

Ferrocement Industries

By- Chandramohan Hangekar,
President, Ferrocement Society India
hangekarce@gmail.com, Mobile 9822597479

Pune, India- *World famous ferrocement is gaining importance now a day. Indian Ferrocement Society having head office in Pune has promoted the technology successfully in the world. Debate about ferrocement or concrete is better explained by the experts.*



(Lahuji Vastad Health Centre Aurangabad with ferrocement roof)

Ferrocement looks very simple as to use wire meshes in layers and filling rich and thick cement mortar in the gaps of layer, thus giving tremendous strength. As forecasted by the Italian Architect Lambot in 1849 while he built first ferrocement boat, it was quite surprising that cement concrete technology overtook ferrocement technology. After experiencing the drawbacks and limitations of the RCC, many engineers and architects are now running behind the ferrocement. For field workers it is easy to pour concrete with less energy. Ferrocement, also called as ferrocement, requires special efforts to impregnate the thick mortar in meshes.

Ferrocement has properties like water tightness, imperviousness, excellent tensile strength, ductility, high impact resistance, designing freedom for any complex shape and simplicity. In this construction no formwork and no coarse aggregates are used. Saving of cement, saving of timber planks makes it eco-friendly.



(A Banglow near Bhugaon, built by Padmanabh Lele)

Ferrocement has already proved that it is a quality conscious material. Casing of lean cement concrete having W/c ratio 0.65 and the press-filling of thick cement mortar in ferrocement is the basic difference in construction technique. Closely spaced small diameter wire meshes are bound to give more tensile strength, impact resistance and crack resistance. **Bureau of Indian Standards** has taken note of this aspect and they have approved a committee to set up code of practice. Government of Maharashtra ordered to publish a handbook for field engineers. The books published by Ferrocement Society are available in the world on Amazon. So Architects and Engineers can't neglect this magical material now. Intelligent use of ferrocement in any construction is now a day thought of.

Readers will be surprised to note the international success of FERRO-1 to FERRO-12 held in different countries. International conferences on ferrocement have 3 years gap but Indian Conventions are held in every odd year. Various academic data and research, field applications, innovative ideas and case studies are presented in such conventions. The books of proceedings are really the mirrors of the activities in India. Hundreds of buildings are nicely planned and constructed in Kerala using ferrocement. Er. Nandkumar Jadhav from Deep Ferrocement said, architectural planning of the ferrocement building is now becoming very popular and people are demanding it. Ferrocement Society has planned various seminars for students, NGOs, engineers and architects during the Constro 2020. Delegates will witness the construction demo of ferrocement buildings.



FERROCEMENT SOCIETY

After formation of the technical Society, the ferrocement technocrats in the corners of India have been listed in the membership list of Pune based Ferrocement Society. This is the great achievement and the members now get opportunity to interact in the news bulletins and the National Conventions also. The full ferrocement building work (Satara, Maharashtra) was presented by the owner Nandkumar Jadhav in Ferro-11 in Germany. World experts appreciated this work. Experts also appreciated the ferrocement Code of practice published by Ferrocement Society. Dr B N Divekar, expert in Ferrocement has written a text book, construction manual, which stands first of its kind. Savitribai Phule Pune University has approved this text book for the elective subject for BE Civil.

Ferrocement Society has conducted 120 one day workshops in different Engineering and Architectural colleges to enhance awareness of this technology.



(A Banglow in Noida, elevation in ferrocement)

Many patents can be found like sandwich panels of ferrocement, linings etc. But in Pune the Past President of the Ferrocement Society, Dr Balkrishna Divekar built ferrocement cavity walls with embedded columns and hollow slabs with embedded beams. Late Er. Vishnu Joshi brought this technology in Pune. Water Resources Department built ferrocement canal lining in Nashik area and shell roofs for pump houses in Buldhana area. Many ferrocement domes and shells are built in India thereby saving in huge costs. Monolithic ferrocement buildings are really the earthquake resistant structures. RCC multistoried buildings are heterogeneous as the components behave separately while ground is under acceleration.



(A Banglow built in Satara by Deep Ferrocement Co.)

Engineers must accept that designing of ferrocement structures is quite different from that of RCC. Very few designers are available in India. After publishing the IS code and design manuals engineers will get momentum to use ferrocement. Though multistoried ferrocement building is a

dream, it is not at all impossible for experts of ferrocement. Indian ferrocement engineers are developing mechanization for precasting and mass ferrocement works. RCC practicing engineers agree that the RCC slabs leak and the ferrocement layer stops the leakage. Apart from water tanks, water proofing, structurally the tensile strength of the ferrocement component is still unutilized by structural designers. A time will come, even ferrocement components can be used for replacing pre-stressed concrete. This is only because of the ductile properties of ferrocement.

In future ferrocement precast industries will be common in all industrial estates like Singapore.