



In Association With
MAHAVIR
TRADERS

SQVe
Engineering

DESIGN OF CONNECTIONS FOR STEEL STRUCTURES

ONLINE WORKSHOP ID : STEEL-STR-002

Link: <https://sqveconsultants.com/steel-str-002>
email address : steel@sqveconsultants.com

INTRODUCTION

Design of connections for steel structures is one of the grey area in the industry. The practice varies from consultant to consultant to a great extent and there are number of ambiguities in the connection design. In India, IS 800:2007 was published before ~15 years and section 10 is added for the connection design. In absence of the detailed practical handbook, there are number of doubts/ambiguities related to the connection design.

After a grand success of our workshop **STEEL-STR-001*** (Decode IS 800:2007 along with software), we are glad to launch a unique workshop **STEEL-STR-002** related to design of connections for steel structures.

For design of connections, a mix approach of manual calculations/ in house developed spreadsheets / software is preferred. The area of connection design is comprehensively covered in **EUROCODE 3**. Hence, in the workshop, we will understand the fundamentals & concepts for the connection design based on EUROCODE-3. We will also discuss the connection design as per **AISC 360-16** in one of the session. Thereafter, we will take up the connection design as per **IS 800:2007**.

Hands-on training is planned for all different types of the connections on the software **STAAD Pro RAM connection**. The detailed schedule is mentioned towards end of the document.

The workshop is arranged in association with Mahavir Traders.

**Interested engineers can purchase access to recordings of the previous workshop STEEL-STR-001. Please send a request at email address: steel@sqveconsultants.com*

WHAT IS UNIQUE ABOUT THIS COURSE?

The course is designed by the **experienced engineer** (Mr. Bhavin Shah) who has more than two decades of experience in the field of structural engineering.

- ✓ The entire course is designed from the **practical aspects** which can be readily used in the real projects.
- ✓ The course is designed to have an **interactive mode** so that the problems / doubts of the participants can be addressed effectively.
- ✓ Mahavir Traders will provide **training license of RAM connection to registered participants** for the duration of the training.
- ✓ A WhatsApp group will be created for **quick communication** between the participants and the faculty members. The participants will be able to share the discussion points, doubts, queries, etc. in the group. The details in the group will be collated for further discussion in the next session.
- ✓ All the sessions will be recorded and recording of each session will be shared **within few hours**. If someone miss out the live session then he/she can go through the recording before attending the next session. The participants can share the doubts/queries in the WhatsApp group, after going through the recording which will be addressed in the next session.

- ✓ **Recording** will be available with all the participants for **180 days**.
- ✓ Certificate for participation will be issued through **Bentley Institute** in association with **Mahavir Traders** on successful completion of the online course (minimum 80% of attendance is required).
- ✓ We will create a **focused group** of engineers after the course who would like to contribute in the area of the connection design for steel structures.
- ✓ The course is designed as a **process of learning together**.

WHO SHOULD ATTEND?

This course will be useful for following :

- ✓ **Practicing Structural Consultants**
- ✓ **PEB designers**
- ✓ **Owner's consultants**
- ✓ **Proof checking consultants**
- ✓ **Senior Structural Engineers in the company having experience around 10+ years**
- ✓ **Structural engineer having 5+ years of experience**
- ✓ **Young structural engineers having less than ~5 years of experience**
- ✓ **Post Graduate students in Structural Engineering**
- ✓ **Civil engineering students who are interested in Structural Engineering.**

COURSE FACULTY



Bhavin Shah – Founder & CEO, SQVe Consultants

Mr. Bhavin Shah is passionate about Engineering profession with two decades of experience. He is having a dream for enhancing the engineering profession in different organisations. He completed graduation in Civil Engineering and Masters in Structures from Sardar Patel University. He is having unique experience of working in the specialized firm of civil / structural consultancy which grew as multidisciplinary firm (VMS), large multidisciplinary firm (L&T Chiyoda Ltd.) and owner based engineering set up (Adani Infra (I) Ltd.). He worked in different organisations at different levels, starting from junior design engineer to CEO. He is Founder & CEO of **SQVe Consultants**. He is pursuing Ph.D. in Structural Engineering related to earthquake resistant design of industrial steel structures.

