



Politerm Blu- Thermal Insulated EPS Beads Aggregates

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

Name and Address of Certificate Holder:

M/s EDILTECO BUILDING SOLUTIONS PRIVATE LIMITED

641, Model Town, Pruthi Chowk,
Panipat -132103, Haryana
Website- www.politerm.in

Performance Appraisal Certificate

PAC No. **1074-P/2026**

Issue No. **01**

Date of Issue: **01/09/2026**



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bmtpc

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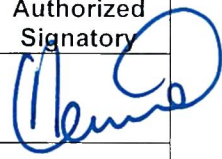
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**PERFORMANCE APPRAISAL CERTIFICATE
FOR
Politerm Blu -Thermal Insulated EPS Beads Aggregates**

ISSUED TO

M/s Edilteco Building Solutions Private Limited

STATUS OF PAC No. 1074-P/2026

S. No.	Issue No.	Date of Issue	Date of Renewal	Amendment		Valid upto (Date)	Remarks	Signature of Authorized Signatory
				No.	Date			
1	01	1.9.2026	31.8.2028			31.8.2028		

PAC No. 1074-P/2026

Issue No. 01

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Part 1 Certification

1.1 Certificate Holder: **M/s Edilteco Building Solutions Private Limited**
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Panipat -132103, Haryana
E-Mail - ediltecoindia@gmail.com
Web Site- www.politerm.in
M: 9812022882/9319800001

Factory Address

Plot No.173, Sector-29, Part-II, HUDA,
Panipat -132103, Haryana

1.2 Description of the Product

1.2.1 Name of the Product- Politerm Blu -Thermal Insulated EPS Beads Aggregates

1.2.2 Brand Name – POLITERM

1.2.3 Brief Description- Politerm Blu is a pre-additivated lightweight thermal insulated aggregate made from virgin closed-cell EPS (Expanded Polystyrene) beads of 2 mm to 5 mm dia size. The beads are treated with a special proprietary insulating chemical additive E.I.A. (Edilteco Insulating Additive), for use in preparation of light weight cement mortar and concrete mix of different densities, for thermal insulation and screed. The proprietary additive helps EPS beads bind with cement and water, preventing bead flotation, and ensuring uniform distribution within the mix. The density of EPS bead Aggregates ranges from 10 kg/m³ to 12 kg/m³ for different applications.

It may serve as an alternative to conventional lightweight Aggregates such as expanded perlite and vermiculite for insulation.

1.3 Uses of the Product

The product is used for;

- i) Roof insulation, floor screeds, filling layers, and under floor heating systems.
- ii) Reduction of structural dead load due to its low density.

1.4 Assessment

1.4.1 Scope of Assessment

The scope of assessment includes suitability of Politerm Blu- Thermal Insulated EPS Beads Aggregates, for use in lightweight insulating mortars, screeds on roof insulation and other non-structural lightweight concrete applications.

1.4.2 Basis of Assessment

- a) Test report of lightweight concrete using Politerm Blu- Thermal Insulated EPS Beads Aggregates for thermal conductivity conducted by the National Laboratory for Testing and Development of Thermal Insulations (NAFETIC), NIRMA University, Ahmedabad.
- b) Test report of Politerm bead-based concrete cubes for compressive strength conducted by e-Cube Concrete Consultants LLP, Thane.
- c) Physical inspection and assessment of Production Process and Its Application in the Production Unit of the Agency

1.4.3 Special Aspects of Use/ Limitations:

- a) As a protective layer and thermal insulation layer on terrace slabs. Inside buildings in filling areas like toilet sunken slabs, projecting balconies and chajjas, for floor height adjustments and filling any other voids.
- b) Safe to use in all climatic conditions having temperatures ranges from - 20 °c to + 50°c.
- c) Being light weight concrete, it is not recommended for high strength applications.
- d) For external applications Politerm Blu lightweight screed shall function as an intermediate thermal insulating layer and shall not remain exposed or serve as the final wearing surface. A suitable cementitious load-distribution/finishing screed shall be provided over the Politerm Blu screed, followed by the appropriate final finish as per the project requirements
- e) For internal applications normally no maintenance is required unless it is physically damaged during construction work.

