>c</sup> , H112	all	95	-	35	-	25	20	30	

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> F Temper: property values are for information only.

**Table 1314 — Alloy EN AW-3103 [Al Mn1]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	95	-	35	-	25	20	28
O, H111	all	all	95	135	35	-	25	20	28
Extruded tube									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.
		min.	max.	min.	max.	min.	max.		
F <sup>c</sup> , H112	all	95	-	35	-	25	20	28	
O, H111	all	95	135	35	-	25	20	28	
Extruded profile									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.
		min.	max.	min.	max.	min.	max.		
F <sup>c</sup> , H112	all	95	-	35	-	25	20	28	

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> F Temper: property values are for information only.

**Table 1415 — Alloy EN AW-5005 [Al Mg1(B)] and Alloy EN AW-5005A [Al Mg1(C)]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	D <sup>a</sup>	S <sup>b</sup>	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	100	100	-	40	-	18	16	30
O, H111	$\leq 80$	$\leq 60$	100	150	40	-	18	16	30
Extruded tube									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	t	mm	min.	max.	min.	max.			
F <sup>c</sup> , H112		all	100	-	40	-	18	16	30
O, H111		$\leq 20$	100	150	40	-	20	18	30
Extruded Profile									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	t	mm	min.	max.	min.	max.			
F <sup>c</sup> , H112		all	100	-	40	-	18	16	30
O, H111		$\leq 20$	100	150	40	-	20	18	30

<sup>a</sup> D = Diameter for round bar.

<sup>b</sup> S = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> F Temper: property values are for information only.

**Table 1516 — Alloy EN AW-5019 [Al Mg5]**

Extruded rod/bar									
Temper	Dimensions		$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	mm	MPa	min.	max.	min.	max.			
F <sup>c</sup> , H112	≤ 200	≤ 200	250	-	110	-	14	12	65
O, H111	≤ 200	≤ 200	250	320	110	-	15	13	65
Extruded tube									
Temper	$t$	Wall thickness	$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
			mm	MPa	min.	max.			
F <sup>c</sup> , H112		≤ 30	250	-	110	-	14	12	65
O, H111		≤ 30	250	320	110	-	15	13	65
Extruded profile									
Temper	$t$	Wall thickness	$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
			mm	MPa	min.	max.			
F <sup>c</sup> , H112		≤ 30	250	-	110	-	14	12	65

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> F Temper: property values are for information only.

**Table 1617 — Alloy EN AW-5049 [Al Mg2Mn0,8]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	180	-	80	-	15	13	50
Extruded tube									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.
		min.	max.	min.	max.	min.	max.		
F <sup>c</sup> , H112		all	180	-	80	-	15	13	50
Extruded profile									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.
		min.	max.	min.	max.	min.	max.		
F <sup>c</sup> , H112		all	180	-	80	-	15	13	50

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> F Temper: property values are for information only.

**Table 1718 — Alloy EN AW-5051A [Al Mg2]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	150	-	50	-	16	14	40
O, H111	all	all	150	200	50	-	18	16	40
Extruded tube									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.
		min.	max.	min.	max.	min.	max.		
F <sup>c</sup> , H112		all	150	-	60	-	16	14	40
O, H111		all	150	200	60	-	18	16	40
Extruded profile									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.
		min.	max.	min.	max.	min.	max.		
F <sup>c</sup> , H112		all	150	-	60	-	16	14	40

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> F Temper: property values are for information only.

**Table 4819 — Alloy EN AW-5251 [Al Mg2Mn0,3]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	Hardnes s Typical value
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	160	-	60	-	16	14	45
O, H111	all	all	160	220	60	-	17	15	45
Extruded tube									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.
		min.	max.	min.	max.	min.	max.		
F <sup>c</sup> , H112	all	160	-	60	-	16	14	45	
O, H111	all	160	220	60	-	17	15	45	
Extruded profile									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.
		min.	max.	min.	max.	min.	max.		
F <sup>c</sup> , H112	all	160	-	60	-	16	14	45	

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> F Temper: property values are for information only.

**Table 19<sup>a</sup>20 — Alloy EN AW-5052 [Al Mg2,5]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	170	-	70	-	15	13	47
O, H111	all	all	170	230	70	-	17	15	45
Extruded tube									
Temper	Wall thickness $t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
		min.	max.	min.	max.				
F <sup>c</sup> , H112	all	170	-	70	-	15	13	47	
O, H111	all	170	230	70	-	17	15	45	
Extruded profile									
Temper	Wall thickness $t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
		min.	max.	min.	max.				
F <sup>c</sup> , H112	all	170	-	70	-	15	13	47	

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> F Temper: property values are for information only.

Extruded rod/bar									
Temper	Dimensions		$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	170	-	70	-	15	13	47
O, H111	all	all	170	230	70	-	17	15	45
Extruded tube									
Temper	Wall thickness		$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	$t$	mm	MPa	min.	max.	MPa			
F <sup>c</sup> , H112		all	170	-	70	-	15	13	47
O, H111		all	170	230	70	-	17	15	45
Extruded profile									
Temper	Wall thickness		$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	$t$	mm	MPa	min.	max.	MPa			
F <sup>c</sup> , H112		all	170	-	70	-	15	13	47

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> F Temper: property values are for information only.

**Table 2021 — Alloy EN AW-5154A [Al Mg3,5(A)]**

Extruded rod/bar										
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.		
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.				
F <sup>c</sup> , H112	≤ 200	≤ 200	200	-	85	-	16	14	55	
O, H111	≤ 200	≤ 200	200	275	85	-	18	16	55	
Extruded tube										
Temper	$t$	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW		
		mm		min.	max.	min.	max.			
F <sup>c</sup> , H112		≤ 25		200	-	85	-	16	14	55
O, H111		≤ 25		200	275	85	-	18	16	55
Extruded profile										
Temper	$t$	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW		
		mm		min.	max.	min.	max.			
F <sup>c</sup> , H112		≤ 25		200	-	85	-	16	14	55

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> F Temper: property values are for information only.

**Table 2122 — Alloy EN AW-5454 [Al Mg3Mn]**

Extruded rod/bar										
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
	D <sup>a</sup>	S <sup>b</sup>	min.	max.	min.	max.				
F <sup>c</sup> , H112	≤ 200	≤ 200	200	-	85	-	16	14	60	
O, H111	≤ 200	≤ 200	200	275	85	-	18	16	60	
Extruded tube										
Temper	t	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
		mm	mm	min.	max.	min.	max.			
F <sup>c</sup> , H112		≤ 25	200	-	85	-	16	14	60	
O, H111		≤ 25	200	275	85	-	18	16	60	
Extruded profile										
Temper	t	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
		mm	mm	min.	max.	min.	max.			
F <sup>c</sup> , H112		≤ 25	200	-	85	-	16	14	60	

<sup>a</sup> D = Diameter for round bar.  
<sup>b</sup> S = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> F Temper: property values are for information only.

**Table 2223 — Alloy EN AW-5754 [Al Mg3]**

Extruded rod/bar										
Temper	Dimensions		$R_m$ mm		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardnes s</b> Typical value	
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.				
F <sup>c</sup> , H112	$\leq 150$	$\leq 150$	180	-	80	-	14	12	47	
	$150 < D \leq$	$150 < S \leq 250$	180	-	70	-	13	-	47	
O, H111	$\leq 150$	$\leq 150$	180	250	80	-	17	15	45	
Extruded tube										
Temper	$t$	Wall thickness		$R_m$ mm		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	
		mm		min.	max.	min.	max.			
F <sup>c</sup> , H112		$\leq 25$		180	-	80	-	14	12	47
O, H111		$\leq 25$		180	250	80	-	17	15	45
Extruded profile										
Temper	$t$	Wall thickness		$R_m$ mm		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	
		mm		min.	max.	min.	max.			
F <sup>c</sup> , H112		$\leq 25$		180	-	80	-	14	12	47

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> F Temper: property values are for information only.

**Table 2324 — Alloy EN AW-5083 [Al Mg4,5Mn0,7]**

Extruded rod/bar									
Temper	Dimensions		$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value
	D <sup>a</sup>	S <sup>b</sup>	min.	max.	min.	ma			
F <sup>c</sup>	≤ 200	≤ 200	270	-	110	-	12	10	70
	200 < D ≤ 250	200 < S ≤ 250	260	-	100	-	12	-	70
O, H111	≤ 200	≤ 200	270	-	110	-	12	10	70
H112	≤ 200	≤ 200	270	-	125	-	12	10	70
Extruded tube									
Temper	Wall thickness		$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value
	t	mm	MPa	min.	max.	MPa			
F <sup>c</sup>	all	270	-	110	-	12	10	70	
O, H111	all	270	-	110	-	12	10	70	
H112	all	270	-	125	-	12	10	70	
Extruded profile									
Temper	Wall thickness		$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value
	t	mm	MPa	min.	max.	MPa			
F <sup>c</sup>	all	270	-	110	-	12	10	70	
H112	all	270	-	125	-	12	10	70	

<sup>a</sup> D = Diameter for round bar.

<sup>b</sup> S = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> F Temper: property values are for information only.

**Table 24<sup>25</sup> — Alloy EN AW-5086 [Al Mg4]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
F <sup>c</sup> , H112	≤ 250	≤ 250	240	-	95	-	12	10	65
O, H111	≤ 200	≤ 200	240	320	95	-	18	15	65
Extruded tube									
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112	all		240	-	95	-	12	10	65
O, H111	all		240	320	95	-	18	15	65
Extruded profile									
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112	all		240	-	95	-	12	10	65

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> F Temper: property values are for information only.

**Table 25 — Alloy EN AW-6026 [Al MgSiBi]**

Drawn rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
T6 <sup>c</sup>	≤ 80	≤ 80	370	-	300	-	8	6	95
T8 <sup>c</sup>	≤ 80	≤ 60	345	-	315	-	4	3	95
T9 <sup>c</sup>	≤ 80	≤ 60	360	-	330	-	4	3	95

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar  
<sup>c</sup> Properties may be obtained by press quenching

**Table 26 — Alloy EN AW-~~6064A~~6101A [Al Mg<sub>1</sub>SiBi]MgSi(A)]**

Extruded rod/bar										
Temper	Dimensions mm			$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^a$	$S^b$		min.	max.	min.	max.			
T6, T6510, T6511 <sup>c</sup>	$\leq 140$ $140 < D \leq 250$	$\leq 140$ $140 < S \leq 250$		310 260	- -	260 240	- -	8 8	6 6	95 90
Extruded tube										
Temper	Wall thickness $t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW		
		min.	max.	min.	max.					
T6, T6510, T6511 <sup>c</sup>	$\leq 30$	310	-	260	-	8	6	90		
Extruded profile										
Temper	Wall thickness $t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW		
		min.	max.	min.	max.					
T6, T6510, T6511 <sup>c</sup>	$\leq 40$	310	-	260	-	8	6	90		

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Characteristics may be obtained by tempering under press.

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	Hardnes s Typical value
	$D^a$	$S^b$	min.	max.	min.	max.			
T6 <sup>c</sup>	≤ 150	≤ 150	200	-	170	-	10	8	70
Extruded tube									
Temper	Wall thickness $t$ mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	Hardnes s Typical value
	min.	max.	min.	max.	min.	max.			
T6 <sup>c</sup>	≤ 25	200	-	170	-	10	8	70	
Extruded profile									
Temper	Wall thickness $t$ mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	Hardnes s Typical value
	min.	max.	min.	max.	min.	max.			
T6 <sup>c</sup>	≤ 50	200	-	170	-	10	8	70	

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 27 — Alloy EN AW-6101A [Al MgSi(A)]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardnes s Typical value HBW</b>
	$D^a$	$S^b$	min.	max.	min.	max.			
T6 <sup>c</sup>	$\leq 150$	$\leq 150$	200	-	170	-	10	8	70
Extruded tube									
Temper	Wall thickness $t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardnes s Typical value HBW</b>	
		min.	max.	min.	max.				
T6 <sup>c</sup>	$\leq 25$	200	-	170	-	10	8	70	
Extruded profile									
Temper	Wall thickness $t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardnes s Typical value HBW</b>	
		min.	max.	min.	max.				
T6 <sup>c</sup>	$\leq 50$	200	-	170	-	10	8	70	

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

**Table 2827 — Alloy EN AW-6101B [Al MgSi(B)]**

Extruded rod/bar									
Temper	Dimensions		$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardnes s</b> Typical value
	mm	MPa	min.	max.	min.	max.			
T6 <sup>c d</sup>	-	$\leq 15$	215	-	160	-	8	6	70
T7 <sup>c e</sup>	-	$\leq 15$	170	-	120	-	12	10	60
Extruded tube									
Temper	$t$	Wall thickness		$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %
		mm	MPa	min.	max.	min.	max.		
T6 <sup>c d</sup>	$t$	$\leq 15$	215	-	160	-	8	6	70
T7 <sup>c e</sup>		$\leq 15$	170	-	120	-	12	10	60
Extruded profile									
Temper	$t$	Wall thickness		$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %
		mm	MPa	min.	max.	min.	max.		
T6 <sup>c d</sup>	$t$	$\leq 15$	215	-	160	-	8	6	70
T7 <sup>c e</sup>		$\leq 15$	170	-	120	-	12	10	60

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.  
<sup>d</sup> Electrical conductivity  $\gamma \geq 30$  MS/m.  
<sup>e</sup> Electrical conductivity  $\gamma \geq 32$  MS/m.

**Table 2928 — Alloy EN AW-6005 [Al SiMg] and Alloy EN AW-6005A [Al SiMg(A)]**

Extruded rod/bar											
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW		
	$D^{\text{a}}$	$S^{\text{b}}$	min.	ma	min	ma					
T6 <sup>c</sup>	$\leq 25$	$\leq 25$	270	-	225	-	10	8	90		
	$25 < D \leq 50$	$25 < S \leq 50$	270	-	225	-	8	-	90		
	$50 < D \leq 100$	$50 < S \leq 100$	260	-	215	-	8	-	85		
Extruded tube											
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW			
		min.	ma	min	ma	min	min.				
T6 <sup>c</sup>		$\leq 5$		270	-	225	-	8	6	90	
		$5 < t \leq 10$		260	-	215	-	8	6	85	
Extruded profile <sup>d</sup>											
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW			
		min.	ma	min	ma	min	min.				
<i>Open profile</i> T4 <sup>c</sup>		$\leq 25$		180	-	90	-	15	13	50	
		$\leq 5$		270	-	225	-	8	6	90	
		$5 < t \leq 10$		260	-	215	-	8	6	85	
<i>Hollow profile</i>		$10 < t \leq 25$		250	-	200	-	8	6	85	
		$\leq 10$		180	-	90	-	15	13	50	
		$\leq 5$		255	-	215	-	8	6	85	
<i>Hollow profile</i>		$5 < t \leq 15$		250	-	200	-	8	6	85	
<sup>a</sup> $D$ = Diameter for round bar.											
<sup>b</sup> $S$ = Width across flats for square and hexagonal bar, thickness for rectangular bar.											
<sup>c</sup> Properties may be obtained by press quenching.											
<sup>d</sup> If a profile cross section <del>is comprised of</del> comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.											

**Table 3029 — Alloy EN AW-6106 [Al MgSiMn]**

Extruded rod/bar									
Not specified									
Extruded tube									
Not specified									
Extruded profile									
Temper	<i>t</i>	Wall thickness mm	<i>R<sub>m</sub></i> MPa		<i>R<sub>p0,2</sub></i> MPa		<i>A</i> % min.	<i>A<sub>50 mm</sub></i> % min.	<b>Hardness</b>  Typical value
			min.	max.	min.	max.			
T6 <sup>a</sup>		≤ 10	250	-	200	-	8	6	75

<sup>a</sup> Properties may be obtained by press quenching.

**Table 3130 — Alloy EN AW-6008 [Al SiMgV]**

Extruded rod/bar									
Not specified									
Extruded tube									
Temper	<i>t</i>	Wall thickness	<i>R<sub>m</sub></i> MPa		<i>R<sub>p0,2</sub></i> MPa		<i>A</i> % min.	<i>A<sub>50 mm</sub></i> % min.	<b>Hardness</b>  Typical value HBW
			min.	max.	min.	max.			
T4		≤ 10	180	-	90	-	15	13	50
T6 <sup>a</sup>		≤ 5	270	-	225	-	8	6	90
		5 < <i>t</i> ≤ 10	260	-	215	-	8	6	85
Extruded profile <sup>b</sup>									
Temper	<i>t</i>	Wall thickness	<i>R<sub>m</sub></i> MPa		<i>R<sub>p0,2</sub></i> MPa		<i>A</i> % min.	<i>A<sub>50 mm</sub></i> % min.	<b>Hardness</b>  Typical value HBW
			min.	max.	min.	max.			
<i>Open profile</i> T4 <sup>a</sup>		≤ 10	180	-	90	-	15	13	50
<i>Open profile</i> T6 <sup>a</sup>		≤ 5	270	-	225	-	8	6	90
<i>Hollow profile</i> T4 <sup>a</sup>		5 < <i>t</i> ≤ 10	260	-	215	-	8	6	85
		≤ 10	180	-	90	-	15	13	50
<i>Hollow profile</i> T6 <sup>a</sup>		≤ 5	255	-	215	-	8	6	85
		5 < <i>t</i> ≤ 10	250	-	200	-	8	6	85

<sup>a</sup> Properties may be obtained by press quenching.

