

PARTICULAR SPECIFICATION

General Note : BOQ item descriptions shall be read in conjunction with corresponding particular specification, in addition to the detailed specification. The quoted rate under this schedule shall be deemed to have considered particular specification.

Item No as per BOQ	Description of Items
Q1 - 1 TO 4	<p>Semi unitized structural glazing system</p> <p>Scope: Designing the Curtain wall / Semi unitized structural glazing system as per design intent and as per approved drawings, preparation of shop drawings, supply, fabricate the panel with the specified glass on the child frame at factory, erect the system on erected extruded main frame & Transom fixed on supporting system at site as per approved shop drawings at all floor levels and for all heights. Designing, providing and fixing frame supporting system, the framing system (i.e. Main & Child frame) to support Vision panels (Insulated Glass) / Spandrel panels either with Monolithic Glass or Laminated sandwiched composite panel (ACP),/openable Top hung window panels/ punched strip windows/ decorative capping to any shape & profile, smoke seal, flashing including gaskets, sealants necessary accessories, as part of the system on a continuous framing supported between floors as detailed below and as per the specification for external facade system.</p> <p>Design the split framing semi unitized glazing system in case of Punched windows with vision panel proposed with either Insulated/Monolithic Glass as specified maintaining groove width shall not be more than 16 mm both in horizontal and vertical. Conducting the test for the materials involved in the system, field test on the erected system at site as per the test criteria set out in the specification of External Facade system. Submission of methodology for the Materials and assembly (Mock up & field test) supported by the copy of relevant codes & Standards and the same shall be got approved by the Employer / PMC / Architect prior to testing. Protection of the System and Materials till handing over to the Employer / PMC / Architect, removal of the unwanted materials, broken glass, Screws, bolts, Nuts, Packing Materials, debris etc, regularly and keeping the premises neat and clean at all times.</p> <p>Coordinate the details of the façade cleaning system during the preparation of shop drawing and incorporate such details in the shop drawing submitted for approval of Employer / PMC / Architect. Maintaining the system by means of periodical inspection at site (bi-monthly) and checking the system and Materials involved in the system during Defects liability period (this will not relieve the contractor from the condition laid down in the contract under defects liability period) to ensure that the system and all materials are free from any defects during this period. Providing the Guarantee for the entire External Façade system to the specified period in an approved format supported with Back to back guarantee from the specialized Material supplier like Glass, Aluminium composite panel, Gasket, Sealant, Hardware etc. complete as directed by Employer / PMC / Architect.</p> <p>I.DESIGN:</p> <p>a. Design: Design pre-assembled aluminium Semi unitized Structurally glazed Panel with continuous framed panels / Strip window / Punched window system with split mullion to any shape and profiles shall be designed to with stand the design wind pressure as per IS code or relevant international code (Test pressure shall be 1.5 times of the design wind pressure) and fixed at horizontally / vertically / sloped / curved position etc as shown in the approved drawings by using Aluminium extrusions, Glass, Spacer tape, Gasket, Sealant etc. as specified.</p> <p>Contractor shall be responsible to determine the maximum design wind pressure and lateral forces, moments, stresses etc. applicable for the system. Negative / suction pressures if determined as per IS 875 and Lateral forces as per code IS 1893 shall make allowances as described in the code for corner effects on the system. System shall be designed with Air Pressure equalization chamber and concealed continuous gutter vertically and horizontally at all levels as self drainage barrier to achieve water tightness besides providing EPDM Gaskets on the frame and EPDM Gasket / Sealant on the external groove as air and water barrier.</p> <p>b. System: System shall be designed to satisfy the structural design criteria specified in the technical specification with self-bearing modular elements supported between floors (Supporting span of minimum 3.50 meter) in the case of structural glazing and split mullion supported between sill & lintel/beam in the case of punched windows, EPDM Gaskets on the frame and Gasket/sealant on the groove to prevent the system from Air & water penetration ,double adhesive spacer tape, backer rod, sealant, supporting brackets (Resistance to design wind pressure), Separator Gaskets for Bi-Metallic Corrosion, Pressure equalization chamber in the system, built-in continuous internal drainage gutter for collection and facility at lowest floor level to drain out penetrated water, in built adjustability to accommodate thermal expansion, thermal movement and movement due to any other forces etc.