

PLANERGUARD

EFFECTIVE AND RELIABLE
SOLUTION FOR PROTECTION OF
PLANERS IN THE WOOD INDUSTRY



A Planer – The heart of our production

A fire can strike any day

Everyone in the wood industry fears the horror of a fire. We all know that wood ignites easily and the fire spreads rapidly. A best-case scenario is a few hours of down time and at worst the consequences may be even more serious, with enormous capital loss as a result. The damage after a fire depends on various reasons. One key issue is how fast the fire can be detected and extinguished, early detection and extinguishing is the key to minimise the damage and down time.



Ignition source

The planer is the heart of your production and one of the most dangerous parts of your plant. It is one of the most common generators of fires in the wood industry. Firefly has been developing and designing preventive protection systems for more than 30 years and we are known all over the world for our expertise on how to prevent industry related fires and dust explosions.

Firefly has developed the PlanerGuard system to protect your most valued link in the production chain.



Complexity

All planers are different in one way or the other, depending on planer manufacturer, planer speed, cleaning procedures, planer surroundings and extraction design. All give a different condition for a fire scenario. Therefore the solution against a fire cannot be the same for all planers.

Some parameters that determines the risk as well as the design of a PlanerGuard system:

- Type of planer
- Speed of the planer
- Design of the planer
- Condition of the planer
- Design of the exhaust
- Cleaning procedures
- Material build-up
- Location of electrical cables
- Fire spreading possibilities

PlanerGuard Detection & Extinguishing

Detection

For detectors in a planer protection system there are a number of criteria that needs to be fulfilled. There are also different requirements in different areas of the planer. Firefly has a wide range of detectors that can meet these requirements.

Flame detection – Avoid false alarms

The area around the planer contains several different disturbance sources that could affect conventional flame detectors. Firefly has therefore designed a solution that is highly insensitive to false alarms. The detector used for flame detection around the planer, OAD (Open Area Detector), is a two-channel UV/IR detector. By combining IR and UV wavelengths the detector will efficiently identify flames but discriminate other energy sources, such as lamps, sunlight and even arc welding.



IR flame detection

In volumes, inside the planer, fire can easily become a big problem if time is given for the fire to develop. Therefore Firefly is using fast acting IR flame detectors that will detect flames at an early stage without the common problem of being sensitive to daylight.

Hot body detection

In a combination with the flame detectors, our IR hot body detectors, TD and GD, are used in the extraction ducts from the planer. Detecting extracted overheated material is a method to get an early warning of incipient fire. This will also minimise the risk of fires and dust explosions in cyclones or other process equipment downstream the extraction system. It is important that these detectors can detect the MIT (Minimum Ignition Temperature) of the material. The MIT for wood dust in a cloud is approx. 480° C and for wood dust in a layer it is approx. 260° C. Our GD detector indicates from 400° C and the TD detector from 250° C.

Efficient extinguishing – The difference between disaster and success

Extinguishing is as important as detection. Firefly combines several different extinguishing methods to optimise the solution. By doing this we can achieve a safe and efficient extinguishing with a minimum of negative effects.

Conventional sprinklers are slow to react. A large fire is required before sprinklers are activated and when this occurs the fire has already caused damage to the planer.

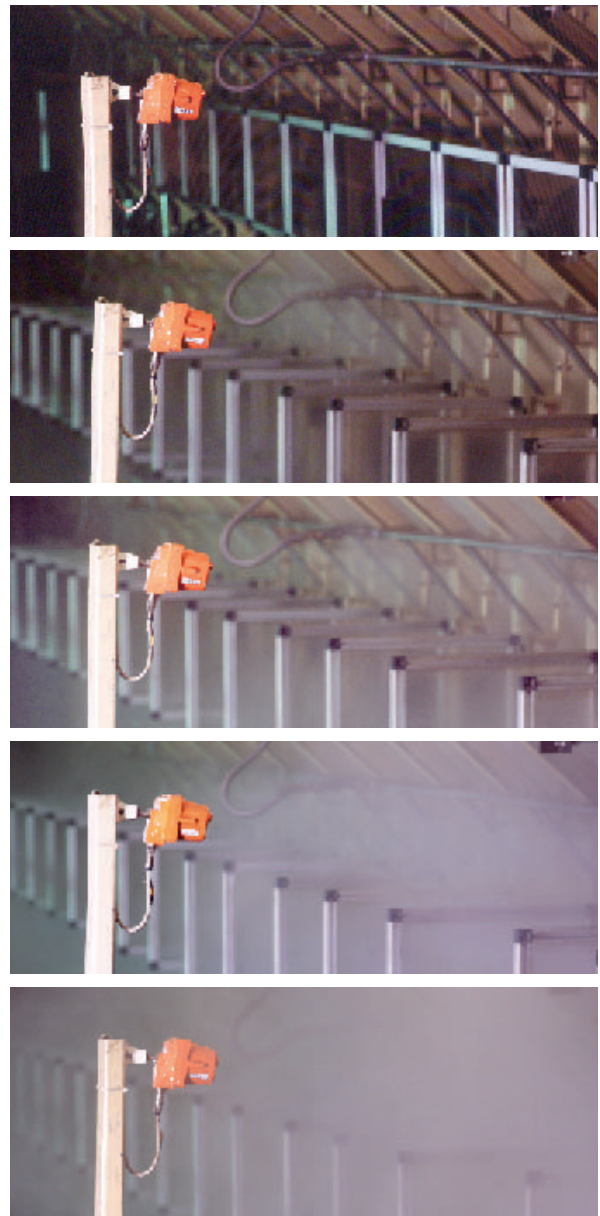
After extinguishing with sprinklers, a time consuming clean up follows due to the large amount of water used.

Harmless extinguishing is essential

Firefly's philosophy is that extinguishing itself must not cause problems. Even though our systems are fully automatic, an operator has the ability to manually activate a system.

Water mist systems develop a specific size of droplets designed for extinguishing in areas with machinery and electrical equipment. If the droplets are too small they will be swept away by the thermal airflow. If they are too big the risk of causing damage to the machinery as well as spreading the fire increases.

The water mist system only consumes a fraction of the water volume compared to the conventional sprinkler system.



Water mist turns into steam

Water mist, as a fire extinguishing medium is gaining ground and has proven to be very effective in fighting and controlling fires. It has a remarkable potential for suppressing fires and causes minimal residual damage.

Water mist systems work by spraying microscopic water droplets onto a fire. This results in efficient extinguishment using nothing more than water. The water removes heat from the fire that in turn creates steam, which displaces the oxygen and ensures that the combustion cannot be sustained.