


From the Desk of the Executive Director

Being a promotion council in the area of building construction, BMTPC strives to reach out to the masses and sensitize them as regards appropriate building materials and construction systems which are not only cost-effective but also sustainable and disaster resistant. The publication of quarterly newsletter is a humble attempt by us through which, we would like to communicate with all the stakeholders involved in construction sector including the common man. BMTPC publishes this newsletter as a special issue once in a year on the occasion of World Habitat Day. However, this time, we are hoping to have it on quarterly basis and I sincerely hope that I would succeed to get it published regularly.

The newsletter will have two regular sections namely on cost-effective building materials & construction technologies and the other one on emerging technologies. Besides, it will cover the recent initiatives of BMTPC and its ongoing schemes. We also intend to put it for wide circulation and look forward for the suggestions/comments from the readers so as to improve it further and bring more useful information which can directly be put to use.

Awaiting your response


(Dr. Shailesh Kr. Agrawal)

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BMTPC Join Hands with NDMA for Preparation of Earthquake Hazard Maps

In its pursuit towards main streaming disaster risk reduction in housing sector, BMTPC has made significant contributions since its inception in 1990. BMTPC developed the first ever Vulnerability Atlas of India in 1996 which was later updated and revised on digitized format with latest data in 2006. The Vulnerability Atlas of India contains hazard maps with respect to earthquakes, cyclones, and floods and indicates risk levels of different types of housing stock district-wise for the entire country against these hazards.

Looking at the overall importance of seismic hazard in Indian context and associated risks involved, the National Disaster Management Authority, Government of India entrusted BMTPC the task of preparing updated earthquake hazard maps up to district level incorporating latest data as available from Survey of India, Census and Geological Survey of India, India Metrological Department etc. An Memorandum of Understanding (MOU) has also been signed with NDMA in this regard on 22nd November, 2011.

The Council is at present preparing the earthquake hazard maps for India, 35 States/UTs and 618 Districts. To take further directions, an Expert Group has been constituted under the overall guidance of Padamshree Prof. A.S. Arya, Professor Emeritus, IIT, Roorkee.

Visits of Technology Advisory Group

The Council is in the process of identification of emerging technologies through a Technology Advisory Group consisting of eminent experts in the academic field. The Technology Advisory Group (TAG) through various meetings shortlisted seven technologies/systems for identification and evaluation of the suitable technologies. The inspection meetings by the TAG members are being organized to see ongoing projects from these technologies/systems. In this connection, the project sites of EMMIDUE Panel Building System at Kolkata on 27th January, 2012 & at Chandigarh on 4th March, 2012 and 3S Technology of M/s B.G.Shirke, New Delhi on 4th February, 2012 have already been visited.



Alternate Building Materials & Technologies

Pulverized Fuel Ash (Fly Ash) Lime Bricks (IS 12894) - An Alternate to Fired Clay Bricks

General

- Bricks shall be solid, compact and uniform in shape with or without frog. Bricks shall be free from visible cracks, warpage and organic matters.
- The bricks shall have rectangular faces with sharp and square corners and shall be uniform in shape and colour.
- Class Designation: 3.5, 5, 7.5, 10, 12.5, 15, 17.5, 20, 25, 30.

Materials

- Flyash: Flyash shall conform to Grade 1 or Grade 2 of IS 3812 (Part 1).
- Bottom Ash: Bottom ash used as replacement of sand shall not have more than 12 per cent loss on ignition when tested according to IS 1727.
- Sand: Deleterious materials, such as clay and silt in sand, shall preferably be less than 5 per cent.
- Lime: Lime shall conform to Class C hydrated lime of IS 712.
- Additives: Any suitable additive considered not detrimental to the durability of the bricks such as gypsum, cement, etc. may be used to provide early strength and/or colour.

Dimensions

- Modular sizes
 - 190 mm x 90 mm x 90 mm
 - 190 mm x 90 mm x 40 mm
- Non-modular sizes
 - 230 mm x 110 mm x 70 mm
 - 230 mm x 110 mm x 30 mm.

Physical Characteristics

- Minimum Compressive Strength shall not be less than the one specified for each class when tested in accordance with IS 3495 (Part 1).
- Average Drying Shrinkage when tested by the method described in IS 4139 shall not exceed 0.15 percent.
- Efflorescence Test as per IS 3495 (Part 3), shall have the rating not more than 'moderate' upto Class 12.5 and 'slight' for higher classes.
- Water absorption shall not exceed 20% upto 12.5 class and 15% for higher classes.

Emerging Technologies for Building Construction

Apart from promoting cost effective building materials & construction technology, BMTPC in recent years is also studying appropriate emerging technologies which could be the potential technologies for social mass housing projects. The technologies are studied with a view so as to bring economy, speed, quality and overall sustainability. The exercise is being done through Technology Advisory Group (TAG). The Panel building system using steel mesh, polystyrene core and chipping concrete is one of them.

The panel building system is a load bearing wall construction which is seismic resistant and thermally insulated. The base element of the building system is a modular panel composed of two electro-welded galvanized steel meshes, reciprocally joined by connectors, in the middle of which is a suitably shaped foam polystyrene plate. High resistance steel meshes composed of bars having dia 2.5 to 5 mm, are made in factory. Panels could be supplied with meshes having different dia and different geometrical characteristics.



Once the panels are installed as per the requirement of the building, they are anchored and finished with the application of light concrete on both of their sides.

Materials used: Meshes manufactured using high resistance steel bars of dia 2.5 - 5 mm, self-extinguishing Polystyrene core (min density 15 kg/m³), Chipping Concrete having characteristics strength 30 Mpa.

