General Product Information (Standards)

Material Data

Alloy : **EN AW-6063**

Applicable Standards : BS EN 515, Part 01 to 04 of BS EN 573,
Part 01 to 09 of BS EN 755 and
Part 01 to 02 of BS EN 12020
SLS :1410

Description of Alloy : EN AW-6063 is a heat treatable alloy, provides good combination of extrudability and mechanical properties. Its excellent extrudability allows thin walled hollow shapes, intricate solids and other shapes (usually difficult extrusions) to extrude with satisfactory finish and to produce more easily.

It responds well to polishing, chemical brightening, anodizing and electro-colouring.

Characteristics

Forming - All tempers of EN AW-6063 are formable

Corrosion - Excellent resistance to the atmosphere. Particularly suitable for anodizing of extrusions for architectural application

Machining - Readily machinable

Welding - EN AW-6063 readily welded by MIG and TIG processes. Recommended filler alloy 5356

Tempers Recommend for Architectural / Hardware Applications

T1 - Cooled from an elevated temperature shaping process and naturally aged to a substantially stable condition

T4 - Solution heat treated and naturally aged to a substantially stable condition

T5 - Cooled from elevated temperature shaping process and then artificially aged

T6 - Solution heat treated and then artificially aged

* Please refer page 03 & 04 of group 01 for further details

Chemical composition

EN AW-6063 is an aluminium alloy, with magnesium & silicon

	% Weight
Silicon	0.20 - 0.60
Magnesium	0.45 - 0.90
Copper	0.10 (Max)
Manganese	0.10 (Max)
Iron	0.35 (Max)
Chromium	0.10 (Max)
Zinc	0.10 (Max)
Titanium	0.10 (Max)
Others each	0.05 (Max)
Others total	0.15 (Max)
Aluminum	Remainder

Mechanical Properties as per BS Standard

Temper	Ultimate Tensile Strength (MPa)	0.2% Proof stress (MPa)	Elongation (%)
T5	175 (Minimum)	130 (Minimum)	6 (Minimum)

Physical Properties

Density (kg/mm³)	Melting range (°C)	Coefficient of Linear Expansion (/deg°C)	Modulus of Elasticity (GPa)
2.71 $x10^{-6}$	600 - 660	23 x 10^{-6}	69

Anodizing - Aluminum alloy anodic oxidation coating

Accordance with BS EN ISO 7599 / SLS ISO 7599 & EN ISO 2360

Colours - **Natural - Currently available in the market (10-15 microns)**
Dark bronze - Currently available in the market (10-15 microns)
Polished natural - As per the Customer's requirement
Polished bronze - As per the customer's requirement

* Other shades such as champaign, medium bronze and black are available on request

Thickness - 10-15 microns, 15-20 microns, 20-25 microns

Powder Coating

Accordance with BS 6496 / SLS 1411

Polyester (PE) Coating - Wider colour range
Polyurethane (PU) / Polyester (PE) coating - Wood effect (Mahogany, Teak, Rosewood)

Film Thickness (EN ISO 2360)	- 60 - 80 microns
Impact resistance (2.5 Nm: EN ISO 6272-1)	- No sign of cracking
Erichsen Cupping Test (5 - 10 mm - EN ISO 1520)	- No sign of cracking or detachment
Bend test (3 - 12 mm - EN ISO 1519)	- No sign of cracking or detachment
Adhesion (ISO 2409)	- Class 0 (no detachment)
Weather Resistance	- Excellent

Length of Extrusions

Extrusions are produced in the following standard lengths,
3.66 m / 6.10 m / 6.50 m

Roller shutter slats are produced in the following standard lengths,
3.66 m (12') / 4.27 m (14') / 4.88 m (16') / 5.49 m (18') / 6.10 m (20')

General Information of Temper Designations for Aluminium, and Industrial Shaping of Metals

Sub-divisions of "T" Temper-Heat-Treatable Aluminium Alloys

T1
Cooled from an elevated temperature shaping process and naturally aged to a substantially stable condition. Usually associated with extruded products and limited to the 6XXX series alloys.

T2
Cooled from an elevated temperature shaping process, cold worked, and naturally aged to a substantially stable condition. Usually associated with cast products.

T3
Solution heat-treated, cold worked, and naturally aged to a substantially stable condition. (T4+cold work)

T4
Solution heat-treated, and naturally aged to a substantially stable condition.

T5
Cooled from an elevated temperature shaping process and artificially aged. Usually associated with extruded products in the 6XXX series alloys. (T1+artificial age)

T6
Solution heat-treated, and artificially aged. (T4+artificial age)

T7
Solution heat-treated, and over-aged/stabilized. Applies to alloy products which are thermally over-aged after solution heat-treatment to carry them beyond the point of maximum strength to provide control of some special characteristic.

