Application Data

Ventcroft
Fire & Life Safety

VENTCROFT
SECURITY PRODUCTS

TECHNICAL SUPPORT

A Guide to Application and Siting Ventcrofts Range of

Smoke and Heat Detectors

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INDEX

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1.0 KEY INFORMATION REGARDING THE CHOICE OF POINT TYPE SMOKE DETECTORS

1.1 OPTICAL AND IONISATION SMOKE DETECTORS

OPTICAL AND IONISATION SMOKE DETECTORS

SITUATION/LOCATION	SUITABLE DETECTOR TYPES	COMMENTS
Bedrooms (Hotel, Hospital including Wards)	OPTICAL	A Smouldering Fire is more likely to exist due to bedding and furniture. NB: However, if smoking is permitted in Hotel Rooms then Ionisation detectors would be less prone to unwanted alarms. Care must be taken in respect of the location of the detector.
Cargo Handling Areas, loading Bays etc.	OPTICAL	The presence of dust and air currents could present problems with Ionisation. Beam Smoke Detectors should be considered for large, open and/or high areas.
Churches (Chapels)	OPTICAL & IONISATION	Both types are suitable. Consideration must be given on the contents within the building, ie: smouldering fires = optical Flame Fire = Ionisation.
Corridors/Passages	OPTICAL PREFERRED, IONISATION ACCEPTABLE	As air currents exist in these areas, and they are Escape Routes for occupants of a building, optical are preferred to detect visible smoke.
Data Processing Areas Including : Telephone Exchanges	OPTICAL & IONISATION	A smouldering Fire is more likely to occur due to many cables with PVC covering. However, consideration must be given to all room contents in respect of which type of fire is more likely to occur and the possible use of high sensitivity sampling systems for rapid response.
Conference Rooms	OPTICAL	In general, Smoke Detection should be utilised but consideration should be given to the proposed use of the room and the possibility of smoke build up when in use. Rate of Rise Heat Detectors may be considered in place of Smoke Detectors - take note of the different spacing requirements.

OPTICAL AND IONISATION SMOKE DETECTORS

SITUATION/LOCATION	SUITABLE DETECTOR TYPES	COMMENTS
Department Stores, Indoor Markets / Shops	OPTICAL & IONISATION	Consideration must be given to area contents eg: bedding, sofa stores may be more susceptible to smouldering fires, and therefore require Opticals.
Dining Areas	OPTICAL & IONISATION	In general, Smoke Detection should be utilised but consideration should be given to the proposed use of the room and the possibility of smoke build up when in use. Rate of Rise Heat Detectors may be considered in place of Smoke Detectors - take note of the different spacing requirements.
Electrical / Mechanical Rooms	OPTICAL & IONISATION	Both types may be suitable. Consideration must be given on the contents etc within the building ie: smouldering fires = Optical, rapid burning flame fires = Ionisation
Factory	OPTICAL & IONISATION	Both types may be suitable. Consideration must be given on the contents etc within the building ie: smouldering fires = Optical, rapid burning flame fires = Ionisation. Care must also be given where dust or fumes from arc welding etc may be emitted, as detectors which respond to these factors must be avoided.
Hotel Foyer	OPTICAL & IONISATION	Both types are suitable. Consideration must be given to the contents of the rooms and tobacco smoke - tobacco smoke may form large particles by the time it reaches ceiling height which could create a false alarm where Opticals are used.
Library	OPTICAL & IONISATION	Both types may be suitable. Consideration must be given on the contents etc within the building ie: smouldering fires = Optical, rapid burning flame fires = Ionisation
Lift Shaft	OPTICAL & IONISATION	A Smouldering Fire is more likely to occur ,and an air current may exist

