B M T P C

PACS

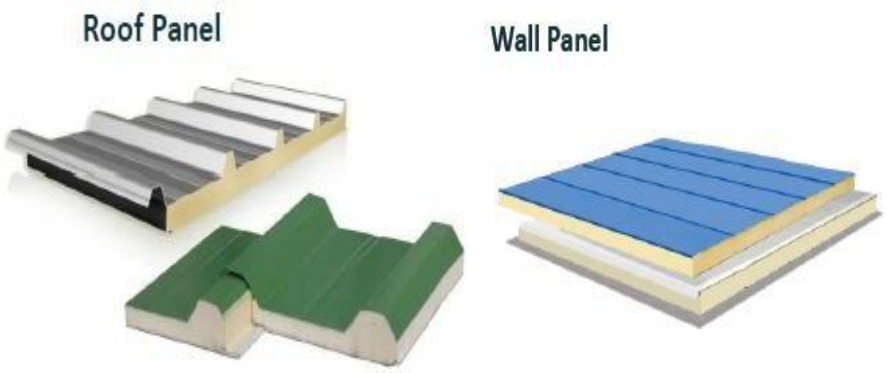
PERFORMANCE APPRAISAL CERTIFICATION

Name and Address of Certificate Holder:
M/s EPACK Prefab Technologies Limited
61 B C, Greater Noida
Distt. Gautam Buddha Nagar, Uttar Pradesh, 201306
Mob: 09818666068
E-mail: nikhil@epack.in

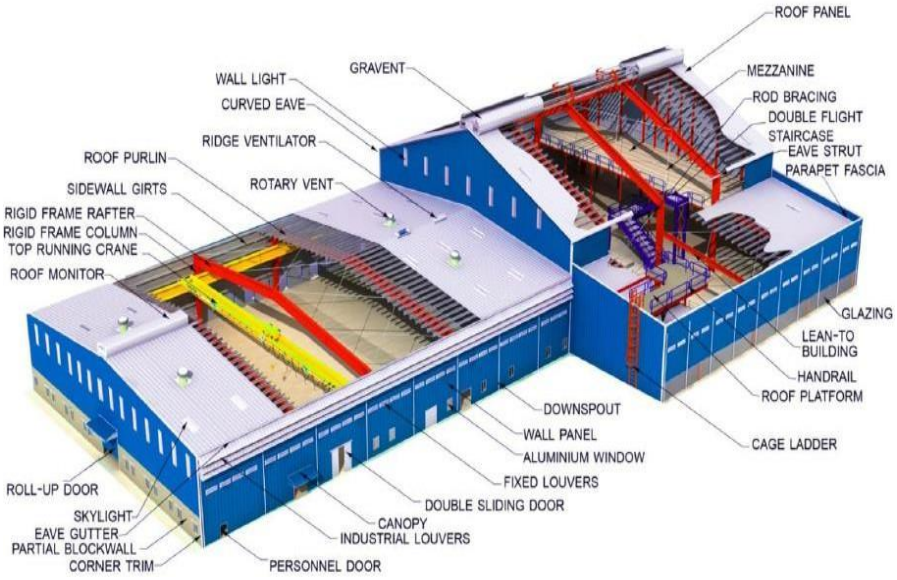
Performance Appraisal Certificate
PAC No.: **1060-S/2022**

Issue No. **04**

Date of Issue: **29/03/2025**



PUF Sandwich Panel with Pre Engineered Building Structure



User should check the validity of the Certificate by contacting Member Secretary, BMBA at BMTPC or the Holder of this Certificate

bmtpc

Building Materials & Technology Promotion Council
Ministry of Housing & Urban Affairs
Government of India
Core 5A, First Floor, India Habitat Centre, Lodhi Road, New Delhi – 110 003

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PERFORMANCE APPRAISAL CERTIFICATE

FOR

PUF Sandwich Panel with Pre Engineered Building Structure

ISSUED TO

M/s EPACK Prefab Technologies Limited

(Formerly to M/s EPACK Polymers Pvt. Ltd.)

STATUS OF PAC No: 1060-S/2022

S. No.	Issue No.	Date of Issue	Date of renewal	Amendment		Valid up to (Date)	Remarks	Signature of authorized Signatory
				No.	Date			
1	2	3	4	5	6	7	8	9
1	01	29/03/2022				28/03/2023	--	Signed
2	02		29/03/2023			28/03/2024	-	Signed
	03		29/03/2024			28/03/2025	-	Signed
	04		29/03/2025	Amend I	29/03/25	28/03/2027	-	

CONTENTS

PART 1: CERTIFICATION

1.1. Certificate Holder: M/s EPACK Prefab Technologies Limited
61 B C, Greater Noida
Distt.Gautam Buddha Nagar,
Uttar Pradesh, 201306
Tel: 09818666068
E-mail: nikhil@epack.in

Factory Address;
B-13 & 14, Ecotech-1 Extension
Greater Noida, UP-201306

1.2. Description of the System

1.2.1 Name of the System – PUF Sandwich Panel with Pre Engineered Building Structure

1.2.2 Brand Name– EPACK Prefab

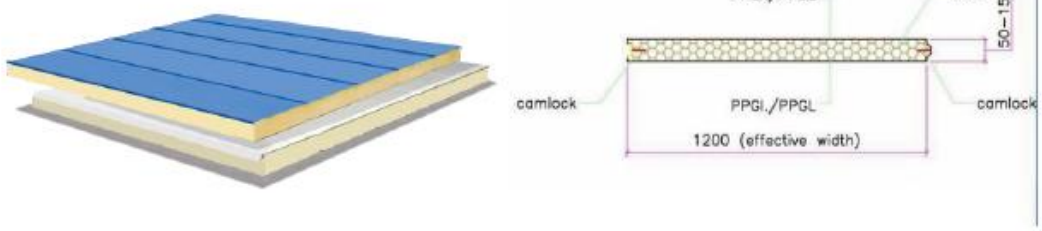
1.2.3 Brief of the System- PUF Sandwich Panels with Pre Engineered Building structure is a combination of Structural Steel Framing System designed as per relevant Indian Standards, with PUF Sandwich Panels in wall and roofing system. PUF panels consist of a rigid PUF core sandwiched between color coated Galvanized Steel/Galvalume steel sheet facing on both sides, complete with joint sealants and fixing ancillaries, which is easy to install and affordable.

The sandwich panel offers high thermal efficiency, comes with variety of finishes and can be installed easily & quickly for being light in weight. The Steel structural system of Pre-engineered building offers flexible design option with diverse layout possibilities/ architecture. It helps achieve very fast installation & durable structure.

1.2.4 Types and sizes of PUF Sandwich Panel

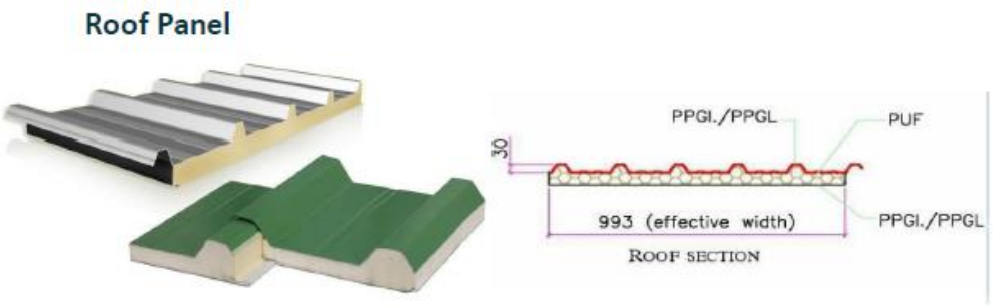
Wall Panel: Standard size 1200 mm/customized (effective width), manufactured in thickness range from 50 mm to 150 mm as per requirement of customer, the panels have a CAM lock Jointing System.

Wall Panel



Roof Panel: Standard size 993 mm (effective width) manufactured in thickness ranging from 30 mm to 150 mm as per requirement of customer, the roof panels have overlap jointing system.

The advantage of roofing panels have of a large number of ribs, which increase the load carrying capacity of the panel and prevents deformation.



1.3. Uses of the System

The PUF Sandwich panels can be used in construction of walls and internal partitions, as well as for roofs. The typical applications of PUF Sandwich Panel with Pre Engineered Building Structures include exterior / interior wall and roof of Industrial buildings, Commercial buildings, Row Housing, Multistory Buildings, prefab buildings, Site offices, Cold storages, Warehouses, etc.

1.4. Assessment

1.4.1 Scope of Assessment

Scope of assessment included conformance of manufactured PUF Sandwich Panel as non load bearing external/ internal wall panel and roof panel with various Pre Engineered Building Structures, designed and executed by following the norms & guidelines stipulated in relevant Indian Standards.

