



निर्माण सामग्री एवं प्रौद्योगिकी संवर्द्धन परिषद्  
 vlok u vlg 'lgjh dk Zealy; | Hjr l jdkj  
**BUILDING MATERIALS & TECHNOLOGY PROMOTION COUNCIL**  
 Ministry of Housing & Urban Affairs, Government of India

भाग 7, अंक 2, अप्रैल - जून 2018, नई दिल्ली Vol. 7, Issue 2, April - June 2018, New Delhi

## From the Desk of the Executive Director

The Govt. of India in the wake of Climate Change Mitigation, COP21, SDG and reduction of GHG emissions is strictly monitoring the prevalent construction practices and asking public and private agencies to adopt sustainable technologies. With the continuous effort of BMTPC, we have identified, evaluated and promoting such systems and construction agencies pan India are keen to adopt them. However, there are issues related with cost and specialized contractors which hampers their mass adoption. Through Technology Sub mission under PMAY-U, we are addressing these issues through wide consultations with public and private agencies but still there is long way to go. The facilitation in terms of incentives, tax holidays, relaxed norms for qualification, global protocols for testing and performance, standardized modular design etc. are some of the issues which require immediate intervention. There have been number of players who have set up their plant & machinery but unable to competent in the Indian market with the conventional systems. The choice is ours now whether to continue business as usual approach with resource inefficient & environmentally irresponsible technologies or embrace futuristic systems to build NEW INDIA by 2022 as envisaged by our Hon'ble PM. All, we need to do is to go for out of box thinking.....

  
 (Dr. Shailesh Kr. Agrawal)

Published by:

Building Materials & Technology Promotion Council, New Delhi

## Sensitization Programmes on "Good Construction Practices including Emerging Technologies for Housing" under PMAY(U)



A Sensitization Programme on Good Construction Practices & Emerging Technologies for housing for PMAY (U) was held on 2<sup>nd</sup> June 2018 in Lucknow. The programme was organized by BMTPC, MoHUA jointly with SUDA Uttar Pradesh which is the State Level Nodal Agency (SLNA) of Pradhan Mantri Awas Yojana (Urban). More than 150 Participants from various ULBs and engineers working in city level technical cell of various cities of Uttar Pradesh attended the Programme.

During the inaugural session, Hon'ble Minister, Department of Employment & Urban Poverty Alleviation Programme), Vice Chairman, Lucknow Development Authority, Director, SUDA, Govt. of Uttar Pradesh, Addl. Director SUDA, Executive Director, BMTPC, Dy.Chief (TDE&IC) and Dy. Chief (I&D), BMTPC were present.

The Hon'ble Minister released a Pocket Book on Emerging Building and Technologies and Pen Drive containing the Films on technologies and other documents related to PMAY(U).

A number of Technology providers from made presentations on Precast concrete Industrialized 3S System; Plaswall System for walling; Precast concrete Technology &



Monolithic concrete construction Technology; EPS, Fly ash, Cement Sandwich Wall Panels Continuous Sandwich (PUF) Panels; Precast Concrete technology; EPS Based Panel System; presentation on Monolithic Concrete Construction; Stay in place Formwork System, etc.

A site visit to the DHP being implemented by BMTPC using technology Double Walled EPS Panel based System was organized for the participants of the programme to make them understand the new technology through live project and explain about the advantages of the technology.

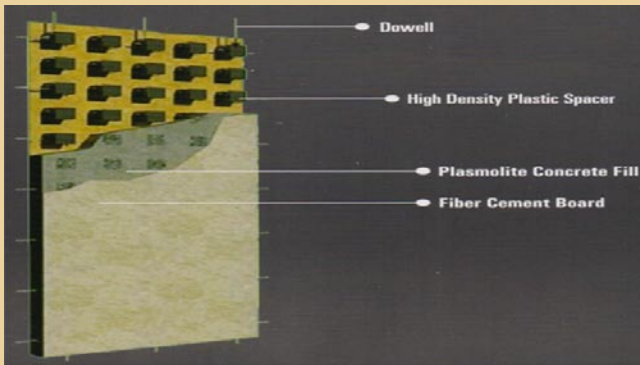
# Emerging Technologies for Building Construction

## Lost-in-Place Formwork System – Plasmolite Wall Panels

Plasmolite Panels are lost in place formwork system where two fibre cement boards (FCB) of 6 mm thickness and High Impact Molded Inserts (HIMI) (spacers) bonded between two sheets of FCB in situ and erected to produce straight to finish walls which are filled with light weight foam concrete. The system may be integrated with conventional column and beam for pre-engineered buildings. The panels may be used as partition walls for external and internal applications.

