Modern, stylish buildings have greater fire load: Study

Parth Shastri
@timesgroup.com

Ahmedabad: In several recent fire incidents in Ahmedabad city, it was observed that the intensity of fire increases greatly if the material caught in flames included PVC, plastic, false ceiling or foam – used extensively in modern buildings. But what impact do such materials have on the severity of fire?

A study by IIT Gandhinagar (IIT-Gn) tries to answer the question. The research, working on a mathematical model of fire load energy density (FLED) in office and dormitory space, pointed at higher fire risk in modern buildings. The values found during the study were three times higher than the previously-recorded values.

The study titled 'Enhanced fire severity in modern Indian dwellings' published in Current Science was carried out by research scholar Nasar Ahmad Khan and assistant professor Gaurav Srivastava, department of civil engineering, IIT-Gn.

File photo of fire in a city mall

"In simple terms, FLED can be described as the calorific value of all combustible items divided by a given space. Thus, if we take an office floor and count all the things – right from machines to stationary and furniture, it would give us the picture of what can happen in times of fire. The unit in which it is calculated is megajoules per square metre (MJ/m²)," said Dr Srivastava.

According to the researchers, the mean FLED value they got by carrying out study in 938 sq m area (1334 MJ/m²) was over three times higher than the value (348 MJ/m²) found in a similar study conducted in Kanpur in 1993.

What do the numbers signify? "The modern lifestyle and building techniques have changed the material used in residences and offices drastically over past two decades," said Srivastava.

Material such as corrugated plastic roofs, partition walls, plastic doors, false ceiling panels, core panels for walls, interior finish materials, electronic equipment and gadgets are much more common in modern context which significantly increases the fire load. The proportion of cellulosic material was found to have decreased whereas plastic saw almost similar increase.

'Fire load guidelines hardly followed'

Rajesh Bhatt, additional chief fire officer, Ahmedabad Fire and Emergency Services (AFES), said that when a building – commercial or residential – catches fire, there are always chances of its rapid spread. "The majority of modern buildings have greater fire load due to a number of factors ranging from construction material to the goods present in the given area. There is a building code that defines the fire load and lays down the guidelines but it is hardly followed, causing greater fire risk," he said. AFES officials also pointed at building design itself as a major reason for the rapid spread of fire and hurdle in rescue work. "Steel and glass buildings trap the smoke that reduces visibility and increases temperature," said a senior official. TNN

Title: Modern, stylish buildings have greater fire load: Study
Source: Times of India (Pg. no. 5)
Link: https://timesofindia.indiatimes.com/city/ahmedabad/modern-stylish-buildings-have-greater-fire-load-study/articleshow/66778098.cms
Date: 24/11/2018