<sup>b</sup> If a profile cross section ~~is comprised of~~ comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 3231—Alloy EN AW-6110A [Al Mg0,9Si0,9MnCu(A)]**

Extruded rod/bar									
Temper	Dimensions		$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$	Hardness
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
T5 <sup>c</sup>	≤ 120	≤ 120	380	-	360	-	10	8	115
T6 <sup>c</sup>	≤ 120	≤ 150	410	-	380	-	10	8	120
Extruded tube									
Temper	$t$	Wall thickness	$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$	Hardness
			mm	MPa	min.	max.			
T4 <sup>c</sup>		≤ 25	320		220	-	16	14	85
T6 <sup>c</sup>		≤ 25	380	-	360	-	10	8	120
Extruded profile									
Temper	$t$	Wall thickness	$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$	Hardness
			mm	MPa	min.	max.			
T4 <sup>c</sup>		≤ 25	320		220	-	16	14	85
T6 <sup>c</sup>		≤ 25	380	-	360	-	10	8	120

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

**Table 3332 — Alloy EN AW-6012 [Al MgSiPb]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value
	$D^a$	$S^b$	min.	max	min.	max			
T6, T6510, T6511 <sup>c</sup>	$\leq 150$ $150 < D \leq 200$	$\leq 150$ $150 < S \leq 200$	310 260	- -	260 200	- -	8 8	6 -	105 105
Extruded tube									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value
	$t$	mm	min.	max	min.	max			
T6, T6510, T6511 <sup>c</sup>	$\leq 30$		310	-	260	-	8	6	105
Extruded profile									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value
	$t$	mm	min.	max	min.	max			
T6, T6510, T6511 <sup>c</sup>	$\leq 30$		310	-	260	-	8	6	105

<sup>a</sup>  $D$  = Diameter for round bar.<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.<sup>c</sup> Properties may be obtained by press quenching.

**Table 3433 — Alloy EN AW-6014 [Al Mg0,6SiV]**

Extruded rod/bar									
Not specified									
Extruded tube									
Temper	<i>t</i> mm	$R_m$ MPa	min.	max.	$R_{p0,2}$ MPa	min.	$A$ % min.	<b>Hardness</b> Typical value HBW	
T4 <sup>a</sup>	≤ 10	140			70	-	15	13	55
T6 <sup>a</sup>	≤ 5	250	-		200	-	8	6	80
	5 < <i>t</i> ≤ 10	225	-		180	-	8	6	80
Extruded profile <sup>b</sup>									
Temper	<i>t</i> mm	$R_m$ MPa	min.	max.	$R_{p0,2}$ MPa	min.	$A$ % min.	<b>Hardness</b> Typical value HBW	
<i>Open profile</i> T4 <sup>a</sup>	≤ 10	140	-		70	-	15	13	55
<i>Open profile</i> T6 <sup>a</sup>	≤ 5	250	-		200	-	10	8	80
	5 < <i>t</i> ≤ 10	225	-		180	-	8	6	80
<i>Hollow profile</i>	≤ 10	140	-		70	-	15	13	55
<i>Hollow profile</i>	≤ 5	250	-		200	-	8	6	80
	5 < <i>t</i> ≤ 10	225	-		180	-	8	6	80

<sup>a</sup> Properties may be obtained by press quenching.

<sup>b</sup> If a profile cross section ~~is comprised of~~ comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 35B4 — Alloy EN AW-6018 [Al Mg1SiPbMn]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value
	$D^a$	$S^b$	min.	max.	min.	max.			
T6, T6510, T6511 <sup>c</sup>	$\leq 150$ $150 < D \leq$	$\leq 150$ $150 < S \leq 200$	310 260	- -	260 200	- -	8 8	6 -	- -
Extruded tube									
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value
			min.	max.	min.	max.			
T6, T6510, T6511 <sup>c</sup>	$\leq 30$		310	-	260	-	8	6	-
Extruded profile									
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value
			min.	max.	min.	max.			
T6, T6510, T6511 <sup>c</sup>	$\leq 30$		310	-	260	-	8	6	-

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 36B5 — Alloy EN AW-6023 [Al Si1Sn1MgBi]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
T6, T6510, T6511 <sup>c</sup>	$\leq 150$	$\leq 150$	320	-	270	-	10	8	-
Extruded tube									
Not specified									
Extruded profile									
Not specified									

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 36 — Alloy EN AW-6026 [Al MgSiBi]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % mi	$A_{50}$ mm % min	Hardness HBW Typical Value
	D <sup>a</sup> mm	S <sup>b</sup> mm	mi	ma	mi	ma			
T6, T6510, T6511 <sup>c</sup>	$\leq 140$ $140 < D \leq 200$	$\leq 140$ $140 < S \leq 200$	37 0	-	30 0	-	8	6	95
			34 0	-	25 0	-	8	6	90
Extruded tube									
Temper	Wall thickness <i>t</i> mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % mi	$A_{50}$ mm % min	HBW Typical Value	
		min.	ma	min.	ma				
T6, T6510,	$\leq 30$	340	-	260	-	8	6	90	
Extruded Profile									
Temper	Wall thickness <i>t</i> mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % mi	$A_{50}$ mm % min	HBW Typical Value	
		min.	ma	min.	ma				
T6, T6510,	$\leq 40$	340	-	260	-	8	6	90	

<sup>a</sup> D = Diameter for round bar.  
<sup>b</sup> S = Width across flats for square and hexagonal bar, thickness for rectangular bar..  
<sup>c</sup> Properties may be obtained by press quenching

**Table 37 — Alloy EN AW-6351 [Al Si1Mg0,5Mn]**

Extruded rod/bar										
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value	
	$D^a$	$S^b$	min	max	min	max				
0, H111	$\leq 200$	$\leq 200$	-	160	-	110	14	12	35	
T4 <sup>c</sup>	$\leq 200$	$\leq 200$	205	-	110	-	14	12	67	
T6 <sup>c</sup>	$\leq 20$	$\leq 20$	295	-	250	-	8	6	95	
	$20 < D \leq 75$	$20 < S \leq 75$	300	-	255	-	8	-	95	
	$75 < D \leq 150$	$75 < S \leq 150$	310	-	260	-	8	-	95	
	$150 < D \leq 200$	$150 < S \leq 200$	280	-	240	-	6	-	95	
	$200 < D \leq 250$	$200 < S \leq 250$	270	-	200	-	6	-	95	
Extruded tube										
Temper	$t$	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value
		mm		min	max	min	max			
0, H111		$\leq 25$		-	160	-	110	14	12	35
T4 <sup>c</sup>		$\leq 25$		205	-	110	-	14	12	67
T6 <sup>c</sup>		$\leq 5$		290	-	250	-	8	6	95
		$5 < t \leq 25$		300	-	255	-	10	8	95
Extruded profile <sup>d</sup>										
Temper	$t$	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value
		mm		min	max	min	max			
0, H111		all		-	160	-	110	14	12	35
T4 <sup>c</sup>		$\leq 25$		205	-	110	-	14	12	67
<i>Open profile</i> T5		$\leq 5$		270	-	230	-	8	6	90
<i>Open profile</i> T6 <sup>c</sup>		$\leq 5$		290	-	250	-	8	6	95
<i>Hollow profile</i>		$5 < t \leq 25$		300	-	255	-	10	8	95
		$\leq 5$		270	-	230	-	8	6	90
<i>Hollow profile</i>		$\leq 5$		290	-	250	-	8	6	95
<i>Hollow profile</i>		$5 < t \leq 25$		300	-	255	-	10	8	95

<sup>a</sup>  $D$  = Diameter for round bar.<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.<sup>c</sup> Properties may be obtained by press quenching.<sup>d</sup> If a profile cross section is comprised of different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 38 — Alloy EN AW-~~6060~~6056 [Al MgSiSi1MgCuMn]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
T4 <sup>c</sup>	$\leq 150$	$\leq 150$	120	-	60	-	16	14	50
T5	$\leq 150$	$\leq 150$	160	-	120	-	8	6	60
T6 <sup>c</sup>	$\leq 150$	$\leq 150$	190	-	150	-	8	6	70
T64 <sup>c,d</sup>	$\leq 50$	$\leq 50$	180	-	120	-	12	10	60
T66 <sup>c</sup>	$\leq 150$	$\leq 150$	215	-	160	-	8	6	75
Extruded tube									
Temper	Wall thickness $t$ mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value HBW
	min.	max.	min.	max.	min.	max.			
T4 <sup>c</sup>	$\leq 15$	120	-	60	-	-	16	14	50
T5	$\leq 15$	160	-	120	-	-	8	6	60
T6 <sup>c</sup>	$\leq 15$	190	-	150	-	-	8	6	70
T64 <sup>c,d</sup>	$\leq 15$	180	-	120	-	-	12	10	60
T66 <sup>c</sup>	$\leq 15$	215	-	160	-	-	8	6	75
Extruded profile <sup>e</sup>									
Temper	Wall thickness $t$ mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value HBW
	min.	max.	min.	max.	min.	max.			
T4 <sup>c</sup>	$\leq 25$	120	-	60	-	-	16	14	50
T5	$\leq 5$	160	-	120	-	-	8	6	60
	$5 < t \leq 25$	140	-	100	-	-	8	6	60
T6 <sup>c</sup>	$\leq 3$	190	-	150	-	-	8	6	70
	$3 < t \leq 25$	170	-	140	-	-	8	6	70
T64 <sup>c,d</sup>	$\leq 15$	180	-	120	-	-	12	10	60
T66 <sup>c</sup>	$\leq 3$	215	-	160	-	-	8	6	75
	$3 < t \leq 25$	195	-	150	-	-	8	6	75

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

<sup>d</sup> Bending quality.

<sup>e</sup> If a profile cross section is comprised of different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

Extruded rod/bar									
Temper	Dimensions		$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$	Hardness
	mm	mm	MPa	MPa	min.	max.			Typical value HBW
T4, T451, T4511 <sup>c</sup>	≤ 80	≤ 80	350	-	245	-	15	14	95
T6, T651, T6511 <sup>c</sup>	≤ 80	≤ 80	380	-	360	-	10	8	115
T78, T7851,	≤ 80	≤ 80	360	-	335	-	10	8	105
Extruded profile									
Temper	$t$	Wall thickness	$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$	Hardness
			mm	MPa	min.	max.			Typical value HBW
T4, T4510,		≤ 10	350	-	245	-	15	14	95
T6, T6510,		≤ 10	380	-	360	-	10	8	115
T78, T78510, T78511 <sup>c</sup>		≤ 10	360	-	335	-	10	8	105

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 39 — Alloy EN AW-6060 [Al MgSi]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	Hardness Typical value HBW
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
T4 <sup>c</sup>	≤ 150	≤ 150	120	-	60	-	16	14	50
T5	≤ 150	≤ 150	160	-	120	-	8	6	60
T6 <sup>c</sup>	≤ 150	≤ 150	190	-	150	-	8	6	70
T64 <sup>c d</sup>	≤ 50	≤ 50	180	-	120	-	12	10	60
T66 <sup>c</sup>	≤ 150	≤ 150	215	-	160	-	8	6	75
Extruded tube									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %
		min.	max.	min.	max.	min.	max.		
T4 <sup>c</sup>	≤ 15	120	-	60	-	16	14	50	
T5	≤ 15	160	-	120	-	8	6	60	
T6 <sup>c</sup>	≤ 15	190	-	150	-	8	6	70	
T64 <sup>c d</sup>	≤ 15	180	-	120	-	12	10	60	
T66 <sup>c</sup>	≤ 15	215	-	160	-	8	6	75	
Extruded profile <sup>e</sup>									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %
		min.	max.	min.	max.	min.	max.		
T4 <sup>c</sup>	≤ 25	120	-	60	-	16	14	50	
T5	≤ 5	160	-	120	-	8	6	60	
	5 < $t \leq 25$	140	-	100	-	8	6	60	
T6 <sup>c</sup>	≤ 5	190	-	150	-	8	6	70	
	5 < $t \leq 25$	170	-	140	-	8	6	70	
T64 <sup>c d</sup>	≤ 15	180	-	120	-	12	10	60	
T66 <sup>c</sup>	≤ 5	215	-	160	-	8	6	75	
	5 < $t \leq 25$	195	-	150	-	8	6	75	

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

<sup>d</sup> Bending quality.

<sup>e</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 3940 — Alloy EN AW-6360 [Al SiMgMn]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value HRW
	$D^a$	$S^b$	min.	max.	min.	max.			
T4 <sup>c</sup>	≤ 150	≤ 150	110	-	50	-	16	14	40
T5	≤ 150	≤ 150	150	-	110	-	8	6	50
T6 <sup>c</sup>	≤ 150	≤ 150	185	-	140	-	8	6	60
T66 <sup>c</sup>	≤ 150	≤ 150	195	-	150	-	8	6	65
Extruded tube									
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardnes s</b> Typical value HBW	
		min.	max.	min.	max.	min.	max.		
T4 <sup>c</sup>		≤ 15	110	-	50	-	16	14	40
T5		≤ 15	150	-	120	-	8	6	50
T6 <sup>c</sup>		≤ 15	185	-	140	-	8	6	60
T66 <sup>c</sup>		≤ 15	195	-	150	-	8	6	65
Extruded profile <sup>d</sup>									
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardnes s</b> Typical value HRW	
		min.	max.	min.	max.	min.	max.		
T4 <sup>c</sup>		≤ 25	110	-	50	-	16	14	40
T5		≤ 25	150	-	110	-	8	6	50
T6 <sup>c</sup>		≤ 25	185	-	140	-	8	6	60
T66 <sup>c</sup>		≤ 25	195	-	150	-	8	6	65

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

<sup>d</sup> If a profile cross section is comprised of different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross

**Table 4041 — Alloy EN AW-6061 [Al Mg1SiCu]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
O, H111	≤ 200	≤ 200	-	150	-	110	16	14	30
T4 <sup>c</sup>	≤ 200	≤ 200	180	-	110	-	15	13	65
T6 <sup>c</sup>	≤ 200	≤ 200	260	-	240	-	8	6	95
Extruded tube									
Temper	$t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
		min.	max.	min.	max.				
O, H111	≤ 25	-	150	-	110	16	14	30	
T4 <sup>c</sup>	≤ 25	180	-	110	-	15	13	65	
T6 <sup>c</sup>	≤ 5	260	-	240	-	8	6	95	
	5 < $t \leq 25$	260	-	240	-	10	8	95	
Extruded profile <sup>d</sup>									
Temper	$t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
		min.	max.	min.	max.				
T4 <sup>c</sup>	≤ 25	180	-	110	-	15	13	65	
T6 <sup>c</sup>	≤ 5	260	-	240	-	9	7	95	
	5 < $t \leq 25$	260	-	240	-	10	8	95	

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.  
<sup>d</sup> If a profile cross section is comprised of different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 4142 — Alloy EN AW-6261 [Al Mg1SiCuMn]**

Extruded rod/bar										
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value	
	$D^a$	$S^b$	min.	max.	min.	max.				
0, H111	$\leq 100$	$\leq 100$	-	170	-	120	14	12	-	
T4 <sup>c</sup>	$\leq 100$	$\leq 100$	180	-	100	-	14	12	-	
T6 <sup>c</sup>	$\leq 20$ $20 < D \leq 100$	$\leq 20$ $20 < S \leq 100$	290 290	-	245 245	-	8 8	7 -	100 100	
Extruded tube										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value
		min.	max.	min.	max.	min.	max.			
0, H111		$\leq 10$	-	170	-	120	14	12	-	
T4 <sup>c</sup>		$\leq 10$	180	-	100	-	14	12	-	
T5		$\leq 5$ $5 < t \leq 10$	270 260	-	230 220	-	8 9	7 8	-	
T6 <sup>c</sup>		$\leq 5$ $5 < t \leq 10$	290 290	-	245 245	-	8 9	7 8	100 100	
Extruded profile <sup>d</sup>										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value
		min.	max.	min.	max.	min.	max.			
0, H111		all		-	170	-	120	14	12	-
T4 <sup>c</sup>		$\leq 25$		180	-	100	-	14	12	-
<i>Open profile</i> T5		$\leq 5$		270	-	230	-	8	7	-
		$5 < t \leq 25$		260	-	220	-	9	8	-
		$> 25$		250	-	210	-	9	-	-
<i>Open profile</i> T6 <sup>c</sup>		$\leq 5$		290	-	245	-	8	7	100
		$5 < t \leq 25$		280	-	235	-	8	7	100
<i>Hollow profile</i>		$\leq 5$		270	-	230	-	8	7	-
		$5 < t \leq 10$		260	-	220	-	9	8	-
<i>Hollow profile</i>		$\leq 5$		290	-	245	-	8	7	100
		$5 < t \leq 10$		270	-	230	-	9	8	100

