Type of Work

1.1 Spandrels
1.2 Copings
1.3 Flashing
1.4 Internal Wall Panels
1.5 External Wall Panels
1.6 Column
1.7 Soffits
1.8 Materials

Materials

Alubond Sheets are produced from pellet and pre-painted Aluminium Coils, and manufactured by M/s. American Building Technologies INC U.S.A. in 6mm, 5mm, 4mm & 3mm thick panels. The panel is visually flat.

Finishes

The panels are pre-coated normally in Kynar 500 PVDF coatings from P.P.G U.S.A. and Alcan Aluminium U.S.A. but others finishes such as polyesters are also available.

Packing & Shipping

The sheets are dispatched from the factory individually covered with a 1.0 mm Plastic film applied at the coating stage. They are packed on wooden skids cushioned with Styrofoam wrapped in water resistant paper and protected on the top and sides with 13mm chipboard with metal banding. This ensures no damage on arrival at the factory. The skids will then be shipped to U.A.E. ports by containers.

Site Survey

The site will be surveyed from the datum levels supplied by the contractors using a the odolite and the building sizes returned to the drawing office.

Design Engineering

1) The site sizes will be applied to the previously approved drawings and the necessary amendments made.

2) Exploded workshop drawings will then be prepared for each different panels by Autocad and Microstation operatives.

3) Checks are then made to see that any changes in panel size do not affect the structural calculations. If major changes appear these will be notified to the contractors with the relevant amended calculations.

Manufacture

Sawing Sheets: The sheets will be cut to size on vertical frame saw with digital measurement to ensure accuracy, using a 203mm dia extra fine carbide tipped 60 tooth saw blade.

Routing

The sheet will be vee-grooved using the same vertical frame saw with a 83mm dia. Blade rated at 11,000 RPM. The Vee of the tooth angle will be 105 degrees and 0.51mm minimum will be left at the bottom of the groove.

Roll Forming

A 3 Roller pyramid type rolling machine is used to curve the Alubond Panels. Usually, roller diameter from 152 mm to 64 mm can be used depending on the width of the panel. Multiple passes are made through the rollers increasing the curvature until the desired radius is achieved. For 6mm thickness a minimum radius 90mm can be achieved.

Assembly:

1) The corner cut outs are removed by panels.
2) The pre-painted panels are land bent to form trays and the four corners are reinforced with angles fixed in position with either cadmium Plated screws or aluminium pop rivets.
3) The attachments clips are all fixed like wise to the panels at approximately 300mm centers. These clips transfer the wind load on the panel to the structural supports. The clips are staggered from one panel to the next.

Transport to Site Storage:

The completed panels are packed on the original skid with polystyrene in between each panel to ensure the panels re not damaged in transit to the site storage.

Panel Renforcement:

Alubond Panels may be stiffened to resist wind load and reduce panel deflection to that specified. Stiffeners in the form of Aluminium angles or I section are adhered to the rear face of the panel at 600mm centres. Stiffeners are fixed across the shortest distance and when screwed at each end liked to the support structure, act as miniature beams.

Installation on Site:

1) Cradles

Where necessary cradles and / or boson's chairs will be used for the installation where scaffolding is not available or practical.

2) Substructure:

1) Settings out is carried out with the use of a theodolite or laser level.
2) The galvanized / Aluminium fixing brackets will be bolted (using G. I Anchor bolt M8 x 65mm long) to the concrete structure following the setting out lines.
3) The horizontal and vertical rails will be positioned working from both concerns towards the center of the wall face.
4) If required the rockwool insulation panels will be placed in position and the vapour barrier laid over the surface.
5) The prefabricated panels will be lung on the substructure and fixed with a single screw to ensure they do not shuffle. Other screws are fixed to slotted holes to allow for both vertical and horizontal expansions.
6) A spacer gange is used between adjacent panels to ensure a consistent gap between the panels.
7) A strained piano wire vertically down the building will ensure the vertical alignment of the first panel. The remainder will then follow accurately.
8) The center panel will be measured on site and fabricated to order. A variation of + 0r 10mm over a panel width of 1.0 meter will not be perceivable where as small variations in the panel gap would show up easily.

Sealant

A corofil backer rod will be placed between the panels and the joint sealed with sealant.

Snagging

On the completion of each face or area, snagging will be carried out and substantial completion of work in that area taken from the contractor.

Cleaning down

After all other trades have vacated the area the protective film will be removed and the panels joints cleaned down with soapy water. Cleaning of the panels should be carried out at least twice yearly.