1.5 Conditions of Certification

1.5.1 Technical Conditions

- a) The product shall be manufactured using closed-cell EPS beads conforming to the approved specifications and coated with E.I.A. additive under controlled manufacturing conditions.
- b) The product shall be used only for non-structural lightweight insulating mortar, screed, filling, and thermal insulation applications.
- c) The application of the product shall be carried out in accordance with the manufacturer's guidelines and approved mix proportions.
- d) Adequate quality control measures as per Quality Assurance plan shall be maintained for raw materials, production process, and finished product testing.
- e) Any change in raw materials, manufacturing process, product composition, or production facility shall require retesting for its performance.

1.5.2 Quality Assurance

The Certificate Holder shall implement & maintain a quality assurance system in accordance with Quality Assurance Plan (QAP) as per **Annex-1**.

1.5.3 Handling of User Complaints

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

1.5.3.2 As part of PACS Certification, the certification holder shall maintain data on all required complaints with a view to assess the complaint satisfaction and suitable preventive measures to be 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 and used for light weight cement mortar and concrete for thermal insulation, screed and filling as set out in Part 1&2 of this Certificate, the Politerm Blu Product covered by this Certificate is 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 thermal insulating beads Aggregate material 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 product.

2.2 Specifications

The manufacturer shall only use the raw materials supplied with the relevant documents/ test reports conforming to the specifications mentioned in 2.2.1 and 2.2.2. The raw materials shall be subject to agreed controls and tests by the manufacturer before acceptance.

2.2.1 Flame Retardant Expanded Polystyrene Beads (FR EPS Beads)

Table 1: Flame Retardant Expanded Polystyrene (FR EPS) Beads

S. No.	Parameter	Unit	Grade	
			SE 200 FR/ equivalent	SE 230 FR/ equivalent
1.	Bead Size	mm	1.0 – 1.4	0.85-1.18
2.	Appearance		Translucent solid beads	
3.	Residual Monomer	%	Max. 0.25	
4.	Moisture Content	%	Max. 1.0	
5.	Blowing Agent (Pentane)	%	5.0 – 7.0	
6.	Recommended Density	kg/m ³	12 - 14	14-16
7.	EPS Flammability		-	HF-1/HF-2

2.2.2 EIA Additives

Table 2: E.I.A. Additive

S. No.	Parameter	Unit	Value
1.	Class	-	Ionic
2.	Aspect	-	Liquid
3.	pH	-	10.14 ± 0.5
4.	Stability		Stable to water to all Hygrometrical degree
5.	Specific Weight	kg/L	1.05 ± 0.05

2.2.3 Performance Requirements of Politerm Blu mix design concrete

Table 3: Performance Requirement of Politerm Blu mix design concrete

S. No.	Performance Characteristics	Test Method	Unit	Requirement	
				For Density of 250 Kg/m ³	For Density of 400 Kg/m ³
1.	Compressive Strength	IS 516:2021 / EN ISO 29469:2022	N/mm ²	0.69	1.69
2.	Thermal Conductivity (λ)	ASTM C518 / EN 12667:2002	W/mK	0.065	0.103

Note: The thermal conductivity values specified above are applicable only for densities of 250 kg/m³ and 400 kg/m³. For any other density, the thermal conductivity value may vary.

2.3 Manufacturing Process (Production Line) & Machinery

2.3.1 Politerm Blu- Thermal Insulated EPS Beads Aggregates consists of 2mm-5 mm EPS (Flame Retardant Grade) beads with a density of 10 kg/m³-12 kg/m³, coated with the proprietary E.I.A. additive. The product shall be manufactured under strictly controlled factory conditions to ensure consistent quality, performance, and compliance with applicable specifications. The manufacturing processes shall be carried out in following steps;

