

ERCON NEWS

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MAY 2012

Issue No. Two

www.ercon-india.com

Ercon Makes A Record - The Largest Indian Infrastructure Project

117 FRP/GRP Platforms made for Indian Railways from Pultruded Profiles

ERCON DOES IT AGAIN

Ercon has done it again. A new feat achieved by completing India's largest GRP Project.

At Vallarpadam in Kerala, is India's longest railway bridge, almost 4 miles long. For this bridge the railways wanted bearing inspection platforms on RCC piers, since most of the piers being inside sea, constructing RCC platforms was uneconomical proposition and metallic platforms did not make any sense in the highly corrosive sea atmosphere. Ercon was approached to advise feasibility of making complete platform with GRP structural. Ercon took the challenge and prepared the feasibility report, which was examined by the main contractor- AFCONS who had constructed the bridge and accepted it in concept.

CHALLENGE

It was challenge to convince the railways to accept the same, since there was no past similar work done anywhere in the world. Detailed calculations were done, prototype developed and tested at Ercon's works, which was finally accepted by the railways.

QUANTUM

Almost 90 metric tons of Pultruded GRP profiles were used in the project. Ercon supplied all pre - designed components at its

Article on Ercon's project in JEC Composites a leading international magazine on Composites

The largest indian GRP infrastructure project

Ercon Composites, a leading Indian pultruder, recently completed the largest project of its kind in the world.

Mukesh Maheshwari
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Ercon Composites

For this project, Ercon supplied 117 structural platforms entirely prefabricated in-house. Several platform designs and sizes were installed under its supervision on a very difficult site on a sea bridge at Kochi, Kerala. The platforms consisted of glass reinforced plastics (GRP) I-sections, channels, angles, cage ladders, gratings and handrails.

Almost 90 metric tons of GRP structural profiles were pultruded for the project. The company fabricated them to the minutest detail, even the smallest parts including stainless steel bolts and nuts. The complete design, validation



The offshore project was completed in just 7 months.

and prototyping work was carried out in-house.

A 6-km-long bridge
The RVNL bridge is supported by 117 concrete piers. The railway company wanted an inspection platform on each pier to inspect the bearings. Most of the piers being inside the sea, building the RCC inspection platforms was next to impossible and uneconomical as it required shuttering and concreting/casting on each pier in the centre of the sea.

Using metal was not advisable for this offshore structure due to the corrosive salty winds and water sprays. Moreover, metal being heavy, the installation would have been a tough job.

Ercon Composites was approached to advise on the feasibility of making the complete structural platform in GRP. The company took up the challenge and prepared a feasibility report which was examined by the main contractor in charge of the construction, AFCONS, who accepted the concept.

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APPLICATIONS





Vaillarpadam Railway Bridge, Kerala, India, Ercon GRP Platforms with Cage GRP Ladders, Handrails, Structure & Gratings



GRP - Bearing Inspection Platforms

works and all the structural profiles were cut into specific lengths to avoid wastage. Thus it was a near zero wastage project.

DESIGN

The design team of Ercon took all the external factors like vibrations due to train movement, sea winds, corrosion and load factor & other constraints, into consideration while designing the platforms. Specially designed cantilever beams were used instead of braced brackets of GRP, since head room space was a constraint specified by RVNL.

INSTALLATION

The Installation work required transferring of material in the middle of sea on each pier either by boats or through 4 mile long railway track. Hangars were suspended from the top of the bridge to the pier base, for workers to stand and work. Strong winds and rains kept on creating difficulties, but the enthusiasm of the labour for working with light weight GRP made it an easy task.

The installation costs were quite low due to light weight material which is easy to fabricate and modify at site. As a result the overall cost turned out to be much lower to the conventional material like galvanized/stainless steel.

RECOGNITION

Articles have been published in the national and international leading magazines of composites. Ercon has been given a good coverage in FRP Today & JEC Composites.

Ercon has now undertaken big projects of platforms and cage ladders for very high reactors, chimneys, columns, etc. in industries.

Ercon Composites, has proved that, India FRP/GRP industry is coming off the age and making inroads in the infrastructure sector and other sectors of national importance.

Ercon Composites designed, fabricated and supervised the installation of the **117 - Bearing Inspection Platforms on RCC Piers for Railways at Vaillarpadam, Kerala, India.** Complete Platforms consisted of Structure, Gratings, Hand Rails & Cage Ladders of Pultruded GRP/FRP specially designed, taking into account, the vibrations, sea winds, corrosion and load factor.

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