PDF-VERSION
(ADJUSTED FROM BROCHURE)

PREVENTIVE PROTECTION SYSTEMS FROM
firefly ab
SWEDEN

PRESSGUARD™

PRESS & HOT OIL PUMPS PROTECTION

"It must be said, even in front of the supplier, that I would recommend any wood working factory not to save money on this type of equipment. I will install a PressGuard™ system on all presses we have. It should be an industry standard."

Mr. Piya Piyasombatkul, President of the Metro Group
MDF and Particle Board producer in Thailand

25.000.000 USD…
….is the estimated yearly loss of revenue for worldwide wood panel producers due to press fires.

Every year there are hundreds of fires in presses throughout the world. Production downtime and damage to the press are costly consequences.

If you think safety is expensive – try an accident!

Boiling oil fuels huge factory fire

Firefighters battled an inferno at (…) on Monday night where temperatures reached more than 1000°C.The fire was helped by a mixture of chemicals, boiling oil and highly explosive particle board dust. Early estimates put the **property damage** at about **$60 million, mainly around the plant's press area**. Damage will **take months to repair**, and it is thought more than 100 jobs could be affected.

(source: New Zealand Herald)

Press – The heart of your board plant

The press in a wood panel factory is often seen as the most important investment. Efficiency of continuous, single or multi-opening presses has always been a high priority for the wood panel industry. The demand for increased productivity has led many factories to make customer specific modifications and additions to their presses. Presses are therefore never exactly alike. As a result, some of these can have had a negative effect on particularly maintenance and cleaning procedures. *Press protection systems relying on standard solutions often prove inadequate.*

Effective press protection requires the design of a plant specific system.

Important parameters when designing a PressGuard™ system:

- type of press
- design of the press
- condition of the press
- location of the press
- design of the exhaust
- cleaning procedures
- operational procedures
- fire procedures
- oil leakage
- material build-up
- electrical cables
- heating oil transfers
- press temperatures
- fire spreading possibilities
- location of control room
- etc.

Did you know….
Question: What is generally the most critical aspect in successfully fighting a fire?

The location of the fire?
The chosen extinguishing method?
The material in the environment?

No.

The right answer is TIME.

The longer time you give a fire to grow, the harder it is to extinguish and the more damage it will cause.

This principle is no different for presses.

Critical issues when choosing a press protection system

- Fast and reliable detection at the right areas, in and around the press
- Fast responding extinguishing
- Possibility to quickly re-start production after extinguishing

Firefly has taken all of the above into account when developing the Firefly PressGuard™ system.

What about the Time factor?

The reaction time for PressGuard™ is down to 2 seconds from detection to **developed extinguishing zone.**

At Firefly we believe that you can never take safety too seriously

PressGuard™ - the concept

On Site System Adaptation

Due to the complexity and individuality of each specific press, the Firefly PressGuard™ concept starts with a thorough On Site System Adaptation.

Step 1

Firefly engineers will first examine risk factors.

- Where can a fire start? (hot surfaces, fans in the roof, lights, brush wheels, etc.)
- From where can a fire spread to the press?
- To where can a fire spread from the press?
- Is there any sensitive equipment located close to the press (cables, oil pumps, etc.)
- Etc.

Firefly looks at your press with different eyes

Step 2

Firefly engineers tailor the PressGuard™ system based on the information gathered.

- The exact location of detectors and water nozzles will be determined
- Extra protection of external sensitive cables located close to high risk areas of the press
- Protection of external sensitive equipment close to high risk areas
- Etc.

PressGuard™ detection

Different areas of a press require different detection methods. Firefly has a wide range of detectors to meet specific requirements.

Flame detection – Avoid false alarms!

Open areas

The area around a press contains many different disturbances that can affect regular flame detectors. The unique detector used for flame detection around a press, OAD (Open Area Detector), is a two-channel UV/IR detector. By combining IR and the UV wavelength, the detector will *efficiently recognise flames but discriminate other energy sources such as lamps, sunlight and even arc welding*.

Enclosed volumes

In enclosed volumes such as heat tunnels, infeed and outfeed boxes, fire can easily become a problem if time is given for the fire to develop. Firefly uses fast acting IR flame detectors that will detect flames at a very early stage without the common problem of being daylight sensitive.

Hot particle detection – Early warning

Firefly uses IR hot particle detectors in extraction ducts from the press. Detecting sparks and overheated material gives early warning of an incipient fire. This will also minimise the risk of fires in cyclones or in other process areas downstream in the extraction system.

Fireflys unique IR detectors are able to recognise sparks as well as hot particles from 250°C (480°F). *Conventional detectors available on the market are unlikely to detect particles at temperatures below 700°C (1290°F)…*

PressGuard™ extinguishing

Conventional sprinklers for extinguishing put your press at a high risk! A deluge of cold water on hot steel has historically shown to result in a *deformation* of for example the steel belt. *Electrical problems* can also occur. After extinguishing with sprinklers, a time consuming clean-up follows due to the large amount of water used.