Salient features: Good heat and sound insulation properties, versatility in construction, lightweight but strong, resistance to seismic, fire retardant and time saving construction.



Skill Development and Capacity Building

ICI-BMTPC Manual for Concrete Field and Lab Technicians

BMTPC has initiated a joint activity along with the Indian Concrete Institute, Chennai for preparation of a Training Manual for Training of Lab Technicians and Civil Engineers in the area of Concrete Testing. The objective of the preparation of training manual is to initiate and implement the training and certification program throughout the country to provide a large number of well-trained and certified personnel to the construction industry. The printed training manual is available with the Council for conducting such training programme, the same has been used to organise the first pilot training programme in Bangalore from October to December 2011 and the certificate distribution function was held on 24th March, 2012.

Training Manual and Certification Programme

One of the core areas in which BMTPC is currently working has been preparation of standardized training modules and certification system for the construction work force. The whole exercise is being undertaken with the aim to provide quality masons and other artisans at the construction sites.

Under this activity for Evolving Building Artisan Friendly Certification Programme linked to Decentralized Modular Training Programme for Enhancing Skill Levels and Livelihood Capacity Project was awarded to the Centre for Ecocentric Development and People's - Action, Ahmedabad. Under this project, the benchmark survey in the State of Gujarat has already been completed by the implementing agency. On the basis of the survey report, a Core Group meeting was held on 28th February, 2012 at Ahmedabad in which a broad guideline for preparation of course content and certification system for masons and assistant mason was finalised. Once the course content and certification system is in place, the same will be used for conducting pilot training programmes for further implementation of this scheme in other states.

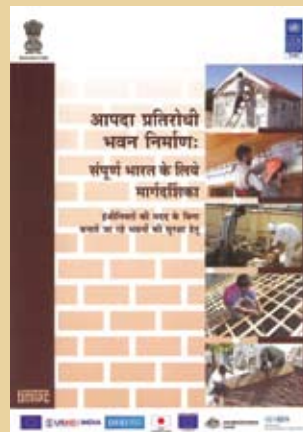
Recent Publications

TRAINING MANUAL FOR SUPERVISORS



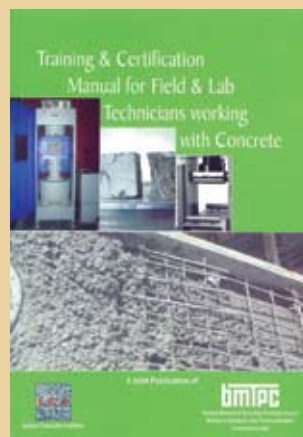
BMTPC brought out the Training Manual for Supervisors involved in building construction both in English and Hindi. The manual attempts to cover all the aspects related to the activities of construction supervisors and to gain overall understanding of whole spectrum of construction activities at the site.

GUIDELINES ON "AAPDA PRATIRODHI BHAWAN NIRMAN : SAMPURN BHARAT KE LIYE MARGDARSHIKA"



At the behest of UNDP, BMTPC brought out Hindi translation of UNDP - Ministry of Home Affairs, English Manual on Disaster Resistant Construction : Safety of housing being constructed without the help of engineers. The guidelines will also help in creating awareness amongst common people as regards disaster resistant techniques.

MANUAL ON TRAINING & CERTIFICATION MANUAL FOR FIELD & LAB TECHNICIANS WORKING WITH CONCRETE



BMTPC published the Manual for Concrete Field and Lab Technicians in association with Indian Concrete Institute (ICI) as a course module for training and certification programme for field and lab technicians. The Manual provides the technical framework for field and lab technicians for handling concrete works and its quality control and assurance. The Manual is available free of cost at

BMTPC and being circulated to all the State Government agencies involved in the construction.



Performance Appraisal Certification Scheme (PACS)

Performance Appraisal Certification Scheme (PACS), being operated by BMTPC, is a third party voluntary scheme for providing Performance Appraisal Certificate (PAC) to manufacturers or installers of building materials, products, components, element and systems, etc. on which, there is no Indian Standards after due process of assessment. Under this scheme, the Council has already issued the 20 PACs related to various building materials and housing technologies and 10 other products and technologies are under various stages for certification. In this regard, the team of BMTPC technical officers visited the following two companies in order to have on-site supervision and verify the product quality through various test methods and collection of the product to be tested at independent laboratories for certification system.

- On 10th March 2012, BMTPC officers visited M/s FACT, Cochin in connection with Performance Appraisal Certification Scheme (PACS) for Glass Fibre Reinforced Gypsum Panel for application as building panel. Samples have been collected and sent to IIT-Chennai for testing of the materials. The visit is undertaken to understand and inspect the production process, requisite raw material and infrastructure, quality control and assurance system being adopted. The test results once obtained would be compiled to make a report for circulation to Technology Advisory Committee (TAC) which is empowered to issue PACs.
- On 29-30th March 2012, BMTPC officers visited M/s Navin Fluorine International Ltd., Surat, Gujarat in connection with Performance Appraisal Certification Scheme (PACS) for fluoro gypsum (waste product) based Anhydrite Binder to be used for masonry application. Inspection of production unit stacking, storage, lab process and testing procedure, manpower and other infrastructure have been done. Samples have been collected and sent to the laboratory for required testing.
- Apart from the these two, there are number of PACs certificate holder to be processed for renewal.



Forthcoming Events

- National Consultation on Development, Construction and Dissemination of Appropriate Technologies on May 29, 2012, New Delhi
- National Symposium on Earthquake Resistant Design & Construction for Urban Social Housing Projects, July 19-20, 2012, New Delhi
- National Seminar on Emerging Building Materials & Construction Technologies, July 31 - August 1, 2012, New Delhi

For further details, please contact:



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