1.4.2 Basis of Assessment

Assessment of the suitability of the PUF panels with PEB structures is based on:

i. Typical Erection Method Statement (Manual) applied for Agency's projects giving details of work execution process, unloading, storage, Safety measures etc. to be taken for installation of panels with PEB structures.
ii. Test report of PUF Panel size 500x500x80 mm for test parameters such as HCFCs & CFC, Dimensional Stability, Flexural Strength, Tensile Strength, Closed Cell Content, Water Vapour Transmission, Water Absorption and Fungi Resistance tests conducted by SPECTRO Analytical Labs Limited, Greater Noida. UP.
iii. Test report of CSIR – National Physical Laboratory, New Delhi for testing of 50 mm thick PUF insulated sandwich panel, for testing of Sound Transmission loss.
iv. GRIHA Council Certificate for PUF Sandwich panel manufactured by the Agency for roof and wall application for meeting the GRIHA & SVAGRIHA norms under typology Insulation in GRIHA & SVAGRIHA registered projects.

v. Assessment of quality assurance procedures implemented in the factory as per Quality Assurance Plan attached at **Annexure-1**.

1.4.3 Special Aspects of Use/ Limitations

Steel has high strength per unit mass, durable, and is reusable, but it is poor in fire and corrosion resistance, it needs to be adequately protected. It requires specialized training for installation of the sandwich panels and PEB structure and needs its periodic maintenance.

1.5. Conditions of Certification

1.5.1 Technical Conditions

i. Raw materials and the finished product shall conform to the requirements of the prescribed specifications.

ii. The building to be constructed using Sandwich Panels shall be designed by competent structural engineer in accordance with various specifications, following relevant codal requirements, manufactured as per the details worked out in design and constructed by trained persons only with technical support or supervision by qualified engineers and builders, based on structural designs including seismic loads, wind forces & other forces/loads as applicable.

iii. It is also recommended that Architects and Engineers who undertake such building design and construction gain familiarity with the properties and materials, characteristics of Sandwich Panels and the construction system.

iv. The design assumptions, detailed calculations, detailed design drawings etc. shall be made available on demand, if required. The structural design calculations should clearly demonstrate structural integrity and stability including connection details.

v. PUF Panels should conform to applicable environmental norms and fire rating requirements of building structure as per NBC/building bye-laws etc.

1.5.2 Quality Assurance

The Certificate Holder shall implement & maintain a quality assurance system in accordance with Quality Assurance Plan (QAP) attached with this Certificate.

1.5.3 Handling of User Complaints

1.5.3.1 The Certificate holder shall provide quick redressal to Consumer/user complaints proved reasonable & genuine and within the conditions of warranty provided by it to customer/purchaser.

1.5.3.2 As part of PACS Certification, PAC holder shall maintain data on such complaints with a view to assess the complaint satisfaction and suitable preventive measures taken.

1.6. Certification

On the basis of assessment given in Part 3 of this Certificate & subject to the conditions of certification, use & limitations set out in this Certificate and if selected, installed & maintained as set out in Parts 1 & 2 of this Certificate, the PUF Sandwich Panel with Pre Engineered Building Structures covered by this Certificate are fit for use set out in the Scope of Assessment.

PART 2: CERTIFICATE HOLDER'S TECHNICAL SPECIFICATIONS

2.1. General

The PAC holder shall manufacture these panels in accordance with the requirements specified in the relevant Standards (See Part 5). In addition it shall follow the Company standards specifying requirements of these sections for various materials used in the manufacturing of the panels.

2.2. Specifications of the System

The manufacturer shall only use the raw materials supplied with the relevant documents as laid down in the prescribed Quality Assurance Plan. The raw materials shall be subject to agreed controls and tests by the manufacturer before acceptance.

2.2.1 Raw Materials

Sl.No.	Raw Material	Specification Conforming to
1.	Insulated PUF Panels	Iso(55%)& Polyol(45%)
2.	Colour Coated Coils	Fy245MPa,120GSM or 550MPa ,AZ120
3.	HR Plates	Fy 345 MPa
4.	Cold form GP Coils	Fy 245 MPa,120 GSM or 275 GSM

Polyurethane Foam (PUF): It is a thermosetting material when it comes contact with fire, it does not drip or melt. It shall be Chlorofluorocarbon (CFC) free and self-extinguishing and shall conform to IS 12436: 1988.

Pre Painted Galvanized Iron (PPGI): The PPGI sheet shall have min. yield strength of 245 MPa conforming to IS 14246:2013 and shall have zinc coating of min. 90 Gsm as per IS 277:2018. The sheet shall have 5-7 micron epoxy primer on both sides and polyester top coat of 15-18 micron. The sheet shall also have plastic protective guard film (Optional) of min. 25 micron to avoid scratches during transportation.

Flashing/Accessories: Made of PPGI sheet conforming to IS 14246:2013 and shall have zinc coating of min. 70 Gsm as per IS 277:2018.

PUF Sandwich Panels with Pre Engineered Building Structures/Prefabricated Structures are made of Steel and Connecting components. However, the Agency can also provide EPS, Rockwool, Glasswool panels which are manufactured in house as per customers' requirement.

2.2.2 PUF Panel

Sl. No.	PRODUCT	PUR/PUF Panel							
1	Width-wall	1200mm (Standard/Customized)							
2	Width-roof	993mm							
3	Core thickness (mm)	30	40	50	60	80	100	120	150

Sl. No.	PRODUCT	PUR/PUF Panel							
4	Thermal Resistivity (U Factor) ($W/m^2\ ^OK$)	0.75	0.53	0.43	0.33	0.28	0.22	0.18	0.15
5	R value ($Btu/hr/ft^2/^0F$)	9.8	11	13	16	20	26	30	38
6	Fascia Options	PPGS/PPGI/Alu/Tarfelt/Cement Fiber Board/SS							
7	Density (Kg/m^3)	$40\pm2\ Kg/m^3$							
8	Thermal Conductivity at 10^0C mean Temperature (w/m^3k)	0.023							
9	Compressive Strength at 10% Deformation (Kg/cm^2)	2.1							
10	Bending Strength (Kg/cm^2)	4							
11	Tensile Strength (Kg/cm^2)	3.7							
12	Adhesive Strength (Kg/cm^2)-foam to steel	2.9							
13	Water Absorption (Volume %)	0.2% at 100%RH							
14	Closed Cell Content (%)	92-95%							
15	Vapor Permeability at 90% (RH) & $38^0C(Gms/Hr.m^2)$	0.12							
16	Fire Class	Fire Resistant							

2.2.3 Pre Engineered Structural components

S.No.	Material	Specification	Min. Strength
1	Built-Up Members	IS: 2062 / ASTM A 570M Grade 50 YS 345 Type 1 (or) its Equivalent	Fy=345 MPa
2	Hot rolled members a. Beams & Columns b. Tubes c. Channels d. Rods & Pipes	ASTM A 572 or equivalent for Hot rolled / IS 2062: 2006 Grade A (or) its Equivalent IS 4923: 1997 IS 2062: 2006 Grade A IS : 1161 / ASTM A 36 or equivalent	Fy=250 MPa
3	Cold formed secondary members	ASTM A 653M / IS:277 or Equivalent.	Fy=345 MPa
4	Sheeting & linear panels	ASTM A792M/IS:15961: Bare Galvalume Steel Sheets, ASTM A 755M/IS:14246/IS15965 for Pre-Painted Galvanized and	Fy=550 MPa

S.No.	Material	Specification	Min. Strength
		Galvalume Steel Sheet	
5	Flashing, trims, & valley gutters.	IS:14246	Fy=345 MPa
6	Deck Sheet for Mezzanine	ASTM A 653M / IS:277 or Equivalent.	Fy=345 MPa
7	X-Bracing members Rod Bracing Angle Bracing Pipe Bracing	 IS 2062: 2006 Grade A IS 2062: 2006 Grade A IS 2062: 2006 Grade A	 Fy=250 MPa Fy=250 MPa Fy=250 MPa
8	Anchor Bolts	IS : 2062 Gr A	Fy=250 MPa
9	High Strength Bolts & Nuts (Primary Bolts & Nuts)	IS: 1367 / ASTM A 325 M Class 8.8. Grade	Fy= 345 MPa
10	Machine Bolts (Secondary Bolts & Nuts)	IS:1364 / ASTM 307 Class 4.6 (Part 1 to 3)	Fy= 345 MPa
11	Self-Tapping Self-Drilling screws (STSD)	AS 3566.1 - 2002 Corrosion Resistance Class-3 or equivalent)	Fy= 345 MPa

2.3. Inspections & Testing

Inspections & testing shall be done at appropriate stages manufacturing process. The inspected panels shall be stored & packed to ensure that no damage occurs during transportation. As part of quality assurance, regular in process inspections shall be carried out by the trained personnel of the PAC holder.

2.4. Manufacturing Process of Sandwich PUF panel

To make the panel, the 'Panel Press' equipment is used, which features a vertical hydraulic ram of the length and width of the largest panel desired to be produced.

Profiling of the two faces of metallic facing is done as an 'Off line' processes and brought to and stacked on either end of the press.

The base on which the bottom facing is placed is a precisely machined flat Platten equipped with a built in heating system. Sides of the mould are made of machined Aluminum extrusions (jigs), profiled to the male and female joint features. These jigs are specific to each thickness of panel being produced. Jigs also feature accurately positioned fixtures to mount "CAMLOCK" components, which get embedded in to the foam later. When the pre-profiled top and bottom facing sheets are placed in this mould with special spacers, a hollow space is created, which is ready for chemical injection.

This complete pre-assembly is moved laterally into the 'daylights' of the press by a positioning actuator. A heavy ram, which is a precision machined guided block, closes the mould tightly and holds the 'mould' firmly. The temperature controlled heated plattens keep the mould at the optimum reaction temperature.