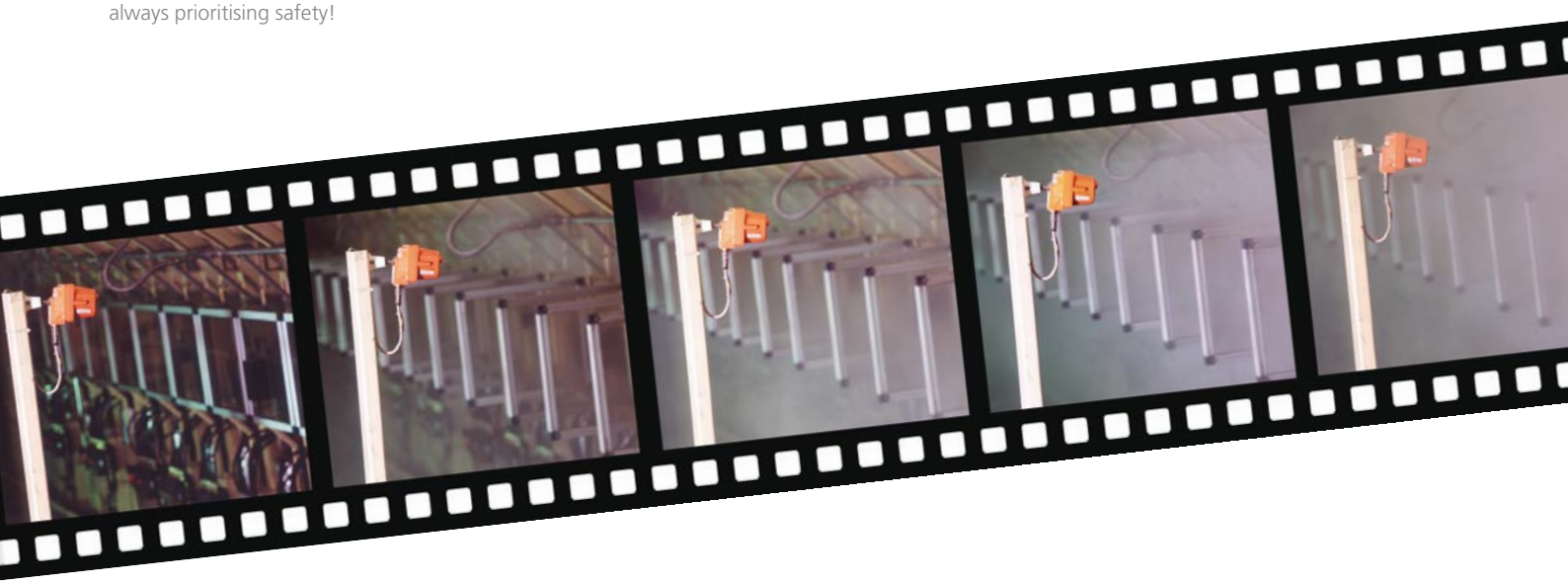
Extinguish without interrupting your production

Firefly's philosophy is that extinguishing itself should not cause problems. The PressGuard™ extinguishing uses water mist around the press. This is a safe and efficient extinguishing with a minimum effect on your production.

You can fully activate our water mist system on your press during production!

Firefly water mist compared to other solutions

Firefly PressGuard™ uses much less water compared to conventional solutions, always prioritising safety!



Harmless extinguishing is essential

When using water mist on a hot press, the water vaporises into steam. The steam effectively quenches the fire and gradually cools down the press.

The water mist has a specific droplet size especially designed for extinguishing on hot surfaces. If the droplets are too small they will be swept away by the thermal air flow. If they are too big, the risk for rapid cooling and structural damages of the press increases.

The facts about water mist

By Factory Mutual Research

Cools the fire area and blocking the heat radiation

Cooling is accomplished due to the greater surface area presented by the quasi-gas created by water mist systems, and the blocking of radiant heat by the many microscopic droplets.

Displacing the oxygen

The atomized droplets are drawn to the base of the fire and flash instantaneously to steam, expanding in volume by *1,700 times*, thereby displacing oxygen required for combustion.

Hot Oil Pumps protection

Why protect the Hot Oil Pumps?
A fire at the hot oil pumps can be devastating! In general, there are no staff present at and around the hot oil pumps. A fire can therefore grow for some time before it is noticed.

A few scenarios are to be considered:
- A fire can spread in the supply channels for the thermal oil and into the press. Probable consequence: both the press and the hot oil pumps are on fire.

- Do you have a cable tray with signal cables from the press to the control room located above the hot oil pumps? This is unfortunately fairly common. Probable consequence: even a small fire around the hot oil pumps can cause damage to those cables. The result can be costly downtime.

The protection of the hot oil pumps is today usually included as a part of the Firefly PressGuard™ system.

Our solution

A system combining flame detection and water mist is installed around the hot oil pumps.

Firefly's solution is designed to quickly detect flames in the area around the hot oil pumps. Before a fire can take hold, the water mist system is activated to extinguish. The water mist is designed to quickly and efficiently extinguish. It will also minimise the risk of water damage to your equipment.

Firefly users sleep well at night

Lesplitinvest
Masonite
Metro
Dongwha
Laminex
Daiken
Evergreen/Siam Fibreboard
Plantation Timber Products
Vanachai
Masisa
Novopan
Arauco

Firefly – Keeps you in production

Firefly is the world-leading supplier of fire and explosion protection systems for the process industries. With innovative solutions, high quality products and outstanding service, Firefly has served these companies over 30 years.

The unique Firefly PressGuard™ system has proved to be the most effective in preventing fire in and around presses. Firefly co-operates with leading experts and institutions around the world to develop safe solutions for frontline industries.

Interested in protecting your press against fire?
Contact us!
We will be happy to share our experience with you.

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Ph +46 8 449 25 00 | Fax +46 8 449 25 01 | info@firefly.se | www.firefly.se

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