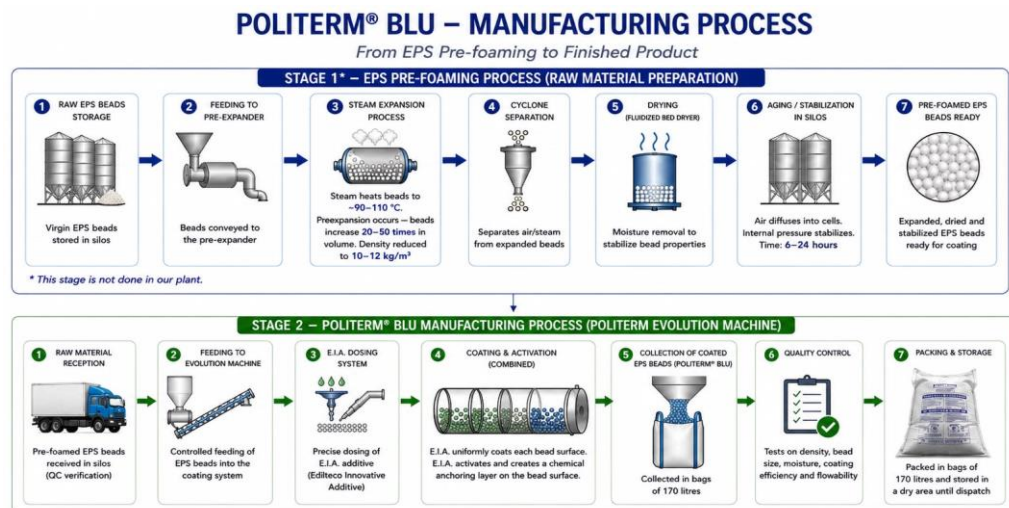
- Flame retardant virgin pre-expanded EPS beads shall be initially stored in silos and then conveyed to a pre-expander, where they are subjected to controlled steam heating at approximately 90–110°C. This causes the beads to expand by 20–50 times their original volume while reducing their density to the desired range. The expanded beads shall be subsequently passed through a cyclone separator to remove residual air and steam, followed by a drying process to eliminate surface moisture. The dried beads shall be transferred to aging silos, where they are stabilized for 6 h–24 h, allowing internal pressure equalization and dimensional stabilization. After aging, the pre-expanded EPS beads gets fully expanded, dried, and stabilized, making them ready for further processing.
- Politerm Blu-** Thermal Insulated EPS Beads Aggregates shall be manufactured by processing flame retardant virgin expanded polystyrene (EPS) beads in a mechanised production system (Politerm Evolution machine), where the beads shall be uniformly treated with the E.I.A. (Edilteco Insulating Additive). The EPS beads of controlled particle size and density, shall first fed into the system, where they undergo surface activation and coating with the E.I.A. additive. This additive chemically and physically modifies the bead surface, improving its affinity with cement and water. The

process ensures that each bead shall individually coated (“bead-by-bead treatment”), eliminating issues like segregation and flotation during subsequent mixing in mortar. The treated beads shall be stabilized, dried (if required), and packed, resulting in a ready-to-use lightweight aggregate that guarantees homogeneous dispersion, improved workability, and consistent thermal and mechanical performance in cementitious applications.

2.3.2 Manufacturing Machinery

Politerm Blu- Thermal Insulated EPS Beads Aggregates Manufacturing Process (EPS Beads + E.I.A. in Politerm Evolution Machine) see **Fig-1**

Fig-1 Manufacturing Process of Politerm Blu- Thermal Insulated EPS Beads Aggregates



2.3.3 Inspections & Testing

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

2.3.4 Application of Politerm Blu

The application process details are attached at **Annex-2**

2.3.5 Storage& Handling of the product

The precautions, safety measures, and first-aid measures as mentioned in **Annex-3** shall be followed during the transportation, storage, mixing, and application of Politerm Blu.

2.3.6 Recommended Finishes and Installation Methods over POLITERM BLU.

Politerm Blu lightweight screed shall function as an intermediate thermal insulating layer and shall not remain exposed or serve as the final wearing surface. The final floor or roof finish shall not normally be bonded directly onto the Politerm Blu screed. A suitable cementitious load-distribution/finishing screed shall be provided over the Politerm Blu screed, followed by the appropriate final finish as per the project requirements. Compatible finishes shall include ceramic or porcelain tiles, natural stone, engineered wood, parquet, vinyl/PVC/LVT flooring, resin flooring, and other approved floor coverings.