<sup>a</sup>  $D$  = Diameter for round bar.<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.<sup>c</sup> Properties may be obtained by press quenching.<sup>d</sup> If a profile cross section is comprised of different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 4243 — Alloy EN AW-6262 [Al Mg1SiPb]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
T6 <sup>c</sup>	$\leq 200$	$\leq 200$	260	-	240	-	10	8	75
Extruded tube									
Temper	Wall thickness $t$ mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
T6 <sup>c</sup>	$\leq 25$		260	-	240	-	10	8	75
Extruded profile									
Temper	Wall thickness $t$ mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
T6 <sup>c</sup>	$\leq 25$		260	-	240	-	10	8	75

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	Hardness Typical value
	D <sup>a</sup>	S <sup>b</sup>	min.	max.	min.	max.			
T6 <sup>c</sup>	≤ 200	≤ 200	260	-	240	-	10	8	75
Extruded tube									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	Hardness Typical value
			mm	min.	max.	min.			
T6 <sup>c</sup>	≤ 25		260	-	240	-	10	8	75
Extruded profile									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	Hardness Typical value
			mm	min.	max.	min.			
T6 <sup>c</sup>	≤ 25		260	-	240	-	10	8	75

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

Table 4344 — Alloy EN AW-6262A [Al Mg1SiSn]

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	Hardness Typical value
	D <sup>a</sup>	S <sup>b</sup>	min.	max.	min.	max.			
T6 <sup>c</sup>	≤ 220	≤ 155	260	-	240	-	10	8	-
Extruded tube									
Not specified									
Extruded profile									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	Hardness Typical value
			mm	min.	max.	min.			
T6 <sup>c</sup>	≤ 25		260	-	240	-	10	8	-

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 4445 — Alloy EN AW-6063 [Al Mg0,7Si]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
O, H111	$\leq 200$	$\leq 200$	-	130	-	-	18	16	25
T4 <sup>c</sup>	$\leq 150$	$\leq 150$	130	-	65	-	14	12	50
	$150 < D \leq$	$150 < S \leq 200$	120	-	65	-	12	-	50
T5	$\leq 200$	$\leq 200$	175	-	130	-	8	6	65
T6 <sup>c</sup>	$\leq 150$	$\leq 150$	215	-	170	-	10	8	75
	$150 < D \leq$	$150 < S \leq 200$	195	-	160	-	10	-	75
T66 <sup>c</sup>	$\leq 200$	$\leq 200$	245	-	200	-	10	8	80
Extruded tube									
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW	
		min.	max.	min.	max.	min.	max.		
O, H111		$\leq 25$	-	130	-	-	18	16	25
T4 <sup>c</sup>		$\leq 10$	130	-	65	-	14	12	50
		$10 < t \leq 25$	120	-	65	-	12	10	50
T5		$\leq 25$	175	-	130	-	8	6	65
T6 <sup>c</sup>		$\leq 25$	215	-	170	-	10	8	75
T66 <sup>c</sup>		$\leq 25$	245	-	200	-	10	8	80
Extruded profile <sup>e</sup>									
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW	
		min.	max.	min.	max.	min.	max.		
T4 <sup>c</sup>		$\leq 25$	130	-	65	-	14	12	50
T5		$\leq 10$	175	-	130	-	8	6	65
		$10 < t \leq 25$	160	-	110	-	7	5	65
T6 <sup>c</sup>		$\leq 10$	215	-	170	-	8	6	75
		$10 < t \leq 25$	195	-	160	-	8	6	75
T64 <sup>c d</sup>		$\leq 15$	180	-	120	-	12	10	65
T66 <sup>c</sup>		$\leq 10$	245	-	200	-	8	6	80
		$10 < t \leq 25$	225	-	180	-	8	6	80

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

<sup>d</sup> Bending quality.

<sup>e</sup> If a profile cross section is comprised of different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 4546 — Alloy EN AW-6063A [Al Mg0,7Si(A)]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value
	$D^a$	$S^b$	min.	max.	min.	max.			
0, H111	$\leq 200$	$\leq 200$	-	150	-	-	16	14	28
T4 <sup>c</sup>	$\leq 150$	$\leq 150$	150	-	90	-	12	10	50
	$150 < D \leq$	$150 < S \leq 200$	140	-	90	-	10	-	50
T5	$\leq 200$	$\leq 200$	200	-	160	-	7	5	75
T6 <sup>c</sup>	$\leq 150$	$\leq 150$	230	-	190	-	7	5	80
	$150 < D \leq 200$	$150 < S \leq 200$	220	-	160	-	7	-	80
Extruded tube									
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.
		min.	max.	min.	max.	min.	max.		
0, H111		$\leq 25$	-	150	-	-	16	14	28
T4 <sup>c</sup>		$\leq 10$	150	-	90	-	12	10	50
		$10 < t \leq 25$	140	-	90	-	10	8	50
T5		$\leq 25$	200	-	160	-	7	5	75
T6 <sup>c</sup>		$\leq 25$	230	-	190	-	7	5	80
Extruded profile <sup>d</sup>									
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.
		min.	max.	min.	max.	min.	max.		
T4 <sup>c</sup>		$\leq 25$	150	-	90	-	12	10	50
T5		$\leq 10$	200	-	160	-	7	5	75
		$10 < t \leq 25$	190	-	150	-	6	4	75
T6 <sup>c</sup>		$\leq 10$	230	-	190	-	7	5	80
		$10 < t \leq 25$	220	-	180	-	5	4	80

<sup>a</sup>  $D$  = Diameter for round bar.<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.<sup>c</sup> Properties may be obtained by press quenching.<sup>d</sup> If a profile cross section is comprised of different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 4647 — Alloy EN AW-6463 [Al Mg0,7Si(B)]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> s Typical value
	$D^a$	$S^b$	min.	max.	min.	max.			
T4 <sup>c</sup>	≤ 150	≤ 150	125	-	75	-	14	12	46
T5	≤ 150	≤ 150	150	-	110	-	8	6	60
T6 <sup>c</sup>	≤ 150	≤ 150	195	-	160	-	10	8	74
Extruded tube									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> s Typical value	
		min.	max.	min.	max.	min.	min.		
T6 <sup>c</sup>	≤ 25	195	-	160	-	10	8	74	
Extruded profile <sup>d</sup>									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> s Typical value	
		min.	max.	min.	max.	min.	min.		
T4 <sup>c</sup>	≤ 50	125	-	75	-	14	12	46	
T5	≤ 50	150	-	110	-	8	6	60	
T6 <sup>c</sup>	≤ 50	195	-	160	-	10	8	74	

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.  
<sup>d</sup> If a profile cross section is comprised of different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 48 — Alloy EN AW-6064A [Al Mg1SiBi]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		A % min	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^a$	$S^b$	min.	max	min.	max			
T6, T6510, T6511 <sup>c</sup>	$\leq 140$ $140 < D \leq$	$\leq 140$ $140 < S \leq 250$	310 260	- -	260 240	- -	8 8	6 6	95 90
Extruded tube									
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW	
		min.	max	min.	max	min.	max		
T6, T6510, T6511 <sup>c</sup>		$\leq 30$		310	-	260	-	8 6 90	
Extruded profile									
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW	
		min.	max	min.	max	min.	max		
T6, T6510, T6511 <sup>c</sup>		$\leq 40$		310	-	260	-	8 6 90	

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Characteristics may be obtained by tempering under press.

**Table 4749 — Alloy EN AW-6065 [Al Mg1Bi1Si]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		A % min	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value
	$D^a$	$S^b$	min.	max.	min.	max.			
T6 <sup>c</sup>	$\leq 220$	$\leq 155$	260	-	240	-	10	8	-
Extruded tube									
Not specified									
Extruded profile									
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value	
		min.	max	min.	max	min.	max		
T6 <sup>c</sup>		$\leq 25$		260	-	240	-	10 8 -	

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 4850 — Alloy EN AW-6081 [Al Si0,9MgMn]**

Extruded rod/bar										
Temper	Dimensions		$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$	<b>Hardness</b> Typical value HBW	
	mm		MPa		MPa					
$D^{\text{a}}$	$S^{\text{b}}$		min.	max.	min.	max.				
T6 <sup>c</sup>	$\leq 250$	$\leq 250$	275	-	240	-	8	6	95	
Extruded tube										
Temper	$t$	Wall thickness		$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$	
		mm		min.	max.	min.	max.			
T6 <sup>c</sup>		$\leq 25$		275	-	240	-	8	6	95
Extruded profile										
Temper	$t$	Wall thickness		$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$	
		mm		min.	max.	min.	max.			
<i>Open profile</i> T6 <sup>c</sup>		$\leq 25$		275	-	240	-	8	6	95
<i>Hollow profile</i>		$\leq 15$		275	-	240	-	8	6	95

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 4951 — Alloy EN AW-6082 [Al Si1MgMn]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	
	$D^a$	$S^b$	min.	max.	min.	max.			
O, H111	$\leq 200$	$\leq 200$	-	160	-	110	14	12	35
T4 <sup>c</sup>	$\leq 200$	$\leq 200$	205	-	110	-	14	12	70
T6 <sup>c</sup>	$\leq 20$	$\leq 20$	295	-	250	-	8	6	95
	$20 < D \leq 150$	$20 < S \leq 150$	310	-	260	-	8	-	95
	$150 < D \leq 200$	$150 < S \leq 200$	280	-	240	-	6	-	95
	$200 < D \leq 250$	$200 < S \leq 250$	270	-	200	-	6	-	95
Extruded tube									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardnes s</b> Typical value	
		min.	max.	min.	max.	min.	min.		
O, H111	$\leq 25$	-	160	-	110	14	12	35	
T4 <sup>c</sup>	$\leq 25$	205	-	110	-	14	12	70	
T6 <sup>c</sup>	$\leq 5$	290	-	250	-	8	6	95	
	$5 < t \leq 25$	310	-	260	-	10	8	95	
Extruded profile <sup>d</sup>									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardnes s</b> Typical value HBW	
		min.	max.	min.	max.	min.	min.		
O, H111	all	-	160	-	110	14	12	35	
T4 <sup>c</sup>	$\leq 25$	205	-	110	-	14	12	70	
<i>Open profile</i>	$\leq 5$	270	-	230	-	8	6	90	
<i>Open profile</i>	$\leq 5$	290	-	250	-	8	6	95	
<i>Hollow profile</i> T5	$5 < t \leq 25$	310	-	260	-	10	8	95	
	$\leq 5$	270	-	230	-	8	6	90	
<i>Hollow profile</i> T6 <sup>c</sup>	$\leq 5$	290	-	250	-	8	6	95	
$5 < t \leq 15$									
<sup>a</sup> $D$ = Diameter for round bar.									
<sup>b</sup> $S$ = Width across flats for square and hexagonal bar, thickness for rectangular bar.									
<sup>c</sup> Properties may be obtained by press quenching.									
<sup>d</sup> If a profile cross section is comprised of different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.									

**Table 5052 — Alloy EN AW-6182 [Al Si1MgZr]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
T4 <sup>c</sup>	$\leq 220$	$\leq 155$	205	-	110	-	12	10	-
T6 <sup>c,d</sup>	$9 < D \leq 100$	$9 < S \leq 100$	360	-	330	-	9	7	-
	$100 < D \leq 150$	$100 < S \leq 150$	330	-	300	-	8	6	-
	$150 < S \leq 220$	280	-	240	-	6	4	-	

Extruded tube Not specified

Extruded profile Not specified

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.  
<sup>d</sup> Properties obtained by the user, however, may be lower than those listed if the material has been formed or otherwise cold or hot worked, particularly in the annealed temper, prior to normal solution heat treatment.

**Table 5153 — Alloy EN AW-7003 [Al Zn6Mg0,8Zr]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
T5	all	all	310	-	260	-	10	8	-
T6 <sup>c</sup>	$\leq 50$	$\leq 50$	350	-	290	-	10	8	110
	$50 < D \leq 150$	$50 < S \leq 150$	340	,	280	-	10	8	110

Extruded tube

Temper	$t$	Wall thickness mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value HBW
			min.	max.	min.	max.			
T5	all	310	-	260	-	10	8	-	-
T6 <sup>c</sup>	$\leq 10$	350	-	290	-	10	8	110	
	$10 < t \leq 25$	340	-	280	-	10	8	110	

Extruded profile<sup>d</sup>

Temper	$t$	Wall thickness mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value HBW
			min.	max.	min.	max.			
T5	all	310	-	260	-	10	8	-	-
T6 <sup>c</sup>	$\leq 10$	350	-	290	-	10	8	110	
	$10 < t \leq 25$	340	-	280	-	10	8	110	

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.  
<sup>d</sup> If a profile cross section is comprised of different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 5254 — Alloy EN AW-7005 [Al Zn4,5Mg1,5Mn]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> $\text{s}$ Typical value
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
T6 <sup>c</sup>	$\leq 50$ $50 < D \leq 200$	$\leq 50$ $50 < S \leq 200$	350 340	- -	290 270	- -	10 10	8 -	110 110
Extruded tube									
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> $\text{s}$ Typical value
			min.	max.	min.	max.			
T6 <sup>c</sup>	$\leq 15$		350	-	290	-	10	8	110
Extruded profile									
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> $\text{s}$ Typical value
			min.	max.	min.	max.			
T6 <sup>c</sup>	$\leq 40$		350	-	290	-	10	8	110

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 5355 — Alloy EN AW-7108 [Al Zn5Mg1Zr]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> $\text{s}$ Typical value
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
T6 <sup>c</sup>	$\leq 100$	$\leq 100$	310	-	260		10	8	90
Extruded tube									
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> $\text{s}$ Typical value
			min.	max.	min.	max.			
T6 <sup>c</sup>	$\leq 20$		310	-	260	-	10	8	90
Extruded profile									
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> $\text{s}$ Typical value
			min.	max.	min.	max.			
T6 <sup>c</sup>	$\leq 30$		310	-	260	-	10	8	90

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 5456 — Alloy EN AW-7108A [Al Zn5Mg1Zr(A)]**

Extruded rod/bar										
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value	
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.				
T6 <sup>c</sup>	$\leq 200$	$\leq 200$	310	-	260	-	12	10	90	
T66 <sup>c</sup>	$\leq 50$ $50 < D \leq 200$	$\leq 50$ $50 < S \leq 200$	350	-	290	-	10	8	105	
Extruded tube										
Temper	$t$	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value
		mm		min.	max.	min	max.			
T6 <sup>c</sup>		$\leq 20$		310	-	260	-	12	10	90
T66 <sup>c</sup>		$\leq 20$		350	-	290	-	10	8	105
Extruded profile										
Temper	$t$	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value
		mm		min.	max.	min	max.			
T6 <sup>c</sup>		$\leq 40$		310	-	260	-	12	10	90
T66 <sup>c</sup>		$\leq 40$		350	-	290	-	10	8	105

<sup>a</sup>  $D$  = Diameter for round bar.<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.<sup>c</sup> Properties may be obtained by press quenching.

**Table 5557 — Alloy EN AW-7020 [Al Zn4,5Mg1]**

Extruded rod/bar										
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value	
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.				
T6 <sup>c</sup>	$\leq 50$ $50 < D \leq 200$	$\leq 50$ $50 < S \leq 200$	350 340	- -	290 275	- -	10 10	8 -	110 110	
Extruded tube										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	
		min.	max.	min.	max.	min.	max.			
T6 <sup>c</sup>		$\leq 15$		350	-	290	-	10	8	110
Extruded profile										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	
		min.	max.	min.	max.	min.	max.			
T6 <sup>c</sup>		$\leq 40$		350	-	290	-	10	8	110

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 5658 — Alloy EN AW-7021 [Al Zn5,5Mg1,5]**

Extruded rod/bar										
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> $\mathbf{s}$ Typical value	
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.				
T6 <sup>c</sup>	$\leq 40$	$\leq 40$	410	-	350	-	10	8	120	
Extruded tube										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	
		mm		min.	max.	min	max.			
T6 <sup>c</sup>		$\leq 10$		410	-	350	-	10	8	120
Extruded profile										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	
		mm		min.	max.	min	max.			
T6 <sup>c</sup>		$\leq 20$		410	-	350	-	10	8	120

<sup>a</sup>  $D$  = Diameter for round bar.<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.<sup>c</sup> Properties may be obtained by press quenching.