</p> <p>System shall be designed with Gasket/Sealant on the external groove with colour anodized aluminium holder around the panel to the required width and thickness as per design as Dead load support to the Glass panel. Non Staining sealant between glass & aluminium holder around the panel shall be provided. Glazing the panel with child frame shall be done only at factory at the controlled atmosphere to erect the panel on erected extruded aluminium main member and transom with supporting system at site fixed on the RC surface. The Mullion and sill / head Transom flush on inside of the facade. Intermediate transoms shall be provided keeping 2 to 3mm recessed from the inner face of the mullion. Joints between mullion and transom shall be filled with weather sealant on the inside. All transoms shall have uniform in depth on the inner face of the system. Vertical in-situ glazing shall not be carried out during construction/erection stage. System shall be designed in such a way that the outer surface of insulated glass unit, monolithic glass unit and Aluminium Composite Panel shall be in the same plane or as per approved drawing. Aluminium shim shall be used for level adjustment of bracket but more than 20 mm is not acceptable. If more than 20 mm bracket shall be designed according to site condition.</p>

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	<p>c. Movement: System shall be designed to accommodate movement due to any force including lateral/dynamic pressure movement, horizontal & vertical building movement panels and on the framing system with support brackets, gaskets and fastening devices. System shall be designed to accommodate the size and shape of the glass panel as per the approved drawings including approved modifications as may be required during execution as well as all other incidental forces and stresses likely to be experienced under service conditions, i.e. Lateral force, Dead weight and Thermal expansion due to building movement both vertical and horizontal etc.</p> <p>The supporting system shall consists of Brackets / Clamps, fastening straps, nuts, bolts, rivets, washers and other fastening materials etc. Extruded sections shall be designed to accommodate Insulated Glass Unit (IGU) / Monolithic (Single) Glass and Aluminium composite panel as per the approved shop drawings. Extruded aluminium sections shall be 63400 (H9) grade conforming to IS 8147, finished with AC25 grade Architectural quality electrolytic colour anodic coating of approved colour conforming to IS 1868.</p> <p>d. Glass: Fixing the Insulated Glass (IGU) with laminated / Monolithic (single) Glass as per specification for both vision and spandrel panel conforming to the minimum spectral parameters as specified. Spacer for Insulated glazing unit shall be aluminium extruded profile and finished with AC 25 grade electrolytic colour anodic coating of black colour conforming to IS 1868 and filled with dry desiccant. Primary sealant shall be Poly-isobutylene (PIB) and Secondary seal shall be structural silicon sealant of DC 995 (one part) or DC 983 (two parts) of Dow coming or approved equivalent. Make and thickness of Inner pane glass shall be the same make as outer pane glass of IGU / DGU. Refer the separate item in Schedule of Quantities for the supply of Insulated / Monolithic glass.</p> <p>e. Gaskets: Providing and fixing weather barrier to ensure the air & water tightness at minimum 3 stages and to ensure that the system is thermally broken systems. The first barrier exposed to weather condition shall be Elastomer silicon synthetic rubber manufacture by oven process at different stages conforming to BS or equivalent IS. The properties of Elastomer silicon synthetic rubber such as hardness, tensile strength elongation compression test & ozone resistance shall be in accordance with BS 903 & BS 903A minimum hardness (shore A) of Elastomer silicon synthetic rubber shall be 65 to 75 Deg and the weather strip with in the system for unexposed shall be Elastomer EPDM (Ethylene Propylene Dinine Monomer) synthetic rubber and its properties like hardness, expanded density (Specific gravity) compressive set, water absorption, skin surface, cell structure, ozone resistance, low temperature includes work shall be in accordance with ASTM D – 1056 and minimum hardness (Shore A) shall be 61/71 Grade.</p> <p>In general, EPDM gaskets / silicon synthetic rubber shall be as per pre approved make. Contractor shall submit the Manufacturer test certificate conforming that the properties of the Gasket supplied is meeting the specification, codes & standards and copy of such codes shall be produced by the Contractor for verification of Employer/PMC/Architect. Contractor shall arrange to carry out the test to check the properties of EPDM / silicon rubber gasket on the random sample selected by Employer/PMC/Architect (Min. 3 Nos of each type to a required length) and the contractor shall make sure that the properties are meeting the codes and standards and specifications.