No additional insulating material, paint, heat-reflective coating, or heat-resistant tiles shall be required directly over the Politerm Blu screed, as the screed itself provides the thermal insulation.

The PAC Holder shall provide the recommended finishing and installation methodology over Politerm Blu to the user/customer at the time of supply/installation.

2.4 Skills /Training needed for Application/Installation

The workers shall be trained/ oriented on handling of the product and its application, support system, etc. with all required safety measures. For preparing light weight cement mortar and concrete with thermal insulated EPS beads Aggregates, necessary precautions during handling and mixing shall be taken

2.5 Manual/Guideline

For mix design, compressive strength corresponding to different densities, application guidelines, and other relevant details, refer to **Annex-4**.

2.6 Guarantee/Warranty provided by the PAC Holder

When stored indoors under dry conditions at ambient temperature, protected from direct sunlight, and provided with adequate ventilation. The Agency shall provide guarantees for one year for Politerm Blu with respect to the specified density, volume, and weight per bag supplied to customers.

2.7 Services provided by the PAC holder to the customer

The PAC holder shall provide pre-sale technical advisory regarding the intended use, specifications, handling, storage, mixing, and application of Politerm Blu.

2.8 Responsibility

Specific performance of the Politerm Blu is the responsibility of the company as per the requirement of the customer according to the contract with the instructions, supervision and guidance of the PAC holder.

Part 3 Basis of Assessment and Brief description of Assessment Procedure

3.1 Assessment

3.1.1 Technical Assessment

The technical assessment was done as per provisions of the Standards listed in Part 5 of this Certificate.

3.2 Tests Performed

Assessment of the suitability of the product is based on the various tests carried out by National Laboratory for Testing and Development of Thermal Insulations (NAFETIC), Nirma University & e-cube concrete consultants LLP, Thane

3.2.1 Test for Thermal Conductivity of Light weight concrete

Specimen : Light weight concrete using Politerm beads
 Date of Testing : May14, 2026
 Sample size (for each sample-1 & sample -2) : 197mmx203mmx34mm
 Declared density : Sample -1: 250 kg/m³
 Sample-2: 400 kg/m³

Table 4: Thermal Conductivity Test – Results

S. No.	Test Sample	Density (kg/m ³)	Observed value of thermal conductivity at 10°C	Unit	Testing method/ Standard
1.	Sample -1	244.8	0.0656	W/(m.K)	ASTM C518
2.	Sample -2	388.1	0.10255		

3.2.2 Test for Compressive Strength of Concrete

Specimen : Politerm Beads Block
 Sample 1 : 201.6mm × 198.5mm × 33.4mm (for density of 250 kg/m³)
 Sample 2 : 200.5 mm× 195.2mm × 32.1mm (for density of 400 kg/m³)
 Date of Testing : May 20, 2025

Table 5: Compressive Strength Test – Results

S. No.	Density (kg/m ³)	Test Standard	Crushing Load (KN)	Compressive Strength (N/mm ²)
1.	250	IS 516 (Part - 1/sec-1):2021	41.5	1.1
2.	400	IS 516 (Part - 1/sec-1):2021	53.9	1.4

3.3 Project list for supply/usage of Politerm

List of projects as reported by the agency are given below;

Table 6: Project List for Supply/Usage of Politerm

S. No	Application	Location	Year of completion	Area of application (m ²)
1.	Terrace of Bungalow	Hauz Khas Enclave, New Delhi	2026	235
2.	Terrace of Bungalow	Rohini, Delhi	2026	206
3.	Terrace of Bungalow	Nehru Enclave, New Delhi	2026	250
4.	Horse Roof & Cow Shed	Wada, Maharashtra	2025	300

Table 7: Project Photographs





Terrace of Bungalow, Rohini



Terrace of Bungalow, Nehru Enclave



Horse Roof & Cow Shed, Maharashtra

Part 4 STANDARD CONDITIONS

This 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.
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-V. 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 V 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 fulfil 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 / copy rights asserted relating to the product / system / design / method of installation etc. covered by this PAC. Considerations relating to patent / copy rights are beyond the scope of the Performance Appraisal Certification Scheme (PACS) under which this PAC has been issued. PACH and users of this PAC are expressly advised that determination of the Claim / validity of any such patent rights / copy rights 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.

