



## RSTV Big Picture: Fire Safety in India

- **Context:** National Capital witnessed one of the worst fire tragedies in almost two decades when at least 43 people were killed and several others injured in north Delhi's Anaj Mandi.
- Recently, released Indian Risk Survey report ranks fire outbreak as the third biggest risk to businesses and human lives. 20 Indian cities witnessed 80% of building fire deaths.
- **Possible reasons:**
  - Locked escape routes
  - No fire safety equipment and
  - No fire safety clearance from the authorities.
  - Rescue operations were also hampered due to narrow lanes.
- Fire poses a major threat to various occupancies in India. Almost every day some fires are reported by media across the country. These fires not only resulted in the loss of many precious life and injuries to many but also inflicted heavy property loss.
- **Background:**
  - During the last two decades there was a vibrant growth in the construction activities in India, especially in high rise buildings.
  - Because of its peculiar nature, fire in residential buildings, in particular, high rise buildings, become more complex and the salvaging operations become more difficult and sometimes even resulting in many deaths and huge property losses.
  - The rapid modernization of Indian Industry has made the scenario more complex.
  - Awareness towards fire safety had not been quite forthcoming.
- **Main regulations:**
  - Fire services in India came under the Twelfth Schedule of the Constitution of India, under the provisions of Article 243W of the Constitution.
  - The performance of the functions listed in the Twelfth Schedule comes under the domain of Municipalities.
  - Regular fire service in India was established about 215 years back.
  - The service was first established in Bombay in 1803, followed by Calcutta in 1822, Delhi in 1867 and Madras in 1908.
  - The National Building Code (NBC), which is the basic model code in India on matters relating to building construction and fire safety.
  - Fire prevention and fire protection is a state subject. The primary responsibility for fire prevention and fire protection lies primarily with State Governments.
  - The rules for fire prevention and fire protection are laid in the form of State Regulations or Municipal By-Laws.
- **National Building Code (NBC):**
  - The National Building Code is published by Bureau of Indian Standards.
  - The first edition of the NBC was published in 1970. This edition was revised in 1983, 1987 and 1997. The second edition of the NBC was published in 2005. The third edition of the NBC was published in 2016, incorporating the latest developments in the construction activities in the country.
  - The main objective of NBC is to specify measures that will provide that degree of safety from fire, which is practical and can be reasonably achieved.
  - The Code insists upon compliance with minimum standards of fire safety necessary for building occupants and users.
  - For ensuring compliance of fire protection equipment/installations to the laid down quality requirements, it is desirable to use such equipment/installation duly certified under the BIS Certification Marks Scheme.
  - The NBC classify the buildings into the following 9 groups. These groups have been subdivided into various categories. The NBC also deals with three types of fire zones and four types of constructions.
  - The Part 4 (Fire and Life Safety) of NBC, which contain the fire safety norms through detailed provisions on fire prevention, life safety and fire protection.
  - The code broadly covers the following areas:
    - **Fire prevention:** This covers aspects of fire prevention pertaining to the design and construction of buildings. It also describes the various types of buildings materials and their fire rating.



- **Life Safety:** This covers life safety provisions in the event of fire and similar emergencies, also addressing construction and occupancy features that are necessary to minimise danger to life from fire, smoke, fumes or panic.
- **Fire Protection:** Covers significant appurtenances (accessories) and their related components and guidelines for selecting the correct type of equipment and installations meant for fire protection of the building, depending upon the classifications and type of building.
- **The Model Building Bye Laws, 2003 (MBBL):**
  - Point-specific responsibility for all fire-related clearance rests with the Chief Fire Officer.
  - The concerned Development Authority shall refer the building plans to the Chief Fire Officer for obtaining clearance in respect of buildings.
  - The Chief Fire Officer shall issue the 'No Objection Certificate' from the view point of fire safety and means of escape, after satisfying himself that all the fire protection measures have been implemented and are functional as per approved plans.
  - On the basis of the undertaking given by the Fire Consultant/ Architect, the Chief Fire Officer shall renew the fire clearance in respect of the following buildings on an annual basis:
    - 1) Public entertainment and assembly
    - 2) Hospitals
    - 3) Hotels
    - 4) Underground shopping complex
- **State Regulations:**
  - By and large, the State fire prevention and fire safety act & rules complement the National Building Code.
  - Many of the NBC Code provisions have been incorporated by various State Governments and Local Bodies in their own building regulations. For example, the acts & rules enacted by states like Maharashtra and Gujarat are aimed to improve overall status of fire safety measures in their respective states.
- **Related Regulations:**
  - Apart from the specific State Acts and Rules stated above, a number of legislations are available on matters relating to fire prevention, fire protection.
  - Amongst these, the Factories Act and State Factories Rules are important ones.
  - The Section 38 of the Factories Act, 1948, emphasises, the obligations of the occupier, which include (i) to adopt all practicable measures to prevent the outbreak and spread of fire, (ii) to provide safe means of escape, (iii) to maintain the firefighting equipment properly and (iv) to familiarize all the workers with the means of escape during fire and train them in steps to be taken in a fire accident.
  - The Section 37 of the Factories Act, 1948, also prescribes detailed measures to prevent explosions hazards.
  - The State Factories Rules, framed under the Factories Act, have prescribed in detail, all the steps to be taken to prevent fire hazard.
- **Codes and Standards:**
  - IS Codes: BIS has formulated more than 150 standards on fire safety in buildings and firefighting equipment & systems and important ones are: Code of practice for fire safety of building (IS 1641 to IS 1646) etc.
  - OISD Standards: Oil Industry Safety Directorate (OISD) is a technical directorate under the Ministry of Petroleum and Natural Gas of Government of India, who formulates and coordinates the implementation of a series of self-regulatory measures aimed at enhancing the safety in the oil & gas industry in India. OISD had issued a number of standards.
- **Compliance:**
  - Many commercial and residential buildings in particular high-rise buildings, have been found flouting fire safety norms.
  - Many occupiers or societies do not bother to conduct regular maintenance of the fire prevention systems installed in their buildings.
  - There is no clear cut provision in any of the fire safety legislations in India, regarding the scope, objectives, methodology and periodicity of a fire safety audit.
- **Way Forward:**
  - In addition to the codes and governance overlays which exist in India, there should be guidelines/framework to conduct a comprehensive risk-assessment for cities.
  - Risks coexist and can be complex; they are qualitative and quantitative, hence there is a dire need to study these in city-wide and local contexts.
  - By and large, these risk-assessment studies should be an integral part of every master planning exercise, which should be revised for changes in land use and density.



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