</p> <p>f. Sealing: Design bite and thickness of structural sealant to withstand 3 times of the stress caused by the design wind pressure specified above and to ensure the same, the design calculation of sealant manufacturer shall be submitted along with shop drawing. Necessary materials as proposed in the shop drawing such as Extruded member with finish, glass and any other material required by the Sealant manufacturer shall be supplied to them to carryout the test as per relevant codes & standards in order to validate the bite and thickness designed by them. Contractor shall obtain the test certificate from Sealant manufacturer and submit the same along with shop drawing and supported by the copy of relevant codes and standards. Contractor shall ensure that the bite and thickness of sealant as designed & determined by calculation, verified and tested by Manufacture's is followed in the shop drawing and the same shall be adopted for the glazing at factory after the approval of shop drawing. Field test shall be conducted for adhesion of sealant with in the quoted rate.</p> <p>Supplying and fixing the Sealant as per specification and Double Adhesive spacer tapes for glazing the panel at factory. Spacer tape shall be open cell polyethylene of code no. Nortan V-2100 of Nortan Grind well make or approved equivalent, Jointing / Sealing of the glazed panel at factory shall be done with Non structural (weather) sealant / Non staining sealant of DC 991 HP of Dow coming make or approved equivalent with Polyurethane baker rods of Supreme make or approved equivalent. Acetoxo sealant shall not be used for Structural Glazing application. In general, providing and fixing the Structural and non Structural (weather) sealant shall be as follows:</p>

Item No as per BOQ	Description of Items
	<p>Shop / Factory Sealants:</p> <p>i) Structural sealant shall be DC 995 (one part) or DC 983 (Two part) of Dow corning make or SSG 4000 (one part) or SSG 4400 (Two part) of Momentive Silicone make or approved equivalent.</p> <p>ii) Non-Structural (weather) sealant shall be DC 991 HP of Dow corning make or approved equivalent.</p> <p>Field Sealants:</p> <p>i) Structural Sealant shall be DC 995 (one part) of Dow corning make or SSG 4000 (one part) of Momentive Silicon make or approved equivalent.</p> <p>ii) Non-Structural (weather) sealant shall be DC 991 HP of Dow corning make or approved equivalent.</p> <p>g. System Supports : Providing and fixing the supporting system with Brackets / Clamps including fastening straps, nuts, bolts, rivets, washers etc. as per design requirement and as per approved shop drawing. Brackets / Clamps shall be of hot dip galvanized steel and fastening materials shall be Non - magnetic Stainless steel 300 series - 316 grade of Hilti make or approved equivalent. Galvanizing thickness shall be in accordance with IS 2629 and 4759. Providing and fixing serrated plates or serrated washer wherever required as per the system requirement and as shown in the approved shop drawing. Shim thickness beyond 20mm is not permitted. Shims shall be similar material, preferably with aluminium, not more than 20mm thick and if the variation is beyond 20 mm, the bracket shall be designed accordingly with fastener.</p> <p>h. Smoke seal: Providing and fixing Smoke seal / Fire stop using extruded aluminium channel with cap for continuous structurally glazed framing system with required thickness as per site and in general the thickness of channel and cap shall be 2 mm and to a width as required between transom and sill finish material and it shall be 63400 (H9) grade conforming to IS 8147, finished with AC25 grade Architectural quality electrolytic colour anodic coating conforming to IS 1868 of approved colour. Aluminium colour anodized extruded Channel shall be supported with the help of Aluminium bracket as designed and this bracket to be fixed on the wall / RCC surface with necessary SS anchor bolt and fastener of Hilti make or approved equivalent. This channel with cap shall be provided between Sill finish Material (Civil scope) and Curtain wall / structural glazing member at sill level and between RCC member face and structural glazing member at soffit level / false ceiling and etc complete. All the Joints between the capping channel and any other finish material at both sill and soffit level shall be sealed with intumescent sealant of 3M or Hilti make.</p> <p>The channel with cap shall be provided between Sill finish Material (Sill finish material shall be paid separately) and Curtain wall / structural glazing member at sill level and between RCC member face and structural glazing member at soffit level / false ceiling and etc complete. All the Joints between the capped channel and any other finish material at both sill and soffit level shall be sealed with Intumescent sealant of 3 M make or approved equivalent. Also, close the gap on the vertical surface between the face of column/wall/partition and structural glazed frame/glass by using extruded aluminium channel with cap with anodized finish aluminium bracket supported on the coloum/wall/partition and in general the thickness of channel and cap shall be 2 mm and to a width as per drawing and it shall be 63400 (H9) grade conforming to IS 8147, finished with AC25 grade Architectural quality electrolytic colour anodic coating conforming to IS 1868 of approved matching colour to the Mullion & transom.