OPTICAL AND IONISATION SMOKE DETECTORS

SITUATION/LOCATION	SUITABLE DETECTOR TYPES	COMMENTS
Photographic Rooms (Dark/Developing/Copying)	OPTICAL	The presence of gaseous substances may cause false alarms with ionisation smoke detectors
Recording Studio	OPTICAL & IONISATION	A mix of both types of detector may be required as a flaming fire is more likely to occur, however many electronics are also present which can overheat along with PVC cables thus producing a smouldering fire.
Schools	OPTICAL & IONISATION	Consideration must be given to each area to be protected.
Stairways	OPTICAL PREFERRED IONISATION ACCEPTABLE	As air currents exist in these areas and they are Escape Routes, for occupants of a building, optical are preferred to detect visible smoke.
Theatre Stage Areas	OPTICAL & IONISATION	Many different factors exist which will influence the type of detector required to cover stage areas. For example materials stored and used on stage, may produce either a rapid burning fire (Ionisation) or a smouldering fire (Optical). Another possible factor is the use of a smoke generator for special effects brings about the possible consideration for using Rate of Rise Heat Detectors as Smoke Detectors could cause problems.
Warehouses	OPTICAL BEAM DETECTORS	Optical Beam Detectors can be used where large unobstructed roof areas need coverage such as those found in most Warehouses. For other areas, both types are suitable, however if fumes are present in these areas such as those produced by diesel or propane fork lift trucks, false alarms may occur if either detectors are used.
X-Ray/Treatment Rooms	OPTICAL & IONISATION	Radioactivity can cause problems if Ionisation is used.

1.2 WHERE NOT TO USE POINT SMOKE DETECTORS

1 In open air applications as the detectors require ceilings to direct the smoke from the plume by convection.

2 Where ceiling heights exceed 10.5m

3 In Rooms where cooking will take place, ie: Kitchens, or similar areas where steam and condensation are present (use Fixed Temperature Heat Detectors only)

4 Where exhaust fumes are present ie: car parks (use Rate of Rise Heat Detectors)

5 Where smoke particles will not be produced by fire

6 Plant Rooms (unless full discussions regarding the room contents and status subject to a fire have been made between client and manufacturer)

7 Boiler and Generator Rooms (use Fixed Heat Detectors)

8 On side walls - this will severely delay the response time of a detector

The above information is only a guide. When designing a system all matters must be considered ie: room type, contents and your country standards (ie: British and European), to determine the type of detector required.

If there are any queries please contact Ventcroft Ltd with the full information/specification.

2.0 INFORMATION REGARDING THE CHOICE OF POINT TYPE HEAT DETECTORS

2.1 FIXED AND RATE OF RISE HEAT DETECTORS

FIXED AND RATE OF RISE HEAT DETECTORS

SITUATION/LOCATION	SUITABLE DETECTOR TYPES	COMMENTS
Boiler / Plant Room	FIXED HEAT DETECTORS 60°C OR 90°C	A Fixed Heat is recommended due to the possible rapid changes in room temperatures. Use of 60°C or 90°C depends on normal ambient Temperature expected.
Car Parks	RATE OF RISE	Smoke Detectors would be activated by vehicle exhaust fumes.
Kitchen	FIXED HEAT	Due to the heat that can be produced by cooking appliances, the higher temperature detector should be fitted
Loading Bays	RATE OF RISE	Smoke Detectors would be activated by vehicle exhaust fumes.
Furnace / Kiln Rooms	FIXED HEAT	High temperatures can be present which can rapidly change, thus making the Rate of Rise unsuitable.

2.2 WERE NOT TO USE POINT HEAT DETECTORS

1 In Computer Rooms as unacceptable losses can be caused by small fires which may not convect the fire product to the detector rapidly in order to operate an alarm and start effective fire fighting.

2 Where ceiling heights exceed the following :
Heat Detectors Rate of Rise - 9.0m
Heat Detectors Fixed Temperature - 7.5m
High Temperature Heat Detectors 90° C - 6.0m

3 Do not use Rate of Rise Heat Detectors where the temperature can change rapidly

The above information is only guide. When designing a system all matters must be considered ie: room type, contents and your country standards (ie: British and European), to determine the type of detector required. If there are any queries please contact Ventcroft Ltd with the full information/specification.

For more detailed information about Ventcrofts range of fire equipment please feel free to browse

www.protectingpeople.co.uk