Active & Passive Fire Protection System
Introduction: The definition of fire protection of a building refers to the building ability to detect, withstand, prevent and reduce any damage caused by a sudden unexpected fire whether man made or non-man made.
Passive Fire Protection

**Passive Fire Protection (PFP)** is an integral component of the three components of structural, fire protection and fire safety in a building. PFP attempts to contain fires or slow down the spread through use of fire-resistant walls, floors and fire rated doors.

**PFP** are known as building materials that are always present and available within the building, placed and located evenly every floors of the building. These materials do not rely on the operation of any mechanical device in order to be activated or triggered.
Passive Fire Protection – Aim

These materials are used within the construction of the building in the aim to:

✓ Contain the growth and spread of fire within the building with use of fire rated walls and doors
✓ Reduce the amount of damages of the building inflicted by the fire
✓ Delaying the collapse of the building structure
✓ Reduce the possible life and health risks of the building occupants and the fire fighters.
✓ Therefore it provides the building the strength to withstand fire for a certain period of time, ensuring the safe evacuation of its occupants and the safety of the building surrounding it.
Passive Fire Protection - Methods

- Fire Walls
- Fire Doors
- Fire-resistant glasses
- Fire Resistance rated floors
- Occupancy Separations
- Fire Dampers
- Fire Stops
- Cable Coating
- Fire Proofing Cladding
Passive Fire Protection - Compartment

SPECIFICATION A2.3  FIRE-RESISTANCE OF BUILDING ELEMENTS

Thus in the diagram below, the floor should be considered as the floor above the compartment and should have the appropriate FRL for that compartment (see also BCA Clause C2.9).

- floor pertinent to compartment 2
- Fire Source Feature
- FSF
- fire compartment 1
- fire compartment 2
- floor pertinent to compartment 1
- fire compartment 1
- fire compartment 2
A fire door is a door with a fire-resistance rating used as part of a passive fire protection system to reduce the spread of fire and smoke between separate compartments of a structure and to enable safe egress from a building or structure or ship.
Total Fire Protection Systems
Active Fire Protection

Fire can be controlled or extinguished, either manually (fire fighting) or automatically. Manual control includes the use of a fire extinguisher or a standpipe system. Automatic control means can include a fire sprinkler system, a gaseous clean agent, or firefighting foam system. Automatic suppression systems would usually be found in large commercial kitchens or other high-risk areas.
Type of Fire Protection Systems

- Fire Protection System
  - Water Based System
  - Gas Based Systems
Type Water based Systems

Water Based Systems

Yard Hydrant System
Wet Riser System
Sprinkler System
Spray System
Foam System
Gas based Fire Suppression Systems
Hydrant System
Automatic Sprinkler System
Automatic Sprinkler System
Spray System for LPG Bullets
Spray System for the LPG Sphere
Foam System for Oil Tank
Further Connect

Kalidasan S
Solution Architect
Fire Suppression Systems
M: 96000 48776
kalidasan.s@siemens.com
Thank you