

PDF- VERSION ADJUSTED FROM THE BROCHURE



# FIREFLY PELLET SOLUTIONS™

HOW TO PROTECT BIOENERGY  
PROCESSES AGAINST FIRE  
AND DUST EXPLOSIONS



FIRES IN THE PELLET INDUSTRY

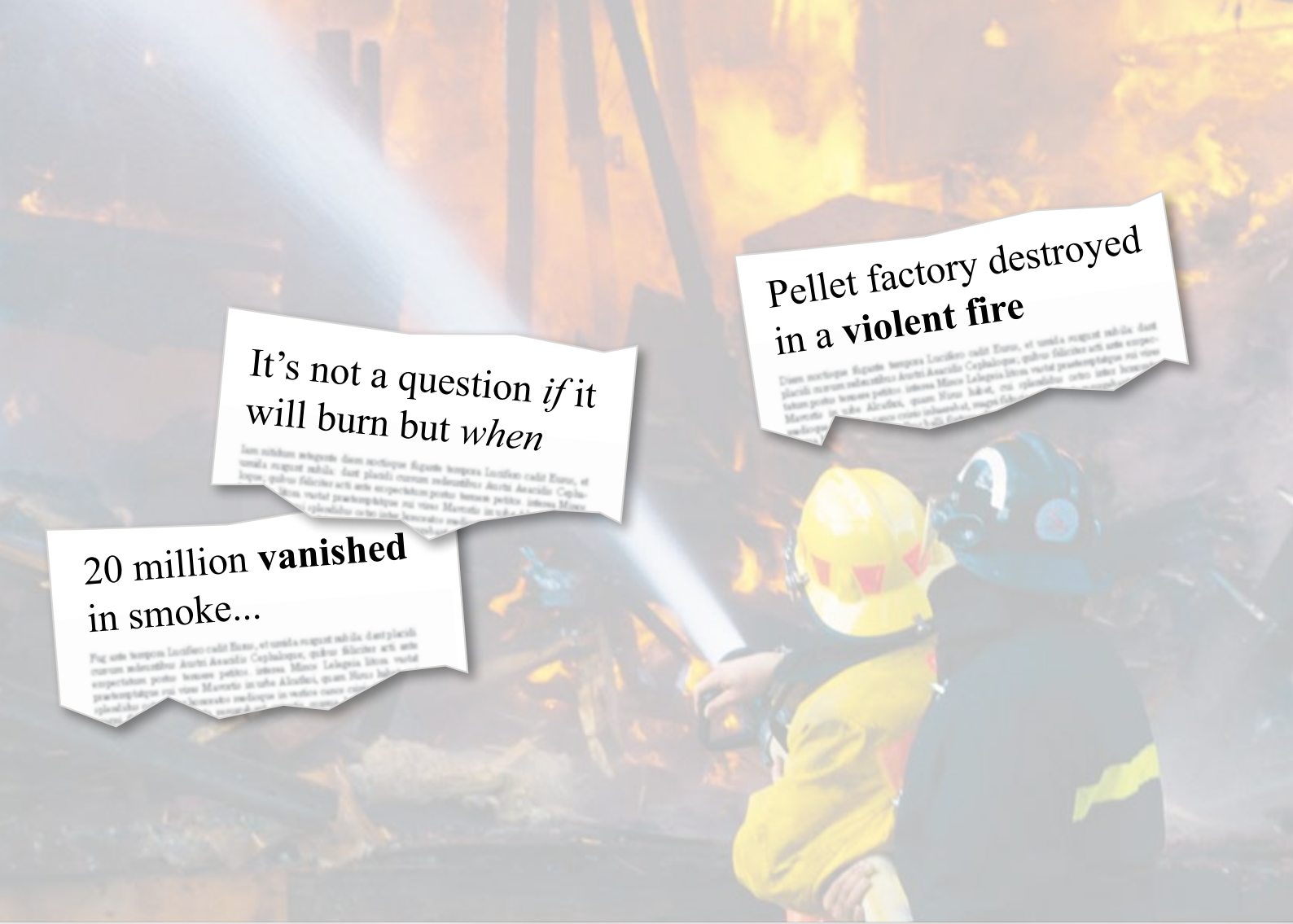
FIREFLY SYSTEMS

PELLET PRODUCTION SOLUTIONS

POWER PLANT SOLUTIONS

WHY FIREFLY?

