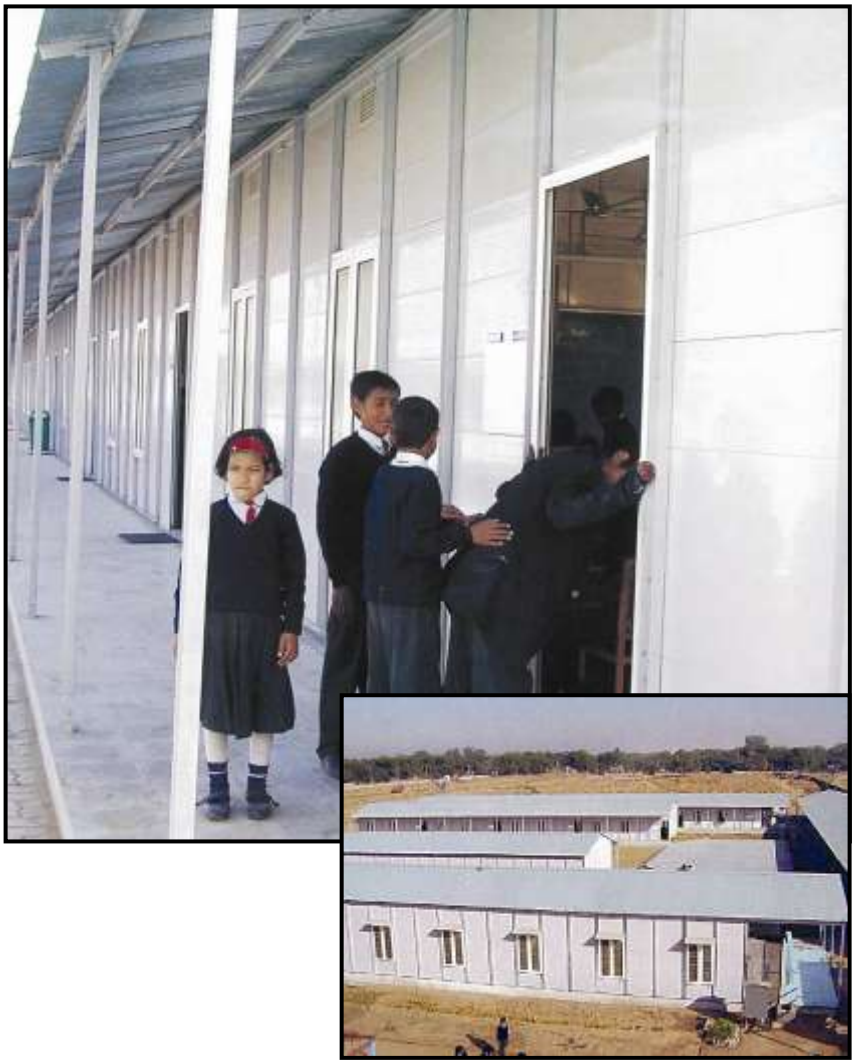
Plastocrete Panel

Name and Address of Certificate Holder:	Performance Appraisal Certificate No.
M/s Sintex Industries Ltd. **Kalol (N. Gujarat) – 382721** **Gandhinagar, India**	PAC No **7 / 2009** Issue No. **1** Date of Issue: **14.07.2009**



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

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Performance Appraisal Certificate
for
PLASTOCRETE PANEL
Issued to
M/s SINTEX INDUSTRIES

STATUS OF PAC 7/2009

S. No.	Issue No.	Date of Issue	Date of renewal	Amendment		Valid upto (Date)	Remarks	Signature of authorized signatory
				No.	Date			
1.	2.	3.	4.	5.	6.	7.	8.	9.
1	1	14-07-09	14-07-12	--	--	13-07-12	--	14/07/09

CONTENTS

PART-I CERTIFICATION

I – 1 **Certificate Holder:** **M/s Sintex Industries Ltd.**
Kalol (N. Gujarat) – 382721
Gandhinagar, India
Phone No. 95-2764-253500
Fax No. 91-2764-253800

I – 2 **Description of Product**

I – 2.1 Name of the Product – Plastocrete Panels

I – 2.2 File Reference – QA/BMTPC/07

I – 2.3 **Brief Description** -- Plastrocrete panel is a layered construction composed of thin facing bounded to a core. The facing carry most of the load and provides the panel with its stiffness and strength characteristics. The major advantage of the material is the structural rigidity in relation with weight. These panels may be used in pre-fabricated system as wall panel. These panels can be used for external or separation walls, partitions, walling etc. These are made out of elements that can be carried to the site even with out the use of mechanized vehicles.

