

TECHNICAL SPECIFICATION FOR DOMAL 40 AND WICTEC 50

Aluminium Extrusion

Aluminium Extrusions shall comply with the following codes various specifications

Aluminium Alloy shall comply with ISO 6063

IS: 1968 1996: For Anodic coating on Aluminium and its Alloy Specification.

IS: 1285-1975 - Specification for wrought Aluminium and Aluminium Alloy, extruded round tube and hollow sections (for general engineering purpose)

IS: 733 -1983 - Specification for wrought Aluminium and Aluminium Alloy bars, rods and sections (for general engineering purpose).

IS: 6477–1983- Dimensions for wrought Aluminium and Aluminium Alloys, extruded hollow Sections.

IS: 3965–1983- Dimensions for wrought Aluminium and Aluminium Alloys, Bar, Rod and section.

IS: 2673–1983- Dimensions for wrought Aluminium and Aluminium Alloys, Extruded round tube.

Aluminium extrusions are optimally designed to meet various requirements of functionality and strength. Profiles with different moment of inertia ensure economic application for varied structural requirement.

Structural Criteria

Profile selection shall comply with Indian wind load criteria conforming to IS 875 Part III.

The maximum allowable deflection shall be $L/175$ for double glazing and $L/125$ for single glazing. L being the bearing span in mm. However for specific structures, these criteria may vary for critical members.

Surface Treatment

The following are the codes for various specifications

IS: 6012 -1992 - for measurement of coating thickness by eddy current method.

IS: 1968 -1996 - for Anodic coating on Aluminium and its Alloy Specification.

IS: 5523 - 1983 - for methods of testing and anodic coatings on Aluminum and its Alloys

Anodizing: Natural: Minimum 15 micrometer thickness/as per IS specification is used.

Colour: Only non-organic dye shall be used

Powder Coating: Only pure polyester powder minimum 50 -60 micrometer thickness is used.

Fabrication and installation

The fabrication and installation is done following guidelines provided in the fabrication manual. Use of machinery like cutting machine, end milling machine, punching tools, and copy milling machine etc. conforming to the International quality standards.

SPECIFICATIONS FOR DOOR/ WINDOWS (DOMAL 40)

Basic Dimensions

Casement windows are overlapping.

Fixed frame and shutter depth is not less than 40 mm.

Height of glass housing shall not less than 14mm.

Wall overlapping (if required) is not less than 14 mm.

For sliding windows fixed frame depth is not less than 45 mm, shutter depth shall not be less than 25 mm

Height of glass housing shall not be less than 15 mm

Air Water Seal

Casement windows are sealed with double EPDM gaskets between shutter and frame. In sliding windows fin weather shutterpyle and EPDM glazing gasket ensure smooth functioning of the system.

Joint seals

Gap is provided between aluminium frame and wall opening for expansion, which is filled with joint backing cord and sealing mastic, which takes care of junction joint compression - tension stress.

Glass Assembly

The glass is installed with rectangular or round snap on glazing bead (dry glazing) in openable windows/doors. The glass is slipped in case of sliding window. Glass shall not be in direct contact with profile to prevent cracking of glass due to differential thermal stress, but through specially made glass supports.

Profiles

Frame for casement windows is 0.575 kg/m; MOI is 4.75 cm⁴ about bending axis.
Shutter for casement windows is 0.650 kg/m; MOI is 5.5cm⁴ about bending axis.
Frame for sliding windows is 0.9 kg/m; track width is of 13 mm MOI is 6.2 cm⁴ about bending axis.
Shutter for sliding windows is 0.850 kg/m; MOI is 11.0 cm⁴ about bending axis.
Frame for door is 0.75 kg/m; MOI is 7.2 cm⁴ about bending axis.
Shutter for door is 0.840 kg/m; MOI is 5.5 cm⁴ about bending axis.

Hinges

Reversible counteracting hinges with the minimum load carrying capacity of 70 Kg. It has a fast rapid fixing system with 2 fixing plates and oval head c/sunk crosshead screw of Stainless Steel and is equipped with a steel pin fitted, with two nylon bushes to ensure correct expansion.

Friction hinges

Defender standard is of stainless steel with Austenitic (304) version recommended for maximum anti - corrosion durability and definitely not ferritic as these are not suitable for corrosive environments. Austenitic hinges survive a 500-hour neutral salt spray test to BS 7479. They are manufactured under the BS EN ISO 9001 part 1 quality assurance system as approved by BSI to ensure operation of 40000 full cycles. Sterling and Senator are of stainless steel with Austenitic (304) version recommended for maximum anti - corrosion durability and definitely not ferritic as these are not suitable for corrosive environments. They are manufactured under the BS EN ISO 9001 part 1 quality assurance system as approved by BSI to ensure operation of 50000 full cycles.