The firm imports the fibre cement board (FCB) manufactured by Hume Cemboard Industries, Malaysia for use in the construction of structures.

An Isometric View of the Plasmolite is shown in Fig. below:



### Raw Materials

- (i) OPC shall conform to relevant grade of Indian Standard.
- (ii) Sand and aggregate shall conform to IS 383:2016.
- (iii) Reinforcement shall conform to IS 1139:1966.
- (iv) Fibre cement board shall be 100% asbestos free and of Type A, Category 3 min. as stipulated in IS 14862:2000.
- (v) Recycled plastic spacers made of High Impact Molded Inserts shall conform to the specifications of the manufacturer M/s Comfort Plast, Mumbai
- (vi) PU Adhesive Glue shall conform to the specifications of the manufacturer.
- (vii) Foaming Agent shall conform to the specifications of the manufacturer.
- (viii) Putty shall conform to IS 419:1967.

### Fabrication of Plasmolite Wall Panels

#### Dowelling

- Holes of dia 75 mm to 125 mm shall be drilled as same as dia of the bar
- Dowels shall be grouted by using epoxy resins in the above drilled holes

- Centre to centre spacing between dowels shall be 300 mm as per design
- Dowels shall be installed on beams, columns and slab.

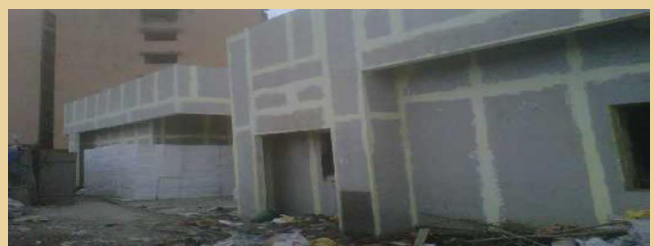
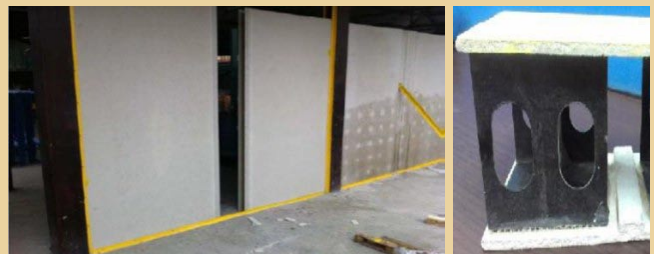
#### Fabrication

- Plastic pallets and jigs shall be arranged perpendicular to each other.
- Fibre sheet shall be laid in alignment with respect to pallet and jig setup.
- Marking of spacer with use of specific stencil positions shall be done on the sheet.
- Glue @ 250gm min. per panel of standard size shall be applied on various positions where spacers are to be bonded
- Spacers shall be placed where glue is applied and kept in linear manner for 4 to 5 hours.
- Glue shall be applied on upper faces of spacers and upper sheet is laid perfectly in line with lower sheet.
- Ten number of panels shall be fabricated on each side of jig and stacked on pallets.
- These panels then shall be cut as per the specified dimensions and sizes such as rectangular, square, curves etc.

### Special Features

The special features of the system encompasses:

- Up to three times faster than conventional technology
- Fire & earthquake resistant.
- No curing required.
- Inlaid plumbing & electrical lines, superior quality finish.
- Better acoustic Insulation
- Termite & algae resistant.
- Applicable in humid conditions.





## Skill Development and Capacity Building

### Sensitization Programme on Emerging Technologies for Mass Housing at Bhopal, Madhya Pradesh

A workshop on Emerging Technologies for housing under PMAY (U) in Bhopal, Madhya Pradesh was held on 27th June 2018. The workshop was organized by BMTPC, MoHUA jointly with Urban Admn. & Development Department, Govt. of Madhya Pradesh which is the State Level Nodal Agency (SLNA) of Pradhan Mantri Awas Yojana (Urban). More than 150 Participants from various ULBs of Madhya Pradesh attended the workshop.

During the inaugural session, Principal Secretary (UADD), Govt. of Madhya Pradesh, Commissioner (UADD), Commissioner M.P. Housing Board, Engineer-in Chief (UADD), Chief Engineer (UADD), GoMP and Dy. Chief (I&D), BMTPC were present.