I – 2.4 **Construction of wall panels** – The prefabricated wall panels consist of outside plastocrete wall and inside wall of various materials such as PVC hollow sections, PUF panels attached PVC layer, AC sheet & also plastocrete. The 40 mm air gap/thermocole is provided between outer & inner walls of panels. Various combination of panels used in the wall construction are 25 mm plastocrete, 35 mm plastocrete and 75 mm plastocrete wall.

I – 3 **Assessments**

I – 3.1 **Scope of Assessment** –. The Prefabricated panels are lightweight, easy to install with simple tools, require low labour and installation cost. These panels are suitable for construction of School buildings, Hospitals, Security cabins, Housing, Modular toilets, Police chowki, Site office etc. Easy production of big elements and the simplicity of their

joints with all other properties recommended the sandwich composite for modular construction. When properly attached to the framework, the panels consisted of structural outside facing are capable of withstanding extremely high loading. A building component which can be prefabricated in an industrial plant and then completely assembled on site, provide therefore, a better performance and more economic use of resources than when it is constructed on site. They are suitable for construction sites where access is difficult and where the ground can't support traditional construction without making expensive foundations.

I – 3.2 **Scope of Inspection** – Scope of inspection included the verification of production and testing facilities at the factory including competence of technical personnel and status of quality assurance in the factory.

I – 3.3 **Assessment Summary**

I – 3.3.1 The assessment was done through inspection, laboratory testing and field operation of the installed panels.

I – 3.3.2 **Manufacturing & test facilities** - Manufacturing and test facilities available in the factory were found to be suitable & adequate to produce the plastocrete panels as per details listed in Annexures 9 & 13 of DAF No. QA/BMTPC/07

I – 3.3.3 **Experience in actual use** – A few prefabricated school rooms made of plastocrete panels were inspected and they showed no distress & were found to be functioning satisfactorily. No complaints have been reported so far.

I – 3.3.4 **Quality Assurance Procedure** – The firm follows a Quality Assurance System for production of plastocrete panels.

I – 3.4 **Durability**

I – 3.4.1 The plastocrete panels installed during the period 2005 showed no distress and they were fully functional. The persons contacted at the inspected locations expressed satisfactions on the performance of these panels. The level of maintenance of these panels was satisfactory.

I – 3.4.2 These panels are designed for a life span of 25 years.

I – 4 Use of the plastocrete panels & their limitations

I – 4.1 Design Data – The design data parameters shall depend upon the size & dimensions of the panels to be used

I – 4.2 Storage & handling at the user end before installation

I – 4.2.1 Storage – At the user's end the panels shall be stacked along the wall or hard surface so that they may not fall & break when taken out for assembling. They shall be stacked inside a shed/building

I – 4.2.2 Handling- Plastocrete panels shall be carefully handled during storage or installation in order to prevent occurrences of damage to the faces & edges. The panels shall not be dragged but shall be lifted clear of any surface on which they are stored.

I – 4.3 Uses of the panels

I – 4.3.1 The samples of the plastocrete panels tested as per the Company standards have been found suitable against Impact, Deflection, Thrust bearing capacity, Load bearing capacity & Honeycombing considering maximum wind velocity of 198 Km per hour and seismic load for Zone 5 in accordance with the acceptance criteria given in test report of M/s CBRI which lead to the conclusion that they can be used as panels for prefabricated buildings provided they are installed in accordance with good engineering practice.

.I – 4.4 Limitations of use

I – 4.4.1 Not recommended for use where radiation hazards are there

I – 5 Conditions of Certification

I – 5.1 Technical conditions –Eco-friendly materials shall be used for the manufacture of plastocrete panels.

I – 5.2 Quality Assurance – The Certificate Holder shall implement & maintain a quality assurance system in accordance with Scheme of Quality Assurance (SQA) given in Annexure.

I – 5.3 Handling of User Complaints

I – 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 him to customer/purchaser

I – 5.3.2 The Certificate holder shall implement the procedure included in the SQA. As part of PACS Certification he shall maintain data on such complaints with a view to assess the complaint satisfaction and suitable preventive measures taken.

I – 6 Certification

I – 6.1 On the basis of assessment given in Part III 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 Part I & II of this Certificate, the plastocrete panels covered by this Certificate are fit for use set out in the Scope of Asessment.

Part – II Certificate holder's Technical Specifications

II – 1 General

II – 1.1 The PAC holder manufactures the plastocrete panels in accordance with requirements specified. In addition it follows Company standards specifying requirements of various materials used in the manufacture of panels (see Part V)

II – 2 Specification for the product & design information

II – 2.1 **Specification** – The specifications for raw materials & finished panels are as per performance criteria when tested in accordance with the Company standards & relevant Indian Standards.

