



Fire Type

When analyzing the object that needs protection one has to determine what Fire Type (FT) is involved before selecting the right detector: Flame detectors are generally only suitable for flames so only type FT4, FT5 and FT6 fires can be detected. An Optical Smoke detector is only useful for FT3 (smoldering) Fires.

Not every Flame Detector is the same based on the sensors property. E.g. Flame detectors with a single frequency 4.3 micron IR sensor (CO₂) is only suitable for FT5 and FT6 fires.

FT1: Sparks or Embers.

No visible flames or smoke.

Example:

FT1-1 Mechanical sparks

-Metal parts in a mill

-Nails in a timber shop

FT1-2 Electric sparks

-Short circuits

-Static electricity

FT2: Latent fire.

The fire is not visible yet and there is no smoke.

Example:

-Chemical reaction

-Heat Combustion (fermentation)

-Overheating (electrical) equipment

FT3: Smoldering fire.

No flames but smoke is present.

Example:

-Smoldering wood, plastic, cotton

FT4: Open fire, flames with little or no Carbon.

Example:

-FT3-1 Hydrogen fire, Methanol fire

-FT3-2 Metal fire such as burning Magnesium

FT5: Open fire, flames with Carbon and little or no smoke.

Example:

-Methane

-Acetone

FT6: Open fire, flames with Carbon and lots of smoke.

Example:

-Diesel

-Transformer oil

-Wood

-Plastic

Also the physical state of the fuel needs to be recorded:

- Solids (S)
- Liquids (L)
- Gas (G)

Some special aspects of the expected fire needs to recorded:

- Spill Fire (SF)
- High Pressure Liquid (HPL)
- Low Pressure Liquid (LPL)
- High Pressure Gas (HPG)
- Low Pressure Gas (LPG)

Example:

Generator room in a Hospital:

Non-hazardous area; Fuel: Diesel and lube oil.

- Fire type: FT6, Spill Fire (SF for the Diesel tank and Lube Oil tank) and Low Pressure Liquid (LPL) for the fuel pump.
- Detector selection: Flame detector, Multi IR or UV/IR (+/- 1 meter below the ceiling).
- Design: 2 Flame detectors, diagonal, ensure that the spill area is in the field of view of the Flame detector.