9. Common Defects And Remedies

Designers and site supervisors should understand the common complaints and defects related to window installation and how to prevent them.

The occurrence of defects in windows is usually caused by poor design, use of inferior or non-compatible materials, poor workmanship during fabrication and installation or mishandling.

The following are some common defects in aluminium frame window installation:

Table 9.1 Common Defects

Common Defects Possible Causes Recommendations (A) Functionality Water seepage through window Poor workmanship during To review the design to ensure fabrications and installation suitable drainage paths exist with sufficient ventilation and of frames and gaskets internal air seals in the Poor detailing of top frame window frames To shield the window from direct rainfall through better design To fabricate and assemble as many components as possible in factory To use mechanical tools to achieve the required fabrication tolerances To ensure the use of gaskets with compatible profile To ensure no physical damages to the frames and gaskets To carry out field watertightness test

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Common Defects	Possible Causes	Recommendations
(A) Functionality		
Water seepage through joints between window frame and wall	 Poor tolerances of wall openings Poor workmanship during grouting/ sealing of gaps 	 To shield the window from direct rainfall through better design To use precast walls for better dimensional tolerances and finishing To ensure the size of the gap between wall and the frame conform to the specified tolerances To ensure correct usage of grout and sealant to seal the gaps, depending on the gap sizes To ensure proper application and compacting of grout or sealant To carry out field watertightness test
3. Difficulty in opening and closing of glass panel (for casement window)	 Misalignment of frames and glass panels Improper installation of friction stays and pivot hinges Improper protection resulting in debris ingress to friction stay track 	 To verify the alignment and plumb of the outer frames and inner panels To check the physical conditions of friction stays To lubricate the pivot hinges To clear track off all debris
4. Difficulty in sliding of inner panel (for sliding window)	 Improper alignment of frames and inner panels Damages to rollers and sliding tracks 	 To verify the alignment of the outer frames and inner panels To protect the sliding tracks during installation. Dirt or debris must be cleared prior to installation of inner panels To restrict the usage of the sliding windows prior to handing over

(B) Alignment & Evenness

1. Misalignment



- Improper setting out of wall openings
- Improper alignment and plumb of window frame during installation

Possible Causes

- To check that the setting out of wall opening conform to specifications
- To verify the alignment and plumb of window frame during installation

(C) Joints & Gaps

Untidy joints between window frame and wall



- Poor workmanship during installation
- To protect the frame with suitable tapes during application of sealant or during painting





- Poor workmanship during fabrication and installation
- Mishandling during delivery and storage
- To carry out cutting and assembly of frames using mechanical tools
- To protect the frames during delivery and storage

(D) Materials & Damages

1. Stained glazing

- Inadequate protection during delivery, storage and installation
- To protect the glazing properly. Protection should remain intact until all works are completed

- (D) Materials & Damages
- 2. Poor frame finish



- Poor workmanship during fabrication
- Poor rectification works
- To inspect the quality of finishes before delivery and prior to installation
- Any rectification works should be carried out effectively

3. Mortar droppings and paint drips on frame



- Inadequate protection during installation
- To provide adequate protection to the frame.
 Protection should remain in tact until all works are completed

4. Physical damages and scratches on frame and glazing





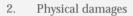
- Inadequate protection during fabrication, delivery, storage and installation
- To inspect the component before delivery and prior to installation
- To provide proper storage space
- To minimize unnecessary handling during delivery, storage and installation
- To provide adequate protection to frames and glazing. Protection should be kept in tact until all works are completed

- (E) Accessories Defects
- 1. Loose or improperly installed gaskets





- Use of gaskets with incompatible profile
- Use of gaskets with inadequate length
- Poor workmanship during installation
- To check that gasket size and profile are compatible to the frame
- To ensure that sufficient length of gasket is used
- To ensure proper workmanship during installation, especially at the corners





- Inadequate protection during fabrication, delivery, storage and installation
- To provide adequate protection for all accessories. Protection should be kept in tact until all works are completed