</p> <p>g. Flashing: In addition to the Channel specified above, providing and fixing flashing at all floor levels as part of the system (applicable only for continuous Curtain wall / structural glazing portion) made to profile as shown in the approved drawings and the profile shall be made out of hot dip galvanized sheet 1.2 mm thick and galvanizing coating thickness shall be in accordance with IS 2629 & 4759. In general, the flashing shall be provided to the entire length of Curtain wall / structural glazing portion horizontally at all floor levels and at terrace level with a overlap of 100 to 125 mm in plan and the joints shall be sealed with weather silicon sealant and with recessing anchoring system soaked and SS fastening devices in sealant of Hilti make or approved equivalent. Also, the flashing shall be provided at parapet top below the coping to drain the water during any seepage through the sealant joints with overlap of 100 to 125 mm in plan with sealant at joints to make sure that no water leakage through coping / flashing joints.</p> <p>h. Insulation on spandrel panel: Providing and fixing Rock wool - 50 mm thick - 64 Kg / cum and having 'K' value of 0.023 w / M deg k of approved make conforming to IS - 8183 / BS 3958 / ASTM C 612 on the spandrel panel area i.e. behind the ACP / glass and for smoke seal at sill level. These wool should be covered with Black tissue factory pressed - 0.50 mm thick (Nominal Mass - 60 Kg/cum) to conform Non combustibility Class - fire rating to BS 476 - part 7 & IS 3808 and fixed by using GI Angle / channel of required size as base and the wool shall be tied with 22 gauge G.I. wire in criss-cross manner into Aluminium angle / Channel to the structure in addition to the G.I wore the aluminium flat shall be provided to hold the insulation in position and shall be covered with Anodized aluminium sheet tray of 1.2 mm thick. Rock wool should be fixed to the main aluminium frame work between mullion & transom on each side with the gap of 25 to 30 mm from the inner surface of the glass (i.e behind the spandrel panel glass area). The measurement shall be made only between mullion & transom on each side of the inner surface of system.</p> <p>j. Top hung Openable window Hardwares: Providing and fixing the hardwares for the shutter with heavy duty self balancing stainless steel friction hinges, corner transmission, detachable restrictor stay assembly and Multi point locking with heavy duty mechanism (minimum 6 points including corner locking point), handle with key at centre of the transom having a ceremony. Handle / cremony shall be made out of aluminium die cast with powder coat finish - 65 microns, matching to the transom profile colour. Rate shall include the shutter frame as designed to accommodate the Hinge, stay arm and multi point lock, EPDM gaskets, fastening materials including all other necessary materials etc. Hinge shall have thermoplastic asymmetric end cap to ensure weather tight sealing at the ends.</p>

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	<p>Rate shall exclude cost of Glass and main frame, but include cost of sub frame for shutter and the frame to be designed to fix all the hardwares specified like heavy duty self balancing stainless steel friction hinges of Model no SPT 26, Corner Transmission Model no 9312, corner locking point model no 9313 and restrictor stay arm assembly model no SRD 8 with release key of Model no R 7437 of Securestyle (UK) make or pre approved equivalent make and Multi point lock (minimum 9 point) and handle / cremone size of 110 x 27mm with key of Model no 610 K of Alualpha make or pre approved equivalent make. Shutter will have a provision for hold open option and to restrict the opening not more than 200 mm and to keep the vent weather tight while closing the shutter. Gaskets shall be designed to ensure the air and water tight including noise control while the shutter is closed in position and the gasket shall be silicon synthetic rubber of required strength. Rate shall include for providing master key - 3 sets (floor wise) & Grand master key - 3 sets (building wise) for openable with necessary coding engraved on the keys etc, complete..</p> <p>I. Visual mock up: Providing and fixing full scale visual mock-up with minimum 3 bays with openable window, ACP cladding, smoke seal and other special architectural features etc, to establish the actual system design prior to proceeding with full scale production of the materials involved in the system. Conduct a water test on the installed visual mock up system, (only water using hose real to the specified pressure in the technical specification) and submit the test result of the system for review. Rate shall include for any improvements required on the system based on the test result by the Glazing contractor.