The State is interested in adopting new technologies for PMAY projects, however, the cost of local raw materials and labour is reasonable in the state which makes conventional construction quite competitive. Still, the state is ready to explore the possibilities of adopting new technologies.

Presentation from the State was made on current progress of AHP projects. Technology providers from various companies were invited to make presentation and interact with the participants and made presentations on Precast concrete Industrialized 3S System; Reinforced EPS Core Panel System; Plasmawall System for walling; Precast concrete Technology & Monolithic concrete construction Technology; Light Gauge Steel Framing System; Stay in place Formwork System; Sandwich Puf Panel Technology, etc. Dy. Chief (I&D), BMTPC made presentation highlighting the need of new technologies, overview of all certified technologies.

Field visit was organized in Ujjain to see the ongoing projects of AHP and BLC under PMAY. Some houses constructed under BLC were also visited at two locations i.e. Bapu Nagar and Shankar Pur Jagipura.



### बी.एम.टी.पी.सी. द्वारा राजभाषा कार्यशाला का आयोजन

बी.एम.टी.पी.सी. द्वारा दिनांक 30 जून 2018 को हिन्दी कार्यशाला का आयोजन श्री सुरेश चन्द्र चतुर्वेदी, सहायक निदेशक राजभाषा, आवासन और शहरी कार्य मंत्रालय, भारत सरकार की उपस्थिति में किया गया। सहायक निदेशक, राजभाषा विभाग ने बी.एम.टी.पी.सी. कार्यालय द्वारा 11 दिसम्बर 2017 को हिन्दी संगोष्ठी का सफल आयोजन किए जाने की सराहना की एवं हिन्दी को बढ़ावा देने के लिए राजभाषा हिन्दी संगोष्ठी को सफल प्रयत्न बताया। कार्यशाला के दौरान कार्यालय के सभी अधिकारी/कर्मचारियों को राजभाषा हिन्दी के कार्य करने में आने वाली समस्याओं को सुना एवं उनका निदान किया गया एवं पत्र लेखन सम्बन्धी महत्वपूर्ण जानकारियाँ दी गयी।





## Performance Appraisal Certification Scheme (PACS)

(Through Gazette Notification No.I-16011/5/99 H-II in the Gazette of India No.49 dated 4<sup>th</sup> December, 1999)

The details of activities carried out under Performance Appraisal Certification Scheme (PACS) for the quarter April 2018 to June 2018 are highlighted here:

### Inspection of Works

Inspection of Works of the following new systems and renewal of PACs has been carried out by the officers of BMTPC and TAC members:

- a) QuikBuild Panels
- b) Prefabricated Large Concrete Panel System
- c) Continuous Sandwich (PUF) Panels with Steel structure
- d) Bamboowood Flooring and Wall Cladding
- e) Polyethylene Underground Septic Tank
- f) Continuous Sandwich Panel
- g) Marshal Door
- h) FRP Manhole
- i) PIR Dry Wall Prefab Panels
- j) Robomatic Concrete Hollowcore Wall Panels
- k) Flyash EPS (Beads) Cement Sandwich Panels
- l) BauPanel System
- m) LGSFS-ICP Technology



## Global Housing Technology Challenge – India (GHTC-I)

The Government of India launched the Pradhan Mantri Awas Yojana in June 2015. The country need to deploy innovative designs, efficient technologies and delivery mechanisms at an unprecedented scale – requiring a disruption of ‘business as usual’ and the embrace of the new.

The Global Housing Technology Challenge – India is an initiative of the Ministry of Housing & Urban Affairs, Government of India which seeks to identify cost-effective and speedy construction technologies. These technologies with the capability to provide maximum number of houses in minimum time and cost would be mainstreamed into the local construction industry and piloted across different climatic conditions of the country. The Ministry is in the final stages of devising this unique competition that would invite proposals from both innovators with proven and tested technologies as well as newly incubated solutions.



*For further details, please contact:*



**Executive Director**  
**BUILDING MATERIALS & TECHNOLOGY PROMOTION COUNCIL**

Ministry of Housing & Urban Affairs, Government of India  
(Erstwhile Ministry of Housing & Urban Poverty Alleviation)  
Core 5 A, 1<sup>st</sup> Floor, India Habitat Centre, Lodhi Road, New Delhi – 110003  
Phone: +91-11- 24638096, 24636705; Fax: +91-11-24642849  
E-mail: bmtpc@del2.vsnl.net.in, Website: www.bmtpc.org