Through many nozzles provided on the sides of the 'mould', PU chemicals mix is injected to precise volume as per settings in the microprocessor controlled delivery head. The liquid mix finds its level well before the 'cream time' of the chemicals is reached. The foaming reaction starts and the foam rise gradually to fill the nooks and corners of the mould. The rising of the foam is complete well before the 'tack-free' time, when the adhesion to the sheets starts- i.e., well after the foam has filled the 'mould'. The assembly is held in position, in the preheated mould till after the 'mould release' time has elapsed.

Maintenance of each of the time elements of the process is achieved using the microprocessor assisted control system.

2.5. Manufacturing Machinery & Equipment

As per the details provided, the manufacturer has various machines and equipment of required capacities and specifications for manufacturing, testing and installation of the panels. Details of the machines are given below;

SL No	Machine Name	Capacity	Make
1	Power press (4 Nos.)	75/50 ton	Milap Company
2	CNC Hydrolic Drill machine/Punching	25.5 mm	Supertime
3	Stand Grinder	1hp	Bosch
4	Radial Drill machine	40 mm	Mao Sheng
5	Plazma Machine	14m /3m	System Engineering
6	Bending Machine (foundation Bolt)	3.7 KW =5HP	Rohita
7	Threading Machine	3.7 KW =5HP	Rohita
8	Shearing Machine	12mmx6m	
9	Compresser (5 Nos.)	220/420/500LTR , 126 KG	ELGI INDIA
10	Jing Jong	H-BEAM 1300X20M	
11	Oven	40000WT	FEC
12	Crane (2 Nos.)	5/10 TON	ELECTRO MECH
13	Arc Welding Machine (4 Nos.)	400AMP	SWASTIC/ELECTRA
14	Drill Machine (5 Nos.)	1.3 AMP	TMT/KULKARNI POWER TOOL
15	Saw Machine	1500AMP	MOGRA
16	Mig/Arc Welding Machine (9 Nos.)	350/400/500 AMP	PROSTAR/ELECTRA/KEMPPI
17	Arc Welding Machine-5	400 AMP	ESSAB
18	Hand Gas Cutter (2 Nos.)	100 MM	
19	Magnetic Drill machine-2	23 mm	KULKARNI POWER TOOL

SL No	Machine Name	Capacity	Make
20	Browch Cutter (3 Nos.)	35/38 MM	SHAKTI/JARMANG/KBM
21	Paint Machine	3200 PSI	GRACO
22	Paint Mixture	1/2 HP	BERGER
23	Sag Rod Threading	12 MM	
24	DG	320	KIRLOSKAR
25	Rockwool Cutter		xmliming
26	Chop Saw Machine (3 Nos.)	7/8.8/9 AMP	MAKITA/BOSS/DIWAIT
27	Tapping Machine	20MM	T.MT
28	Bench Grinder -1	1.6 AMP	BOSS
29	Bending Machine	UP TO 2MM	BOSS
30	Ribbing Machine	7.8 AMP	MEDINCIA
31	Shearing Machine	6MM	BAJAJ
32	Roof Machine	1MM	ZWIAMENZHENGLI NAG
33	Forbed Machine	50-80 MM	AGIP
34	Veg Hi- Pressure Foaming Machine	200 KG/MINUTE	VEG
35	Veg Nano Penta Mix Unit	20 KG/MINUTE	VEG
36	Corner Machine	90 TON	VADODARA
37	C&Z Purin (2 Nos.)	3MM(T)/250MM(WEB)	
38	Lgsf	3.5MMX 63 MM	
39	Aluminium Cutter (2 Nos.)	10 MM	LGF
40	Aluminium Drill	8MM CAPACITY	LGF
41	Edge Bending Machine	0.8 MM THICK	Jiagsu Yuanding Science & Technology Co. Ltd

2.6. Handling, Storage and Identification of the Components

The panels should be stored on a clean, flat hard surface area on the site. The panels should not be laid down directly on the ground to prevent them from getting dirty, which could lead to problems of plaster adhesion. Preferably, panels should be stored on timber battens approx. 2m apart. The panels should not be exposed to sunlight for not more than 1 month either in storage or during construction. The panels should be bound carefully to make sure these are not accidentally blown by the wind.

Long term storage of the panels shall be done in a covered, protected, dry environment so that corrosion of the reinforcement does not occur and the panels do not get damaged.

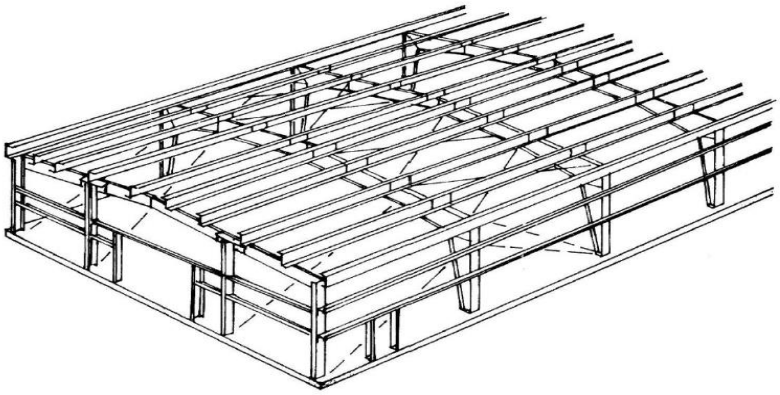
Panels shall be stored and transported to site in a manner that prevents damage, buckling or sprawling of the polystyrene or bending of the mesh reinforcement. Operatives should place the panels in position and tie them down to starter bars of adjoining panels and slabs in the manner described in the Erection Method Statement Manual.

Panels should be properly braced to provide rigid temporary support to the walls during erection and concrete spraying and placing of concrete in slabs. Propping of walls and slabs should be in accordance with E Pack Erection Method Statement Manual.

The panels shall be delivered to the site with an identification issued by the manufacturer that reports the element height.

The panel layout shall provide instructions for laying the components correctly.

2.7. Framing of wall and roof



i. Finish Frames & Accessories – Complete erection of main and secondary framing as per the erection statement of the project.

ii. Upon Completion of all secondary framing in the braced bay, plumbing and squaring the braced bay, installing secondary framing in the end bay, paneling may commence and be worked in conjunction with the completion of the balance of the secondary framing. This could save time on larger buildings if separate sheeting crews are used.

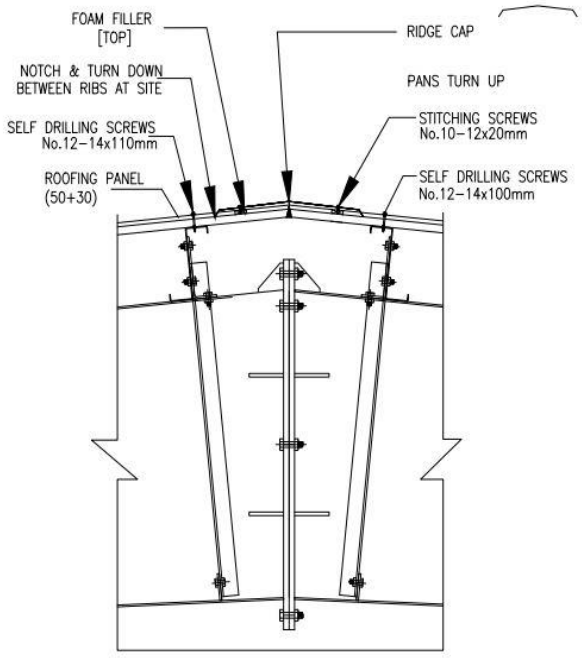
iii. When the building reaches this stage of erection, sheeting should proceed immediately. The structure without sheeting should not be left standing for prolonged periods of time without taking proper precautions (temporary bracing, blocking etc.) to prevent wind damage especially to purlins and girts due to excessive vibration they are exposed to in the un-sheeted condition.

2.8. Installation Procedure of PUF panels with PEB Structure

Roof Panel:

Need to check that the C/Z purlins (supporting structure of the panels) comply with the erection drawings (span length, width of purlin's flange, etc.). Generally Panels are designed for installation on plane surfaces, of minimum slope 7%. Ensure that installation workers bear the appropriate personal safety equipment, as per current regulations.

Roof Panel should be placed on the roof purlins, close to the main trusses (load bearing structure), and distributed along roof's length, taking into consideration the installation direction.



TYP. RIDGE CAP DETAIL

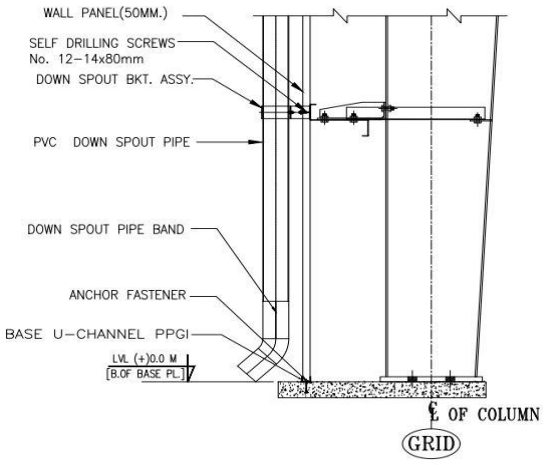
The Guard film on the internal side must be removed before panels' installation. On the external side, the Guard film should be partially removed (along panel's edges – joint), Film should be completely removed by the end of the working shift, and in any case, before panels' fixing on the internal trapezoidal ribs. Any eventual traces of adhesive (from the film) on panel's surfaces should be removed, with the use of a water-detergent mixture.