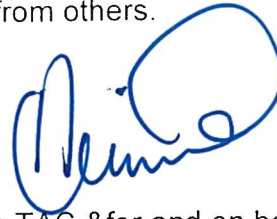
13. It should be noted that any recommendations relating to the safe use of the product which are contained or referred to in this Certificate are the minimum standards required to be met with when the product is installed, used and maintained. They do not purport in any way to restate or cover all the 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 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 this 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 defence in cases against him or for legal claims he may make from others.



Place: New Delhi
Date of issue: 01/09/2026

Chairman TAC & for and on behalf of
Member Secretary, BMBA

Part 5 LIST OF APPLICABLE STANDARDS & CODES

Table 8: List of Standards and Codes

IS 4671 : 2018	Expanded Polystyrene for Thermal Insulation Purposes
IS 516 (Part-1/Sec-1):2021	Hardened concrete Methods of test (Part 1 testing of strength of hardened concrete section 1 compressive, flexural and split tensile strength)
EN 12667: 2002	Thermal performance of building materials and products. Determination of thermal resistance by means of guarded hot plate and heat flow meter methods. Products of high and medium thermal resistance.
ASTM C518-21	Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus

CERTIFICATION

In the opinion of Building Materials & Technology Promotion Council's Board of Agreement (BMBA), **Politerm Blu -Thermal Insulated EPS Beads Aggregates Product** is satisfactory if used as set out above in the text of the Certificate. This Certificate **PAC No. 1074-P/2026** is awarded to **M/s Edilteco Building Solutions Private Limited, Panipat, Haryana.**

The period of validity of this Certificate is for a period of two years i.e. from 01/09/2026 to 31/08/2028 as shown on Page 1 of this PAC. This Certificate consists of pages 1 to 29.



& 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-110023



Embossing
Seal
Of
BMBA

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: 01/09/2026

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 years 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

Annex-1
(Refer cl. 1.5.2)

Quality Assurance/Quality Control Plan

A-1 Quality Assurance Procedures and Quality Assurance Documents

A-1.1 In Manufacturing

- I. Quality Control:** Strict quality control measures are followed during manufacturing of Politerm to ensure consistency and performance of the final product.

a) EPS Beads: The EPS beads shall be checked for

- i) *Bead size:* 2 mm-5 mm (uniform spherical)
- ii) *Bulk density:* Verify against standard (critical for final density)
- iii) *Moisture:* shall be dry (non-absorbent property)
- iv) *Visual check:* No dust/fines ,No broken beads ,No contamination

These parameters are critical as they directly influence density, thermal conductivity, and compressive strength of the lightweight mortar.

b) E.I.A. Additive (Coating/Compatibilizer)

Checks:

- i) Dosage Control of EIA (Maintain strict ratio (kg EIA / m³ EPS or per batch)
- ii) Proper coating on beads (uniform appearance)

c) Mixing Time and Energy

- i) Ensure: Sufficient tumbling / coating
- ii) Typical indicator: All beads show uniform surface sheen

A-1.2 In-Process QA Checks (Shopfloor)

I. Quality Assurance

Every Batch:

- a) *Visual uniformity check* : Every bead shall have consistent EIA film coverage
- b) *Free-flow test (hand feel)* : Coated beads shall remain Non sticky + Free flowing
- c) *Bulk density measurement* – physical measurement of 1 ltr measuring cup
- d) *Sample retention*

Table 9: Final QA Release Criteria

S.No.	Parameter	Acceptance Criteria
1)	Appearance	Uniformly coated beads, free from visible defects and contamination.
2)	Flowability	Beads shall be free-flowing and free from lumps or agglomeration.
3)	Bulk Density	Shall conform to the specified bulk density range.
4)	Moisture Content	Beads shall be dry and free from moisture.
5)	Functional Test	Beads shall not float when mixed with cement slurry.