**Table 5759 — Alloy EN AW-7022 [Al Zn5Mg3Cu]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardne ss</b> Typical value HBW
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
T6, T6510, T6511 <sup>c</sup>	$\leq 80$ $80 < D \leq 200$	$\leq 80$ $80 < S \leq 200$	490 470	- -	420 400	- -	7 7	5 -	133
Extruded tube									
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %
		min.	max.	mi n.	max.	mi n.	max.		
T6, T6510, T6511 <sup>c</sup>		$\leq 30$	490	-	420	-	7	5	133
Extruded profile									
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %
		min.	max.	mi n.	max.	mi n.	max.		
T6, T6510, T6511 <sup>c</sup>		$\leq 30$	490	-	420	-	7	5	133

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

**Table 5860 — Alloy EN AW-7049A [Al Zn8MgCu]**

Extruded rod/bar								
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.
	mm	mm	min.	max	min.	max.		
T6, T6510, T6511	$\leq 100$	$\leq 100$	610	-	530	-	5	4
	$100 < D \leq 125$	$100 < S \leq 125$	560	-	500	-	5	-
	$125 < D \leq 150$	$125 < S \leq 150$	520	-	430	-	5	-
	$150 < D \leq 180$	$150 < S \leq 180$	450	-	400	-	3	-
Extruded tube								
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.
	t	mm	min.	max	min.	max.		
T6, T6510, T6511	$\leq 30$		610	-	530	-	5	4
Extruded profile								
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.
	t	mm	min.	max	min.	max.		
T6, T6510, T6511	$\leq 30$		610	-	530	-	5	4

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

**Table 5961 — EN AW-7075 [Al Zn5,5MgCu]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	Hardness Typical value
	$D^a$	$S^b$	min.	max.	min.	max.			
O, H111	$\leq 200$	$\leq 200$	-	275	-	16	10	8	60
T6, T6510, T6511	$\leq 25$	$\leq 25$	540	-	480	-	7	5	150
	$25 < D \leq 100$	$25 < S \leq 100$	560	-	500	-	7	-	150
	$100 < D \leq 150$	$100 < S \leq 150$	550	-	440	-	5	-	150
	$150 < D \leq 200$	$150 < S \leq 200$	440	-	400	-	5	-	150
T73, T73510, T73511 <sup>c</sup>	$\leq 25$	$\leq 25$	485	-	420	-	7	5	135
	$25 < D \leq 75$	$25 < S \leq 75$	475	-	405	-	7	-	135
	$75 < D \leq 100$	$75 < S \leq 100$	470	-	390	-	6	-	135
	$100 < D \leq 150$	$100 < S \leq 150$	440	-	360	-	6	-	135
Extruded tube									
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.
		min.	max.	min.	max.	min.	max.		
O, H111		$\leq 10$	-	275	-	165	10	-	60
T6, T6510, T6511	$\leq 5$	540	-	485	-	8	6	150	
	$5 < t \leq 10$	560	-	505	-	7	5	150	
	$10 < t \leq 50$	560	-	495	-	6	4	150	
T73, T73510, T73511 <sup>c</sup>	$\leq 5$	470	-	400	-	7	5	135	
	$5 < t \leq 25$	485	-	420	-	8	6	135	
	$25 < t \leq 50$	475	-	405	-	8	-	135	
Extruded profile <sup>d</sup>									
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.
		min.	max.	min.	max.	min.	max.		
T6, T6510, T6511	$\leq 25$	530	-	46	-	6	4	150	
	$25 < t \leq 60$	540	-	40	-	6	-	150	
T73, T73510, T73511 <sup>c</sup>	$\leq 25$	485	-	42	-	7	5	135	

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> For materials of thickness 20 mm or above, see EN 755-1, with respect to stress corrosion cracking resistance.

<sup>d</sup> If a profile cross section is comprised of different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Annex A**  
(informative)

**List of tempers used in Tables 1 to 5961 (extract of EN 515)**

Temper	
Symbol	Definition
F	as fabricated (no mechanical property limits specified)
O	annealed - products achieving the required annealed properties after hot forming processes may be designated as O temper
H111	annealed and slightly strain-hardened (less than H11) during subsequent operations such as stretching or straightening
H112	slightly strain-hardened from working at an elevated temperature or from a limited amount of cold work (mechanical property limits specified), such as stretching or straightening
T3	solution heat-treated, cold worked and naturally aged
T3510	solution heat-treated, stress-relieved by stretching a controlled amount (permanent set 1 % to 3 %) and naturally aged  The products receive no further straightening after stretching.
T3511	same as T3510 except that minor straightening is allowed after stretching to comply with standard tolerances
T4	solution heat-treated and naturally aged
T4510	solution heat-treated, stress-relieved by stretching a controlled amount (permanent set 1 % to 3 %) and naturally aged  The products receive no further straightening after stretching.
T4511	same as T4510 except that minor straightening is allowed after stretching to comply with standard tolerances
T5	cooled from an elevated temperature shaping process and then artificially aged
T6	solution heat-treated and then artificially aged
T64	solution heat-treated and then artificially aged in underaging conditions (between T6 and T61) to improve formability
T6510	solution heat-treated, stress-relieved by stretching a controlled amount (permanent set 1 % to 3 %) and then artificially aged  The products receive no further straightening after stretching.
T6511	same as T6510 except that minor straightening is allowed after stretching to comply with standard tolerances
T66	solution heat-treated and then artificially aged - mechanical property level higher than T6 achieved through special control of the process (6000 series alloys)
T7	solution heat-treated and then artificially overaged
T73	solution heat-treated and then artificially overaged in order to achieve the best stress corrosion resistance
T73510	solution heat-treated, stress-relieved by stretching a controlled amount (permanent set 1 % to 3 %)

<b>Temper</b>	
<b>Symbol</b>	<b>Definition</b>
	and then artificially overaged in order to achieve the best stress corrosion resistance The products receive no further straightening after stretching.
T73511	same as T73510 except that minor straightening is allowed after stretching to comply with standard tolerances
T8	solution heat-treated, cold worked and then artificially aged
T8510	solution heat-treated, stress-relieved by stretching a controlled amount (permanent set 1 % to 3 %) and then artificially aged The products receive no further straightening after stretching.
T8511	same as T8510 except that minor straightening is allowed after stretching to comply with standard tolerances

## Bibliography

- [1] EN 515, *Aluminium and aluminium alloys - Wrought products - Temper designations*
- [2] EN 573-3, *Aluminium and aluminium alloys - Chemical composition and form of wrought products - Part 3: Chemical composition and form of products*

**BS EN 755-2:2016**



## BSI Standards Publication

# **Aluminium and aluminium alloys — Extruded rod/bar, tube and profiles**

Part 2: Mechanical properties

**National foreword**

This British Standard is the UK implementation of EN 755-2:2016.  
It supersedes BS EN 755-2:2013 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee NFE/35, Light metals and their alloys.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2016.  
Published by BSI Standards Limited 2016

ISBN 978 0 580 90367 0

ICS 77.150.10

**Compliance with a British Standard cannot confer immunity from legal obligations.**

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 March 2016.

**Amendments/corrigenda issued since publication**

---

Date	Text affected
------	---------------

**EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM**

**EN 755-2**

March 2016

ICS 77.150.10

Supersedes EN 755-2:2013

English Version

**Aluminium and aluminium alloys - Extruded rod/bar, tube  
and profiles - Part 2: Mechanical properties**

Aluminium et alliages d'aluminium - Barres, tubes et  
profilés filés - Partie 2 : Caractéristiques mécaniques

Aluminium und Aluminiumlegierungen -  
Stranggepresste Stangen, Rohre und Profile - Teil 2:  
Mechanische Eigenschaften

This European Standard was approved by CEN on 10 January 2016.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

Contents	Page
<b>European foreword.....</b>	<b>3</b>
<b>1 Scope.....</b>	<b>4</b>
<b>2 Normative references.....</b>	<b>4</b>
<b>3 Mechanical property limits .....</b>	<b>4</b>
<b>3.1 General.....</b>	<b>4</b>
<b>3.2 Elongation.....</b>	<b>4</b>
<b>3.3 Reference list of the tables of mechanical properties of the relevant aluminium and aluminium alloys.....</b>	<b>5</b>
<b>3.4 Tables of mechanical properties .....</b>	<b>7</b>
<b>Annex A (informative) List of tempers used in Tables 1 to 61 (extract of EN 515) .....</b>	<b>56</b>
<b>Bibliography.....</b>	<b>58</b>

## European foreword

This document (EN 755-2:2016) has been prepared by Technical Committee CEN/TC 132 "Aluminium and aluminium alloys", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 755-2:2013.

CEN/TC 132 decided to revise EN 755-2:2013 as follows:

- reorganization of the list of the tables of mechanical properties of the relevant aluminium and aluminium alloys;
- addition of the alloy EN AW-2618A [AlCu2Mg1,5Ni] in a new Table 9;
- correction of the alloy EN AW-6026 [Al MgSiBi] in a new Table 36;
- addition of the alloy EN AW-6056 [Al Si1MgCuMn] in a new Table 38.
- Modification of the Alloy EN AW-6060 [Al MgSi] in Table 39: Extruded profile T6 and T66 wall thickness-border from 3 mm to 5 mm;
- Modification of the Alloy EN AW-6063 [Al Mg0,7Si] in Table 45: Extruded profile T5 wall thickness-border from 3 mm to 10 mm;
- The former Table 26 was moved, and is now Table 48.

EN 755, *Aluminium and aluminium alloys — Extruded rod/bar, tube and profiles* comprises the following parts:

- *Part 1: Technical conditions for inspection and delivery*
- *Part 2: Mechanical properties*
- *Part 3: Round bars, tolerances on dimensions and form*
- *Part 4: Square bars, tolerances on dimensions and form*
- *Part 5: Rectangular bars, tolerances on dimensions and form*
- *Part 6: Hexagonal bars, tolerances on dimensions and form*
- *Part 7: Seamless tubes, tolerances on dimensions and form*
- *Part 8: Porthole tubes, tolerances on dimensions and form*
- *Part 9: Profiles, tolerances on dimensions and form*

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## 1 Scope

This European Standard specifies the mechanical property limits resulting from tensile testing applicable to aluminium and aluminium alloy extruded rod/bar, tube and profile.

Technical conditions for inspection and delivery, including product and testing requirements, are specified in EN 755-1. Temper designations are defined in EN 515. The chemical composition limits for these materials are given in EN 573-3.

## 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.

EN 755-1, *Aluminium and aluminium alloys- Extruded rod/bar, tube and profiles - Part 1: Technical conditions for inspection and delivery*

EN ISO 6892-1, *Metallic materials - Tensile testing - Part 1: Method of test at room temperature (ISO 6892-1)*

## 3 Mechanical property limits

### 3.1 General

The mechanical properties shall be in conformity with those specified in Table 1 to Table 61 or those agreed upon between supplier and purchaser and stated in the order document.

Table 1 to Table 61 contain limits of mechanical property values obtained by tensile testing according to EN ISO 6892-1 after sampling and test piece preparation according to EN 755-1.

NOTE The mechanical properties refer to test pieces taken in the longitudinal direction. Mechanical properties of test pieces taken in other directions can differ from those for the longitudinal direction quoted in this standard.

Brinell hardness values given in Table 1 to Table 61 expressed as HBW values are for information only.

### 3.2 Elongation

If not otherwise agreed, the  $A$  value shall be used.

The  $A$  value for elongation is the % elongation measured over a gauge length of  $5,65\sqrt{S_0}$  (where  $S_0$  is the initial cross-sectional area of the test-piece), and expressed in percent.

For certain products the supplier may choose (if not otherwise specified in the order documents) to use the elongation based on  $A_{50mm}$ . Consequently, values for the  $A_{50mm}$  are included in the following tables.

The  $A_{50mm}$  value is the elongation measured over a gauge length of 50 mm and expressed in percent.

Test pieces and their location in the specimen are given in EN 755-1.

### 3.3 Reference list of the tables of mechanical properties of the relevant aluminium and aluminium alloys

		Page	
Table 1	Aluminium EN AW-1050A	[Al 99,5]	7
Table 2	Aluminium EN AW-1070A	[Al 99,7]	7
Table 3	Aluminium EN AW-1200	[Al 99,0]	8
Table 4	Aluminium EN AW-1350	[Al 99,5]	8
Table 5	Alloy EN AW-2007	[Al Cu4PbMgMn]	9
Table 6	Alloy EN AW-2011 and EN AW-2011A	[Al Cu6BiPb] and [Al Cu6BiPb(A)]	9
Table 7	Alloy EN AW-2014 and EN AW-2014A	[Al Cu4SiMg] and [Al Cu4SiMg(A)]	10
Table 8	Alloy EN AW-2017A	[Al Cu4MgSi(A)]	11
Table 9	Alloy EN AW-2618A	[AlCu2Mg1,5Ni]	12
Table 10	Alloy EN AW-2024	[Al Cu4Mg1]	13
Table 11	Alloy EN AW-2030	[Al Cu4PbMg]	14
Table 12	Alloy EN AW-3102	[Al Mn0,2]	15
Table 13	Alloy EN AW-3003	[Al Mn1Cu]	16
Table 14	Alloy EN AW-3103	[Al Mn1]	17
Table 15	Alloy EN AW-5005 and EN AW-5005A	[Al Mg1(B)] and [Al Mg 1(C)]	18
Table 16	Alloy EN AW-5019	[Al Mg5]	19
Table 17	Alloy EN AW-5049	[Al Mg2Mn0,8]	20
Table 18	Alloy EN AW-5051A	[Al Mg2]	20
Table 19	Alloy EN AW-5251	[Al Mg2Mn0,3]	21
Table 20	Alloy EN AW-5052	[Al Mg2,5]	22
Table 21	Alloy EN AW-5154A	[Al Mg3,5(A)]	23
Table 22	Alloy EN AW-5454	[Al Mg3Mn]	24
Table 23	Alloy EN AW-5754	[Al Mg3]	25
Table 24	Alloy EN AW-5083	[Al Mg4,5Mn0,7]	26
Table 25	Alloy EN AW-5086	[Al Mg4]	27
Table 26	Alloy EN AW-6101A	[Al MgSi(A)]	27
Table 27	Alloy EN AW-6101B	[Al MgSi(B)]	28
Table 28	Alloy EN AW-6005 and EN AW-6005A	[Al SiMg] and [Al SiMg(A)]	29
Table 29	Alloy EN AW-6106	[Al MgSiMn]	30
Table 30	Alloy EN AW-6008	[Al SiMgV]	30
Table 31	Alloy EN AW-6110A	[Al Mg0,9Si0,9MnCu(A)]	31
Table 32	Alloy EN AW-6012	[Al MgSiPb]	32

Page

Table 33	Alloy EN AW-6014	[Al Mg0,6SiV]	33
Table 34	Alloy EN AW-6018	[Al Mg1SiPbMn]	34
Table 35	Alloy EN AW-6023	[Al Si1Sn1MgBi]	34
Table 36	Alloy EN AW-6026	[Al MgSiBi]	35
Table 37	Alloy EN AW-6351	[Al Si1Mg0,5Mn]	36
Table 38	Alloy EN AW-6056	[Al Si1MgCuMn]	37
Table 39	Alloy EN AW-6060	[Al MgSi]	38
Table 40	Alloy EN AW-6360	[Al SiMgMn]	39
Table 41	Alloy EN AW-6061	[Al Mg1SiCu]	40
Table 42	Alloy EN AW-6261	[Al Mg1SiCuMn]	41
Table 43	Alloy EN AW-6262	[Al Mg1SiPb]	42
Table 44	Alloy EN AW-6262A	[Al Mg1SiSn]	42
Table 45	Alloy EN AW-6063	[Al Mg0,7Si]	43
Table 46	Alloy EN AW-6063A	[Al Mg0,7Si(A)]	44
Table 47	Alloy EN AW-6463	[Al Mg0,7Si(B)]	45
Table 48	Alloy EN AW-6064A	[Al Mg1SiBi]	46
Table 49	Alloy EN AW-6065	[Al Mg1Bi1Si]	46
Table 50	Alloy EN AW-6081	[Al Si0,9MgMn]	47
Table 51	Alloy EN AW-6082	[Al Si1MgMn]	48
Table 52	Alloy EN AW-6182	[Al Si1MgZr]	49
Table 53	Alloy EN AW-7003	[Al Zn6Mg0,8Zr]	49
Table 54	Alloy EN AW-7005	[Al Zn4,5Mg1,5Mn]	50
Table 55	Alloy EN-AW-7108	[Al Zn5Mg1Zr]	50
Table 56	Alloy EN-AW-7108A	[Al Zn5Mg1Zr(A)]	51
Table 57	Alloy EN AW-7020	[Al Zn4,5Mg1]	52
Table 58	Alloy EN AW-7021	[Al Zn5,5Mg1,5]	52
Table 59	Alloy EN AW-7022	[Al Zn5Mg3Cu]	53
Table 60	Alloy EN AW-7049A	[Al Zn8MgCu]	54
Table 61	Alloy EN AW-7075	[Al Zn5,5MgCu]	55

### 3.4 Tables of mechanical properties

**Table 1 — Aluminium EN AW-1050A [Al 99,5]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	mm		min.	max.	min.	max.			
	$D^{\text{a}}$	$S^{\text{b}}$							
F <sup>c</sup> , H112	all	all	60	-	20	-	25	23	20
O, H111	all	all	60	95	20	-	25	23	20
Extruded tube									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	mm		min.	max.	min.	max.			
	$t$								
F <sup>c</sup> , H112	all		60		20	-	25	23	20
O, H111	all		60	95	20	-	25	23	20
Extruded profile									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	mm		min.	max.	min.	max.			
	$t$								
F <sup>c</sup> , H112	all		60		20	-	25	23	20

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> F Temper: property values are for information only.