Place the first panel and fix it in place, making sure that it is perfectly aligned and squared with the roof structure. The second panel is installed by overlapping its first (empty) rib on the last (full) rib of the first panel and fixing them together on the roof purlins. Fixing element (self-drilling screw with saddle cap) should be placed perpendicularly to panel's surface, and positioned in the middle line of the rib. The use of original saddle caps is mandatory.

After installation of the first strip panels (downstream), the second strip panels are installed by longitudinal overlapping.

Longitudinal overlapping length can vary between 100mm and 300mm, also depending on roof slope. During drilling, fixing (and eventually cutting) operations, metal chippings are produced, that can damage panels' surface either by scratching, or by their rapid corrosion. Such metal chippings should be carefully removed with a vacuum cleaner, immediately after each operation.

Installation of Wall panels:



TYP. CLADDING BOTTOM DETAIL

Installation direction of the panels, on each façade, should be opposite to the prevailing wind direction. Place the first panel and fix it in place, making sure that it is perfectly vertical and aligned with the wall structure (Girt – C/Z). The use of mechanical clamps before fixing the panel can assist the plumbing procedure.

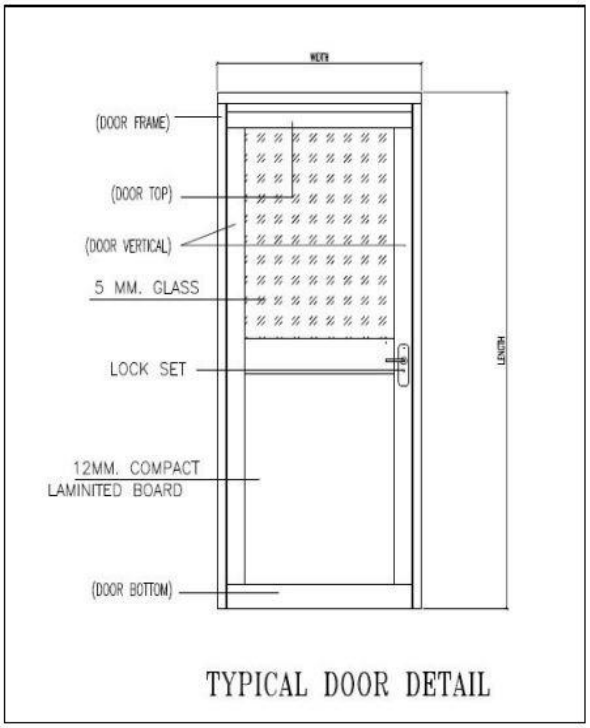
The first panel is secured on the wall sub structure with a visible fixing element, close to its "groove" join on each wall purlin. Those fixing elements (self-drilling screw with metal washer & EPDM gasket) can be hidden later on by appropriate flashing elements (external corner profiles,

base-drip cover profiles, etc.). The second panel is approached the first one, and with a slight inclination it must be pushed against the previous panel, in order to obtained a perfect coupling between the panels. After fixing second panel, the installation of every next panel is performed is similar way.

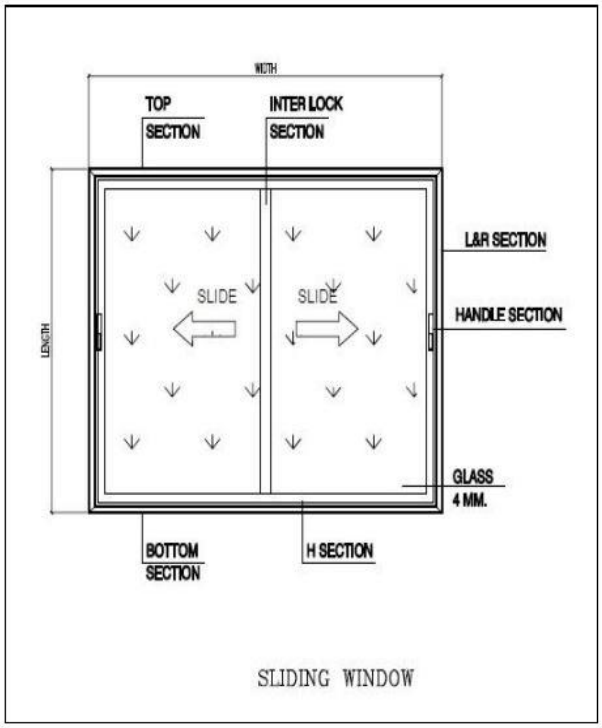
Cutting of Panels for Door & Window Installation:

Any cutting operations on panels should be performed for Door & window installation with a circular saw or a jigsaw; the use of angle grinder is not acceptable.

The outline is drawn of the cut to be made on the tape with a felt-tip pen. Cut with the use of suitable cutting tools. Clean panel's surface from shavings and chippings formed during cutting.

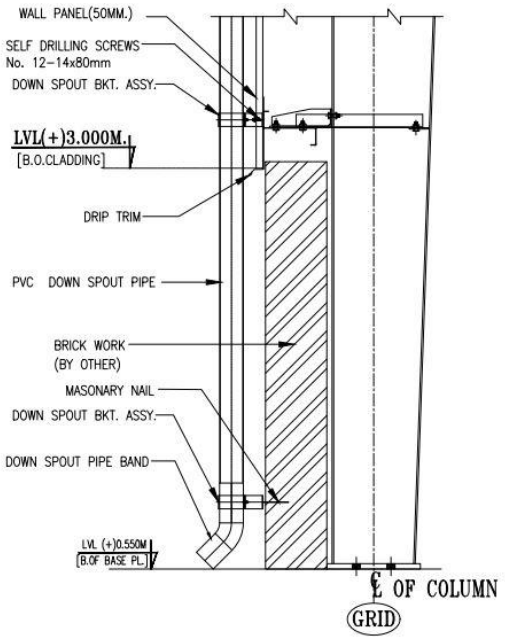


TYPICAL DOOR DETAIL

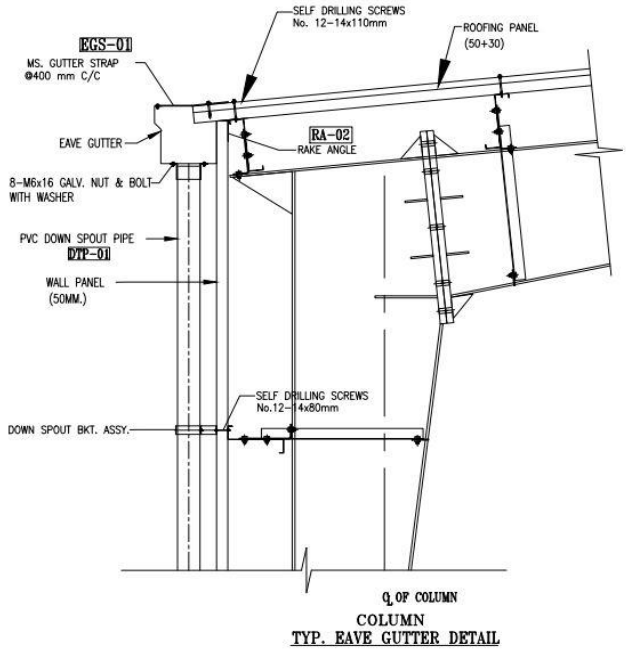


SLIDING WINDOW

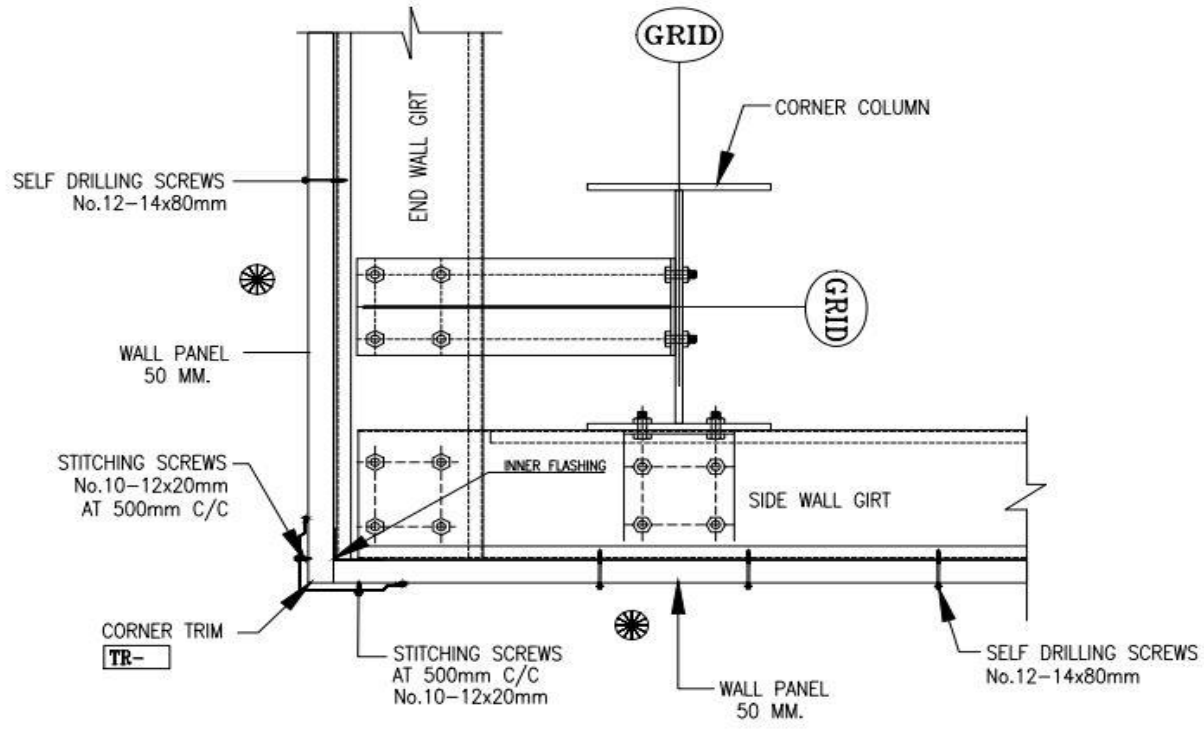
Sketches for other Typical Connection details;



