

19th - 21th March, 2025  
CSIR - CBRI Roorkee



# SHORT TERM COURSE ON DESIGN OF FIRE PROTECTION MEASURES FOR VITAL INSTALLATIONS AND BUILDINGS



**CSIR - Central Building Research  
Institute, Roorkee, Uttarakhand**  
(Ministry of Science and Technology, Government Of India)

## OVERVIEW

Cities are now facing unprecedented challenges due to rapid urbanization and evolving building designs. Over the past two decades, the construction of complex structures—such as hospitals, high-rise buildings, offices, atriums, malls, underground parking, metro and road tunnels, airports, warehouses, and industrial facilities—has significantly increased. The frequency of fire incidents, both historical and recent has raised serious concerns about fire safety in these buildings. Consequently, it is essential to implement systematic designs for effective fire protection systems and ensure the timely evacuation of occupants during emergencies.

Recognizing this need, the CSIR-Central Building Research Institute, Roorkee is conducting a three-day course on 'Design of Fire Protection Measures' from March 19th to 21st, 2025 aimed at developing trained professionals in this critical field.

## COURSE BRIEF

This course is planned to provide an overview of fire codes/ design considerations with respect to Active systems, Passive systems, and Life Safety measures that must be provided in a building and how to assess a building's compliance with those codes. The pedagogy will include presentations, hands on experience and lab visits.

Most commonly used Active fire protection systems in the built environment include Standpipe systems, sprinkler systems and detection systems. Fire officers / safety officers should know facts to look upon while approving for installation of sprinkler system in a particular type of built environment. This becomes more important in densely populated occupancies like hospitals, metros, offices and hazardous occupancies like in industries and stores / warehouses, car parks etc. It has been observed that inappropriate installation of these systems may render them ineffective or useless in time of need.

Little effort is made to compartmentalise the building in order to prevent fire and smoke from spreading both horizontally and vertically resulting in death of people due to asphyxiation. There is a lack of understanding of impact of fire on structural elements.

Therefore, this endeavour is to make aware the fire officers/ safety people to brush up their existing knowledge with the current state of art in Fire Protection Systems.

## ABOUT CSIR-CBRI

(MINISTRY OF SCIENCE AND TECHNOLOGY, GOVERNMENT OF INDIA)

Founded in 1947, the Central Building Research Institute (CBRI) is one of the 37 laboratories under the Council of Scientific and Industrial Research (CSIR), a leading government research organization in India. Among its various facilities, CBRI houses a specialized Fire Safety Engineering Laboratory that focuses on research, fire safety engineering, risk analysis, testing, and fire auditing particularly in the building and industrial sectors. The laboratory is equipped with cutting-edge facilities to support its work.

Website: [www.cbri.res.in](http://www.cbri.res.in)

## WHO SHOULD ATTEND

If you are a Fire Engineer, Students, Researchers, Technologist, Consultant, Architect, Academician, Fire and Emergency Response Officer, Safety Executive, Insurance Executive, or a Representative from various public sector Enterprises or Government Departments at the Central or State level, we invite you to participate.

## WHY PARTICIPATE

- 3 days of experts presenting on a diverse range of subjects relevant to design approaches and solutions for fire safety of buildings.
- Exchange of Ideas and Knowledge of what is being done in fire safety designing.

# COURSE CONTENT

## 1. Introduction to Fire safety and its components

- Fire scenarios and design fires
- Hazard and commodity classification

## 2. Active Fire Protection Systems

- Water Suppression systems including Evaluation of water supply (water tank / pump capacity requirement), hydraulic design and installation guidelines of hydrant system, Gas suppression Systems, Smoke Management Systems.

## 3. Automatic sprinkler theory

- Fundamentals
- Types of sprinklers
- Design
- Sprinkler system layout
- Hydraulic calculations
- Installation guidelines

## 4. Fire Detection & Alarm System

- Basics
- Design Guidelines

## 5. Passive Fire Protection Systems

- Compartmentation - Importance, Principles & Design Approaches

## 6. Fire Resistance of Building Elements

- Fire Codes, Standards & Test Methods

## 7. Reaction to Fire of Different Materials

- Combustibility, Ignitability, Surface Spread of Flame, Toxicity, Limiting Oxygen Index
- Fire Codes, Standards & Test Methods

## 8. Life Safety

- Egress Design for the Built Environment

## 9. Smoke Management Systems in Buildings

- Concepts
- Case Studies

## 10. Regulations

- IS codes - NBC (IV), IS: 15105, IS: 13039, IS: 3844, IS: 2189
- BS: 476
- NFPA 13
- FM global Data Sheets
- All Standards and codes will be discussed along with above sections.

## 11. Case studies

- Fire Safety Audit
- Data Centers Transformers
- Post Fire Investigation

# REGISTRATION

## Fees






Fee includes kit & reading materials.  
Tea/Lunch/Dinner would be provided during the program.

**STUDENTS : RS. 1500 + 18% Tax = Rs. 1770/-**  
**INDIVIDUALS / WORKING PROFESSIONALS : RS. 10,000 + 18% Tax = Rs. 11,800/-**

If requested, accommodation near the venue or at CSIR - CBRI Guest House on first come first serve basis can be booked on prior confirmation and additional payment.

The list of few hotel options in close proximity to the event venue, categorized by various standards. We encourage you to review these suggestions and book directly with the hotels that best meet your needs.

## Accommodation

| S. NO. | Hotel           | Distance | Phone         | Location  |
|--------|-----------------|----------|---------------|---|
| 1      | Hyatt Place     | 16 KM    | 01334 691     |  |
| 2      | Sterling Mantra | 20 KM    | 079 6979 2045 |  |
| 3      | Sarovar Hotel   | 14 km    | 099273 98010  |  |
| 4      | Centrum         | 3 km     | 097562 07106  |  |
| 5      | Centre Point    | 2 km     | 078950 43739  |  |

Please send duly filled application form with fee in the form of account payee Demand Draft, drawn in favor of "Director, CSIR - Central Building Research Institute" payable at Roorkee or through Electronic Transfer to the coordinator through speed post/ Email by **28th February, 2025**.

## Online Form

Registration form



Payment



## Bank Details

SBI, Branch : CBRI, Roorkee.  
Account No. : 30269847968 (Savings A/C)  
Account Name : Director, CBRI, Roorkee  
IFSC/ RTGS Code SBIN0010635  
GSTIN : 05AAATC2716RIZL

A certificate will be awarded to each participant on successful completion of the course.

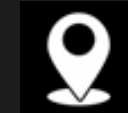
## Contact Us



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## Venue



CSIR - Central Building Research Institute, Roorkee

## ORGANIZING COMMITTEE

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