Annex-2

(Refer cl. 2.3.4)

A-2 Application of Politerm Blu

A-2.1 Preparation of Laying Surface

- A-2.1.1 The laying surface shall always be clean, free from dust and fragments of any kind.
- A-2.1.2 Absorbent laying surfaces in concrete or concrete & masonry: Gradually wet the surface but do not leave puddles, before laying the lightweight screed.
- A-2.1.3 Very absorbent surfaces (hollow clay bricks, hollow tile, etc.): Thoroughly clean and remove dust from the laying surface. Apply grout used as adhesive and absorbency reducer. When dry, wet the surface and gradually proceed with the laying of lightweight screed. The dampening shall be carried out gradually as the lightweight screed is being laid.
- A-2.1.4 Low absorbent surfaces (cement supports): treat the base layer before applying Politerm Blu with the specific adhesion promoter (Edilstik type) and proceed wet on wet, or realize an adherence bridge with cement grout with water and Edilstik, or use an adhesive primer.
- A-2.1.5 Non-absorbent laying surfaces (sheaths, metal, ceramic, panels, etc.): Before pouring the mortar prepared with Politerm® Blu, lay a galvanized mesh diameter 2mm - 3 mm, mesh 50×50 mm, at a due distance from the laying surface (positioned at least at a third of the final thickness of the casting to be carried out).
- A-2.1.6 Single-layer screeds for direct gluing of floor coverings: It is recommended to lay some special PVC Piano zero guides beforehand.

A-2.2 Mixing & Application

- A-2.2.1 Use only CEM I/PPC or CEM II/OPC 43 grade limestone cement, compliant with UNI standards, and in perfect Conservation Conditions. Different types of cement or poor-quality cement may affect the functionality of the additive with which Politerm Blu beads are treated, and could make mixing difficult, affecting the conformity of the final properties of the mortar.
- A-2.2.2 Recommended Table: Mix Proportions for Lightweight Thermal Insulating Mortar
 - A-2.2.2.1 Mix Proportions to Obtain 1 m³ (1000 L) of Lightweight Thermal Insulating Mortar

Table 10: Mix Proportions to Obtain 1 m³ (1000 L) of Lightweight Thermal Insulating Mortar

S.No.	Target Density (kg/m ³)	Water (L) (tol. ±5%)	Cement (kg)	Politerm Blu (L)	Sand (kg)
1)	150	68	150	840	—
2)	200	90	200	840	—
3)	250	110	250	840	—
4)	300	140	300	840	—
5)	350	160	350	840	—
6)	500	140	300	800	160
7)	800	140	300	680	475
8)	1000	140	300	600	675
9)	1200	140	300	510	875
10)	1500	150	300	420	1175
11)	1800	160	300	280	1475

Note: The sand is not required for density less than 500kg/m³

A-2.2.2.2 Mix Proportions to Obtain 1/5 m³ (200 L) of Lightweight Thermal Insulating Mortar

Table 11: Mix Proportions to Obtain 1/5 m³ (200 L) of Lightweight Thermal Insulating Mortar

S.No.	Target Density (kg/m ³)	Water (L) (tol. ±5%)	Cement (kg)	Politerm Blu (L)	Sand (kg)
1)	150	14	30	170	—
2)	200	18	40	170	—
3)	250	22	50	170	—
4)	300	28	60	170	—
5)	350	32	70	170	—
6)	500	28	60	170	35
7)	800	28	60	135	95
8)	1000	28	60	120	135
9)	1200	28	60	105	175
10)	1500	30	60	85	235
11)	1800	32	60	55	295

Note: The sand is not required for density less than 500kg/m³

A-2.2.3 Mixing :The mortars prepared with Politerm Blu can be mixed using:

- a) Cement mixer
- b) Horizontal mixer

A-2.2.4 Mixing and Pumping: The mortars prepared with Politerm Blu can be mixed and pumped on site using:

- a) Politerm Machine
- b) Isolcap Machine
- c) Pumps such as "Turbosol" for sand and cement screeds

A-2.2.5 Order of Component Infeed with Politerm Machine

- a) Switch on the mixer.
- b) Add the required quantity of water according to the selected formulation.
- c) Pour the contents of one bag of Politerm Blu.
- d) Add the required quantity of cement.
- e) Pour the contents of the second bag of Politerm Blu.
- f) Mix for 10 minutes (including loading time) before pumping