</p> <p>n. Field Test: Conduct Field test at site on the installed glazing system as per the criteria set out in the specification of the external facade system and as per the Methodology described in ASTM 501-2. Test shall be carried out in the presence of Employer/PMC/Architect. Methodology for carrying out the test shall be submitted to Architect for approval prior to testing. The results shall be recorded and the reports shall be submitted to the Engineer in charge for approval. If Field test fails, contractor shall submit the rectification methodology to correct the defects as per the performance data set out in the Specification of external facade system and as per the methodology described in the relevant code for the approval of PMC/Architect .Defects, if any noticed shall be rectified to the satisfaction of Employer / PMC / Architect.</p> <p>o. General : System design in total, including Aluminium extruded frames, type & thickness of Glass pane, Aluminium sleeves at connections, inserts, EPDM Gaskets / Silicon rubber, Adhesive tapes, Sealant, Supporting system / bracket including fastening and anchoring system & Materials specified in the schedule and the system details as shown in the tender drawing are only tentative and is meant to set out a general outline of the Proprietary system and minimum requirements/ properties of the system and component parts.</p> <p>The general guidelines governing the system design and performance parameters as set out in the Specification relating to External Façade System and the contents therein. Since the External Façade system in terms of Design, materials, all fixing details, methodology of execution are proprietary in nature, the onus of the design and Performance requirements, shop drawing, execution etc satisfying the design intent and specification of external facade system including conducting the site survey prior to and after preparation of shop drawing and accommodating the site conditions in the system at appropriate levels etc lies solely with the Contractor.</p> <p>p. Mode of Measurement: Length and breadth of the superficial area of the finished work shall be measured centre to centre of the grooves on the external surface viewed externally correct to a centimeter under the respective items. Areas shall be calculated in a square meter correct to two places of decimal.</p> <p>q. Rate. Quoted rate shall include the cost of all materials and labour involved in all the operations as specified above, specified in the external facade system, to execute the work as per approved drawings / shop drawings including, scaffolding, infrastructure facility, tools and plants etc. necessary for execution of the respective item for all height and for all floor levels, Item measurable in sqm. Rate shall exclude cost of Insulation on spandrel, but includes the field test, visual mock up, supplying and fixing of glass & fixing of window hardware. Supply of hardware for top hung window. Supplying and fixing of Insulation with tray on spandrel shall be measured separately and paid under respective item given in the tender.</p>
Q1 - 5	<p>Designing, providing and fixing of Aluminium Grille / Louvers of Fameline make shall be fixed on the system by using aluminium box section 50mm X100mm with minimum 2.20mm thick as a main frame. Grille / Louver panel shall be fixed on the aluminium main framing system with suitable size and thick brackets shall be fixed on the RC / MS surface with vertically to the spacing not more than 1500mm and horizontally not more than 1500mm by using SS 316 grade anchors and bolts and the complete system shall be designed to with stand the design wind pressure as per IS code or relevant international code (Test pressure shall be 1.5 times of the design wind pressure)</p> <p>In addition to the aluminium main frame, aluminium clip on vertical support of 2.0mm thick & covering profile of 0.7mm thick to fix the aluminium Grille shall be fixed at every vertical aluminium main frame as per manufacturer specification with specified product code in the bills of quantities with not less than 0.80 mm thick shall be fixed as per drawing with pitch as specified in the BOQ using SS 316 grade bolt and nut arrangement. The aluminium grille and all aluminium frames shall be finished with PVDF coating with approved colour. All aluminium sections shall be 6063-T6 Conforming to BS 1474 / 63400 (H9) grade conforming to IS 8147. Rate shall include the supplying and fixing of aluminum main frame, sub frames to receive the grille, aluminium brackets / clamps with necessary SS 316 grade anchor fastener, nuts, bolts, rivets, aluminium end caps on the terminations and washers of approved make and all materials involved in the work.</p> <p>Mode of Measurement: Length and breadth of the superficial area of the finished Louver area shall be measured on the external surface viewed externally correct to a centimeter under the respective items. Areas shall be calculated in a square meter correct to two places of decimal.</p>

Item No as per BOQ	Description of Items