**Table 2 — Aluminium EN AW-1070A [Al 99,7]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	mm		min.	max.	min.	max.			
	$D^{\text{a}}$	$S^{\text{b}}$							
F <sup>c</sup> , H112	all	all	60	-	23		25	23	18
Extruded tube									
Not specified									
Extruded profile									
Not specified									
<sup>a</sup> $D$ = Diameter for round bar. <sup>b</sup> $S$ = Width across flats for square and hexagonal bar, thickness for rectangular bar. <sup>c</sup> F Temper: property values are for information only.									

**Table 3 — Aluminium EN AW-1200 [Al 99,0]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	75	-	25	-	20	18	23
Extruded tube									
Temper	Wall thickness $t$ mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	75	-	25	-	20	18	23
Extruded profile									
Temper	Wall thickness $t$ mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	75	-	25	-	20	18	23

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> F Temper: property values are for information only.

**Table 4 — Aluminium EN AW-1350 [Al 99,5]**

Extruded rod/bar <sup>d</sup>									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	60	-	-	-	25	23	20
Extruded tube <sup>d</sup>									
Temper	Wall thickness $t$ mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	60	-	-	-	25	23	20
Extruded profile <sup>d</sup>									
Temper	Wall thickness $t$ mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	60	-	-	-	25	23	20

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> F Temper: property values are for information only.  
<sup>d</sup> Electrical conductivity  $\gamma \geq 35,4$  MS/m.

**Table 5 — Alloy EN AW-2007 [Al Cu4PbMgMn]**

Extruded rod/bar												
Temper	Dimensions mm			$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW		
	$D^a$	$S^b$		min.	max.	min.	max.					
T4, T4510, T4511 <sup>c</sup>	$\leq 80$	$\leq 80$		370	-	250	-	8	6	95		
	$80 < D \leq 200$	$80 < S \leq 200$		340	-	220	-	8	-			
	$200 < D \leq 250$	$200 < S \leq 250$		330	-	210	-	7	-			
Extruded tube												
Temper	Wall thickness mm			$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW		
	$t$	mm		min.	max.	min.	max.					
T4, T4510, T4511 <sup>c</sup>	$\leq 25$			370	-	250	-	8	6	95		
Extruded profile												
Temper	Wall thickness mm			$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW		
	$t$	mm		min.	max.	min.	max.					
T4, T4510, T4511 <sup>c</sup>	$\leq 30$			370	-	250	-	8	6	95		

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 6 — Alloy EN AW-2011 [Al Cu6BiPb] and Alloy EN AW-2011A [Al Cu6BiPb(A)]**

Extruded rod/bar											
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW		
	$D^a$	$S^b$	min.	max.	min.	max.					
T4 <sup>c</sup>	$\leq 200$	$\leq 60$	275	-	125	-	14	12	95		
T6 <sup>c</sup>	$\leq 75$	$\leq 60$	310	-	230	-	8	6	110		
	$75 < D \leq 200$	-	295	-	195	-	6	-	110		
Extruded tube											
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW		
	$t$	mm		min.	max.	min.	max.				
T6 <sup>c</sup>	$\leq 25$		310	-	230	-	6	4	110		
Extruded profile											
Not specified											

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 7 — Alloy EN AW-2014 [Al Cu4SiMg] and Alloy EN AW-2014A [Al Cu4SiMg(A)]**

Drawn rod/bar										
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
	$D^a$	$S^b$	min.	max.	min.	max.				
	O, H111	$\leq 200$	$\leq 200$	-	250	-	135	12	10	45
T4, T4510, T4511	$\leq 25$	$\leq 25$	370	-	230	-	13	11	110	
	$25 < D \leq 75$	$25 < S \leq 75$	410	-	270	-	12	-	110	
	$75 < D \leq 150$	$75 < S \leq 150$	390	-	250	-	10	-	110	
	$150 < D \leq 200$	$150 < S \leq 200$	350	-	230	-	8	-	110	
T6, T6510, T6511	$\leq 25$	$\leq 25$	415	-	370	-	6	5	140	
	$25 < D \leq 75$	$25 < S \leq 75$	460	-	415	-	7	-	140	
	$75 < D \leq 150$	$75 < S \leq 150$	465	-	420	-	7	-	140	
	$150 < D \leq 200$	$150 < S \leq 200$	430	-	350	-	6	-	140	
	$200 < D \leq 250$	$200 < S \leq 250$	420	-	320	-	5	-	140	
Extruded tube										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.	min.	max.			
O, H111		$\leq 20$		-	250	-	135	12	10	45
T4, T4510, T4511		$\leq 20$		370	-	230	-	11	10	110
T6, T6510, T6511		$\leq 10$ $10 < t \leq 40$		415	-	370	-	7	5	140
450	-	400		-	-	6	4	-	140	
Extruded profile <sup>c</sup>										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.	min.	max.			
O, H111		all		-	250	-	135	12	10	45
T4, T4510, T4511		$\leq 25$ $25 < t \leq 75$		370	-	230	-	11	10	110
		410		-	270	-	10	-	-	110
T6, T6510, T6511		$\leq 25$ $25 < t \leq 75$		415	-	370	-	7	5	140
		460		-	415	-	7	-	-	140

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> If a profile cross section comprises different thicknesses which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 8 — Alloy EN AW-2017A [Al Cu4MgSi(A)]**

Extruded rod/bar									
Temper	Dimensions		$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	mm		MPa		MPa				
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
O, H111	$\leq 200$	$\leq 200$	-	250	-	135	12	10	45
T4, T4510, T4511 <sup>c</sup>	$\leq 25$	$\leq 25$	380	-	260	-	12	10	105
	$25 < D \leq 75$	$25 < S \leq 75$	400	-	270	-	10	-	105
	$75 < D \leq 150$	$75 < S \leq 150$	390	-	260	-	9	-	105
	$150 < D \leq 200$	$150 < S \leq 200$	370	-	240	-	8	-	105
	$200 < D \leq 250$	$200 < S \leq 250$	360	-	220	-	7	-	105
Extruded tube									
Temper	$t$	Wall thickness		$R_m$		$R_{p0,2}$		<b>Hardness</b> Typical value HBW	
		mm		MPa	MPa	min.	min.		
		min.	max.	min.	max.				
O, H111		$\leq 20$	-	250	-	135	12	10	45
T4, T4510, T4511 <sup>c</sup>		$\leq 10$	380	-	260	-	12	10	105
		$10 < t \leq 75$	400	-	270	-	10	8	105
Extruded profile									
Temper	$t$	Wall thickness		$R_m$		$R_{p0,2}$		<b>Hardness</b> Typical value HBW	
		mm		MPa	MPa	min.	min.		
		min.	max.	min.	max.				
T4, T4510, T4511 <sup>c</sup>		$\leq 30$	380	-	260	-	10	8	105

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

**Table 9 — Alloy EN AW-2618A [Al Cu2Mg1.5Ni]**

Extruded rod/bar										
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value HBW	
	$D^a$	$S^b$	min.	max.	min.	max.				
T6, T6511	$D \leq 10$	$S \leq 10$	410	-	330	-	6	4	140	
T6, T6511	$10 < D \leq 100$	$10 < S \leq 100$	420	-	360	-	7	5	145	
Extruded tube										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	
		min.	max.	min.	max.	min.	max.			
T6, T6511		$\leq 10$		410	-	330	-	6	4	140
T6, T6511		$10 < t \leq 100$		420	-	360	-	7	5	145
Extruded profile <sup>c</sup>										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	
		min.	max.	min.	max.	min.	max.			
T6, T6511		$\leq 10$		410	-	330	-	6	4	140
T6, T6511		$10 < t \leq 100$		420	-	360	-	7	5	145

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup> Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 10 — Alloy EN AW-2024 [Al Cu4Mg1]**

Extruded rod/bar										
Temper	Dimensions		$R_m$ mm		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW	
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.				
	0, H111	$\leq 200$	$\leq 200$	-	250	-	150	12	10	47
T3, T3510, T3511	$\leq 50$	$\leq 50$	450	-	310	-	8	6	120	
	$50 < D \leq 100$	$50 < S \leq 100$	440	-	300	-	8	-	120	
	$100 < D \leq 200$	$100 < S \leq 200$	420	-	280	-	8	-	120	
	$200 < D \leq 250$	$200 < S \leq 250$	400	-	270	-	8	-	120	
T8, T8510, T8511	$\leq 150$	$\leq 150$	455	-	380	-	5	4	130	
Extruded tube										
Temper	$t$	Wall thickness		$R_m$ mm		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	
		mm		min.	max.	min.	max.			
		0, H111	$\leq 30$	-	250	-	150	12	10	47
T3, T3510, T3511		$\leq 30$		420	-	290	-	8	6	120
T8, T8510, T8511		$\leq 30$		455	-	380	-	5	4	130
Extruded profile <sup>c</sup>										
Temper	$t$	Wall thickness		$R_m$ mm		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	
		mm		min.	max.	min.	max.			
		0, H111	all	-	250	-	150	12	10	47
T3, T3510, T3511		$\leq 15$		395	-	290	-	8	6	120
		$15 < t \leq 50$		420	-	290	-	8	-	120
T8, T8510, T8511		$\leq 50$		455	-	380	-	5	4	130

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 11 — Alloy EN AW-2030 [Al Cu4PbMg]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
T4, T4510, T4511 <sup>c</sup>	$\leq 80$	$\leq 80$	370	-	250	-	8	6	115
	$80 < D \leq 200$	$80 < S \leq 200$	340	-	220	-	8	-	115
	$200 < D \leq 250$	$200 < S \leq 250$	330	-	210	-	7	-	115
Extruded tube									
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	min.	max.	min.	max.	min.	max.			
T4, T4510, T4511 <sup>c</sup>	$\leq 25$		370	-	250	-	8	6	115
Extruded profile									
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	min.	max.	min.	max.	min.	max.			
T4, T4510, T4511 <sup>c</sup>	$\leq 30$		370	-	250	-	8	6	115

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

**Table 12 — Alloy EN AW-3102 [Al Mn0,2]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	80	-	30	-	25	23	23
Extruded tube									
Temper	$t$ mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112	all		80	-	30	-	25	23	23
Extruded profile									
Temper	$t$ mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112	all		80	-	30	-	25	23	23

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> F Temper: property values are for information only.

**Table 13 — Alloy EN AW-3003 [Al Mn1Cu]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	95	-	35	-	25	20	30
O, H111	all	all	95	135	35	-	25	20	30
Extruded tube									
Temper	$t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
		min.	max.	min.	max.				
F <sup>c</sup> , H112	all	95	-	35	-	25	20	30	
O, H111	all	95	135	35	-	25	20	30	
Extruded profile									
Temper	$t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
		min.	max.	min.	max.				
F <sup>c</sup> , H112	all	95	-	35	-	25	20	30	

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> F Temper: property values are for information only.

**Table 14 — Alloy EN AW-3103 [Al Mn1]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	95	-	35	-	25	20	28
O, H111	all	all	95	135	35	-	25	20	28
Extruded tube									
Temper	$t$ mm	Wall thickness	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112	all		95	-	35	-	25	20	28
O, H111	all		95	135	35	-	25	20	28
Extruded profile									
Temper	$t$ mm	Wall thickness	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112	all		95	-	35	-	25	20	28

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> F Temper: property values are for information only.

**Table 15 — Alloy EN AW-5005 [Al Mg1(B)] and Alloy EN AW-5005A [Al Mg1(C)]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
	F <sup>c</sup> , H112	all	100	100	-	40	-	18	
O, H111	$\leq 80$	$\leq 60$	100	150	40	-	18	16	30
Extruded tube									
Temper	$t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	Hardness Typical value HBW	
		min.	max.	min.	max.				
F <sup>c</sup> , H112	all	100	-	40	-	18	16	30	
O, H111	$\leq 20$	100	150	40	-	20	18	30	
Extruded Profile									
Temper	$t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	Hardness Typical value HBW	
		min.	max.	min.	max.				
F <sup>c</sup> , H112	all	100	-	40	-	18	16	30	
O, H111	$\leq 20$	100	150	40	-	20	18	30	

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> F Temper: property values are for information only.

**Table 16 — Alloy EN AW-5019 [Al Mg5]**

Extruded rod/bar										
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.				
F <sup>c</sup> , H112	≤ 200	≤ 200	250	-	110	-	14	12	65	
O, H111	≤ 200	≤ 200	250	320	110	-	15	13	65	
Extruded tube										
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.	min.	max.			
F <sup>c</sup> , H112	≤ 30	250	-	110	-	14	12	65		
O, H111	≤ 30	250	320	110	-	15	13	65		
Extruded profile										
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.	min.	max.			
F <sup>c</sup> , H112	≤ 30	250	-	110	-	14	12	65		

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> F Temper: property values are for information only.

**Table 17 — Alloy EN AW-5049 [Al Mg2Mn0,8]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> <b>s</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	180	-	80	-	15	13	50
Extruded tube									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.
		min.	max.	min.	max.	min.	max.		
F <sup>c</sup> , H112	all	180	-	80	-	15	13	50	
Extruded profile									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.
		min.	max.	min.	max.	min.	max.		
F <sup>c</sup> , H112	all	180	-	80	-	15	13	50	

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> F Temper: property values are for information only.

**Table 18 — Alloy EN AW-5051A [Al Mg2]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	150	-	50	-	16	14	40
O, H111	all	all	150	200	50	-	18	16	40
Extruded tube									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.
		min.	max.	min.	max.	min.	max.		
F <sup>c</sup> , H112	all	150	-	60	-	16	14	40	
O, H111	all	150	200	60	-	18	16	40	
Extruded profile									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.
		min.	max.	min.	max.	min.	max.		
F <sup>c</sup> , H112	all	150	-	60	-	16	14	40	

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> F Temper: property values are for information only.

**Table 19 — Alloy EN AW-5251 [Al Mg2Mn0,3]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	mm	mm	min.	max.	min.	max.			
F <sup>c</sup> , H112	all	all	160	-	60	-	16	14	45
O, H111	all	all	160	220	60	-	17	15	45
Extruded tube									
Temper	$t$ mm	Wall thickness	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112	all	160	-	60	-	16	14	45	
O, H111	all	160	220	60	-	17	15	45	
Extruded profile									
Temper	$t$ mm	Wall thickness	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112	all	160	-	60	-	16	14	45	

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> F Temper: property values are for information only.

**Table 20 — Alloy EN AW-5052 [Al Mg2,5]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
	F <sup>c</sup> , H112	all	all	170	-	70	-	15	13
O, H111	all	all	170	230	70	-	17	15	45
Extruded tube									<b>Hardness</b> Typical value HBW
Temper	$t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %		
		min.	max.	min.	max.				
F <sup>c</sup> , H112	all	170	-	70	-	15	13	47	
O, H111	all	170	230	70	-	17	15	45	
Extruded profile									<b>Hardness</b> Typical value HBW
Temper	$t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %		<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.				
F <sup>c</sup> , H112	all	170	-	70	-	15	13	47	

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> F Temper: property values are for information only.

**Table 21 — Alloy EN AW-5154A [Al Mg3,5(A)]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	
	$D^{\text{a}}$ mm	$S^{\text{b}}$ mm	min.	max.	min.	max.		min.	
F <sup>c</sup> , H112	≤ 200	≤ 200	200	-	85	-	16	14	55
O, H111	≤ 200	≤ 200	200	275	85	-	18	16	55
Extruded tube									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW	
		min.	max.	min.	max.	min.	min.		
F <sup>c</sup> , H112	≤ 25	200	-	85	-	16	14	55	
O, H111	≤ 25	200	275	85	-	18	16	55	
Extruded profile									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW	
		min.	max.	min.	max.	min.	min.		
F <sup>c</sup> , H112	≤ 25	200	-	85	-	16	14	55	

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> F Temper: property values are for information only.