II – 2.2 Technical Specifications

II – 2.2.1 Raw Materials

(i) PVC Hollow section – Company's product

(ii) Cement – Ordinary Portland cement of 43 grade as per I S-8112

II – 2.2.2 Construction & workmanship

Plastocrette panels are manufactured out of hollow uPVC profile sections. The hollow section is filled with Cement mortar duly compacted to avoid honeycombing in the filled mortar. The panels are then kept aside for 24 hours for setting of the mortar which are then adequately cured with water. The panels are then thoroughly cleaned on surfaces & edges.

These shall be free from any surface defects like scratches, cracks, discoloration and breakages. These shall be made out of the elements that can carried to the site even without the use of mechanical vehicles. These composite prefabricated systems shall have sufficient overall thermal performance. There shall be no honeycombing observed under light. The cement mortar shall be compact and adequately set & cured.

II -2.2.3 Design & Dimensions –These composite wall panels were tested by CBRI for maximum wind wall (55/m/sec) according to IS-875 and max. earthquake load calculated according to IS 1893. Their bearing capacity becomes critical, especially when higher structures are subjected to heavy horizontal forces, particularly structures located in seismic and windy areas. The result shows that plastocrete has sufficient ductility in terms of deflections, after applying 195 kg load. Its bending strength is 120 kg/cm. This shows that the sample has an adequate toughness and good resistance to bending action. The plastocrete panel was tested for lateral load of 33 kg and it is found that there was no buckling/ bulging, failure of core material and any cracking of skin material. The above load test on plastocrete panel showed that the outside wall facing are safe from structural point of view to be used as infill wall panels in prefabricated building. The system consisted of outside plastrocrete wall, middle airspace and inside asbestos cement is rigid and structurally safe. This is supported by load testing and bending strength of plastocrete and asbestos cement facing i.e. 120 kg/cm2 & 150 kg/cm2. It is concluded that the composite wall prefabs can be suitably used as an

external/ internal fill walls in windy & seismic zones for making prefabricated buildings from structural point of view.

II – 2.3 Performance criteria of panels

II – 2.3.1 The panels shall meet the following performance criteria when tested in accordance with the Company standards.

II - 2.3.1.1 Impact load - Average failure height of 5 samples shall not be less than 1.25 mm

II – 2.3.1.2 Deflection – Average deflection of 5 samples shall not be more than 15 mm after 24 hours & 40 kg centre point load

II - 2.3.1.3 Thrust Bearing Capacity – After 3 consecutive blows of 50 kg sand bags, plastocrete panels shall be free from any damage / failure

II – 2.3.1.4 Load Bearing Capacity

(a) After loading with 750 kg/m² on 75x40 mm channel, no failure shall be observed of average 3 samples.

(b) After loading with 1500 kg/ m² on rectangular hollow section of 49.50x49.50 mm, no failure shall be observed of average 3 samples.

II – 2.3.1.5 Honey combing: No major air gap shall be present throughout the hollow part of PVC section filled with cement mortar.

II – 2.4 Size & Thickness – The Plastocrete panels shall be available in various sizes & thickness. The plastocrete panels shall be manufactured in accordance with the size of the prefabricated structures.

II – 2.5 Properties of the materials used for construction

S.No.	Material	Density g/cm³	Moisture Content (%)	Thermal Conductivity W/m² k
1.	Plastocrete	1.803	1.15	1.19
2.	Cement Sheet	1.552	8.0	1.58
3.	PVC	0.31 – 0.35	0.04 – 0.09	0.14

4.	Thermocole	0.022	-	0.037
5.	PUF with PVC Sheet	0.168	0.62	0.040

II – 2.6 **Packing** – Each panel confoming to the specifications shall be packed properly to ensure safe & defect free delivery to the customers.

II – 3 **Selection & installation**

II – 3.1 The user/installer is responsible for the workmanship & finishing at site

II -- 3.2 **Choosing size and thickness** –Appropriate size of the panels shall be chosen to suit the requirements of the user.

II – 3.3 **Handling** – Plastocrete panels shall be carefully handled during storage or installation in order to prevent occurrences of damage to the faces & edges. The panels shall not be dragged along a stack or any surface but shall be lifted clear of a stack or any surface on which they are stored.

II – 3.4 Good practice for installation & maintenance shall be followed for installation of the panels.