TYP. CLADDING FIXING DETAIL



TYP. EAVE GUTTER DETAIL



TYPICAL CORNER DETAIL

2.9. Skilled /Training Needed for Installation

The panels shall be installed under the direct supervision of trained personnel of the manufacturer or by manufacturer's authorized personnel only. Alternatively, if the customer wants to execute the installation work of its own, the manufacturer shall provide training to client at different stages of the project, as and when required.

2.10. Guarantees/Warranties Provided by the PAC Holder

- PAC holder shall furnish various performance warranties as required/agreed for project specifications.
- The items covered by these warranties include weather tightness, corrosion and finish performance. The Weather tightness warranties are subjected to the use of manufacturer's authorized contractors under its technical Engineer's supervision and periodic inspection.
- The manufacturer shall ensure that all specifications and shop drawings are reviewed prior to warranty issuance.
- In addition, warranties are limited to materials supplied by the manufacturer.

2.11. Services Provided by the PAC Holder to the Customer

The PAC holder shall take full care of after sales services such as leakages, repairing etc.

2.12. Manuals

Installation Manual, Quality Control Manual and a Manual for Health & Safety shall be provided by E Pack for each project incorporating the system of Sandwich Panel with PEB structure.

2.13. Responsibility

- Specific design using PUF Sandwich Panel with PEB structure is the responsibility of the designer with the instructions, supervision and guidance of the PAC holder.
- Quality of installation/construction of the system on site is the responsibility of the trade persons engaged by the building owner under the guidance of the manufacturer.
- Quality of maintenance of the building is the responsibility of the building owner under the guidance of the manufacturer.
- Providing necessary facilities and space for movement of cranes and vehicles is the responsibility of the building owner.

PART 3: QUALITY ASSURANCE AND BASIS OF ASSESSMENT

3.1. Assessment

The assessment has been done as per provisions of the standards listed in Part V of this Certificate.

3.2. Tests Performed

Assessment of the suitability of the PUF Sandwich panels is based on;

3.2.1 Test Conducted : Physical properties of PUF Panel

Name of Laboratory		SPECTRO Analytical Labs Limited, Greater Noida. UP.	
Duration of testing		02.11.2020 to 10.11.2020	
Description of Sample		PUF Panel size 500x500x80mm	
Sl.No.	**Test Parameters**	**Results**	**Reference of IS**
1.	HCFCs	Not detected	GC-MSD
2.	CFC	Not detected	GC-MSD
3.	Dimensional stability Test change in dimension % (a) At 100°c for 24 hours	0.45	IS:11239(Part 3)-1985
4.	Flexural Strength, Kg/cm^2	3.5	IS:11239(Part 11)-1985
5.	Tensile Strength, Kg/cm^2	4.1	IS:13360(Part5/sec I) :2018
6.	Closed Cell Content, %	93	IS:11239(Part 5)-1985
7.	Water vapour Transmission, ng/pasm (At 38°C for 88%R.H)	4.1	IS:11239(Part 4)-2014
8.	Water Absorption % (At 100% R.H) By volume	2.1	IS:11239(Part 9)-1988

3.2.2 Test Conducted : Physical properties of PUF Panel

Name of Laboratory		SPECTRO Analytical Labs Limited, Greater Noida. UP.	
Duration of Test		13.09.2020 to 20.10.2020	
Description of Sample		PUF Panel	
Sl.No.	**Test Parameters**	**Results**	**Reference of IS**
1.	Fungi Resistance	The Sample has not shown any Fungal growth during incubation of 28 days at 28^0C with humidity 85%	ASTM-G21

3.2.3 Test Conducted : Physical properties of PUF Sandwich Panel

Name of Laboratory		SPECTRO Analytical Labs Limited, Greater Noida. UP.	
Date of Testing		21.09.2010	
Description of Sample		PUF Panel	
Sl.No.	**Test Parameters**	**Results**	**Reference of IS**
1.	Horizontal Burning Characteristics	70	IS:12436-1988 & IS:11239(Part12)-1988

3.2.4 Test Conducted : Physical properties of 50mm thick PUF insulated Sandwich Panel

Name of Laboratory		CSIR National Physical Laboratory, New Delhi.	
Date of Report		10.03.2021	
Description of Sample		50mm thick PUF insulated sandwich panels with 0.5mm PPGI sheet on both sides with RMP coating with 25 micron and 25 MPA, Sample size 1200mmX 1000mmX 50mm,15 pcs.	
Sl.No.	**Test Parameters**	**Results**	**Reference of IS**
1.	Sound Absorbing Coefficient	Using the standard reference curve, the Sound Transmission	IS 8225-1987

		curve (STC) was found to be 28. The evaluated uncertainty in measurement was ±5% which is at a coverage factor k=2 and which corresponds to a coverage probability of approximately 95% for a normal distribution.	

3.2.5 Test Conducted : Physical properties of 50mm thick PUF insulated sandwich Panel

Name of Laboratory		CSIR National Physical Laboratory, New Delhi.	
Date of Test		09.03.2021	
Description of Sample		50mm thick PUF insulated sandwich panels with 0.5mm PPGI sheet on both sides with RMP coating with 25 micron and 25 MPA, Sample size 930mmX 930 mmX 50mm,	
Sl.No.	**Test Parameters**	**Results**	**Reference of IS**
1.	Sound Transmission Loss	Sound Transmission Loss (STC) was found to be 28. The evaluated uncertainty in measurement was ±dB which is at a coverage factor k=2 and which corresponds to a coverage probability of approximately 95% for normal distribution.	IS 9901(Part III)-1981, DIN - 52210PartI-1983-08, ISO:10140 (Part II)/ASTM-E-90.

3.2.6 GRIHA Council Certificate: The product of E Pack panel for roof and wall application has been included in the GRIHA Product Catalogue. GRIHA Council Certifies that the PUF Sandwich panel manufactured by the Agency for roof and wall application, meets the GRIHA & SVAGRIHA norms under typology Insulation in GRIHA & SVAGRIHA registered projects. The certificate is valid from 06th April 2021 to 05th April 2023.

3.2.7 Assessment of quality assurance procedures implemented in the factory by the Certificate holder for process control as per Quality Assurance Plan.

3.3. Inspection of the factory

The factory was inspected on December 17, 2021 at the Manufacturing plant in Greater Noida, UP by the technical representatives of the Council. During visit the procedures and the quality assurance followed were observed to be in accordance with the Quality Assurance Plan (QAP). It is the responsibility of the PAC holder to maintain and calibrate equipment for manufacturing and testing periodically to manufacture these panels in accordance with the stipulated parameters.

3.4. Execution of Projects

The manufacturer has executed the following major PEB Projects with PUF Panel;

1. Field Maintenance Office for Reliance Industries Ltd. at Reliance Industries Limited, Jamnagar (Area: 22,983 Sq.ft. completed in 2 months @ Rs.3.9 Cr.)
2. Warehouse Building (PEB) for Aditya Moda at Ghaziabad (Area: 37,674 Sq.ft. completed in 2 months @ Rs. 1.70 Cr.)
3. PEB Buildings (Canteen and Office) for Hankuk at Greater Noida (Area: 11,346 Sq.ft. completed in 1 month)
4. PEB G+2 Building for Perfect IT at Noida (Area: 6,45,840 Sq.ft. completed in 4 months)
5. PEB GIS Building for GE T&D at Phagi, Rajasthan (Area: 15,300 Sq.ft. completed in 1.5 months)
6. PEB G+1 Building for Hetero Health Care Ltd. at Kamakhya, Guwahti (Area: 35,840 Sq.ft. Ongoing)
7. PEB GIS Building for L&T at Meerut, UP
8. PEB for Wilson at Malda
9. PEB G+1 Building for Dr Shroff Eye Hospital at Saharanpur, UP
10. PEB GIS Building for TOSHIBA at Godishahi, Odisha

The Photographs of the Projects are attached at **Annexure III**.