**Table 22 — Alloy EN AW-5454 [Al Mg3Mn]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	
	$D^a$	$S^b$	min.	max.	min.	max.			
F <sup>c</sup> , H112	≤ 200	≤ 200	200	-	85	-	16	14	60
O, H111	≤ 200	≤ 200	200	275	85	-	18	16	60
Extruded tube									
Temper	$t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
		min.	max.	min.	max.				
F <sup>c</sup> , H112	≤ 25	200	-	85	-	16	14	60	
O, H111	≤ 25	200	275	85	-	18	16	60	
Extruded profile									
Temper	$t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
		min.	max.	min.	max.				
F <sup>c</sup> , H112	≤ 25	200	-	85	-	16	14	60	

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> F Temper: property values are for information only.

**Table 23 — Alloy EN AW-5754 [Al Mg3]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
	F <sup>c</sup> , H112	$\leq 150$ $150 < D \leq 250$	$\leq 150$ $150 < S \leq 250$	180 180	- -	80 70	- -	14 13	12 -
O, H111	$\leq 150$	$\leq 150$	180	250	80	-	17	15	45
Extruded tube									
Temper	$t$	Wall thickness mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112		$\leq 25$	180	-	80	-	14	12	47
O, H111		$\leq 25$	180	250	80	-	17	15	45
Extruded profile									
Temper	$t$	Wall thickness mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
F <sup>c</sup> , H112		$\leq 25$	180	-	80	-	14	12	47

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> F Temper: property values are for information only.

**Table 24 — Alloy EN AW-5083 [Al Mg4,5Mn0,7]**

Extruded rod/bar									
Temper	Dimensions		$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$	<b>Hardness</b>
	mm		MPa		MPa				Typical value HBW
F <sup>c</sup>	$\leq 200$	$\leq 200$	270	-	110	-	12	10	70
	$200 < D \leq 250$	$200 < S \leq 250$	260	-	100	-	12	-	70
O, H111	$\leq 200$	$\leq 200$	270	-	110	-	12	10	70
H112	$\leq 200$	$\leq 200$	270	-	125	-	12	10	70
Extruded tube									
Temper	Wall thickness		$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$	<b>Hardness</b>
			MPa		MPa				Typical value HBW
F <sup>c</sup>	mm		min.	max.	min.	max.	% min.	% min.	HBW
	all		270	-	110	-			
O, H111	all		270	-	110	-	12	10	70
H112	all		270	-	125	-	12	10	70
Extruded profile									
Temper	Wall thickness		$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$	<b>Hardness</b>
			MPa		MPa				Typical value HBW
F <sup>c</sup>	mm		min.	max.	min.	max.	% min.	% min.	HBW
			270	-	110	-			
H112	all		270	-	125	-	12	10	70

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> F Temper: property values are for information only.

**Table 25 — Alloy EN AW-5086 [Al Mg4]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	
	$D^a$	$S^b$	min.	max.	min.	max.			
F <sup>c</sup> , H112	≤ 250	≤ 250	240	-	95	-	12	10	65
O, H111	≤ 200	≤ 200	240	320	95	-	18	15	65
Extruded tube									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	
		min.	max.	min.	max.	min.	max.		
F <sup>c</sup> , H112	all	240	-	95	-	12	10	65	
O, H111	all	240	320	95	-	18	15	65	
Extruded profile									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	
		min.	max.	min.	max.	min.	max.		
F <sup>c</sup> , H112	all	240	-	95	-	12	10	65	
<sup>a</sup>	$D$ = Diameter for round bar.								
<sup>b</sup>	$S$ = Width across flats for square and hexagonal bar, thickness for rectangular bar.								
<sup>c</sup>	F Temper: property values are for information only.								

**Table 26 — Alloy EN AW-6101A [Al MgSi(A)]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	
	$D^a$	$S^b$	min.	max.	min.	max.			
T6 <sup>c</sup>	≤ 150	≤ 150	200	-	170	-	10	8	70
Extruded tube									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	
		min.	max.	min.	max.	min.	max.		
T6 <sup>c</sup>	≤ 25	200	-	170	-	10	8	70	
Extruded profile									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	
		min.	max.	min.	max.	min.	max.		
T6 <sup>c</sup>	≤ 50	200	-	170	-	10	8	70	
<sup>a</sup>	$D$ = Diameter for round bar.								
<sup>b</sup>	$S$ = Width across flats for square and hexagonal bar, thickness for rectangular bar.								
<sup>c</sup>	Properties may be obtained by press quenching.								

**Table 27 — Alloy EN AW-6101B [Al MgSi(B)]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	
	mm	mm	min.	max.	min.	max.			
T6 <sup>c d</sup>	-	$\leq 15$	215	-	160	-	8	6	70
T7 <sup>c e</sup>	-	$\leq 15$	170	-	120	-	12	10	60
Extruded tube									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW	
		min.	max.	min.	max.	min.	min.		
T6 <sup>c d</sup>	$\leq 15$	215	-	160	-	8	6	70	
T7 <sup>c e</sup>	$\leq 15$	170	-	120	-	12	10	60	
Extruded profile									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW	
		min.	max.	min.	max.	min.	min.		
T6 <sup>c d</sup>	$\leq 15$	215	-	160	-	8	6	70	
T7 <sup>c e</sup>	$\leq 15$	170	-	120	-	12	10	60	

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.  
<sup>d</sup> Electrical conductivity  $\gamma \geq 30$  MS/m.  
<sup>e</sup> Electrical conductivity  $\gamma \geq 32$  MS/m.

**Table 28 — Alloy EN AW-6005 [Al SiMg] and Alloy EN AW-6005A [Al SiMg(A)]**

Extruded rod/bar										
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %		
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.				
T6 <sup>c</sup>	$\leq 25$	$\leq 25$	270	-	225	-	10	8	90	
	$25 < D \leq 50$	$25 < S \leq 50$	270	-	225	-	8	-	90	
	$50 < D \leq 100$	$50 < S \leq 100$	260	-	215	-	8	-	85	
Extruded tube										
Temper	$t$	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW		
		mm		min.	max.	min.	max.			
T6 <sup>c</sup>		$\leq 5$		270	-	225	-	8	6	90
		$5 < t \leq 10$		260	-	215	-	8	6	85
Extruded profile <sup>d</sup>										
Temper	$t$	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW		
		mm		min.	max.	min.	max.			
<i>Open profile</i> T4 <sup>c</sup>		$\leq 25$		180	-	90	-	15	13	50
		$\leq 5$		270	-	225	-	8	6	90
<i>Open profile</i> T6 <sup>c</sup>		$5 < t \leq 10$		260	-	215	-	8	6	85
		$10 < t \leq 25$		250	-	200	-	8	6	85
		<i>Hollow profile</i> T4 <sup>c</sup>		$\leq 10$	-	90	-	15	13	50
<i>Hollow profile</i> T6 <sup>c</sup>		$\leq 5$		255	-	215	-	8	6	85
		$5 < t \leq 15$		250	-	200	-	8	6	85

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

<sup>d</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 29 — Alloy EN AW-6106 [Al MgSiMn]**

Extruded rod/bar								
Not specified								
Extruded tube								
Not specified								
Extruded profile								
Temper	$t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.			
T6 <sup>a</sup>	$\leq 10$	250	-	200	-	8	6	75

<sup>a</sup> Properties may be obtained by press quenching.

**Table 30 — Alloy EN AW-6008 [Al SiMgV]**

Extruded rod/bar								
Not specified								
Extruded tube								
Temper	$t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.			
T4	$\leq 10$	180	-	90	-	15	13	50
T6 <sup>a</sup>	$\leq 5$	270	-	225	-	8	6	90
	$5 < t \leq 10$	260	-	215	-	8	6	85
Extruded profile <sup>b</sup>								
Temper	$t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.			
<i>Open profile</i> T4 <sup>a</sup>	$\leq 10$	180	-	90	-	15	13	50
<i>Open profile</i> T6 <sup>a</sup>	$\leq 5$	270	-	225	-	8	6	90
<i>Hollow profile</i> T4 <sup>a</sup>	$\leq 10$	180	-	90	-	15	13	50
<i>Hollow profile</i> T6 <sup>a</sup>	$\leq 5$	255	-	215	-	8	6	85
	$5 < t \leq 10$	250	-	200	-	8	6	85

<sup>a</sup> Properties may be obtained by press quenching.

<sup>b</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 31— Alloy EN AW-6110A [Al Mg0,9Si0,9MnCu(A)]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	mm	mm	min.	max.	min.	max.			
T5 <sup>c</sup>	≤ 120	≤ 120	380	-	360	-	10	8	115
T6 <sup>c</sup>	≤ 120	≤ 150	410	-	380	-	10	8	120
Extruded tube									
Temper	$t$ mm	Wall thickness	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
T4 <sup>c</sup>	≤ 25	320			220	-	16	14	85
T6 <sup>c</sup>	≤ 25	380	-		360	-	10	8	120
Extruded profile									
Temper	$t$ mm	Wall thickness	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
T4 <sup>c</sup>	≤ 25	320			220	-	16	14	85
T6 <sup>c</sup>	≤ 25	380	-		360	-	10	8	120

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 32 — Alloy EN AW-6012 [Al MgSiPb]**

Extruded rod/bar										
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW	
	mm		min.	max.	min.	max.				
T6, T6510, T6511 <sup>c</sup>	$\leq 150$ $150 < D \leq 200$	$\leq 150$ $150 < S \leq 200$	310 260	- -	260 200	- -	8 8	6 -	105 105	
Extruded tube										
Temper	$t$	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
		mm		min.	max.	min.	max.			
T6, T6510, T6511 <sup>c</sup>		$\leq 30$		310	-	260	-	8	6	105
Extruded profile										
Temper	$t$	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
		mm		min.	max.	min.	max.			
T6, T6510, T6511 <sup>c</sup>		$\leq 30$		310	-	260	-	8	6	105

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

**Table 33 — Alloy EN AW-6014 [Al Mg0,6SiV]**

Extruded rod/bar								
Not specified								
Extruded tube								
Temper	<i>t</i> mm	<i>R<sub>m</sub></i> MPa		<i>R<sub>p0,2</sub></i> MPa		<i>A</i> %	<i>A<sub>50 mm</sub></i> %	<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.			
T4 <sup>a</sup>	≤ 10	140		70	-	15	13	55
T6 <sup>a</sup>	≤ 5	250	-	200	-	8	6	80
	5 < <i>t</i> ≤ 10	225	-	180	-	8	6	80
Extruded profile <sup>b</sup>								
Temper	<i>t</i> mm	<i>R<sub>m</sub></i> MPa		<i>R<sub>p0,2</sub></i> MPa		<i>A</i> %	<i>A<sub>50 mm</sub></i> %	<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.			
<i>Open profile</i> T4 <sup>a</sup>	≤ 10	140	-	70	-	15	13	55
	5 < <i>t</i> ≤ 10	250	-	200	-	10	8	80
		225	-	180	-	8	6	80
<i>Hollow profile</i> T4 <sup>a</sup>	≤ 10	140	-	70	-	15	13	55
	5 < <i>t</i> ≤ 10	250	-	200	-	8	6	80
		225	-	180	-	8	6	80

<sup>a</sup> Properties may be obtained by press quenching.

<sup>b</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 34 — Alloy EN AW-6018 [Al Mg1SiPbMn]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	mm		min.	max.	min.	max.			
	$D^{\text{a}}$	$S^{\text{b}}$					min.	min.	
T6, T6510, T6511 <sup>c</sup>	$\leq 150$ $150 < D \leq 200$	$\leq 150$ $150 < S \leq 200$	310 260	- -	260 200	- -	8 8	6 -	- -
Extruded tube									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
T6, T6510, T6511 <sup>c</sup>	$\leq 30$		310	-	260	-	8	6	-
Extruded profile									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
T6, T6510, T6511 <sup>c</sup>	$\leq 30$		310	-	260	-	8	6	-

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 35 — Alloy EN AW-6023 [Al Si1Sn1MgBi]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	mm		min.	max.	min.	max.			
	$D^{\text{a}}$	$S^{\text{b}}$					min.	min.	
T6, T6510, T6511 <sup>c</sup>	$\leq 150$	$\leq 150$	320	-	270	-	10	8	-
Extruded tube									
Not specified									
Extruded profile									
Not specified									

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 36 — Alloy EN AW-6026 [Al MgSiBi]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\ mm}$ %	Hardness HBW Typical Value
	D <sup>a</sup>	S <sup>b</sup>	min.	max.	min.	max.			
T6, T6510, T6511 <sup>c</sup>	≤ 140	≤ 140	370	-	300	-	8	6	95
	140 < D ≤ 200	140 < S ≤ 200	340	-	250	-	8	6	90
	200 < D ≤ 250	200 < S ≤ 250	300	-	200	-	8	6	90
Extruded tube									
Temper	Wall thickness $t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\ mm}$ %	Hardness HBW Typical Value	
		min.	max.	min.	max.				
T6, T6510, T6511 <sup>c</sup>	≤ 30	340	-	260	-	8	6	90	
Extruded Profile									
Temper	Wall thickness $t$ mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\ mm}$ %	Hardness HBW Typical Value	
		min.	max.	min.	max.				
T6, T6510, T6511 <sup>c</sup>	≤ 40	340	-	260	-	8	6	90	

<sup>a</sup> D = Diameter for round bar.  
<sup>b</sup> S = Width across flats for square and hexagonal bar, thickness for rectangular bar..  
<sup>c</sup> Properties may be obtained by press quenching

**Table 37 — Alloy EN AW-6351 [Al Si1Mg0,5Mn]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
O, H111	$\leq 200$	$\leq 200$	-	160	-	110	14	12	35
T4 <sup>c</sup>	$\leq 200$	$\leq 200$	205	-	110	-	14	12	67
T6 <sup>c</sup>	$\leq 20$	$\leq 20$	295	-	250	-	8	6	95
	$20 < D \leq 75$	$20 < S \leq 75$	300	-	255	-	8	-	95
	$75 < D \leq 150$	$75 < S \leq 150$	310	-	260	-	8	-	95
	$150 < D \leq 200$	$150 < S \leq 200$	280	-	240	-	6	-	95
	$200 < D \leq 250$	$200 < S \leq 250$	270	-	200	-	6	-	95
Extruded tube									
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
O, H111	$\leq 25$		-	160	-	110	14	12	35
T4 <sup>c</sup>	$\leq 25$		205	-	110	-	14	12	67
T6 <sup>c</sup>	$\leq 5$		290	-	250	-	8	6	95
	$5 < t \leq 25$		300	-	255	-	10	8	95
Extruded profile <sup>d</sup>									
Temper	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
O, H111	all		-	160	-	110	14	12	35
T4 <sup>c</sup>	$\leq 25$		205	-	110	-	14	12	67
Open profile T5	$\leq 5$		270	-	230	-	8	6	90
Open profile T6 <sup>c</sup>	$\leq 5$		290	-	250	-	8	6	95
Hollow profile T5	$5 < t \leq 25$		300	-	255	-	10	8	95
	$\leq 5$		270	-	230	-	8	6	90
Hollow profile T6 <sup>c</sup>	$\leq 5$		290	-	250	-	8	6	95
Hollow profile T6 <sup>c</sup>	$5 < t \leq 25$		300	-	255	-	10	8	95

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

<sup>d</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 38 — Alloy EN AW-6056 [Al Si1MgCuMn]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.			
T4, T451, T4511 <sup>c</sup>	≤ 80	≤ 80	350	-	245	-	15	14	95
T6, T651, T6511 <sup>c</sup>	≤ 80	≤ 80	380	-	360	-	10	8	115
T78, T7851, T78511 <sup>c</sup>	≤ 80	≤ 80	360	-	335	-	10	8	105
Extruded profile									
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %
		min.	max.	min.	max.	min.	max.		
T4, T4510, T4511 <sup>c</sup>	≤ 10	350	-	245	-	15	14	95	
T6, T6510, T6511 <sup>c</sup>	≤ 10	380	-	360	-	10	8	115	
T78, T78510, T78511 <sup>c</sup>	≤ 10	360	-	335	-	10	8	105	

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

**Table 39 — Alloy EN AW-6060 [Al MgSi]**

Extruded rod/bar								
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %
	$D^{\text{a}}$ mm	$S^{\text{b}}$ mm	min.	max.	min.	max.		
	T4 <sup>c</sup>	$\leq 150$	$\leq 150$	120	-	60	-	16
T5	$\leq 150$	$\leq 150$	160	-	120	-	8	6
T6 <sup>c</sup>	$\leq 150$	$\leq 150$	190	-	150	-	8	6
T64 <sup>c d</sup>	$\leq 50$	$\leq 50$	180	-	120	-	12	10
T66 <sup>c</sup>	$\leq 150$	$\leq 150$	215	-	160	-	8	6
Extruded tube								
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.	min.	min.	
		T4 <sup>c</sup>	$\leq 15$	120	-	60	-	16
T5	$\leq 15$	160	-	120	-	8	6	60
T6 <sup>c</sup>	$\leq 15$	190	-	150	-	8	6	70
T64 <sup>c d</sup>	$\leq 15$	180	-	120	-	12	10	60
T66 <sup>c</sup>	$\leq 15$	215	-	160	-	8	6	75
Extruded profile <sup>e</sup>								
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.	min.	min.	
		T4 <sup>c</sup>	$\leq 25$	120	-	60	-	16
T5	$\leq 5$	160	-	120	-	8	6	60
	$5 < t \leq 25$	140	-	100	-	8	6	60
T6 <sup>c</sup>	$\leq 5$	190	-	150	-	8	6	70
	$5 < t \leq 25$	170	-	140	-	8	6	70
T64 <sup>c d</sup>	$\leq 15$	180	-	120	-	12	10	60
T66 <sup>c</sup>	$\leq 5$	215	-	160	-	8	6	75
	$5 < t \leq 25$	195	-	150	-	8	6	75

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

<sup>d</sup> Bending quality.