These hinges conform to all leading international standards including UK BS 6375: the North American AAMA 904 -1 the French NFP 20 - 302 and NFP 20-501 and Singapore standard 212:1988.

Sl. No	Item code	Description	Max. Vent weight(kg)	Max. Vent height(mm)	Min. Vent height(mm)	Opening angle
1	DT10	Defender standard 10"	16	400	275	25°
2	DT16	Defender standard 16"	21	750	500	80°
				Max. Vent width(mm)	Hinge length(mm)	
3	STS10	Sterling10"	38	660	255	25°
4	STS16	Sterling16"	47	838	406	90°
5	SEN25 0A	Senator Hinge	34.5	660	255	85°
6	SEN55 0A	Senator Hinge	74	1321	559	90°

DT10 – Defender Standard of 10" hinge size.

DT16 – Defender Standard of 16" hinge size.

STS – Sterling and senator Heavy duty hinge for Side hung window.

SEN - Sterling and senator Heavy duty hinge for Top hung window.

Corner jointing is done with corner cleat, which is made of die-cast aluminium fixed with external buttons with a spring for rapid and secure joint assembly.

Perpendicular jointing is done with die cast aluminium T connector supplied with a button and spring for secure and rapid positioning.

Cross jointing is done with a special lock screw that does not interfere with the glass stop.

Casement Handles rotate up to 120°. It distributes stresses in balanced manner with the help of two racks and requires simple drilling for quick installation on the frame. External case cover is in extruded aluminium with galvanized zamak slides and base is in nylon with fiberglass

Casement allen key handle has 90° rotation. It has a removable handle for security requirement with die cast zamak cremone case, gear, rack and slides stainless steel fixing screws.

Casement key lockable handle has 90° rotation and fixing plates with cheese -headed screw. it has die cast aluminium handle, zamak cremone case, gear, rack and slide brass cylinder with SS fixing screws.

Lateral Handle for sliding windows locks automatically by spring action. The grub screw controls precision adjustment of the nib in order to obtain the required degree of precision. It has extruded aluminium body with die zamak slider, bracket plates, SS grub screws and springs, galvanized zamak internal components.

Adjustable pulley for sliding windows has a precision adjustment mechanism that vertically adjusts the shutter and is fixed with a contrast grub screw. The steel roller is mounted on a ball bearing with reinforced nylon facing. It has a nylon and fiberglass support centering mechanism with galvanized zamak roller support.

General notes

All accessories used are based on the requirements of stability, tightness, functionality and aesthetics. Window fittings have a multipoint locking system. All gaskets are of EPDM for tightness, insulation and UV resistant. Corner joints are made using specially designed corner cleats. Metallic accessories are made of aluminium alloy extrusions, zamak, SS 304, galvanized steel. Non-metallic accessories are of EPDM, Nylon (of various grade depending on usage), ABS, Polypropylene, Teflon, Delrin etc. All screws, bolts, nut used for any window or door shall be made of SS.

SPECIFICATIONS FOR CURTAIN WALL (WICTEC 50)

Generalities/System proof

The sight line for the mullion and transom section is 50 mm from inside and outside. Air permeability, heavy force tightness and behaviour in case of wind load is tested on large- surface element according to test and classification basic factors of DIN (German Industrial Standard), CEN (European committee for standardization) ASTM (American society for testing and Materials) and AAMA (American Architectural Manufacturers Associations), Airborne sound insulation is according to DIN 52210. The depth of mullion section ranges from 50 mm to 190 mm. The depth of transom section ranges from 21.5 mm to 155.5mm transom sections. The cover section ranges from 4 mm to 30 mm.

Section joint assembly

Notched transom sections are fixed to the mullion by overlapping joint. Transom screwing can take up to 120 kg. For higher field weights aluminium connecting brackets are used. Vertical mullion connections have expansion joints. The maximum tightening torque of transom screwing is 400 Ncm.

Air pressure compensation and drainage

For facade height up to 20 m pressure equalization and drainage from open rebates of transom sections in mullion channel is up to the base point. For facade height above 20 m pressure compensation at the top over pressure section, at the bottom over central drainage part in mullion section for the respective floor height / element height up to 6 m.

Glazing/ Gasket

Supporting shims shall be laid on aluminium shims for load denudation. Inside and outside glazing gaskets are made of non-ageing EPDM. Outer gaskets shall be inserted in pressure sections with horizontal butt joint. Technical specification for DOMAL 40 and WICTEC 50