II –3.5 **Paint ability** – No plastering & painting is required for plastocrete panels

II –3.6 **Installation instructions**

II –3.6.1 Plastocrete Panel --A Plastocrete panel is one of the parts of prefabricated structure. These panels are vertically fixed in gap of the T-Section & MS channels or tube member. Panels are inter-locked with tongue & grove as per drawings.

II –3.6.2 Fully Assembled Pre-Fabricated structures --

1. Foundation works
2. Grouting of foundation members
3. Grouting of pre cast members
4. Fixing of fabricated steel members
5. Joint of fabricated steel members with nuts, bolts & washers
6. Fixing of wall panels

7. Construction of plinth protection
8. Sand filling
9. Laying of Brick-bat cement concrete
10. Fixing of tiles i/c cement slurry
11. Outside finishing i/c plaster works
12. Fixing of electrical fixtures & fittings
13. Site inspection by QA Engineer

II – 4 **Maintenance requirements** – These panels are practically maintenance free. However, these panels shall be refinished in accordance with the recommendations contained in technical literature of the PAC holder. If necessary, the panels shall be removed from the prefabricated structure so that the finishes of the edges can be carried out properly.

II –5 **Skilled /Training needed for installation**

II – 5.1 Trained manpower shall be engaged for on – site erection.

II--6 **Guarantees/Warranties provided by the PAC Holder-** This product is guaranteed for a period of one year from the date of supply against any genuine manufacturing defect provided the products are not subject to any damage whatsoever and are not abused/misused or wrongly installed. During the period of Warranty the products shall be serviced free of cost for any defect observed and subsequent to Warranty period services shall be done at a nominal service charge together with other incidental costs as mutually agreed by the PAC holder and the purchaser.

II – 7 **Services provided by the PAC holder to the customer**

II – 7.1 The PAC holder shall provide pre-sale advisory regarding the product. Customer/user shall obtain from the PAC holder details of the advice that may be provided to him.

II –7.2 The PAC holder shall also provide after sales service on customer to customer basis. These include items like pre-finishing, trouble in fixing and usage of pre fabricated structures. Users/Customers shall ascertain from the PAC holder the type of service and the conditions, the PAC holder is prepared to provide.

Part III Basis of Assessment and Brief description of Assessment Procedure

III – 1 Basis of Assessment

III – 1.1 The technical basis for assessment is as per the standards listed in Part V

III – 1.2 The assessment is based on the results & reports of

(i) Inspection of the factory
(ii) Inspection of the test equipment used and the test procedures followed in the laboratory of the factory
(iii) Assessment of quality assurance procedures implemented in the factory
(iv) Tests done in the factory during inspection
(v) Tests done is in independent laboratory in random samples of the finished panels taken by the IO during inspection
(vi) Inspection of panels in service

III – 2 Manufacturing process

III – 2.1 Raw Materials &. Plastocrete is procured from market. PVC sheet is cut & bent. Thereafter, cement, sand &water are mixed to form cement mortar. The cement mortar is than filled. The panel is then finished properly and cleaned.

III – 2.2 Inspections & testing is done at appropriate stages of manufacturing process. The inspected panels are stored & packed to ensure that no damage occurs during transportation. As part of quality assurance regular in process inspections are carried out by the trained personnel of the PAC holder.

III – 3 Factory inspection

III – 3.1 The factory was inspected by the technical representatives of the Council. During inspection the entire manufacturing process along with the equipment was inspected. The manufacturing process was found to conform to the process description given in the Annexure. The in-process inspection and the inspection of the finished panels were in accordance with the SQA approved as a part of the requirements for

grant of this PAC. These were found suitable to produce plastocrete panels satisfying the criteria specified.

III – 4 Laboratory Tests done for assessment

III – 4.1 Testing of samples

III – 4.1.1 In the factory – The tests listed in the report i.e. Impact load, Deflection, Thrust Bearing Capacity, Load Bearing Capacity and Honeycombing were done by the IO in the factory on random samples of panels taken by him for checking the product as well as the related test equipment. The tests were conducted using standard test methods specified by the PAC holder. The samples passed in all the tests conducted.

III – 4.1.2 In independent laboratory – The performance tests for Plastocrete panels listed below were got done by an independent laboratory on random samples taken by the IO. The samples passed in all the tests.

S. No.	Parameters	Performance Characteristics
1.	Impact Load Test (Average Failure height of samples or a hole in the panel after dropping from a height of 1.25 m) – No failure or a hole in the panel observed.	
2.	Deflection Test (before & after removal) – 8.20 mm	
3.	Thrust Bearing Capacity – No damage or failure observed	
4.	Load carrying capacity (Failure of panels) – (a) On Channels – 800 kg/m² (b) On Rectangular section – 1603 kg/ m²	
5.	Honey combing – No air gap in the filled mortar and no debonded area between skin and core observed.	

