

# Building construction for fire protection

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Construction with steel comprised of a steel skeleton made of steel columns and I-beams. The frame is able to support the attached building (floor, roof, wall, etc.) due to its rectangular shape. Due to their strength, steel frames are employed in skyscrapers.

Concrete is one of the most significant ingredients in construction to improve the strength of the building and to support the structure. It is composed of cement, slag cement, fly ash, aggregate (limestone, gravel, sand, granite, etc.) water and certain chemical additives. After mixing with water, the fluid is poured where hydration hardens the concrete within the desired shape. It is used in constructing roads, pavements, foundations, poles, blocks walls, structures, parking, bridges, underpass, etc.

In either mode of construction, the most important aspect to keep in mind is fire resistance as after setting on fire the whole building can collapse. The best way is to keep the building airy and using non-combustible material (tiles of clay or slate, cement and concrete mixture, etc) in ceilings/roofs (Avillo, 2002). For windows smaller pane and double or tempered pane glass is preferred while skylights must not be made of flaming material. Firewalls, rated wall to resist fire, can be constructed to avoid the spread of fire. It slows down the movement of fire from one side to another by separating the building into different fire areas.

Constructing a project on large scale involves a number of tasks. Mixture of cement and concrete can be used to reinforce the infrastructure to increase its durability where inflammable material must be avoided for walls and roofs. There should be fire exits and firewalls to keep the burning area

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separate from the safe compartments.

#### References

Avillo, A. (2002). Fireground strategies: fire engineering. Tulsa, OK: PennWell Books.