STANDARD PROCEDURE FOR INSTALLATION OF ALUMINUM WINDOWS

We provide aluminium windows in our projects due to their ease of fabrication, ease to maintain dimensional integrity and opportunity to manufacture them in controlled conditions off site in the factory where proper machinery and tools for various operations such as cutting, crimping, mitring, drilling holes etc can be carried out with precision and speed.

It is obvious that factory production needs standardized specifications and dimensions to make the production commercially viable.

We normally have few types say 8 to 10 types of windows in each building and good quantity of each of them. Many of our projects have suffered avoidable delays due to delay in installation of windows which take too long to manufacture primarily due to wrong practice of the vendor being asked to take measurements of each window opening and customize the production to the dimensions of individual opening!

In order to speed up production and installation of windows following process shall henceforth be strictly adhered to. This has already been discussed with all project managers and is being successfully adopted at few sites.

Vendor shall submit shop drawings for approval together with design calculations to Comply with performance parameters specified in the contract. Normally these parameters will include:

1. Sectional modulus to resist wind pressure with deflections within permissible limits that would not result in cracking of glass panes or would allow water and air permeation beyond design values.
2. Thickness of glass panes to resist wind pressure without exceeding permissible deflection.
3. Strength of end fixities so that windows do not undergo any displacement or free body movement under applied loads including wind loads.
4. Pressure equalization where strong wind velocities would not allow quick draining out of water or will result in water ingress.
5. Thermal break efficiency wherever specifications require the same to be designed as would be the case with our projects planned overseas.
6. After approval of shop drawings and design calculations vendor shall submit samples of all sections , fasteners and fixtures , gaskets, powder coating/anodizing and hardware which in some cases have to be checked for compatibility with the sections selected.
7. On approval of the material the vendor shall provide one template for each type of window, outer dimensions of which will be the masonry/structure opening size required for installation of the corresponding window as per approved shop drawing.
8. QA/QC will inspect and check these templates and approve them if found correct as per sizes, diagonals or specified geometric pattern and approved shop drawings.
9. All opening sizes in masonry or concrete shall be maintained accurately with the help of these template and shall be certified by the engineer as correct before masonry work is certified for payment
10. In case where aluminium vendor is not yet on board while masonry work is due to commence , template sizes will be given by facade team and these will be got fabricated from approved vendor.

11. Once the templates are approved by QA/QC, the project manager shall give the clearance to vendor to commence the production of windows as per approved shop drawings without any site measurements unless these become necessary due to changes or architect's requirements.
12. For full width sliding windows which are provided from floor level to beam/ lintel soffit there is difficulty to provide the opening as per template due to variations in floor levels which cannot be separately localized for the sake of such a window. In case of such windows normally provided for balconies, following method may be adopted.
    a. The bottom outer i.e. the main track section is fabricated as per design length and provided with corner adjustment jackets (or end caps) at both ends.
    b. An end cap shall be an L shape jacket with C section inner dimensions horizontal and vertical of which will be as per the outer dimensions of bottom and side tracks of the window respectively.
    c. The length of each leg of the end cap may be 2 inches.
    d. Both sides of the end cap shall have a horizontal slit for the screw to fasten the bottom and side tracks on both sides (inner and outer) so that these can slide over the tracks to adjust the length upto say 30 mm horizontally or vertically.
    e. Two end caps will thus facilitate adjustment upto 60 mms horizontally and 30 mm vertically. If these need to be more end cap size can be increased to accommodate longer adjustment slit.
    f. This will also facilitate diagonal variation upto 42 mms each.
    g. After the opening is ready to receive the window the bottom track with end caps will be installed first and end caps adjusted to fit to opening width.
    h. Thereafter the verticals will be fixed by pressing it into vertical of the end cap after adjusting for the height as necessary.
    i. The top outer can now be assembled and fixed into place with verticals jacketed into end caps and screwed to bottom track through prefixed corner angle cleats.
    j. The end cap will have the corner angle cleat prefixed to it through which bottom and side tracks will be screwed to end caps.
    k. Installation of outer is now complete.
    l. Adjustment of height to some extent is also possible by cutting short the legs which can be little longer and packing with the shim plates where height is to be reduced. The width of opening can be controlled with the template.
    m. In both the options fabrication of window outers is possible before the opening is ready. Shutters will however to be manufactured after outer dimensions are firm. This being only for a single type of window will be easily manageable and will not impact timely completion.