

**COMMENTARY WITH WORKED EXAMPLES
FOR IRC:6-2017**

**STANDARD SPECIFICATIONS AND
CODE OF PRACTICE FOR ROAD BRIDGES**

**SECTION II : LOADS & LOAD COMBINATIONS
(SEVENTH REVISION)**

SEPTEMBER, 2020

VOLUME 1 OF 2 : COMMENTARY



**INDIAN ASSOCIATION OF
STRUCTURAL ENGINEERS**

About this Guideline

Like many current national codes in India, the IRC code on Loads and Load Combinations (namely IRC:6-2017) is a code without a published commentary. For any structural design code, it is important for the practicing structural engineers to have a thorough understanding of the principles, the true interpretation and background of the codal clauses, which will ensure better compliance of the code. It is often found that many of the clauses presented in the code pose difficulty to some designers at least initially for its correct application. For young engineers particularly, the unfamiliarity with the codal clauses poses huge problems in ensuring correct interpretation and application of the code. This is the backdrop to the publication of this guideline, titled 'Commentary for IRC:6-2017' by the Indian Association of Structural Engineers (IAStructE). The association recognised this need and had set up a task group to prepare the base document in two volumes :

- a. Volume - 1 : Commentary
- b. Volume - 2 : Illustrative Worked Examples.

The first draft of this document, including proposed comments on the code was prepared by a group of engineers led by Mr Alok Bhowmick. Other members of the group were Mr Rajiv Ahuja and Dr Lakshmy Parameswaran. The team was assisted by many engineers, list of which is given below. The draft document was widely circulated amongst the structural and bridge engineering fraternity and a brain-storming session was organised by IAStructE in the month of November 2019, which was attended by more than 40 participants. Many engineers, who could not attend the Brain-Storming session sent their comments thru' email. Thereafter an expert committee was constituted by IAStructE under the convenorship of Prof. Mahesh Tandon, MD of Tandon Consultants Pvt. Ltd. and past president of IAStructE to give final shape to this guideline, after going through all the comments received during and after the brain-storming session. Other members of this expert committee are :


- a. Mr Alok Bhowmick (MD, B&S Engineering Consultants Pvt. Ltd. and President, IAStructE),
- b. Mr Rajiv Ahuja (Independent Consultant and GC Member, IAStructE),
- c. Mr G L Verma (Director, EPC Consultants Pvt. Ltd.),
- d. Mr Partha Pratim Banerjee (Technical Director, Ayesa) and
- e. Dr Lakshmy Parameswaran (Chief Scientist, CSIR-CRRI).

Mr Jatin Singla (Student Engineer, B & SECPL) assisted the team for the preparation of illustrative worked examples.

It was decided by the expert committee to segregate comments on the existing code from the Commentary and Worked Examples. Comments on the existing code are proposed to be compiled in a separate volume and handed over to IRC for consideration of B-2 Committee of IRC. The expert panel was assisted by several engineers, listed below.

This publication will assist practicing bridge and structural engineers in building confidence in the code, which offers tools for the design of economic and innovative bridge structures. The document is rich in theoretical explanations and draws on much experience of the authors. Worked examples further illustrate the application of the code and should promote better understanding. As members of the Expert Panel, we would like to thank all the authors, peer reviewers and members of the joint Task Force for working efficiently and effectively in producing these documents.

The Commentary and the Worked Examples will prove to be an authentic companion to IRC:6-2017 and deserve every success.



Prof. Mahesh Tandon

MD, Tandon Consultants Pvt. Ltd. and
GC Member, IAStructE



Er. Alok Bhowmick

President - IAStructE and
MD, B&S Engineering Consultants Pvt. Ltd.



Er. Rajiv Ahuja

Independent Consultant and
GC Member, IAStructE



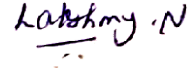
Er. Partha Pratim Banerjee

Technical Director, Ayesa and
Member, IAStructE



Er G L Verma

MD, EPC Consultants Pvt. Ltd. and
Fellow IAStructE



Dr Lakshmy Parameswaran

Chief Scientist, CSIR-CRRI and
Fellow IAStructE

Participants and contributors in this guideline :

- Mr Manoj Mittal
- Dr SK Dhawan
- Mr A K Banerjee
- Mr Harpreet Singh
- Mr Amitabha Ghoshal
- Mr MM Ghosh
- Mr Anirban Sengupta
- Mr Ahmed Bilal
- Mr Mohamed Azarudeen
- Mr Shubham Rastogi
- Mr Bhumi Reddy Maheswara Reddy
- Dr Durgesh C Rai
- Ms B. Shobhana
- Mr Nishad Kulkarni
- Mr Umesh Sharma
- Mr Ashutosh Mathur
- Mr Vipul Ahuja
- Dr Dulal Goldar
- Mr Sanjay Jain
- Mr Arpit Singhal
- Dr Nirmalya Bandopadhyay
- Mr Varun Garg
- Ms Mousumi De
- Mr Devjyoti Paul
- Mr Ashish Vishnoi
- Mr Padam Kumar
- Mr D Suresh
- Mr Pradhyumna Jasti
- Mr Devang Patel
- Mr Ashish Kumar
- Mr Jatin Singla
- Mr Pritam Jash
- Mr Sitaram Aggarwal
- Mr T Viswanathan
- Mr Soumyaa Dixitt
- Mr Aditya Sharma
- Mr Nirav Mody
- Mr KN Sarvanan
- Mr Deepak Kulkarni
- Mr Achint Kumar
- Mr Vivek Pathak
- Mr Suraj Mehra
- Ms Shreya Chandra
- Mr Santhosh Kumar
- Mr Rizwan
- Mr Tarnpreet Singh Gill
- Mr Abhishek Sharma
- Mr. Neeraj Sharma

Disclaimer/Copyright: Indian Association of Structural Engineers

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the Indian Association of Structural Engineers (IAStructE).

The opinions reflected in this document are those of the authors and the IAStructE cannot be held liable for any view expressed therein. All advice or information from the IAStructE is intended for those who will evaluate the significance and limitations of its contents and take responsibility for its use and application. No liability (including for negligence) for any loss resulting from such advice or information is accepted.

Readers should note that all codes and standards published by the Indian Roads Congress are subject to revision from time to time and therefore this guideline is applicable and relevant to the latest publication of the code available at the time of publication of this document. Readers must ensure that they are in possession of the latest version of the code for practical application.