A-2.3 Application Precaution

- a) Politerm Blu is suitable for use in all climatic conditions at installation temperatures ranging from 5°C to 35°C, when the ambient temperature falls below 5°C, a suitable anti-freeze admixture should be incorporated into the mix. Conversely, when temperatures exceed 35°C, the substrate surface should be lightly sprinkled with cold water prior to application to prevent rapid moisture loss. As a lightweight insulating concrete, POLITERM BLU is not intended for applications requiring high structural strength and should therefore be used primarily in non-structural and insulating applications.
- b) Avoid application under direct sunlight. If application under direct sunlight is unavoidable, suitable protective measures (e.g., shading mesh over scaffolding) shall be provided.
- c) It is recommended to install acoustic edge strips around the perimeter before placing the screed.

A-2.4 Minimum Thickness

- a) Absorbent surfaces: Minimum 50 mm. For thicknesses less than 50 mm, consult the Manufacturer.
- b) Non-absorbent surfaces: Consult the Politerm® Blu Application Manual or the Manufacturer.

Annex-3

(Refer cl. 2.3.5)

A-3 Storage, Handling and Safety Guidelines for Politerm Blu

A-3.1 General Safety Precautions

- a) Politerm Blu is classified as a non-hazardous.; however, good industrial hygiene practices should always be followed.
- b) Do not eat, drink, or smoke while handling the product.
- c) Avoid breathing dust generated during handling, mixing, or application.
- d) Avoid contact with eyes, skin, and clothing.
- e) Keep out of reach of children.
- f) Use appropriate Personal Protective Equipment (PPE) whenever handling the product.

A-3.2 Personal Protective Equipment (PPE)

- a) Eye Protection
 - i) Wear safety goggles or protective glasses conforming to EN 166 standards.
 - ii) Avoid wearing contact lenses while handling or mixing the product.
- b) Hand Protection
 - i) Wear alkali-resistant protective gloves.
 - ii) Gloves should be abrasion-resistant and suitable for construction applications.
- c) Skin Protection
 - i) Wear long-sleeved clothing, long trousers, and safety footwear.
 - ii) Wash exposed skin thoroughly after work.
- d) Respiratory Protection
 - i) Use a dust mask (FFP2/FFP3 or equivalent) when dust generation is likely.
 - ii) Ensure adequate ventilation in enclosed work areas.
- e) Precautions During Transportation
 - i) Transport bags in covered vehicles to protect against rain and moisture.
 - ii) Avoid tearing, puncturing, or crushing of bags.
 - iii) Prevent wind dispersion of loose beads during loading and unloading.
 - iv) Keep bags securely stacked to avoid shifting during transit.
 - v) The product is not classified as dangerous goods for road, rail, sea, or air transport.
- f) Storage Precautions
 - i) Store in original, properly sealed bags.
 - ii) Keep in a dry, cool, and well-ventilated area.
 - iii) Protect from rain, moisture, humidity, and direct sunlight.
 - iv) Do not store near food, beverages, animal feed, or drinking water.

