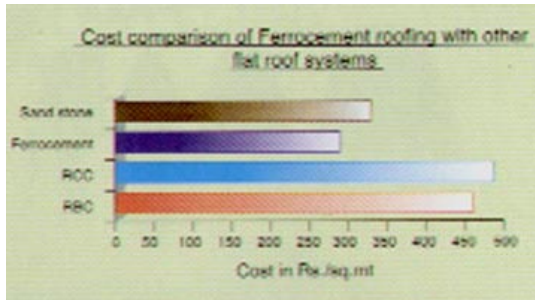


The ferrocement technology package for roofing developed by Development Alternatives uses state-of-the-art design principles to manufacture reinforced shells. Commonly called channels they are produced on specially designed vibrating tables and profiled moulds. The production system is uniquely tailored to provide special end details, consistent shape and thickness; all crucial for high performance. The channels made with an optimised proportion of cement, sand and water. Have a very high density, are impervious to penetration of water and provide high structural strength. Ferrocement roofing channels produced on mechanised equipment can be used for intermediate floor applications as well. Ferrocement roofing technology offers a viable alternative to conventional flat roofing systems such as reinforced cement concrete, Reinforced brick cement, Sand stone, etc. In both rural and urban areas of the country.



Business

Ferrocement technology is a highly profitable business for small scale building material producers or construction companies. A total investment of roughly Rs. 3,80,000/- for a mechanised production system assures a net profit of approximately Rs1.50.000/- per annum.



Ferrocement Channels as an intermediate floor

Product

Ferrocement roofing channels have a uniform segmental profile; they are 2.5 cm thick and 83 cm wide maximum length of mechanically produced channels can be 6 metres. Longer spans for roofing can be built with intermediate supports.

Ferrocement roofing channels are manufactured using a fixed proportion of cement. Sand and water to give high strength mortar that is reinforced with a layer of galvanised iron chicken wire mesh of 22 gauge and Tor steel bars of 8-12 mm diameter provided in the bottom ribs of the channel.

Ferrocement roofing channels can be safely transported after a curing period of 14 days.



Profile of Ferrocement Roofing Channels

Unique Features of Ferrocement Roofing Channels

- Speedy installation; no shuttering required
- 30% cost saving over RCC roofing
- Lower dead load on the walls
- Usable as an intermediate floor
- High strength to weight ratio
- Elegant profile and uniform sites
- Large spans possible with intermediate supports

Production process

Ferrocement roofing channels are prefabricated elements. The mechanised system of production uses a vibrating table and profiled steel shell moulds. The production yard consists of a vibrating table positioned under a gantry system 65mts in width the gantry is fitted with a chain and a pulley system for ease of handling of shell moulds. A production team consisting of 2 masons, 6 semi-skilled workers and a supervisor can produce upto 5 channels of 4.6 mts length each in 8 hours operation.



Ferrocement channels production yard

The shell moulds are lifted with the cast channels in the green state. After 24 hours. The roofing channels are demoulded by using a specially designed mould lifting frame and demoulding tongs. The mechanised system does not require high skills but ensures high quality. Whereas, Manual method needs highly trained masons and stringent quality control measures.



Mechanised Ferrocement production table

Installation

Ferrocement roofing channels are simply placed in a series, next to each other resting on opposite walls of a structure. The valley between channels are then filled with a plain cement concrete. Over which a layer of bitumen is spread to ensure water tightness. A lean concrete of 2.5 cm thickness or mud phuska with brick tiles can be laid to make a flat surface and provide thermal insulation.

Application

Ferrocement roofing channels, offer unmatched speed of construction and can be used for :

- Residences
- Primary schools, and other community buildings
- Porticos, verandahs and garages
- Industrial sheds, Workshops and godowns
- Farm houses and semi-covered structures



Transporting ferrocement roofing channels

Technical Specifications of Ferrocement Channels

Parameters	Description
Shape and size of roofing channel	Clear bay length 750 mm, total bay length 830 mm, rise of arch 290 mm, shell thickness 25 mm.
Weight of channel Mortar composition	50 kg per meter length 1 part cement : 3 parts fine aggregates
Load carrying capacity	350 kg/sqmt. for simple roof and 870 kg/sqmt. for intermediate floor
Water absorption	Less than 5% by weight of channel



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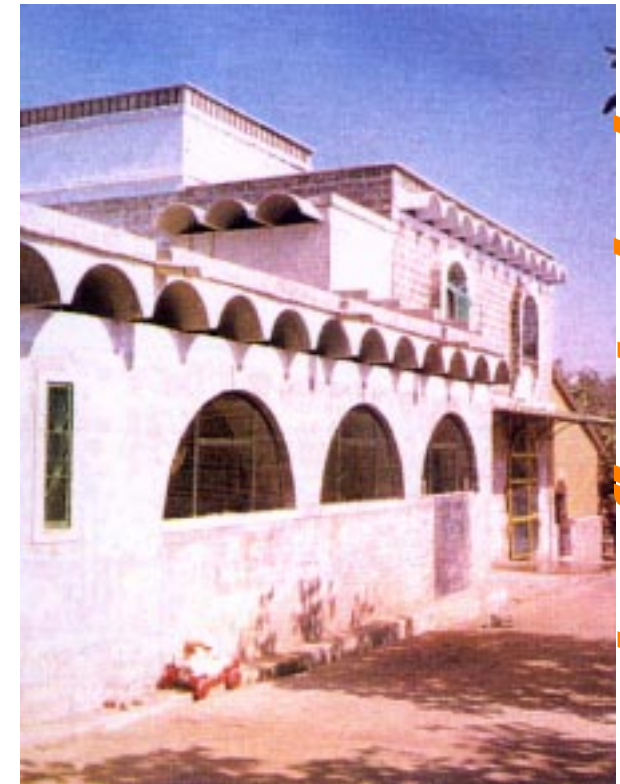
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THE MECHANISED FERROCEMENT ROOFING TECHNOLOGY PACKAGE HAS BEEN DEVELOPED BY DEVELOPMENT ALTERNATIVES WITH FINANCIAL SUPPORT FROM BUILDING MATERIAL AND TECHNOLOGY PROMOTION COUNCIL, GOVERNMENT OF INDIA.



Eco Building Advisory Unit



ferrocement roofing technology

An affordable, durable and

aesthetic flat roof

... in just 3 Days



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