



Fire Safety in India

For Prelims: [National Building Code \(NBC\)](#), [Bureau of Indian Standards](#), [National Disaster Management Authority](#).

For Mains: Current Provision Regarding Fire Safety in India, Issues Leading to Urban Fire in India, Measures to improve fire safety in India.

Source: TH

Why in News?

Recently, fire accidents at the Rajkot game-center have raised concerns about fire safety regulations and their enforcement.

- These incidents, including a market fire in Pune and a hospital oxygen blast in Delhi, show a possible need for stronger safety checks and clearer rules.

What is the Model Code for Fire Safety in India?

- **Data on Fire Accidents:**
 - According to the **Accidental Deaths and Suicides in India (ADSI)** report by the [National Crimes Records Bureau \(NCRB\)](#), as many as 7,435 people were killed in over 7,500 fire accidents in 2022.
 - The fire accidents continue to cause heavy casualties, with no lessons learned from past tragedies like the **Uphaar Cinema fire in 1997** and the **Kumbakonam fire in 2004**.
- **National Building Code (NBC):**
 - India has a [National Building Code \(NBC\)](#) that serves as the central standard for fire safety.
 - It was published by the [Bureau of Indian Standards \(BIS\)](#) in 1970 and last updated in 2016.
 - It provides detailed guidelines on general construction requirements, maintenance, and fire safety of buildings.
 - **Fire safety instructions** are mentioned in **Part 4 of the NBC**, which deals with safety from fire.
 - The NBC is a mandatory requirement for state governments to incorporate into their local building bylaws.
 - This is because **fire services are a state subject**, included as a municipal function in the **12th Schedule** of the **Constitution**.
 - State governments are responsible for fire prevention and ensuring the safety of life and property.
- The '[Model Building Bye Laws 2016](#)' issued by the Ministry of Housing and Urban Affairs guide states and Union Territories to **frame their respective building bylaws**.
 - These laws also prescribe norms for **fire protection and safety requirements**.
- The [National Disaster Management Authority \(NDMA\)](#) has also laid out guidelines on fire

safety at homes, schools, and hospitals.

- The NDMA guidelines include instructions on **maintaining minimum open safety space**, protected exit mechanisms, dedicated staircases, and crucial evacuation drills.

What are the Key Fire Safety Rules Laid by NBC in India?

- The NBC specifies the **demarcation and restrictions** on the construction of buildings in fire zones:
 - Residential areas, educational, and institutional buildings fall under **Fire Zone 1** to ensure they **do not coexist with industrial and hazardous structures** (like factories, warehouses, data centres, and facilities for power and repair).
- The NBC mandates the use of **non-combustible materials** for construction, including for the internal walls of staircase enclosures, with a minimum **120-minute fire** resistance rating.
- It also outlines requirements for **maximum height, floor area ratio, open spaces**, and provision of openings in walls and floors to prevent the spread of fire.
- **Electrical installations** must have **flame-retardant wiring and cabling**, with high, medium, and low voltage wiring run in separate shafts/conduits and sealed with fire-stop materials.
 - All metallic items like **steel structural members must be properly bonded** to the earthing system.
- The Code requires an **emergency power-supplying** distribution system, including exit signage, emergency lighting, **fire alarm systems, and public address systems for emergencies**.
 - It also specifies **requirements for exit access, exits, escape lighting**, and exit signage to ensure safe evacuation.
- The Code recommends incorporating technologies like **automatic fire detection** and down-comer pipelines, **dry riser pipelines, automatic sprinklers, and water sprays**.

NDMA Guidelines on Fire Safety

- **Do's**
 - **Prepare:** Have a fire escape plan and practise it regularly. Ensure all exits are clear and functional.
 - **Alert:** In case of fire, stay calm and raise the alarm. Alert everyone in the building and prioritise escape over belongings.
 - **Escape:** Use the designated escape routes and staircases. Never use elevators during a fire.
 - **Crawl Low:** Stay low to the ground to avoid smoke inhalation.
- **Don'ts**
 - **Panic:** Stay calm and think clearly. Panicking can hinder your ability to make good decisions.
 - **Re-enter:** Never go back into a burning building for any reason.
 - **Use elevators:** Elevators can malfunction during a fire, leaving you trapped.
 - **Open doors/windows without caution:** Opening doors/windows can feed the fire. Only do so if you can escape through them safely.

What are the Compliance Challenges with Fire Safety Rules in India?

- **Ignoring Fire Safety Rules:**
 - While national guidelines (National Building Code) exist, they aren't mandatory, leading to inconsistent enforcement across localities.
 - Even mandatory certifications have loopholes, as the code allows fire services to grant exemptions due to practical difficulties.
 - **Eg:** In **Rajkot Tragic Accident**, the building was constructed using metal sheets, creating a large structure. **The owners failed to get a mandatory NOC from the fire department**, lacked proper fire-fighting equipment on the premises.
- **Underutilisation of Fire Safety Audits:**
 - Authorities responsible for fire safety norms are usually understaffed, and they rarely

conduct audits, allowing fire hazards to persist.

▪ **Lack of Preparedness and Apathy of Authorities:**

- A 2020 report by the **National Institute of Disaster Management (NIDM)** criticised authorities for their inaction and failure to learn from previous fires accidents.
 - NIDM highlighted that adhering to building codes and implementing effective urban planning could have averted the tragedy and saved lives.
 - NIDM also stressed the significance of **fostering strong communities** to enhance disaster preparedness.

Way Forward

▪ **Legislative Reform and Enforcement:**

- **Mandatory Fire Safety Code:** Enact a uniform and **mandatory** national fire safety code binding on all states and local authorities.
- Implement a system of **mandatory fire safety audits** for all buildings (as per NBC and NDMA) with strict penalties for non-compliance.

▪ **Bolstering Firefighting Capabilities:**

- **Modernisation of Fire Services:** State governments must prioritise investments in upgrading firefighting equipment, firefighter training, and overall fire service capacity.

▪ **Empowering Communities:**

- **Public Awareness Campaigns:** Launch extensive **public awareness campaigns** to educate citizens on fire safety measures, evacuation procedures, and the **importance of building code compliance**.
- Integrate fire **safety education into school curricula** to cultivate a culture of fire safety awareness from a young age. This will empower communities to be **active participants in disaster risk reduction**.

▪ **Other Measures:**

- **Mock Drills:** The fire services must conduct regular **fire safety drills** so that people are aware of what to do in the event of such a tragedy.
- **Self-extinguishing Furniture and Building Materials:** Implement furniture, carpets, and wall coverings made from fire-resistant or self-extinguishing materials that can slow the spread of flames.
- **Advanced fire Suppression Systems:** Encourage installation of advanced fire suppression systems like **automatic sprinkler systems and misting technologies**.
- **Installing Advanced Equipments to Prevent Smog:** Few equipment needs to be installed in buildings, such as devices for **containing smog generated from fires to prevent suffocation of individuals**.

Drishti Mains Question:

Q. What is the state of fire safety in India, and what measures need to be taken to improve it?