Q2 - 1	<p>Laminated sandwiched composite panel cladding system and Associated works</p> <p>Scope: Designing the cladding system with Laminated sandwiched composite panel (Aluminium composite panel) as per design intent, preparation of shop drawings for approval, supply, fabricate, erect as per approved shop drawings at all floor levels and at all floor heights and the cladding shall be provided matching the plane of glazing system as shown in the approved drawings, wherever required. Design the framing system with the gap as per drawing between wall/column/steel structures/any supporting system & cladding. Frame to support Laminated sandwiched composite panel and Decorative capping to any shape & profile and shall be supported between the aluminium angle brackets anodized finish.</p> <p>Brackets shall be fixed on to the Masonry wall with Solid block (Compressive strength not less than 5.5 N/mm²) / RCC / steel structures/any other supporting structures like brackets, Angles and the brackets shall be fixed with Polyamide expansion SS anchors of suitable dia and length with the strength as per design criteria. In order to decide the actual strength of expansion bolts to be achieved as per design, a pull out test on bolts shall be conduct at site on the block wall/RCC member at minimum 3 locations on each. Pull out test results will decide the type of anchors (PMC/Architect. All fasteners and expansion bolts shall be Hilti make or approved equivalent. Groove width in the system both in horizontal and vertical shall not be more than 18 mm and the groove width shall be maintained uniform for both structural glazing and cladding system. Groove shall be sealed with non structural and non-staining sealant.</p> <p>A.DESIGN</p> <p>Design : Design the cladding system with Laminated sandwiched composite panel for the external surface like column, wall, jambs, sills, projected area, ceiling, decorative cladding on any surface to any profile and shape at horizontally / vertically / sloped / curved / circular etc with approved make of Laminated sandwiched composite panel (ACP) - 4 mm thick (0.5 mm thick aluminium sheet on top & bottom sandwiched with 3 mm thick core material conforming to BS 1467 in combination with approved Solid and Metallic colour panels Laminated sandwiched composite panel. The complete system shall be designed to with stand the design wind pressure as per IS code or relevant international code (Test pressure shall be 1.5 times of the design wind pressure). Necessary pull out test of anchor fastener shall be carried out on the masonry wall /RCC structure to check the load carrying capacity of the bolt designed under suction pressure for designing the supporting and anchoring system.</p> <p>Movement: System shall be designed to accommodate movement due to any force including the movement resulting from the exterior skin temperature ranging from 15 to 85 deg.celsius and also to accommodate the horizontal building movement of 10 mm per panel & vertical movement of 20 mm between floors on the aluminium framing system with support brackets, glass, gaskets and fastening devices. System shall be designed to accommodate the size and shape of the Laminated sandwiched composite panel as per the approved drawings including approved modifications as may be required during execution as well as all other incidental forces and stresses likely to be experienced under service conditions, i.e. Lateral force, Dead weight and Thermal expansion due to building movement both vertical and horizontal etc. Grooves shall be designed in such a way to accommodate weather sealant - Non staining sealant of approved make.</p> <p>B.MATERIALS</p> <p>a. Frames: Providing and fixing Aluminium extruded members (Box Tube) designed to with stand design wind pressure and movement as specified as continuous member for cladding the aluminium Composite panel. Aluminium member shall be fixed into masonry wall / RCC member /steel structures with Brackets / Clamps and it shall be of chromotised finish aluminium. All fastening straps, nuts & bolts, rivets, washers/other fastening materials shall be of non magnetic Stainless steel and aluminium brackets shall be considered for ACP cladding with standard dimension and after the site survey if any undulation is observed in tern that doesn't allow to fix the aluminium bracket only in these areas the additional support with locally fabricated Hot dip galvanized bracket can be considered. The bidder shall include the provision for these brackets also with in the quoted rate for ACP cladding works. Aluminium shim shall be used for level adjustment of bracket but more than 20 mm is not acceptable. If more than 20 mm bracket shall be designed according to site condition.</p> <p>Aluminium brackets / clamps shall be fixed with chemical injection technique threaded anchor rods of Hilti make or approved equivalent to the base structure in the case of masonry wall / RCC members and SS anchor bolts in the case of steel structure. Extruded member shall be designed to accommodate Laminated sandwiched composite panel as per the approved shop drawings and extruded aluminium member shall be 6063 T6 or 63400 (H9) grade conforming to BS 1467 or IS 8147, finished with transparent electrolytic colour anodic coating AC15 grade conforming to IS 1868.