PART 4: STANDARD CONDITIONS

The certificate holder shall satisfy the following conditions:

1. The certificate holder shall continue to have the product reviewed by BMBA.

2. The product shall be continued to be manufactured according to and in compliance with the manufacturing specifications and quality assurance measures which applied at the time of issue or revalidation of this certificate. The Scheme of Quality Assurance separately approved shall be followed.

3. The quality of the product shall be maintained by the certificate holder. The complete testing facility shall be installed for in-process control.

4. The product user should install, use and maintain the product in accordance with the provisions in this Certificate.

5. This certificate does not cover uses of the product outside the scope of this appraisal.

6. The product is appraised against performance provisions contained in the standards listed in Part-5. Provisions of any subsequent revisions or provisions introduced after the date of the certificate do not apply.

7. Where reference is made in this Certificate to any Act of Parliament of India, Rules and Regulations made there under, statutes, specifications, codes of practice, standards etc. of the Bureau of Indian Standards or any other national standards body and the International Organization for Standardization (ISO), manufacturer's company standards, instruction/manual etc., it shall be construed as reference to such publications in the form in which they were in force on the date of grant of this Certificate (and indicated in Part 5 to this Certificate).

8. The certificate holder agrees to inform BMBA of their distributors / licensees whenever appointed by him and agrees to provide to BMBA a six monthly updated list thereof.

9. The certificate holder agrees to provide to BMBA feedback on the complaints received, the redressal provided, and the time taken to provide redressal on complaint to complaint basis as soon as redressal is provided. BMBA agrees to provide the certificate holder the user feedback received by it, if any.

10. If at any time during the validity period, PACH is unable to fulfill the conditions in his PAC, he should on his own initiative suspend using the PAC and notify Chairman, TAC the date from which he has suspended its use, the reason for suspension and the period by which he will be able to resume. He shall not resume without the prior permission of BMBA. He shall also inform, simultaneously, his agents, licensees, distributors, institutional, government, public sector buyers, other buyers and all those whom he has informed about his holding the PAC. He shall also inform all those who buy his product(s) during the period of suspension. He shall provide to BMBA at the earliest the list of who have been so informed by him.

11. In granting this certificate, BMBA takes no position as to:
    a. The presence or absence of patent or similar rights relating to the product;
    b. The legal right of the Certificate holder to market, install or maintain the product;
    c. The nature of individual installations of the product, including methods of workmanship.

12. BMTPC and the Board of Agreement of BMTPC (BMBA) take no position relating to the holder of the performance appraisal certificate (PACH) and the users of the Performance Appraisal Certificate (PAC) respecting the patent rights/copyrights asserted relating to the product/system/design/method of installation etc. covered by this PAC. Considerations relating to patent/copyrights are beyond the scope of the Performance Appraisal Certification Scheme (PCS) under which this PAC has been issued. PACH and uers of this PAC are expressly advised that determination of the Claim/validity of any such patent rights/copyrights and the risk of infringement of such rights are entirely the responsibility of PACH on the one hand and that of the users on the other.

13. It should be noted that any recommendations relating to the safe use of the product which are contained or referred to in this Certificate are the minimum standards required t be met with when the product is installed, used and maintained. They do not purport in any way to restate or cover all the requirements of related Acts such as the Factory Act, or of any other statutory or Common Law duties of care, or of any duty of care which exist at the date of this Certificate or in the future, nor is conformity with the provisions of this Certificate to be taken as satisfying the requirements of related Acts.

14. In granting this certificate, BMTPC and BMBA does not accept any responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the use of this product.

15. The certificate holder indemnifies BMBA, its officers and officials involved in the assessment against any consequences of actions taken in good faith including contents of this certificate. The responsibility fully rests with the certificate holder and user of the product.

16. The responsibility for conformity to conditions specified in this PAC lies with the manufacturer who is granted this PAC. The Board (BMBA) will only consider requests for modification or withdrawal of the PAC.

17. The PAC holder shall not use this certificate for legal defense in cases against him or for legal claims he may make from others.

Place: New Delhi
Date of issue: 29/03/2022

Chairman TAC & for and on behalf of
Member Secretary, BMBA
Dr. Shailesh Kr. Agrawal
Chairman, TAC
& Member Secretary, BMBA
Building Materials and Technology Promotion Council
Ministry of Housing and Urban Affairs, Govt. of India
Core 5A, 1st Floor, India Habitat Centre
Lodhi Road, New Delhi-110003

PART 5: List of Standards & Codes used in Assessment

5.1. These Standards are referred for carrying out particular tests only and do not specify the requirements for the whole product as such.

IS 277:2018	-	Specifications for galvanized steel sheets (Plain & corrugated)
IS 801:1975(Reaffirmed 2010)	-	Code of practice for use of cold formed light gauge steel structural members in general building construction
IS 875 (Parts1 to 3):1987/2015	-	Code of Practice for design loads (other than earthquake) for buildings & structures
IS1893 (Part 1):2016	-	Criteria for earthquake resistant design of structures
IS 1904:1986(Reaffirmed 2010	-	Code of practice for design and construction of foundations in soils: general requirements.
IS 2062:2011(Reaffirmed 2016)	-	Specifications for hot rolled medium & high tensile structural steel
IS 3346: 1980(Reaffirmed 2017)	-	Method of determination of thermal conductivity of thermal insulation materials
IS 7888:1976(Reaffirmed 2008)	-	Methods of test for Polyurethane Foam
IS 11239 (Part 1, 3, 4, 11 & 12):2009/1985/1988/2014	-	Method of tests for rigid cellular thermal insulations
IS 12436:1988(Reaffirmed 2017)	-	Specifications for Performed Rigid Polyurethane foam for thermal insulation
IS 14246:2013	-	Specifications for continuously pre-painted galvanized steel sheets and coils
IS: 15961:2012	-	Specification for Hot dip Aluminium zinc alloy Metallic coated steel sheet
IS: 15965:2012	-	Specification for Pre-Painted Aluminium zinc alloy Metallic coated steel sheet
ISO 2796:1986–Cellular plastics	-	Test method for dimensional stability of rigid materials
ISO 2896:2001 -- Cellular plastics	-	Test method for water absorption of rigid materials
ASTM C518	-	Standard test method for steady state thermal transmission properties by means of heat flow meter apparatus
ASTM D1621	-	Standard test method for compressive properties of rigid cellular plastics
ASTM D1622	-	Standard test method for apparent density of rigid cellular plastics
ASTM D1623	-	Standard test method for adhesion properties of rigid cellular plastics
BS 476 (Parts 5, 6, 7)	-	Fire Tests on Building Materials & Structures– Method of test of Fire Ignitability, Fire Propagation & Surface spread of flame of Materials/Products
ASTM:792	-	Pre-Painted Galvalume Steel Sheet
ASTM:755	-	Pre-Painted Galvanized Steel Sheet

5.2. **Company Standards of the PAC holder** – The branded design & specifications of the raw materials and finished product are as submitted by the manufacturer. The PAC holder has to make available the company standards to the consumers according to which testing have been done**.**

CERTIFICATION

In the opinion of Building Materials & Technology Promotion Council's Board of Agreement (BMBA), **PUF Sandwich Panel with Pre Engineered Building Structure** is satisfactory if used as set out above in the text of the Certificate. This Certificate **PAC No. 1060-S/2022** is awarded to **M/s EPACK Prefab Technologies Limited (Formerly M/s EPACK Polymers Pvt. Ltd.).**

The period of validity of this Certificate is for a period of two years i.e. from **29/03/2025** to **28/03/2027** as shown on Page 1 of the PAC. This Certificate consists of a cover page and pages 1 to 35.

Dr. Shailesh Kr. Agrawal
Chairman, TAC
& Member Secretary, BMBA
Building Materials and Technology Promotion Council
Ministry of Housing and Urban Affairs, Govt. of India
Core 5A, 1st Floor, India Habitat Centre
Lodhi Road, New Delhi-110003

Embossing Seal

On behalf of BMTPC Board of Agreement, Chairman, Technical Assessment Committee (TAC) of BMBA & Member Secretary, BMTPC Board of Agreement (BMBA) Under Ministry of Housing and Urban Affairs, Government of India

Place: New Delhi, India

Date: 01/07/2025

PART 6: ABBREVIATIONS

BMBA	Board of Agreement of BMTPC
BMTPC	Building Materials and Technology Promotion Council
CPWD	Central Public Works Department
ED	Executive Director of BMTPC
IO	Inspecting Officer
MS	Member Secretary of BMBA
PAC	Performance Appraisal Certificate
PACH	PAC Holder
PACS	Performance Appraisal Certification Scheme
SQA	Scheme of Quality Assurance
TAC	Technical Assessment Committee (of BMBA)

Performance Appraisal Certification Scheme - A Brief

Building Materials & Technology Promotion Council (BMTPC) was set up by the Government of India as a body under the Ministry of Housing & Urban Poverty Alleviation to serve as an apex body to provide inter-disciplinary platform to promote development and use of innovative building materials and technologies laying special emphasis on sustainable growth, environmental friendliness and protection, use of industrial, agricultural, mining and mineral wastes, cost saving, energy saving etc. without diminishing needs of safety, durability and comfort to the occupants of buildings using newly developed materials and technologies.