METHODOLOGY

- ✓ The entire course is designed in the **ONLINE mode**.
- ✓ The course will spread over ~**three weeks** with **approximate 23+ contact hours**.
- ✓ During the program, the interaction can be done with faculty and the participants using **WhatsApp**.
- ✓ The course includes few tutorials wherein the participants will get hands on experience related to **design of connections for steel structures**.
- ✓ The online sessions will be conducted using **ZOOM** software.

COURSE SCHEDULE

Start Date	3-OCT-2022
End Date	20-OCT-2022
Total contact hours	23+ (Sessions will be arranged on Monday to Saturday from 8:30 PM IST to 9:45 PM IST .)
Details of each session	Please refer subsequent page for details of each session.

FEES FOR THE COURSE**

For participant <u>from India</u>	Cost per participant shall be 12500 INR (inclusive of 18% GST).
For participant <u>outside from India</u>	Cost per participant shall be 225 USD .

****Discount offered:**

- ✓ **For continuous learner:** If you have attended earlier one course of SQVe Consultants than **5%** of discount will be offered. For prior two courses, **10%** of discount will be offered. For three or more prior courses, **15%** of discount will be offered. To avail the discount, please send us an email at : steel@sqveconsultants.com . We will arrange to send an invoice considering the discount for online payment.

- ✓ **Group participation** from a company or institute is encouraged to get the discounts on this course. For more details, pl contact us at the above mentioned email address.

HOW TO REGISTER FOR THE COURSE?

Please click on the following link and thereafter click on “**Register Now**” button at bottom of the page. You will be directed to the **payment page**. Your registration will be confirmed after receipt of the payment at portal.

<https://sqveconsultants.com/steel-str-002>

Important notes:

- ⇒ The above payment gateway will accept card only. If you prefer other type of payments such as net banking, UPI, Goggle Pay, etc. then please message us. We will arrange details for the same.
- ⇒ Payment gateway at the above-mentioned portal is configured only for **Indian participants**. Interested foreign engineers can contact us at the email address : **steel@sqveconsultants.com**. An invoice will be shared through **PayPal** for online payment.

Kindly note that there are limited seats.

Your any queries/ doubts related to the workshop shall be addressed to the above mentioned email address.

SCHEDULE OF THE COURSE : STEEL-STR-002

Session no.	Title	Date	Time (IST)
1	Structural behaviour and connections – Introduction <ul style="list-style-type: none"> Importance of conceptual thinking How type of connection to be decided? Iterative process of connection design and structural analysis, etc. Importance of connection design in the structure Overall philosophy of the connection design, etc. 	3-OCT-22	8:30 PM TO 9:45 PM
2	Overview of connection design as per EN 1993-1-8 - Eurocode 3 <ul style="list-style-type: none"> Bolts, nuts, washers Shear connection Tension connection Positioning for holes Group of fasteners Long joints Slip resistant connection Block shear Long joints Prying forces, etc. Welding consumables Type of welds Design resistance of Fillet welds Design resistance of Butt welds Long joints, etc. 	4-OCT-22	8:30 PM TO 9:45 PM

Session no.	Title	Date	Time (IST)
3	Overview of connection design as per EN 1993-1-8 - Eurocode 3 (P358) <ul style="list-style-type: none"> • Beam to beam and beam to column connections • Partial depth end plates • Full depth end plates • Fin plates • Column splices • Column bases • Bracing connections • Examples, etc. 	6-OCT-22	8:30 PM TO 9:45 PM
4	Hands on practice for Simple joints as per Eurocode 3 using STAAD.Pro RAM connection software - (PART 1) <ul style="list-style-type: none"> • Beam to column flange • Beam to column web • Beam to Beam • With Fin plates • Bracing connection 	7-OCT-22	8:30 PM TO 9:45 PM
5	Hands on practice for Simple joints as per Eurocode 3 using STAAD.Pro RAM connection software (PART 2) <ul style="list-style-type: none"> • Beam to column flange • Beam to column web • Beam to Beam • With Fin plates • Bracing connection 	8-OCT-22	8:30 PM TO 9:45 PM
6	Moment resisting joints as per Eurocode 3 (P398) <ul style="list-style-type: none"> • Bolted beam to column connection • Welded beam to column connection • Splices • Column bases, etc. • 	10-OCT-22	8:30 PM TO 9:45 PM