</p> <p>b. Composite Panel: Laminated sandwiched composite panel of approved make as specified in BOQ in combination with solid and Metallic colors and it shall consist of 3 mm thermoplastic 100% virgin core of polyethylene sandwiched between 2 skins of 0.5mm thick Aluminium sheet (alloy designation 3000 series – H14 to H16 conforming to BS 1475) making a consolidated panel thickness of 4 mm ranging 5.30 to 5.50 kg/sqm and to be fixed on the framing system described above. Laminated sandwiched composite panel finished with PVDF (Polyvinylidenfluorid) coating containing minimum 70% kynar 500 and 30% resin or Lumiflon based coating on the topline / top surface and the dry film thickness shall not be less than 23 microns for solid colour and 33 microns for Metallic colour with natural pearl pigment. The reverse side coated with polyester based wash coat and top surface shall be protected with a self-adhesive peel-off foil. Lamination process of Aluminium panel shall only be Glue Technology and the source of complete composite panel shall only be accepted.</p>

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	<p>Providing and fixing Laminated sandwiched composite panel suitably stiffened internally on the back side for preventing deformation due to design wind pressure beyond permissible limits by using aluminium flat 25 mm wide – 4 mm thick glued with 3 M make Double adhesive tape in order to maintain panel flatness and to avoid permanent deformation over a period. Stiffener shall be provided at 600 mm c/c behind ACP panel irrespective of structural check of the panel against stability and deflection. Aluminium flat of size 25 mm wide and 3 mm thick shall be provided to a length 100 mm bent to shape, wherever the Inner skin is cut to bend the ACP at the corners and as per approved shop drawing. Methodology of fixing the stiffener/Flat in the corner panel shall be established in the drawing or to be glued to ACP on the backside of the panel in such a way the fixing mechanism of stiffener / Flat shall not be visible on the elevation of the panel / outside.</p> <p>d. Sealing: Providing and applying the sealant for Jointing / Sealing and it shall be done with Non structural (weather) sealant / Non staining sealant of DC 991 HP of Dow coming make or approved equivalent with Polyurethane baker rods of Supreme make or approved equivalent. Acetox sealant shall not be used for Structural Glazing application. Sealing shall be carried out with Non structural (weather) sealant / Non staining sealant with Polyurethane baker rods, wherever the system is interfacing with glazing, cladding groove and any other groove.</p> <p>e. Flashing: providing and fixing flashing at terrace level as part of the system made to profile as shown in the approved shop drawings and the profile shall be made out of hot dip galvanized sheet 1.2 mm thick and galvanizing coating thickness shall be in accordance with IS 2629 & 4759. In general, the flashing shall be provided to the entire length of cladding horizontally at terrace level with necessary anchoring system with SS fastening devices of Hilti make or approved equivalent. Also, the flashing shall be provided at parapet top below the coping to drain the water during any seepage through the sealant joints with overlap of 100 to 125 mm in plan with sealant at joints to make sure that no water leakage through coping / flashing joints.</p> <p>f. Field Test: Conduct Field test at site on the installed system as per the criteria set out in the particular specification in the presence of Engineer in charge. Methodology for carrying out the test shall be submitted to Employer/PMC/Architect for approval prior to testing. Record the results and submit the report to the Employer/ PMC/ Architect for approval. If Field test fails, correct the defects revealed to the satisfaction of the performance data as setout in the Technical Specification with the prior approval of Employer/PMC/Architect on defects rectification Methodology.</p> <p>g. General Guideline: System design in total, including Aluminium extruded member, type & thickness of Aluminium composite panel, Aluminium sleeves at connections, inserts, Sealant, Supporting system/bracket including fastening and anchoring system & Materials specified in the schedule and the system details as shown in the tender drawing are only tentative and is meant to set out a general outline of the Proprietary system. Since the cladding system in terms of Design, materials, all fixing details, methodology of execution are proprietary in nature, the onus of the design and Performance requirements, shop drawing, execution etc satisfying the design intent, particular specification and site conditions lies solely with the Contractor.</p> <p>h. Mode of Measurement: Length and width of the superficial area of the finished work shall be measured centre to centre of the grooves on the external surface viewed externally correct to a centimeter under the respective items. Areas shall be calculated in a square meter correct to two places of decimal.</p> <p>i. Rate. Quoted rate shall include the cost of all materials and labour involved in the item for all operation described above and any other stipulations in the particular specification and agreement. Also, include the cost of scaffolding, infrastructure facility and all other consumables to execute the work as specified above.</p>