During the year's government, public and private sector organizations independently or under the aegis of BMTPC have developed several new materials and technologies. With liberalization of the economy several such materials and technologies are being imported. However, benefits of such developments have not been realized in full measure as understandably the ultimate users are reluctant to put them to full use for want of information and data to enable them to make informed choice.

In order to help the user in this regard and derive the envisaged social and economic benefits the Ministry of Housing &Urban Poverty Alleviation has instituted a scheme called Performance Appraisal Certification Scheme (PACS) under which a Performance Appraisal Certificate (PAC) is issued covering new materials and technologies. PAC provides after due investigation, tests and assessments, amongst other things information to the user to make informed choice.
To make the PACS transparent and authentic it is administered through a Technical Assessment Committee (TAC) and the BMTPC Board of Agreement (BMBA) in which scientific, technological, academic, professional organizations and industry interests are represented.

The Government of India has vested the authority for the operation of the Scheme with BMTPC through Gazette Notification No. 1-16011/5/99 H-II in the Gazette of India No.49 dated 4th December, 1999.Builders and construction agencies in the Government, public and private sectors can help serve the economic, development and environmental causes for which the people and Government stand committed by giving preference to materials and technologies which have earned Performance Appraisal Certificates.

Further information on PACS can be obtained from the website: www.bmtpc.org

Annexure-1

QUALITY ASSURANCE PLAN

Sr. No	Components Operation & Description of test	Type of Check	Quantum of Check/ Sampling With Basis	Reference Documents of Testing	Acceptance Norms	Formats of Records	Responsibility	
1	**Steel**						**EPACK**	**CLIENT**
1.1	Steel Plates	a) Chemical composition	One sample/heat /lot	Material Test Certificates/ Relevant Standard As per Technical Specification	As per Technical Specification /IS 2062 or Equivalent	MTC & Report	P	R/W
		b) Mechanical properties (Yield, Ultimate and % Along Bend Test)					P	R/W
		c) Dimension, Appearance & Surface Defects			ASTM A 6	MTC & Report	P	R
1.2	Purlin & Girt members galvanized	a) Chemical composition	One sample/heat /lot	Material Test Certificates/ Relevant Standard As per Technical Specification	As per Technical Specification/ ASTM A 653/ASTM A 570 or Equivalent	MTC & Report	P	R/W
		b) Yield Strength					P	R/W
		c) Physical parameters					P	R
		d) Zinc coating					P	R
1.2	Purlin & girt members Painted	a) Chemical composition	One sample/heat /lot	Material Test Certificates/ Relevant Standard As per Technical Specification	As per Technical Specification /IS 2062 or Equivalent	MTC & Report	P	R/W
		b) Yield Strength					P	R/W
		c) Physical parameters					P	R
1.3	Hot rolled section (Beam, Channel, Angle,Pipe)	a) Chemical composition	One sample/heat /lot	Material Test Certificates/ Relevant Standard As per Technical Specification	As per Technical Specification/IS 2062 E250/or Equivalent	MTC & Report	P	R
		b) Mechanical properties (Yield, Ultimate and % Along Bend Test)					P	R
		c) Dimension, Appearance & Surface Defects			IS 1852	MTC & Report	P	R
		a) Chemical Composition		Material Test	ASTM		P	R

1.4	Steel sheet for Roof & Wall Panel	b) Yield Strength	one sample/heat /lot	Certificates/ relevant standard as per Technical Specification	792M/IS 14246/IS 513 (tolerance as per (IS 16163),Coating thickness as per Technical Specification	MTC	P	R
		c) Thickness					P	R
		d) Zinc Al alloy coating					P	R
		e) Primer & Type of coating						
1.5	Poly & MDI	Verification of MTC- PUF Chemical- Polyol & MDI	one sample/heat /lot	Supplier TC Verification	IS 14246/IS 513	MTC	P	R
2	**BOUGHT -OUT ITEMS**							
2.1	Foundation Bolt / Connection BOLTS (HOT DIP GALVANISED/ Painted/Auto Black as per TS in our offer)	a) Chemical composition	Verify TC 100%	Technical Specification (IS1367 PT13,PT17/As per TS)	IS1367 ,Grade 8.8 for HS /ASTM 325M	MTC	P	R
		b) GSM / Paint Test						
		c) Mechanical properties	Verify TC 100%			MTC		
		d) Dimension	5 in 1000 Nos		IS1367 Grade 4.6 for MS	I R		
2.2	NUT (Auto Black/GI/HOT DIP GALVANIZED)	a) Chemical Composition/GSM Test	Verify TC 100%	Technical Specification (IS1367 PT13,PT17/As per TS)	IS1367 ,Grade 8.8for HS /ASTM 325M	MTC	P	R
		c) Mechanical properties	Verify TC 100%			MTC		
		d) Dimension	5 in 1000 Nos		IS1367 Grade 4.6 for MS	I R		
2.3	WASHER (Auto Black/GI/HOT DIP GALVANIZED)	a) Chemical Composition/GSM Test	Verify TC 100%	Technical Specification (Applicable IS or Equivalent Code)	IS 6649 Grade 8.8 For HS / ASTM F436	MTC	P	R
		c) Mechanical properties	Verify TC 100%			MTC		
		d) Dimension	5 in 1000 Nos		IS 2016 For MS	I R		
2.4	PRIMER/ PAINT	a) Verification Of Colour & Mfg Batch	1 Sample Per Batch	Batch Test Certificates	As Per Technical Specification	BTC	P	W
2.5	WELDING	a) Chemical	100%	BTC	As Per	BTC	P	R

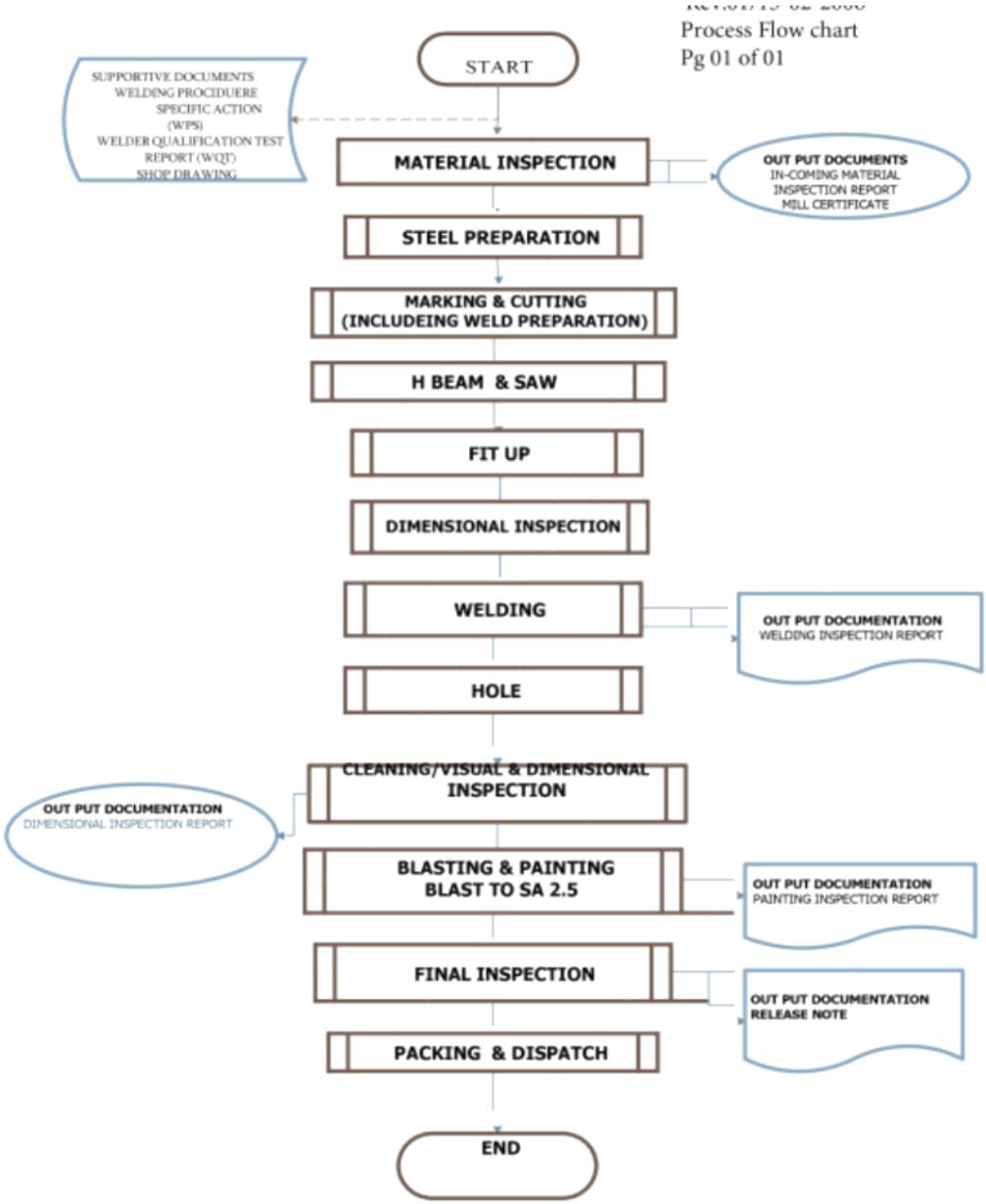
	CONSUMABLES	Composition			WPS			
		b) Mechanical properties	100%			BTC		
3	**BUILT-UP INSPECTION (In-Process Inspection)**							
3.1	Shearing Of Steel Plates / Sheets	Heat No	Once / Shift	Marking/Drawing Dimension	As per Drawing	Dimension report	P	R
3.2	Welding Qualification	Welding Procedure As Per AWS/ asme Sec IX		AWS/ASME	WPS/WPQ	WPS/WPQ	P	R
3.3	Fitup	Dimension	100%	Drawing	Drawing /AWS D1.1 /IS 7215	IR	P	R
3.4	In Process Inspection - Sandwich Panels-Wall & Roof Panels	Surface defects	Random Check	Visual	As per drawing	IR	P	W
		Dimensional measurement		Measurement			P	W
3.5	PUF	Density	Random Check	40±2kg/m3	As per Requirement	IR	P	R
		(Dimension) Length , Width, Thickness	Random Check	ength ±10mm, width±2mm, thickness±.2mm	As per drawing		P	R
4	**FINAL INSPECTION**							
4.1	Welding inspection	a) Visual	Verify TC 100%	ASME Sec 5/AWS D1.1	ASME Sec 5/AWS D1.1	MTC	P	R/W
		b) Mechanical properties	Verify TC 100%			IR		
		a) Visual	100%					
4.2	Non-Destructive examination on butt joints of flange to flange and web to web	a) DP test	10% DP test for all built joint by PEB manufacturer	ASME Sec 5	ASME Sec 5	IR	P	R/W
4.3	Final dimension inspection	Dimension (Built-up)	100%	Drawing	Drawing/ IS 7215	IR	P	R/W
4.4	"C" & "Z" Purlin and other Cold Form members	Dimensions	Once/shift	Drawing	Drawing/ IS 7215	IR	P	R
4.5	Rolling Shutter	Surface defects	Random Check	Visual	As per	IR	P	W

