

**Zeitschrift:** IABSE congress report = Rapport du congrès AIPC = IVBH  
Kongressbericht

**Band:** 14 (1992)

**Artikel:** Bridging Pamban strait near Rameshwaram Island in India

**Autor:** Haridas, Giridhar R. / Jatkar, Mohan V. / Srinivasan, Duraisamy

**DOI:** <https://doi.org/10.5169/seals-853202>

### **Nutzungsbedingungen**

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. [Mehr erfahren](#)

### **Conditions d'utilisation**

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. [En savoir plus](#)

### **Terms of use**

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. [Find out more](#)

**Download PDF:** 21.08.2025

**ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>**



## **Bridging Pamban Strait near Rameshwaram Island in India**

Pont sur le détroit de Pamban, Inde

Die Brücken über die Pamban Meerenge, Indien

### **Giridhar R. HARIDAS**

Addl. Chief Eng.  
Gammon India Ltd.  
Bombay, India

### **Mohan V. JATKAR**

Senior Design Eng.  
Gammon India Ltd.  
Bombay, India

### **Duraisamy SRINIVASAN**

Project Mgr.  
Gammon India Ltd.  
Bombay, India

## **1. INTRODUCTION**

This bridge linking the Tamilnadu Main land and the Island of Rameshwaram is the longest bridge across Open Sea in India. The scope of work consisted of completing major portion of the bridge which was partly executed by a local contractor and left on account of technical and other problems. The completion of this bridge was a formidable challenge on account of the Open Sea as also the area being prone to frequent cyclonic storms, one of which had resulted in disruption of the initial work.

## **2. SALIENT FEATURES**

This bridge consists of 53 non-navigational simply supported spans on Mandapam side and 12 non-navigational spans on Pamban side each of 27.13 M with 9 additional viaduct spans of 27.58 M on a curvature across a Railway track underneath. The bridge also provides one navigation span of 115.21 M and 2 adjacent anchor spans of 68 M with 2 non-navigational spans of 40.69 M one each on either side of the navigation span.

## **3. DESIGN ASPECTS**

The bridge provides for a 7.5 M roadway for vehicular traffic with 1.57 M footway on either side. The simply supported spans consists of 4 Nos. of precast PSC girders while the navigation and anchor spans consist of a single cell box girder of 5.5 M width with projecting deck slab covering the full width of roadway and footway and kerb amounting to 11.10 M.



The bridge is designed for the critical of the following live loads :

- i) Crowd load of 500 Kg. per sq.m. over the entire width of carriageway and footpaths.
- ii) Two lanes of Class A with crowd load on footpaths.
- iii) One lane of Class 70R with crowd load on footpaths.

The box superstructure is also designed for temperature differential as per BS:5400 - Part 4. Untensioned mild steel reinforcement is provided in the box decking to cater for 15 percent loss in prestress in addition to the losses worked out as per codal stipulations.

Tetron spherical bearings (S3) manufactured by M/s.Freyssinet International, France are provided below suspended spans. The bearings were chosen since they can accommodate rotation upto 3 degrees and are made of aluminium alloy hence corrosion-resistant.

Since the bridge is located in an aggressive marine environment, special care had to be taken in specification, design and detailing of various components of the bridge.

#### 4. CONSTRUCTION ASPECTS

The PSC girders for simply supported spans were pre-cast and launched into position and the decking was cross-prestressed after casting the gap slabs. The original scheme envisaged precasting of the PSC girders with flanges just short of touching each other which were transversely prestressed after filling in the gap with dry mortar. Since this resulted in threading difficulties for the transverse cables on account of the differential hogging, the scheme was altered to introduce an insitu gap between the flanges to provide a smooth transition for the transverse cables.

The box superstructure was constructed by the cantilever method. Extreme precaution and precamber control was necessary to ensure matching of part of decking cast over rigid support of staging at the anchor pier and the decking cast on the main navigation pier with cantilever construction gantries.

Mild steel reinforcement is given anti-corrosive treatment developed by CECRI, Karaikudi.

The bridge has been instrumented for the temperature and stress monitoring in the navigation spans.