- v) Avoid prolonged exposure to high temperatures and UV radiation.
- vi) Stack bags carefully to prevent damage and spillage.
- a) Precautions During Mixing
 - i) Use only clean potable water and approved binders/additives.
 - ii) Open bags carefully to minimize dust generation.
 - iii) Add Politerm Blu® gradually into the mixer.
 - iv) Avoid excessive mixing speeds that may damage EPS beads.
 - v) Ensure adequate ventilation during mixing operations.
 - vi) Wear eye protection, gloves, and dust masks throughout the mixing process.
- b) Precautions During Application
 - i) Ensure the substrate is stable and prepared as per project specifications.
 - ii) Avoid unnecessary skin contact with the wet mix.
 - iii) Do not kneel or stand directly in fresh material without protective footwear.
 - iv) Prevent material from entering drainage systems and watercourses.
 - v) Maintain good site ventilation in enclosed areas.
 - vi) Clean tools and equipment immediately after use.
 - vii) First Aid Measures be taken as required.
- c) Inhalation
 - i) Move the affected person to fresh air.
 - ii) Seek medical advice if coughing, irritation, breathing discomfort, or other symptoms persist.
- d) Skin Contact
 - i) Wash immediately with plenty of clean water and mild soap.
 - ii) Remove contaminated clothing.
 - iii) Seek medical attention if irritation continues.
- e) Eye Contact
 - i) Remove contact lenses, if present.
 - ii) Flush eyes immediately with clean water for at least 20 min.
 - iii) Seek medical attention if irritation persists.
 - iv) Ingestion
 - v) Rinse mouth thoroughly with water.
 - vi) Do not induce vomiting.
 - vii) Seek immediate medical advice.
- f) Spill and Accidental Release Measures
 - i) Restrict access to the affected area.
 - ii) Wear appropriate PPE before cleanup.
 - iii) Prevent product from entering drains, sewers, or water bodies.
 - iv) Collect spilled material mechanically and place it in suitable containers.
 - v) Dispose of waste according to local regulations.

g) Fire Safety

- i) Politerm Blu is non-combustible, non-explosive, and non-flammable under normal conditions.
- ii) In case of surrounding fire, suitable extinguishing media include:
 - Water spray/fog
 - Foam
 - Dry chemical powder
 - Sand
- iii) Firefighters should follow standard site fire-fighting procedures.

h) Good Site Practices

- i) Maintain clean housekeeping around mixing and application areas.
- ii) Keep work areas well ventilated.
- iii) Train workers in safe handling procedures.
- iv) Ensure first aid facilities and clean water is readily available on site.
- v) Follow all local occupational health and safety regulations.

Note: Protect Politerm Blu bags from rain and moisture at all times, as exposure to water can adversely affect the product's performance and handling characteristics.

User Guideline/Manual

A-4.1 Guideline & Precautions

A-4.1.1 Application Guidelines & Precautions

Table 12: Application Guidelines & Precautions

S.No.	Aspect	Recommendation
1)	Minimum Application Temp.	Above +5°C
2)	Minimum Thickness	50 mm
3)	Surface Preparation	Clean, moist (no standing water)
4)	Reinforcement	Mesh required on non-absorbent surfaces
5)	Curing Before Waterproofing	7 days
6)	Protection After Application	Protect from rain for min 48 h

Note: Strict adherence to these guidelines is essential to achieve the desired performance and durability

A-4.2 Design Recommendation

The following details provide practical guidance on selecting appropriate densities and mix designs for different applications of Politerm Blu, aligning performance requirements with field conditions.

A-4.2.1 Recommended Density by Application

Table 13: Recommended Density by Application

S.No.	Application Type	Recommended Density (kg/m³)
1)	Floor/Terrace Leveling (Residential)	350-500
2)	Floor Levelling (Commercial/High Load)	400 - 500
3)	Intermediate Insulation Layer	130-250
4)	Underfloor Heating (UFH)Base	150-250
5)	Flat Roofing (Insulation + slope)	200-300
6)	Lightweight Roof Filling	130 - 200
7)	Vault / Void Filling	130-200

A-4.2.2 Mix Design Table (Indicative)

Table 14: Mix Design Table

S. No.	Density (kg/m ³)	Cement Content (kg/m ³)	Thermal Conductivity (W/mK)	Compressive Strength (N/mm ²)	Typical Use Case
1)	130	110	0.043	0.5	High insulation, UFH base
2)	215	200	0.065	0.7	General floor leveling
3)	265	250	0.067	0.8	Standard screeds
4)	315	300	0.080	1.6	Heavy-duty floors
5)	365	350	0.103	1.7	Industrial/ high load

A-4.2.3 Selection Guidelines

Table 15: Selection Guidelines – Recommended Density Range

S.No.	Requirement Priority	Recommended Density Range (kg/m ³)
1)	Maximum Thermal Insulation	130 - 200
2)	Balanced Performance	200 - 300
3)	Higher Mechanical Strength	300 - 350
4)	Minimum Structural Load	130 - 200
5)	Under floor Heating Efficiency	150 - 250