

CATEGORY

**BUILDING SYSTEMS**



PRODUCT / TECHNOLOGY



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Technology Detail

**PRECAST TECHNOLOGY USING JOINTING TECHNIQUE**

*Alternate to conventional cast-in-situ building construction systems  
e.g. RCC framed and load bearing construction*



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**CONTACT DETAILS**

**M/s N M Roof Designers**

Contact Person: - Sh Deepak Sogani  
Address: C 41, Tarun Marg, Jaipur  
E-mails: deepak.sogani@gmail.com  
Contact Numbers; 7726812234



**BRIEF**

M/s N M Roof Designers (NMRD) have been into structural consultancy and turnkey construction including prestressed and precast concrete works. NMRD has an innovative cost-effective, precast RCC system for construction of houses using patented "Sogani Jointing Technique". It is a building system which employs fully precast concrete components e.g. floor, walls and roof with special cast-in-situ patented jointing system at site.

The precast construction system has already been approved under Global Housing Technology Challenge – India under Precast Concrete Construction System-Precast Components assembled at site category and is suited for high to mid-rise structures. However, NMRD claims that the precast technology can be extended for isolated single storey houses with their innovative solution and will be economical enabling faster delivery of quality affordable houses.

The company holds Guinness World Record for design and construction of reinforced cement concrete flat roof with single span of 119 ft. which is the largest RCC span in the world.



## SALIENT FEATURES

- The structure is entirely made of precast reinforced panels for foundations, shear-walls and slabs.
- The precast floors, walls and roofs are joined on site using “Sogani Jointing Technique”.
- Special treatment of joints for water tightness.
- The structure has smooth finish, higher strength & good quality and facilitating faster construction.
- The plant/factory can be set up at the site as per requirements.
- The other salient features are textbook casting, meticulous curing and smooth finish.
- A fully finished 250 sft. Carpet area house with one bedroom, living, kitchen and toilet can be handed over in 5 days complete with doors, windows, flooring, painting, plumbing fixtures, electrical fixtures, kitchen counter, etc as claimed by NMRD.

## ECONOMIC ASPECTS

- NMRD has submitted a proposal for construction of isolated PMAY single storey houses under Beneficiary Led Construction vertical to AP Govt. at a cost of Rs. 1.80 lakh for 250 sft. House.
- The precast concrete construction has advantages over conventional cast-in-situ construction such as resource efficiency, low life cycle cost, less maintenance, waste minimization, affordability and durability.
- Building components being cast under controlled conditions are of good quality and durable.



## SUSTAINABILITY ASPECTS

- The precast concrete construction has high thermal mass and long lag times. In building design, thermal mass is a property of the mass of a building which enables it to store heat, providing “inertia” against temperature fluctuations.
- Casting of building components being done in controlled conditions, sustainability is achieved in terms of material and human resource efficiency, disaster resilience and durability.
- Precast concrete construction enables use of industrial waste such as flyash, slags and other pozzolanic materials in house construction.
- Strong and durable with multi-hazard resistant construction with respect to earthquakes, wind/cyclone and floods.

## SUITABILITY & AVAILABILITY

- Suited for all weather conditions. However, under very hot climatic conditions, the structure may require proper insulations.
- Plant setup in multiple parts of the country including Jaipur, Ludhiana, Ranchi, Rajahmundry, Pune
- Suitable for construction of single storied & upto G+3 buildings.





### LIMITATIONS, IF ANY:

- Since it is a patented system by NMRD, the feasibility and techno-viability of the company need to be ascertained before undertaking the large size projects.
- Commercially not viable for small volume of works. Minimum Order value should be Rs. 1 crore.
- Requires experienced structural designers to design and highly trained technical staff with help from skilled and unskilled workers to manufacture, transport, erect and assembly.
- Depending upon the geo-climatic zone, the structural design/structural integrity needs to be vetted by Institute of repute i.e. IITs, NITs or CSIR laboratories before field level applications.



### MARKET LINKAGES

- The precast components can be locally cast near construction site.
- Being patented system, NMRD can set up the plant near site or supply the components as per the project requirements and viability anywhere in India.

### MAJOR PROJECTS:

- Houses in Rajahmundry, AP,
- Jaipur National University,
- Musepur, Pilibhit Tiger Reserve

### CERTIFICATION/INDIAN STANDARD/ ENDORSEMENT

- Technology certified by IIT Delhi & JNTU Kakinada.

