Stratos®

High Sensitivity Aspirating Smoke Detectors

APPLICATION NOTE

Tobacco Industry

Introduction

The tobacco industry comprises of many aspects. The: purchase, treatment, packing and storage of tobacco all represent a significant fire risk. In any of these processes, great quantities of combustible materials are present, and if a fire starts it can develop rapidly. Such fires can cause disastrous loss of assets, property, production and possible loss of life.

Advantages of Stratos-HSSD® Solution

The advantage of the Stratos-HSSD aspirating detection system is that it provides a system capable of reacting to the very earliest stage of fire, prompting very early intervention and probable fire PREVENTION. Stratos-HSSD also provides a cost-effective solution which unlike 'conventional' smoke detection methods, places the detection units in an easily accessible location for routine service.

Despite being the most sensitive smoke detection system available, the Stratos-HSSD system is almost completely unaffected by dust and humidity likely to be found in such an environment, meaning false alarms are very unlikely to occur.

Fire risks in the tobacco industry

The tobacco industry represents a significant risk because tobacco leaves and treatment chemicals can be easily ignited. When tobacco is stored and exposed to excessive heat, spontaneous combustion can occur. This is sometimes a result of a chemical reaction, but decomposition can also create this reaction.

1. Causes of fire

a. Sparks where combustible tobacco leaves are stored.

b. Unauthorised fire lighting e.g. smoking.

c. Unauthorised open flame works, e.g. welding, cutting, while combustible materials are not removed from the immediate vicinity.

d. Arson

e. Inadequate insulation/protection and/or overloading to electrical wiring.

2. Fumigation risks

Tobacco is routinely fumigated during production to kill insects and other pests. Preservatives may also be applied to prevent the leaves from decomposition. Microbial pesticide is applied to restrain microbes from becoming active. Some pesticides are flammable, and others are highly corrosive. Improper handling of such pesticide can cause an exothermic reaction, resulting in fire.

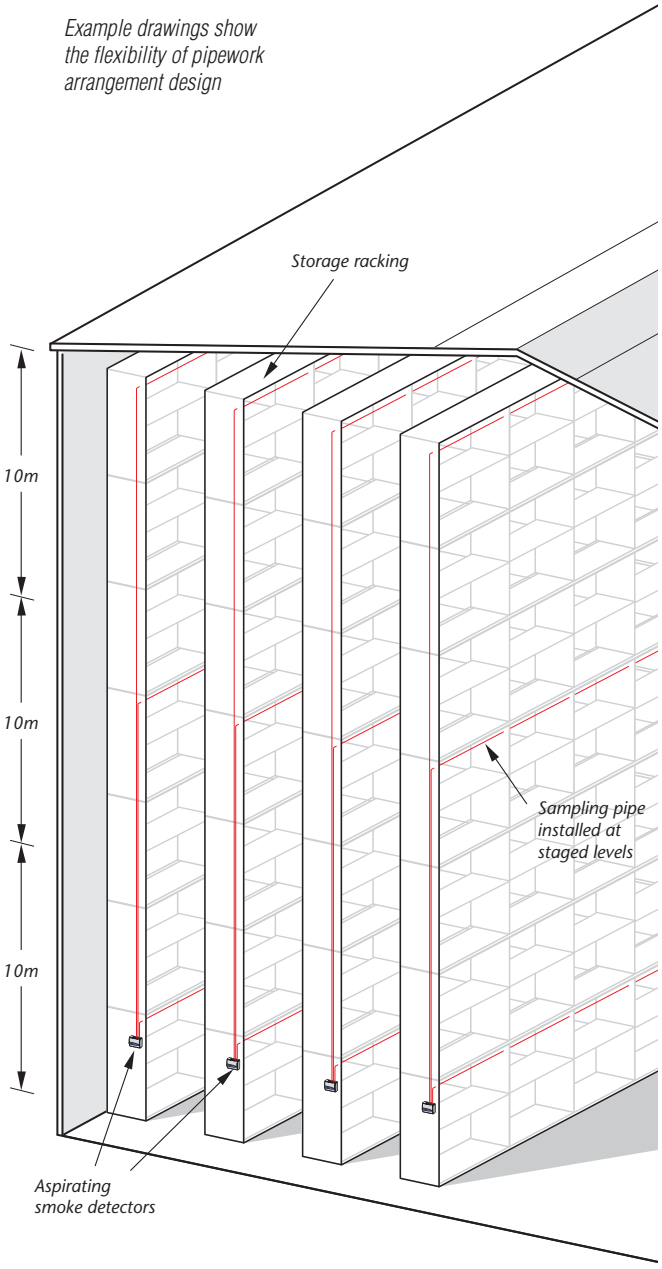
High Technology:

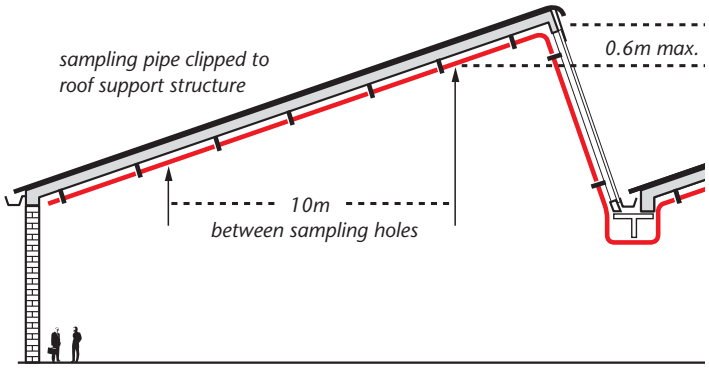
- Stratos-HSSD detectors have the widest sensitivity range of any detector, from 0.0015 - 25% obscuration per metre (obs/m). The system employs Laser Dust Discrimination (LDD™) technology and a highly sophisticated system of Perceptive Artificial Intelligence (PAI) which is known as ClassiFire®. This PAI system continually records the standing levels of air pollution. The sensitivity of the Stratos-HSSD system is highly adaptive, ensuring that the system continually adjusts itself to provide the optimum sensitivity for the environment in which is it installed.
- Stratos-HSSD detectors are designed to withstand the arduous conditions caused by high levels of contamination and corrosive fumigation materials.

Cost Saving:

- Once installed the cost of increasing the number of sampling points is minimal - requiring only the drilling of additional calibrated sampling holes.
- The sampling pipe network is monitored for efficient airflow. In the unlikely event of partial blockage or breakage, a fault signal is generated.
- Unlike 'conventional' detectors which are typically ceiling mounted, the Stratos-HSSD detector is usually installed in an accessible location for routine maintenance.
- If required, sampling pipework can be easily flushed to clean sampling points without affecting the normal operation.

Example drawings show the flexibility of pipework arrangement design





Project references for the tobacco industry:

- ***Changsha Tobacco Manufacturing Plant and Warehouse***
- ***Ningbo Cigarette Factory China - Warehouse***
- ***Da Hong Yin - Shanghai - Tobacco processing/warehouse***
- ***Qingzhou Tobacco Plant - Warehouse***

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