Session no.	Title	Date	Time (IST)
7	Hands on practice for Moment resisting joints as per Eurocode 3 using STAAD.Pro RAM connection software - (PART 1) <ul style="list-style-type: none"> • Bolted beam to column connection • Welded beam to column connection • Splices • Column bases, etc. 	11-OCT-22	8:30 PM TO 9:45 PM
8	Hands on practice for Moment resisting joints as per Eurocode 3 using STAAD.Pro RAM connection software - (PART 2) <ul style="list-style-type: none"> • Bolted beam to column connection • Welded beam to column connection • Splices • Column bases, etc. 	12-OCT-22	8:30 PM TO 9:45 PM
9	Hands on practice for Simple & Moment resisting joints as per AISC 360-16 using STAAD.Pro RAM connection software <ul style="list-style-type: none"> • Beam to column flange • Beam to column web • Beam to Beam • With Fin plates • Bracing connection • Splices • Column bases, etc. 	13-OCT-22	
10	Overview of IS 800 : 2007 for connection design <ul style="list-style-type: none"> • Discussion on section 10 • Location details of fasteners • Bearing type bolts • Friction grip type of bolting • Long joints • Prying • Welding • Minimum design action on connections • Analysis of bolt/weld group 	14-OCT-22	8:30 PM TO 9:45 PM

Session no.	Title	Date	Time (IST)
11	Hands on practice for Simple joints as per IS 800 : 2007 using STAAD.Pro RAM connection software - (PART 1) <ul style="list-style-type: none"> • Beam to column flange • Beam to column web • Beam to Beam • With Fin plates • Bracing connection 	15-OCT-22	8:30 PM TO 9:45 PM
12	Hands on practice for Simple joints as per IS 800 : 2007 using STAAD.Pro RAM connection software - (PART 2) <ul style="list-style-type: none"> • Beam to column flange • Beam to column web • Beam to Beam • With Fin plates • Bracing connection 	17-OCT-22	8:30 PM TO 9:45 PM
13	Hands on practice for Moment resisting joints as per Eurocode 3 using STAAD.Pro RAM connection software - (PART 1) <ul style="list-style-type: none"> • Bolted beam to column connection • Welded beam to column connection • Splices • Column bases, etc. 	18-OCT-22	8:30 PM TO 9:45 PM
14	Hands on practice for Moment resisting joints as per Eurocode 3 using STAAD.Pro RAM connection software - (PART 2) <ul style="list-style-type: none"> • Bolted beam to column connection • Welded beam to column connection • Splices • Column bases, etc. 	19-OCT-22	8:30 PM TO 9:45 PM

Session no.	Title	Date	Time (IST)
15	Open Discussion <ul style="list-style-type: none">• Discussion on doubts/queries• Development of inhouse excel sheets for connection design• Discussion on appropriate format for connection design• Strategy for standardization of connection• Input required for connection design (types of forces, etc.)• Q & A• Concluding remarks	20-OCT-22	8:30 PM TO 9:45 PM

About SQVe Consultants

SQVe Consultants is a recently established innovative company with a vision of enhancing the engineering profession. The name of the company is derived from first letters of goals of engineering, i.e. **S**chedule adherence, **Q**uality assurance & **Ve** -Value Engineering.

Our ALL services are designed to have maximum of ONLINE interaction with the least OFFLINE interaction.

We look forward for long term association with different organisations for enhancement of engineering profession through our unique services. We also provide mentoring to the structural engineers through one-on-one session. Please get in touch with us for any requirements related to online training related to civi/structural engineering as well as in the area of people management (soft skills).

For more details, please refer website : <https://sqveconsultants.com>

You may contact us at email address : contact@sqveconsultants.com

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