<sup>e</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 40 — Alloy EN AW-6360 [Al SiMgMn]**

Extruded rod/bar										
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b>	
	D <sup>a</sup>	S <sup>b</sup>	min.	max.	min.	max.			Typical value HBW	
T4 <sup>c</sup>	≤ 150	≤ 150	110	-	50	-	16	14	40	
T5	≤ 150	≤ 150	150	-	110	-	8	6	50	
T6 <sup>c</sup>	≤ 150	≤ 150	185	-	140	-	8	6	60	
T66 <sup>c</sup>	≤ 150	≤ 150	195	-	150	-	8	6	65	
Extruded tube										
Temper	t	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b>		
		mm	mm	min.	max.	min.	max.			
T4 <sup>c</sup>		≤ 15		110	-	50	-	16	14	40
T5		≤ 15		150	-	120	-	8	6	50
T6 <sup>c</sup>		≤ 15		185	-	140	-	8	6	60
T66 <sup>c</sup>		≤ 15		195	-	150	-	8	6	65
Extruded profile <sup>d</sup>										
Temper	t	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b>		
		mm	mm	min.	max.	min.	max.			
T4 <sup>c</sup>		≤ 25		110	-	50	-	16	14	40
T5		≤ 25		150	-	110	-	8	6	50
T6 <sup>c</sup>		≤ 25		185	-	140	-	8	6	60
T66 <sup>c</sup>		≤ 25		195	-	150	-	8	6	65

<sup>a</sup> D = Diameter for round bar.

<sup>b</sup> S = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

<sup>d</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 41 — Alloy EN AW-6061 [Al Mg1SiCu]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	D <sup>a</sup>	S <sup>b</sup>	min.	max.	min.	max.			
O, H111	≤ 200	≤ 200	-	150	-	110	16	14	30
T4 <sup>c</sup>	≤ 200	≤ 200	180	-	110	-	15	13	65
T6 <sup>c</sup>	≤ 200	≤ 200	260	-	240	-	8	6	95
Extruded tube									
Temper	t	Wall thickness mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
O, H111		≤ 25	-	150	-	110	16	14	30
T4 <sup>c</sup>		≤ 25	180	-	110	-	15	13	65
T6 <sup>c</sup>		≤ 5	260	-	240	-	8	6	95
		5 < t ≤ 25	260	-	240	-	10	8	95
Extruded profile <sup>d</sup>									
Temper	t	Wall thickness mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
T4 <sup>c</sup>		≤ 25	180	-	110	-	15	13	65
T6 <sup>c</sup>		≤ 5	260	-	240	-	9	7	95
		5 < t ≤ 25	260	-	240	-	10	8	95

<sup>a</sup> D = Diameter for round bar.

<sup>b</sup> S = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

<sup>d</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 42 — Alloy EN AW-6261 [Al Mg1SiCuMn]**

Extruded rod/bar										
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.				
0, H111	$\leq 100$	$\leq 100$	-	170	-	120	14	12	-	
T4 <sup>c</sup>	$\leq 100$	$\leq 100$	180	-	100	-	14	12	-	
T6 <sup>c</sup>	$\leq 20$ $20 < D \leq 100$	$\leq 20$ $20 < S \leq 100$	290	-	245	-	8	7	100	
			290	-	245	-	8	-	100	
Extruded tube										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.	min.	max.			
0, H111		$\leq 10$	-	170	-	120	14	12	-	-
T4 <sup>c</sup>		$\leq 10$	180	-	100	-	14	12	-	-
T5		$\leq 5$ $5 < t \leq 10$	270 260	- -	230 220	- -	8 9	7 8	-	-
T6 <sup>c</sup>		$\leq 5$ $5 < t \leq 10$	290 290	- -	245 245	- -	8 9	7 8	100 100	-
Extruded profile <sup>d</sup>										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.	min.	max.			
0, H111		all	-	170	-	120	14	12	-	-
T4 <sup>c</sup>		$\leq 25$	180	-	100	-	14	12	-	-
<i>Open profile</i> T5	$\leq 5$	270	-	230	-	8	7	-	-	-
	$5 < t \leq 25$	260	-	220	-	9	8	-	-	-
	$> 25$	250	-	210	-	9	-	-	-	-
<i>Open profile</i> T6 <sup>c</sup>	$\leq 5$	290	-	245	-	8	7	100	-	-
	$5 < t \leq 25$	280	-	235	-	8	7	100	-	-
<i>Hollow profile</i> T5	$\leq 5$	270	-	230	-	8	7	-	-	-
	$5 < t \leq 10$	260	-	220	-	9	8	-	-	-
<i>Hollow profile</i> T6 <sup>c</sup>	$\leq 5$	290	-	245	-	8	7	100	-	-
	$5 < t \leq 10$	270	-	230	-	9	8	100	-	-

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

<sup>d</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 43 — Alloy EN AW-6262 [Al Mg1SiPb]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	mm	mm	min.	max.	min.	max.			
T6 <sup>c</sup>	≤ 200	≤ 200	260	-	240	-	10	8	75
Extruded tube									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			mm	min.	max.	min.			
T6 <sup>c</sup>	≤ 25		260	-	240	-	10	8	75
Extruded profile									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			mm	min.	max.	min.			
T6 <sup>c</sup>	≤ 25		260	-	240	-	10	8	75
<sup>a</sup>	$D$ = Diameter for round bar.								
<sup>b</sup>	$S$ = Width across flats for square and hexagonal bar, thickness for rectangular bar.								
<sup>c</sup>	Properties may be obtained by press quenching.								

**Table 44 — Alloy EN AW-6262A [Al Mg1SiSn]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D$ <sup>a</sup>	$S$ <sup>b</sup>	min.	max.	min.	max.			
T6 <sup>c</sup>	≤ 220	≤ 155	260	-	240	-	10	8	-
Extruded tube									
Not specified									
Extruded profile									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
			mm	min.	max.	min.			
T6 <sup>c</sup>	≤ 25		260	-	240	-	10	8	-
<sup>a</sup>	$D$ = Diameter for round bar.								
<sup>b</sup>	$S$ = Width across flats for square and hexagonal bar, thickness for rectangular bar.								
<sup>c</sup>	Properties may be obtained by press quenching.								

**Table 45 — Alloy EN AW-6063 [Al Mg0,7Si]**

Extruded rod/bar										
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
	$D^a$	$S^b$	min.	max.	min.	max.				
0, H111	$\leq 200$	$\leq 200$	-	130	-	-	18	16	25	
T4 <sup>c</sup>	$\leq 150$	$\leq 150$	130	-	65	-	14	12	50	
	$150 < D \leq 200$	$150 < S \leq 200$	120	-	65	-	12	-	50	
T5	$\leq 200$	$\leq 200$	175	-	130	-	8	6	65	
T6 <sup>c</sup>	$\leq 150$	$\leq 150$	215	-	170	-	10	8	75	
	$150 < D \leq 200$	$150 < S \leq 200$	195	-	160	-	10	-	75	
T66 <sup>c</sup>	$\leq 200$	$\leq 200$	245	-	200	-	10	8	80	
Extruded tube										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.	min.	max.			
0, H111		$\leq 25$	-	130	-	-	18	16	25	
T4 <sup>c</sup>		$\leq 10$	130	-	65	-	14	12	50	
		$10 < t \leq 25$	120	-	65	-	12	10	50	
T5		$< 25$	175	-	130	-	8	6	65	
T6 <sup>c</sup>		$\leq 25$	215	-	170	-	10	8	75	
T66 <sup>c</sup>		$\leq 25$	245	-	200	-	10	8	80	
Extruded profile <sup>e</sup>										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.	min.	max.			
T4 <sup>c</sup>		$\leq 25$	130	-	65	-	14	12	50	
T5		$\leq 10$	175	-	130	-	8	6	65	
		$10 < t \leq 25$	160	-	110	-	7	5	65	
T6 <sup>c</sup>		$\leq 10$	215	-	170	-	8	6	75	
		$10 < t \leq 25$	195	-	160	-	8	6	75	
T64 <sup>c d</sup>		$\leq 15$	180	-	120	-	12	10	65	
T66 <sup>c</sup>		$\leq 10$	245	-	200	-	8	6	80	
		$10 < t \leq 25$	225	-	180	-	8	6	80	

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

<sup>d</sup> Bending quality.

<sup>e</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 46 — Alloy EN AW-6063A [Al Mg0,7Si(A)]**

Extruded rod/bar										
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW	
	$D^a$	$S^b$	min.	max.	min.	max.				
0, H111	$\leq 200$	$\leq 200$	-	150	-	-	16	14	28	
T4 <sup>c</sup>	$\leq 150$	$\leq 150$	150	-	90	-	12	10	50	
	$150 < D \leq 200$	$150 < S \leq 200$	140	-	90	-	10	-	50	
T5	$\leq 200$	$\leq 200$	200	-	160	-	7	5	75	
T6 <sup>c</sup>	$\leq 150$	$\leq 150$	230	-	190	-	7	5	80	
	$150 < D \leq 200$	$150 < S \leq 200$	220	-	160	-	7	-	80	
Extruded tube										
Temper	$t$	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW		
		mm		min.	max.	min.	max.			
0, H111		$\leq 25$		-	150	-	-	16	14	28
T4 <sup>c</sup>		$\leq 10$		150	-	90	-	12	10	50
		$10 < t \leq 25$		140	-	90	-	10	8	50
T5		$\leq 25$		200	-	160	-	7	5	75
T6 <sup>c</sup>		$\leq 25$		230	-	190	-	7	5	80
Extruded profile <sup>d</sup>										
Temper	$t$	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW		
		mm		min.	max.	min.	max.			
T4 <sup>c</sup>		$\leq 25$		150	-	90	-	12	10	50
T5		$\leq 10$		200	-	160	-	7	5	75
		$10 < t \leq 25$		190	-	150	-	6	4	75
T6 <sup>c</sup>		$\leq 10$		230	-	190	-	7	5	80
		$10 < t \leq 25$		220	-	180	-	5	4	80

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.  
<sup>d</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 47 — Alloy EN AW-6463 [Al Mg0,7Si(B)]**

Extruded rod/bar										
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW	
	$D^{\text{a}}$ mm	$S^{\text{b}}$ mm	min.	max.	min.	max.				
T4 <sup>c</sup>	≤ 150	≤ 150	125	-	75	-	14	12	46	
T5	≤ 150	≤ 150	150	-	110	-	8	6	60	
T6 <sup>c</sup>	≤ 150	≤ 150	195	-	160	-	10	8	74	
Extruded tube										
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.	min.	max.			
T6 <sup>c</sup>	≤ 25	195	-	160	-	10	8	74		
Extruded profile <sup>d</sup>										
Temper	$t$ mm	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.	min.	max.			
T4 <sup>c</sup>	≤ 50	125	-	75	-	14	12	46		
T5	≤ 50	150	-	110	-	8	6	60		
T6 <sup>c</sup>	≤ 50	195	-	160	-	10	8	74		

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

<sup>d</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 48 — Alloy EN AW-6064A [Al Mg1SiBi]**

Extruded rod/bar										
Temper	Dimensions		$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW	
	mm		MPa		MPa					
	$D^a$	$S^b$	min.	max.	min.	max.	min.	min.		
T6, T6510, T6511 <sup>c</sup>	$\leq 140$	$\leq 140$	310	-	260	-	8	6	95	
	$140 < D \leq 250$	$140 < S \leq 250$	260	-	240	-	8	6	90	
Extruded tube										
Temper	Wall thickness			$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	mm			MPa	MPa	min.	max.			
T6, T6510, T6511 <sup>c</sup>	$\leq 30$			310	-	260	-	8	6	90
Extruded profile										
Temper	Wall thickness			$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	mm			MPa	MPa	min.	max.			
T6, T6510, T6511 <sup>c</sup>	$\leq 40$			310	-	260	-	8	6	90

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Characteristics may be obtained by tempering under press.

**Table 49 — Alloy EN AW-6065 [Al Mg1Bi1Si]**

Extruded rod/bar										
Temper	Dimensions		$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW	
	mm		MPa		MPa					
	$D^a$	$S^b$	min.	max.	min.	max.	min.	min.		
T6 <sup>c</sup>	$\leq 220$	$\leq 155$	260	-	240	-	10	8	-	
Extruded tube										
Not specified										
Extruded profile										
Temper	Wall thickness		$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW	
	mm		MPa	MPa	min.	max.				
T6 <sup>c</sup>	$\leq 25$		260	-	240	-	10	8	-	

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

**Table 50 — Alloy EN AW-6081 [Al Si0,9MgMn]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
	D <sup>a</sup>	S <sup>b</sup>	min.	max.	min.	max.			
T6 <sup>c</sup>	≤ 250	≤ 250	275	-	240	-	8	6	95
Extruded tube									
Temper	t	Wall thickness mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
T6 <sup>c</sup>		≤ 25	275	-	240	-	8	6	95
Extruded profile									
Temper	t	Wall thickness mm	$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW
			min.	max.	min.	max.			
<i>Open profile</i> T6 <sup>c</sup>		≤ 25	275	-	240	-	8	6	95
<i>Hollow profile</i> T6 <sup>c</sup>		≤ 15	275	-	240	-	8	6	95

<sup>a</sup> D = Diameter for round bar.  
<sup>b</sup> S = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 51 — Alloy EN AW-6082 [Al Si1MgMn]**

Extruded rod/bar										
Temper	Dimensions		$R_m$ mm		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	<b>Hardness</b> Typical value HBW	
	$D^a$	$S^b$	min.	max.	min.	max.				
O, H111	$\leq 200$	$\leq 200$	-	160	-	110	14	12	35	
T4 <sup>c</sup>	$\leq 200$	$\leq 200$	205	-	110	-	14	12	70	
T6 <sup>c</sup>	$\leq 20$	$\leq 20$	295	-	250	-	8	6	95	
	$20 < D \leq 150$	$20 < S \leq 150$	310	-	260	-	8	-	95	
	$150 < D \leq 200$	$150 < S \leq 200$	280	-	240	-	6	-	95	
	$200 < D \leq 250$	$200 < S \leq 250$	270	-	200	-	6	-	95	
Extruded tube										
Temper	$t$	Wall thickness		$R_m$ mm		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	
		mm		min.	max.	min.	max.			
O, H111		$\leq 25$		-	160	-	110	14	12	35
T4 <sup>c</sup>		$\leq 25$		205	-	110	-	14	12	70
T6 <sup>c</sup>		$\leq 5$		290	-	250	-	8	6	95
		$5 < t \leq 25$		310	-	260	-	10	8	95
Extruded profile <sup>d</sup>										
Temper	$t$	Wall thickness		$R_m$ mm		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	
		mm		min.	max.	min.	max.			
O, H111		all		-	160	-	110	14	12	35
T4 <sup>c</sup>		$\leq 25$		205	-	110	-	14	12	70
Open profile T5		$\leq 5$		270	-	230	-	8	6	90
Open profile T6 <sup>c</sup>		$\leq 5$		290	-	250	-	8	6	95
		$5 < t \leq 25$		310	-	260	-	10	8	95
Hollow profile T5		$\leq 5$		270	-	230	-	8	6	90
Hollow profile T6 <sup>c</sup>		$\leq 5$		290	-	250	-	8	6	95
		$5 < t \leq 15$		310	-	260	-	10	8	95

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

<sup>d</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.