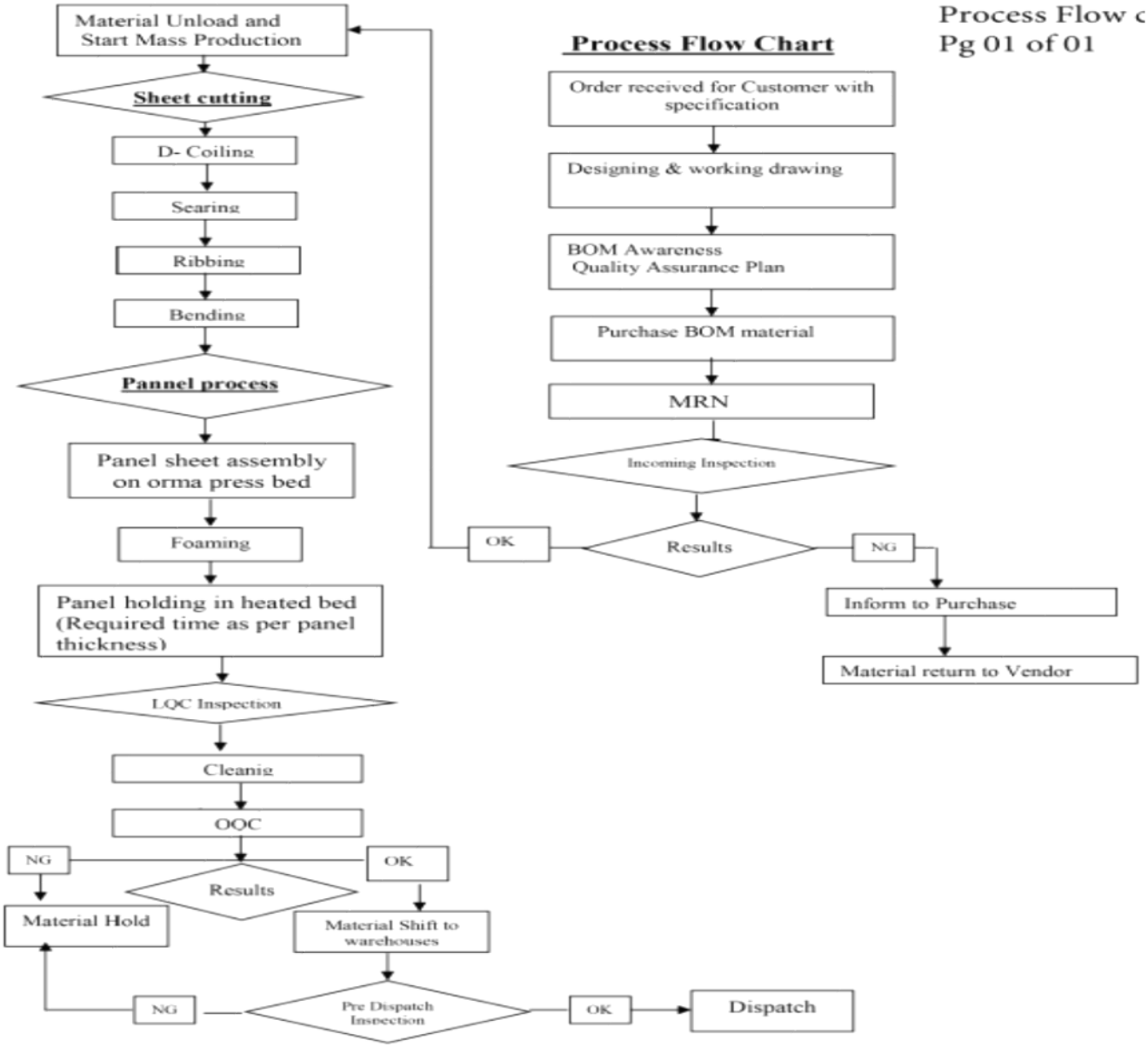
		Dimensional measurement		Measurement	drawing		P	W
4.6	Windows	Surface defects	Random Check	Visual	As per drawing	IR	P	W
		Dimensional measurement		Measurement			P	W
4.7	Doors	Surface defects	Random Check	Visual	As per drawing	IR	P	W
		Dimensional measurement		Measurement			P	W
4.8	PAINTING	Dry Film Thickness	10%	Paint specification in our offer/PDS	Approved paint scheme coating thickness 75 Micron Minimum	IR	P	W
		Visual appearance	100%				P	W

P-Perform	**R-Review**
W-Witness	**MTC- Material Test Certificate**
IR- Inspection Report	**BTC- Batch Test Certificate**
PDS- Paint Data Sheet	

Annexure - II

Process Flow Chart




Process Flow Chart
Material Unload and Start Mass Production
Sheet cutting
D- Coiling
Searing
Ribbing
Bending
Pannel process
Panel sheet assembly on orma press bed
Foaming
Panel holding in heated bed (Required time as per panel thickness)
LQC Inspection
Cleanig
OQC
NG
OK
Results
Material Hold
Material Shift to warehouses
NG
Pre Dispatch Inspection
OK
Dispatch
Order received for Customer with specification
Designing & working drawing
BOM Awareness Quality Assurance Plan
Purchase BOM material
MRN
Incoming Inspection
OK
Results
NG
Inform to Purchase
Material return to Vendor

Annexure III

Project Photographs

Field Maintenance Office, Reliance Industries Limited, Jamnagar

Warehouse Building (PEB), Aditya Moda, Ghaziabad

PEB Buildings (Canteen and Office), Hankuk, Greater Noida

PEB G+2 Building, Perfect IT, Noida

PEB GIS Building, GE T&D, Phagi, Rajasthan

PEB G+1, Hetero Health Care Ltd, Kamakhya, Guwahti

PEB GIS Building, L&T, Meerut, UP

PEB, Wilson, Malda

PEB G+1 Building, Dr Shroff Eye Hospital, Saharanpur, UP

PEB GIS Building, TOSHIBA Godishahi, Odisha

EPACK PREFAB
RAPID CONSTRUCTION · EXCEEDING EXPECTATIONS
ISO 9001 & ISO 14001 Certified

EPACK PREFAB TECHNOLOGIES LIMITED

B- 13 & 14, Ecotech- 1st Extension, Greater Noida, Distt- Gautam Buddha Nagar, Uttar Pradesh-201306, India
+91-81304 44466 info@epack.in www.epackprefab.com
CIN No.: U74999UP1999PLC116066

Date: **27.03.2025**

To,

The Member Secretary,
BMTPC Board of Agreement

Sub.: In reference to change of name of the company

I hereby declare that EPACK PREFAB TECHNOLOGIES PRIVATE LIMITED which was originally incorporated on 12th Feb 1999 under Companies Act, 1956 as E-PACK POLYMERS PRIVATE LIMITED, is converted into a public company under Section 18 of the Companies Act, 2013. The name of the said company is changed to EPACK PREFAB TECHNOLOGIES LIMITED. Supporting documents have been attached herewith.

So, you are requested to issue the new certificate in the name of EPACK PREFAB TECHNOLOGIES LIMITED.

For **EPACK PREFAB TECHNOLOGIES LTD** (Formerly known as **EPACK Polymers Pvt. Ltd.**)

EPACK PREFAB TECHNOLOGIES LIMITED Authorised Signatory

Rohit Teotia
(Authorized Signatory)
Mob. 7428088113