

ALLOY 6060

PRIMARY ALUMINUM - MAGNESTIUM - SILICON ALLOY FOR ALLOY FORGING

Conventional alloy designation: EN AW - 6060 UNI 573-3

Numerical designation: 6060

Typical applications: design and systems extrusions

Chemical composition in weight %

Alloy	Cu	Fe	Mn	Mg	Zn	Si	Impurity	Al
6060	0,10	0,10-0,30	0,10	0,35-0,60	0,10	0,30-0,60	0,05-0,15	Remaining

Typical physical properties of extrusions

Alloy	Physical state	Density	Electrical resistance	Thermal conductivity	Melting range	Thermal expansion coefficient	Elasticity coefficient
		Kg/dm ³	Ohm mm ² /mm	W/mK	°C	20-100 °C x 10 ⁻⁶ /°C	N/mm ²
6060	T1 T5 T6	270	0.034 0.031 0.033	193 209 201	615-655	23	69000

Mechanical properties of typical extrusions

Alloy	Physical state *	Tensile strength at break	Unit load of deviation from proportionality	Elongation	Brinell hardness
		R _m N/mm ²	R _{mp0.2} N/mm ²	A %	HB
6060	O F T1 T5 T6	≤ 140 100 120 185 205	≤ 80 70 145 165	22 18 16 15	40 45 60 70

Technological characteristics (indicative)

Physical state	Plastic deformability cold	Tool machinability	Resistance to atmospheric corrosion	Resistance to marine corrosion	Anodization	Weldability
T1 T5 T6	Good Good Sufficient	Not advisable Good Good	Excellent Excellent Excellent	Good Good Good	Excellent Excellent Excellent	Excellent Excellent Excellent

* Physical state

O extrusion blank

F annealed

T1 cooled subsequent to high temperature plastic forging and natural ageing

T5 cooled subsequent to high temperature plastic forging and artificial ageing

T6 solubilized, tempered and artificially aged

ESTADIENE 1640 AS

Standard

Measurement
unit

1640 AS

PHYSICAL PROPERTIES

MELT FLOW INDEX 220°C - 10 kg.	ASTM D 1238	g./10'	40
MELT FLOW INDEX 260°C - 5 kg.	ASTM D 1238	g./10'	-
DENSITY	ASTM D 792	g./cc	1,05
LINEAR SHRINKAGE	ASTM D 955	%	da 0,4 a 0,7

MECHANICAL PROPERTIES

TENSILE YIELD STRENGTH	ASTM D 638	MPa	44
TENSILE BREAK STRENGTH	ASTM D 638	MPa	39
ELONGATION AT YIELD	ASTM D 638	%	18
FLEXURAL MODULUS	ASTM D 790	MPa	2600
NOTCHED IZOD IMPACT STRENGTH (23°C)	ASTM D 256	J/m	160
NOTCHED IZOD IMPACT STRENGTH (0°C)	ASTM D 256	J/m	130

THERMAL PROPERTIES

VICAT SOFTENING POINT (9,8 N)	ASTM D 1525	°C	102
VICAT SOFTENING POINT (49 N)	ASTM D 1525	°C	94
BALL PRESSURE TEST	IEC 335-1	°C	-

FLAME RESISTANCE

ACCORDING TO UL 94 TESTS THICKNESS 3,2 mm	-	CLASS	HB
ACCORDING TO UL 94 TESTS THICKNESS 1,6 mm	-	CLASS	HB
GLOW WIRE TESTS THICKNESS 2 mm	I.E.C. 695-2-1	°C	650