III – 5 Inspection & Supply of Installed panels: - Prefabricated shelters made out of plastocrete panels installed in various schools of Delhi during the years 2004—2007 were inspected. None of them showed any distress & were fully functional. The users had no complaints. Details of the prefabricated shelters made out of plastocrete panels supplied by the manufacturer are given below:-

S.No.	Occupancy/Building	Location of Building	When installed	Remarks /condition of panels

1.	Directorate of Primary Education Board, Gujarat	Various parts of Gujarat (School rooms)	Oct 2000 – Mar2007	Satisfactory
2.	Delhi State Industrial Development Corporation Ltd.	Various parts of Delhi (School rooms)	Mar2004 – Feb2007	Satisfactory

PART-IV STANDARD CONDITIONS

This certificate holder shall satisfy the following conditions:

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

IV-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.

IV-3 The quality of the product shall be maintained by the certificate holder.

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

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

IV-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.

IV-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)

IV-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 there of.

IV-9 The certificate holder agrees to provide to BMBA feed back 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 feed back received by it, if any.

IV-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.

IV-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.

IV-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.

IV-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.

IV-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.

IV-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.

IV-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.

IV-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_____

Chairman TAC &
Member Secretary, BMBA

for and on behalf of

Dr. Shailesh Kr. Agarwal
Chairman, TAC
& Member Secretary, BMBA
Building Materials and Technology Promotion Council
Ministry of Housing & Urban Poverty Alleviation, (Govt. of India)
Core 5A, 1st Floor, India Habitat Centre, Lodhi Road,
New Delhi-110 003

Part – V List of Standards & codes used in Assessment

Part – V.1 **Indian Standards** - The Standards referred are for carrying out a particular test only and do not specify the requirement for the whole product as such.

Part – V.1.1 I S :2380
Part – V.1.2 I S : 875
Part – V .1.3 I S : 1893
Part – V.1.4 I S : 9162
Part – V.1.5 ASTM E 874

Part – V.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 has been done.

CERTIFICATION

In the opinion of Building Materials and Technology Promotion Council's Board of Agreement (BMBA) Plastocrete Panel bearing the mark Manufactured by M/s Sintex Industries is satisfactory if used as set out above in the text of the Certificate. This Certificate PAC No.7 /2009 is awarded to M/s Sintex Industries.

The period of validity of this Certificate is as shown on Page 1 of this PAC. This Certificate consists of a cover page and pages 1 to 20.

Embossing Seal of BMBA

On behalf of BMTPC Board of Agreement

New Delhi, India
Place
Date

Chairman, Technical Assessment Committee (T AC) of BMBA & Member Secretary, BMTPC Board of Agreement (BMBA) Under Ministry of Housing and Urban Poverty Alleviation, Government of India

Dr. Shailesh Kr. Agarwal
Chairman, TAC
& Member Secretary, BMBA
Building Materials and Technology Promotion Council
Ministry of Housing & Urban Poverty Alleviation, (Govt. of India)
Core 5A, 1st Floor, India Habitat Centre,Lodhi Road,
New Delhi-110 003

PART VI ANNEXURE

Annex VI-I

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 BBA
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 organisations 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 (T AC) and the BMTPC Board of Agreement (BMBA) in which scientific, technological, academic, professional organisations 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-

BUILDING MATERIALS & TECHNOLOGY PROMOTION COUNCIL

QUALITY ASSURANCE PLAN FOR PLASTOCRETE PANELS

S.No.	Parameters Characteristic to be Inspected	Relevant IS or Material Standards	Requirement Specified	Test Method	Sample Size	Frequency Of Testing
I.	**ROUTINE TESTS**					
1	Honeycombing			Visual and with lamp for Plastocrete panels	As per sampling plan	On a daily basis
2	Mixing Proportion of Cement-Sand	1 Part of cement and 6 part of sand	By measuring boxes	By measuring boxes	-do-	-do-
3	Visual		Free from any surface defects – pit marks, cracks, ruptures etc.	Visually	---do--	For every lot
II.	**TYPE TEST**					
1	Load Test on Box Section 50 x 50 mm		Average of 3 samples, 1500 kgs/m2			Once in 6 months
2	Impact Load Test		Samples shall not fail from height of 1.25 meter for average 5 samples			Once in 6 months
3	Deflection Test		Deflection shall not be more than 15mm after applying 40 kgs. Load for 24 hours for average 5 samples			Once in 6 months
4	Thrust Bearing Capacity Test		After 3 consecutive blow plastocrete panel shall be free from damages			Once in 6 months