T8
Solution heat-treated, cold worked, and artificially aged. (T3+artificial age)

T9
Solution heat-treated, artificially aged and cold worked. (T6+artificial age)

T10
Cooled from an elevated temperature shaping process, cold worked and, and artificially aged. Usually associated with cast products (T2+artificial age)

Shaping of Metals

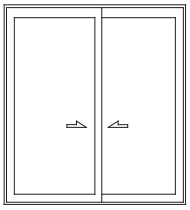
By Casting : Components are produced by pouring molten metal or alloy in to some form of mould cavity which will give to the component its final shape.

By Hot-working : Hot-working processes involve the use of compressive forces as in forging, rolling, and extrusion. Main hot-working processes are hot-rolling, forging, drop-forging, heading, hot-pressing, and extrusions.

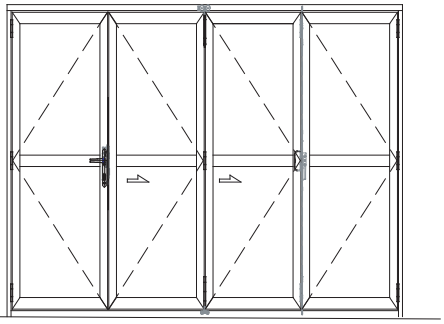
Cold-working : Processes involving the pulling or drawing of metal through a die are always cold-working operations. Cold-working operations usually employ tensile forces to deform the metal. Cold-working processes used in metallurgical industries are cold-rolling, drawing of solid and hollow sections, cold-pressing and deep-drawing, and coining.

Higgins, R.A., *Engineering Metallurgy*, Viva Books Private Limited, 1988.

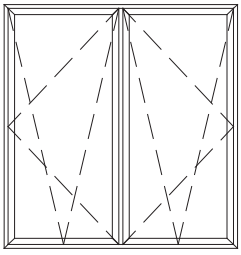
Architectural Applications



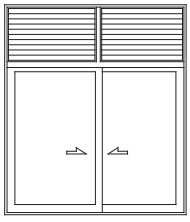
SLIDING



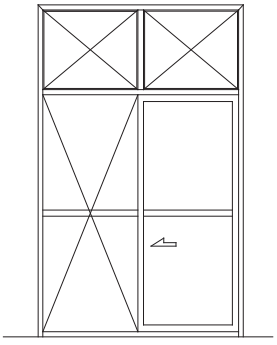
SLIDING & FOLDING DOOR



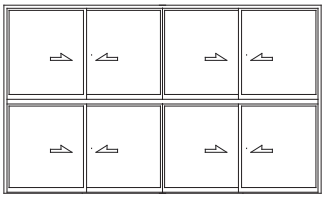
TILT & TURN



SLIDING & LOUVER



SLIDING DOUBLE GLAZING



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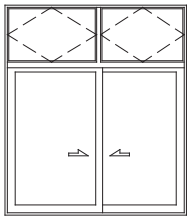
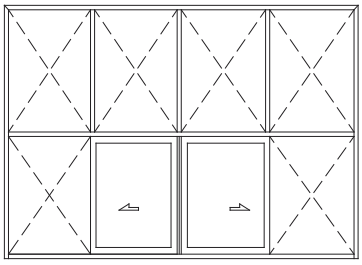
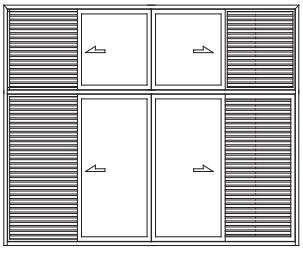


SLIDING & PIVOT



SLIDING & FIXED



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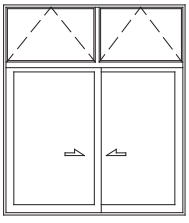
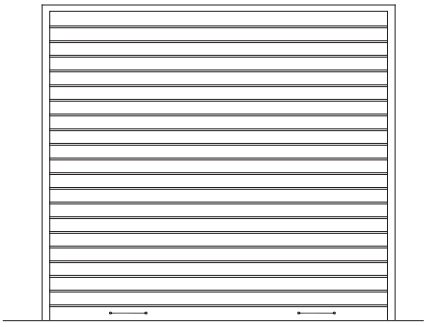
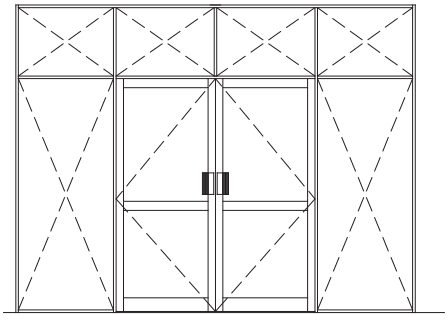