**Table 52 — Alloy EN AW-6182 [Al Si1MgZr]**

Extruded rod/bar									
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
	$D^a$	$S^b$	min.	max.	min.	max.			
T4 <sup>c</sup>	$\leq 220$	$\leq 155$	205	-	110	-	12	10	-
T6 <sup>c, d</sup>	$9 < D \leq 100$	$9 < S \leq 100$	360	-	330	-	9	7	-
	$100 < D \leq 150$	$100 < S \leq 150$	330	-	300	-	8	6	-
	$150 < D \leq 220$	$150 < S \leq 220$	280	-	240	-	6	4	-
Extruded tube									
Not specified									
Extruded profile									
Not specified									
<sup>a</sup> $D$ = Diameter for round bar.									
<sup>b</sup> $S$ = Width across flats for square and hexagonal bar, thickness for rectangular bar.									
<sup>c</sup> Properties may be obtained by press quenching.									
<sup>d</sup> Properties obtained by the user, however, may be lower than those listed if the material has been formed or otherwise cold or hot worked, particularly in the annealed temper, prior to normal solution heat treatment.									

**Table 53 — Alloy EN AW-7003 [Al Zn6Mg0,8Zr]**

Extruded rod/bar										
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
	$D^a$	$S^b$	min.	max.	min.	max.				
T5	all	all	310	-	260	-	10	8	-	
T6 <sup>c</sup>	$\leq 50$	$\leq 50$	350	-	290	-	10	8	110	
	$50 < D \leq 150$	$50 < S \leq 150$	340	,	280	-	10	8	110	
Extruded tube										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.	min.	max.			
T5		all		310	-	260	-	10	8	-
T6 <sup>c</sup>		$\leq 10$		350	-	290	-	10	8	110
		$10 < t \leq 25$		340	-	280	-	10	8	110
Extruded profile <sup>d</sup>										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
		min.	max.	min.	max.	min.	max.			
T5		all		310	-	260	-	10	8	-
T6 <sup>c</sup>		$\leq 10$		350	-	290	-	10	8	110
		$10 < t \leq 25$		340	-	280	-	10	8	110
<sup>a</sup> $D$ = Diameter for round bar.										
<sup>b</sup> $S$ = Width across flats for square and hexagonal bar, thickness for rectangular bar.										
<sup>c</sup> Properties may be obtained by press quenching.										
<sup>d</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.										

**Table 54 — Alloy EN AW-7005 [Al Zn4,5Mg1,5Mn]**

Extruded rod/bar										
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
	$D^a$	$S^b$	min.	max.	min.	max.				
T6 <sup>c</sup>	$\leq 50$ $50 < D \leq 200$	$\leq 50$ $50 < S \leq 200$	350 340	- -	290 270	- -	10 10	8 -	110 110	
Extruded tube										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW		
		min.	max.	min.	max.	min.	max.			
T6 <sup>c</sup>		$\leq 15$		350	-	290	-	10	8	110
Extruded profile										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW		
		min.	max.	min.	max.	min.	max.			
T6 <sup>c</sup>		$\leq 40$		350	-	290	-	10	8	110
<sup>a</sup> $D$ = Diameter for round bar.										
<sup>b</sup> $S$ = Width across flats for square and hexagonal bar, thickness for rectangular bar.										
<sup>c</sup> Properties may be obtained by press quenching.										

**Table 55 — Alloy EN AW-7108 [Al Zn5Mg1Zr]**

Extruded rod/bar										
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ % min.	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
	$D^a$	$S^b$	min.	max.	min.	max.				
T6 <sup>c</sup>	$\leq 100$	$\leq 100$	310	-	260		10	8	90	
Extruded tube										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW		
		min.	max.	min.	max.	min.	max.			
T6 <sup>c</sup>		$\leq 20$		310	-	260	-	10	8	90
Extruded profile										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		<b>Hardness</b> Typical value HBW		
		min.	max.	min.	max.	min.	max.			
T6 <sup>c</sup>		$\leq 30$		310	-	260	-	10	8	90
<sup>a</sup> $D$ = Diameter for round bar.										
<sup>b</sup> $S$ = Width across flats for square and hexagonal bar, thickness for rectangular bar.										
<sup>c</sup> Properties may be obtained by press quenching.										

**Table 56 — Alloy EN AW-7108A [Al Zn5Mg1Zr(A)]**

Extruded rod/bar										
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW	
	D <sup>a</sup>	S <sup>b</sup>	min.	max.	min.	max.				
T6 <sup>c</sup>	≤ 200	≤ 200	310	-	260	-	12	10	90	
T66 <sup>c</sup>	≤ 50 50 < D ≤ 200	≤ 50 50 < S ≤ 200	350 340	-	290 275	-	10 10	8 -	105 105	
Extruded tube										
Temper	t	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
		mm		min.	max.	min.	max.			
T6 <sup>c</sup>		≤ 20		310	-	260	-	12	10	90
T66 <sup>c</sup>		≤ 20		350	-	290	-	10	8	105
Extruded profile										
Temper	t	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardness</b> Typical value HBW
		mm		min.	max.	min.	max.			
T6 <sup>c</sup>		≤ 40		310	-	260	-	12	10	90
T66 <sup>c</sup>		≤ 40		350	-	290	-	10	8	105

<sup>a</sup> D = Diameter for round bar.  
<sup>b</sup> S = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 57 — Alloy EN AW-7020 [Al Zn4,5Mg1]**

Extruded rod/bar											
Temper	Dimensions		$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$	<b>Hardness</b>		
	mm		MPa		MPa				Typical value HBW		
	$D^a$	$S^b$	min.	max.	min.	max.	min.	min.			
T6 <sup>c</sup>	$\leq 50$ $50 < D \leq 200$	$\leq 50$ $50 < S \leq 200$	350 340	- -	290 275	- -	10 10	8 -	110 110		
Extruded tube											
Temper	Wall thickness			$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$		
	mm			MPa		MPa					
	$t$	mm		min.	max.	min.	max.	min.	min.		
T6 <sup>c</sup>		$\leq 15$		350	-	290	-	10	8	110	
Extruded profile											
Temper	Wall thickness			$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$		
	mm			MPa		MPa					
	$t$	mm		min.	max.	min.	max.	min.	min.		
T6 <sup>c</sup>		$\leq 40$		350	-	290	-	10	8	110	

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 58 — Alloy EN AW-7021 [Al Zn5,5Mg1,5]**

Extruded rod/bar											
Temper	Dimensions		$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$	<b>Hardness</b>		
	mm		MPa		MPa				Typical value HBW		
	$D^a$	$S^b$	min.	max.	min.	max.	min.	min.			
T6 <sup>c</sup>	$\leq 40$	$\leq 40$	410	-	350	-	10	8	120		
Extruded tube											
Temper	Wall thickness			$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$		
	mm			MPa		MPa					
	$t$	mm		min.	max.	min.	max.	min.	min.		
T6 <sup>c</sup>		$\leq 10$		410	-	350	-	10	8	120	
Extruded profile											
Temper	Wall thickness			$R_m$		$R_{p0,2}$		$A$	$A_{50\text{ mm}}$		
	mm			MPa		MPa					
	$t$	mm		min.	max.	min.	max.	min.	min.		
T6 <sup>c</sup>		$\leq 20$		410	-	350	-	10	8	120	

<sup>a</sup>  $D$  = Diameter for round bar.  
<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.  
<sup>c</sup> Properties may be obtained by press quenching.

**Table 59 — Alloy EN AW-7022 [Al Zn5Mg3Cu]**

Extruded rod/bar										
Temper	Dimensions mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value HBW	
	$D^{\text{a}}$	$S^{\text{b}}$	min.	max.	min.	max.				
T6, T6510, T6511 <sup>c</sup>	$\leq 80$ $80 < D \leq 200$	$\leq 80$ $80 < S \leq 200$	490 470	- -	420 400	- -	7 7	5 -	133	
Extruded tube										
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value HBW
		min.	max.	min.	max.	min.	max.			
T6, T6510, T6511 <sup>c</sup>		$\leq 30$		490	-	420	-	7	5	133
Extruded profile									<b>Hardnes s</b> Typical value HBW	
Temper	$t$	Wall thickness mm		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ % min.	<b>Hardnes s</b> Typical value HBW
		min.	max.	min.	max.	min.	max.			
T6, T6510, T6511 <sup>c</sup>		$\leq 30$		490	-	420	-	7	5	133

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

<sup>c</sup> Properties may be obtained by press quenching.

**Table 60 — Alloy EN AW-7049A [Al Zn8MgCu]**

Extruded rod/bar									
Temper	Dimensions		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	
	mm	mm	min.	max.	min.	max.			
T6, T6510, T6511	$\leq 100$	$\leq 100$	610	-	530	-	5	4	170
	$100 < D \leq 125$	$100 < S \leq 125$	560	-	500	-	5	-	170
	$125 < D \leq 150$	$125 < S \leq 150$	520	-	430	-	5	-	170
	$150 < D \leq 180$	$150 < S \leq 180$	450	-	400	-	3	-	170
Extruded tube									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	
	t	mm	min.	max.	min.	max.			
T6, T6510, T6511	$\leq 30$		610	-	530	-	5	4	170
Extruded profile									
Temper	Wall thickness		$R_m$ MPa		$R_{p0,2}$ MPa		$A$ %	$A_{50\text{ mm}}$ %	
	t	mm	min.	max.	min.	max.			
T6, T6510, T6511	$\leq 30$		610	-	530	-	5	4	170

<sup>a</sup>  $D$  = Diameter for round bar.

<sup>b</sup>  $S$  = Width across flats for square and hexagonal bar, thickness for rectangular bar.

**Table 61 — EN AW-7075 [Al Zn5,5MgCu]**

Extruded rod/bar										
Temper	Dimensions		$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %	Hardness Typical value HBW	
	$D^a$	$S^b$	mm	MPa	MPa	min.	max.	min.	max.	
O, H111	$\leq 200$	$\leq 200$	-	275	-	165	10	8	60	
T6, T6510, T6511	$\leq 25$	$\leq 25$	540	-	480	-	7	5	150	
	$25 < D \leq 100$	$25 < S \leq 100$	560	-	500	-	7	-	150	
	$100 < D \leq 150$	$100 < S \leq 150$	550	-	440	-	5	-	150	
	$150 < D \leq 200$	$150 < S \leq 200$	440	-	400	-	5	-	150	
T73, T73510, T73511 <sup>c</sup>	$\leq 25$	$\leq 25$	485	-	420	-	7	5	135	
	$25 < D \leq 75$	$25 < S \leq 75$	475	-	405	-	7	-	135	
	$75 < D \leq 100$	$75 < S \leq 100$	470	-	390	-	6	-	135	
	$100 < D \leq 150$	$100 < S \leq 150$	440	-	360	-	6	-	135	
Extruded tube										
Temper	$t$	Wall thickness		$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %	
		mm		MPa	MPa	min.	max.			
O, H111		$\leq 10$		-	275	-	165	10	-	60
T6, T6510, T6511	$\leq 5$	540		-	485	-	8	6	150	
	$5 < t \leq 10$	560		-	505	-	7	5	150	
	$10 < t \leq 50$	560		-	495	-	6	4	150	
T73, T73510, T73511 <sup>c</sup>	$\leq 5$	470		-	400	-	7	5	135	
	$5 < t \leq 25$	485		-	420	-	8	6	135	
	$25 < t \leq 50$	475		-	405	-	8	-	135	
Extruded profile <sup>d</sup>										
Temper	$t$	Wall thickness		$R_m$		$R_{p0,2}$		$A$ %	$A_{50\text{ mm}}$ %	
		mm		MPa	MPa	min.	max.			
T6, T6510, T6511	$\leq 25$	530		-	460	-	6	4	150	
	$25 < t \leq 60$	540		-	470	-	6	-	150	
T73, T73510, T73511 <sup>c</sup>	$\leq 25$	485		-	420	-	7	5	135	
<p><sup>a</sup> <math>D</math> = Diameter for round bar.</p> <p><sup>b</sup> <math>S</math> = Width across flats for square and hexagonal bar, thickness for rectangular bar.</p> <p><sup>c</sup> For materials of thickness 20 mm or above, see EN 755-1, with respect to stress corrosion cracking resistance.</p> <p><sup>d</sup> If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section.</p>										

**Annex A**  
(informative)

**List of tempers used in Tables 1 to 61 (extract of EN 515)**

<b>Temper</b>	
<b>Symbol</b>	<b>Definition</b>
F	as fabricated (no mechanical property limits specified)
O	annealed - products achieving the required annealed properties after hot forming processes may be designated as O temper
H111	annealed and slightly strain-hardened (less than H11) during subsequent operations such as stretching or straightening
H112	slightly strain-hardened from working at an elevated temperature or from a limited amount of cold work (mechanical property limits specified), such as stretching or straightening
T3	solution heat-treated, cold worked and naturally aged
T3510	solution heat-treated, stress-relieved by stretching a controlled amount (permanent set 1 % to 3 %) and naturally aged  The products receive no further straightening after stretching.
T3511	same as T3510 except that minor straightening is allowed after stretching to comply with standard tolerances
T4	solution heat-treated and naturally aged
T4510	solution heat-treated, stress-relieved by stretching a controlled amount (permanent set 1 % to 3 %) and naturally aged  The products receive no further straightening after stretching.
T4511	same as T4510 except that minor straightening is allowed after stretching to comply with standard tolerances
T5	cooled from an elevated temperature shaping process and then artificially aged
T6	solution heat-treated and then artificially aged
T64	solution heat-treated and then artificially aged in underaging conditions (between T6 and T61) to improve formability
T6510	solution heat-treated, stress-relieved by stretching a controlled amount (permanent set 1 % to 3 %) and then artificially aged  The products receive no further straightening after stretching.
T6511	same as T6510 except that minor straightening is allowed after stretching to comply with standard tolerances
T66	solution heat-treated and then artificially aged - mechanical property level higher than T6 achieved through special control of the process (6000 series alloys)
T7	solution heat-treated and then artificially overaged
T73	solution heat-treated and then artificially overaged in order to achieve the best stress corrosion resistance
T73510	solution heat-treated, stress-relieved by stretching a controlled amount (permanent set 1 % to 3 %)

<b>Temper</b>	
<b>Symbol</b>	<b>Definition</b>
	and then artificially overaged in order to achieve the best stress corrosion resistance The products receive no further straightening after stretching.
T73511	same as T73510 except that minor straightening is allowed after stretching to comply with standard tolerances
T8	solution heat-treated, cold worked and then artificially aged
T8510	solution heat-treated, stress-relieved by stretching a controlled amount (permanent set 1 % to 3 %) and then artificially aged The products receive no further straightening after stretching.
T8511	same as T8510 except that minor straightening is allowed after stretching to comply with standard tolerances

## Bibliography

- [1] EN 515, *Aluminium and aluminium alloys - Wrought products - Temper designations*
- [2] EN 573-3, *Aluminium and aluminium alloys - Chemical composition and form of wrought products - Part 3: Chemical composition and form of products*



# British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

## About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards-based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

## Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at [bsigroup.com/standards](http://bsigroup.com/standards) or contacting our Customer Services team or Knowledge Centre.

## Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at [bsigroup.com/shop](http://bsigroup.com/shop), where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

## Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to [bsigroup.com/subscriptions](http://bsigroup.com/subscriptions).

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member**.

**PLUS** is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit [bsigroup.com/shop](http://bsigroup.com/shop).

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email [bsmusales@bsigroup.com](mailto:bsmusales@bsigroup.com).

## BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK

## Rewvisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

## Copyright

All the data, software and documentation set out in all British Standards and other BSI publications are the property of and copyrighted by BSI, or some person or entity that owns copyright in the information used (such as the international standardization bodies) and has formally licensed such information to BSI for commercial publication and use. Except as permitted under the Copyright, Designs and Patents Act 1988 no extract may be reproduced, stored in a retrieval system or transmitted in any form or by any means – electronic, photocopying, recording or otherwise – without prior written permission from BSI. Details and advice can be obtained from the Copyright & Licensing Department.

## Useful Contacts:

### Customer Services

**Tel:** +44 845 086 9001

**Email (orders):** [orders@bsigroup.com](mailto:orders@bsigroup.com)

**Email (enquiries):** [cservices@bsigroup.com](mailto:cservices@bsigroup.com)

### Subscriptions

**Tel:** +44 845 086 9001

**Email:** [subscriptions@bsigroup.com](mailto:subscriptions@bsigroup.com)

### Knowledge Centre

**Tel:** +44 20 8996 7004

**Email:** [knowledgecentre@bsigroup.com](mailto:knowledgecentre@bsigroup.com)

### Copyright & Licensing

**Tel:** +44 20 8996 7070

**Email:** [copyright@bsigroup.com](mailto:copyright@bsigroup.com)