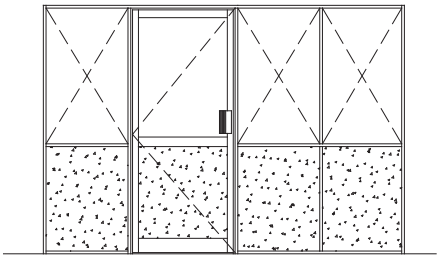
SLIDING & PROJECT



ROLLER SHUTTER

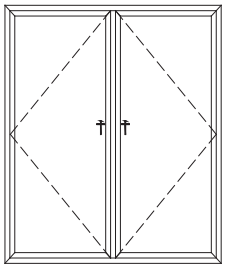


SHOPFRONT

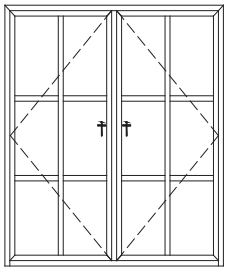


PARTITION

Architectural Applications



CASEMENT



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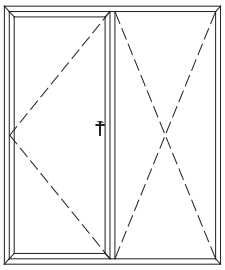
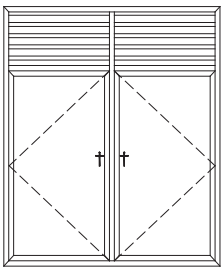
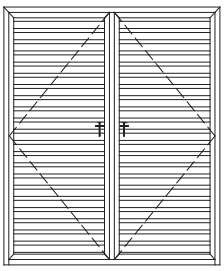


FIXED & CASEMENT



CASEMENT & TOP LOUVER



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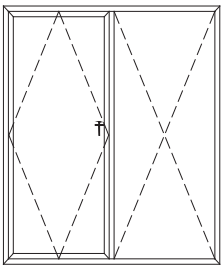
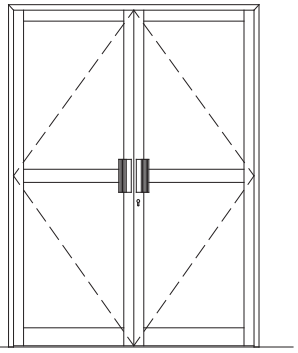
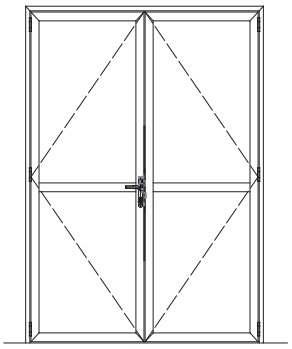


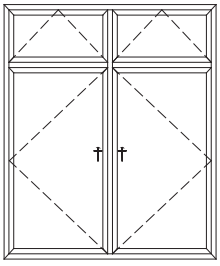
FIXED & PIVOT



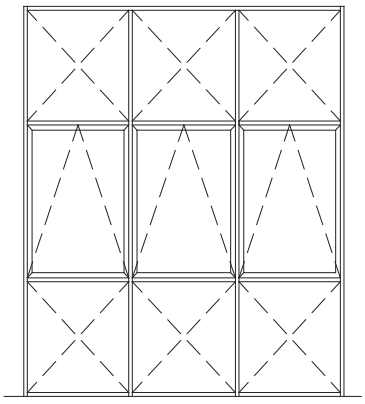
DOUBLE DOOR



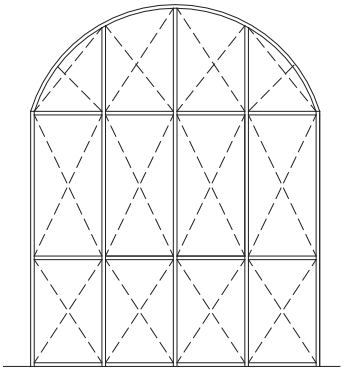
DOUBLE DOOR - LAPPED



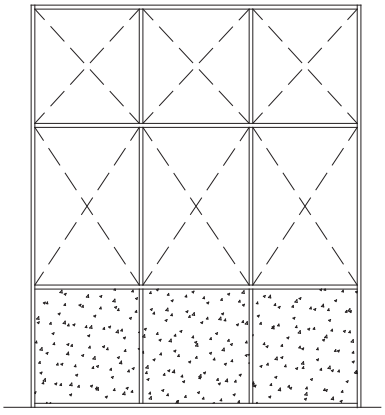
CASEMENT & PROJECT



CURTAIN WALL



SHOPFRONT



PARTITION