CONTACT US



**Pellet factory destroyed  
in a violent fire**

**It's not a question *if* it  
will burn but *when***

**20 million **vanished**  
in smoke...**

Non enim utique digno scilicet tempore Lucifera cedit Eurus, et  
vulva regunt nihil. Aut plandi curam subleuibus Aurti Aaurilo Cepha-  
loque, quibus filiciter acti ante expectatum proteru tenore petito. utique Mure  
stus vultu praetorptaque sui rite Marate in tuba Aluafes, quam Huro habet, cui  
qlynditio in ter ante leuacato red-

Diem noctique figunt tempore Lucifera cedit Eurus, et vulva regunt nihil. Aut  
plandi curam subleuibus Aurti Aaurilo Cephaloque, quibus filiciter acti ante expec-  
tatum proteru tenore petito. utique Mure Lalegia litos vultu praetorptaque sui rite  
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Fig ante tempore Lucifera cedit Eurus, et vulva regunt nihil. Aut plandi  
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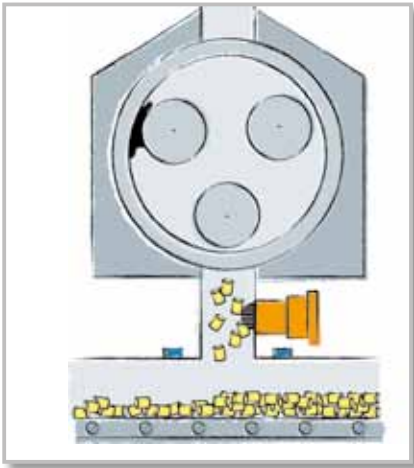


**Firefly – Keeps you in production**

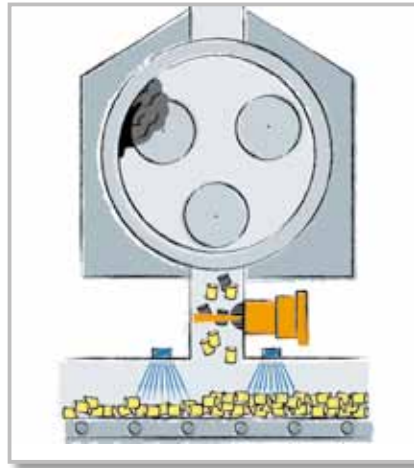


Headlines about fires in pellet plants are unfortunately all too common. As the pellet industry grows, so do its fire problems. Producing or handling pellets are processes that involve many risks. One of the most common fire risks in the pellet industry is friction. An example: friction can generate overheated material that can create ignition in the conveyor or even worse, inside the cooler.

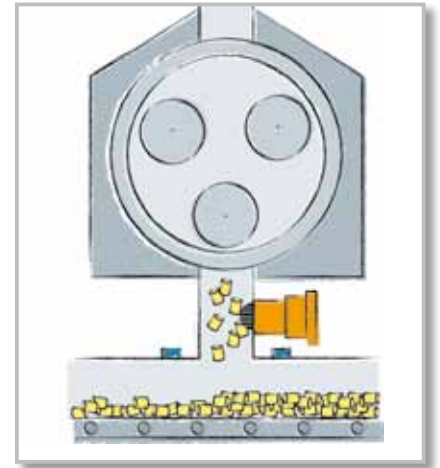
#### A possible scenario



Material build-up creates friction between pellet press wheel and matrix. Overheating occurs...



Dangerous overheated pellets exit the matrix. Instantaneously, overheated pellets are detected and extinguished.



You have just avoided a possible fire!

#### We never generalise

For over 30 years, Firefly has specialised in creating tailor-made solutions that will fit your operation. Our competent staff has vast experience in the pellet industry and the highest technical skills necessary to design a safe fire prevention solution for your company.

In order to protect your company from fire and dust explosions:

- You need a fast and reliable system of the highest technical standard.
- You need a tailor-made system to match your process flow.
- You need detection of potential hazards: i.e. sparks and hot particles occurring in your process.

Additionally, to ensure uninterrupted production:

- You need a system which is insensitive to daylight, thus minimising numerous false alarms and costly downtime.
- You need an extinguishing method adapted to your process to minimise the risk of water damage.

#### At Firefly we understand your business



## How we protect your mill

Our systems are designed to provide optimal safety against fire and minimal effect on machinery or production. From a range of unique patented products we combine a system depending on the design of your process. Firefly systems are designed to protect industrial processes and prevent damage to plants. Our products are:



### Detection

Detectors that indicate hot particles, sparks and flames in pneumatic or mechanical conveying systems

Detectors that indicate flames in open areas



### Extinguishing

Using full-cone water spray

Using water mist

Using mechanical diversion, isolation, steam or gas

### Control

Control unit for system monitoring and process control

### Services

Installation & Commissioning

On-site service of installed systems

### Solutions

Firefly has developed unique solutions for the pellet industry. With these solutions, your plant can effectively be protected against costly fires and dust explosions:

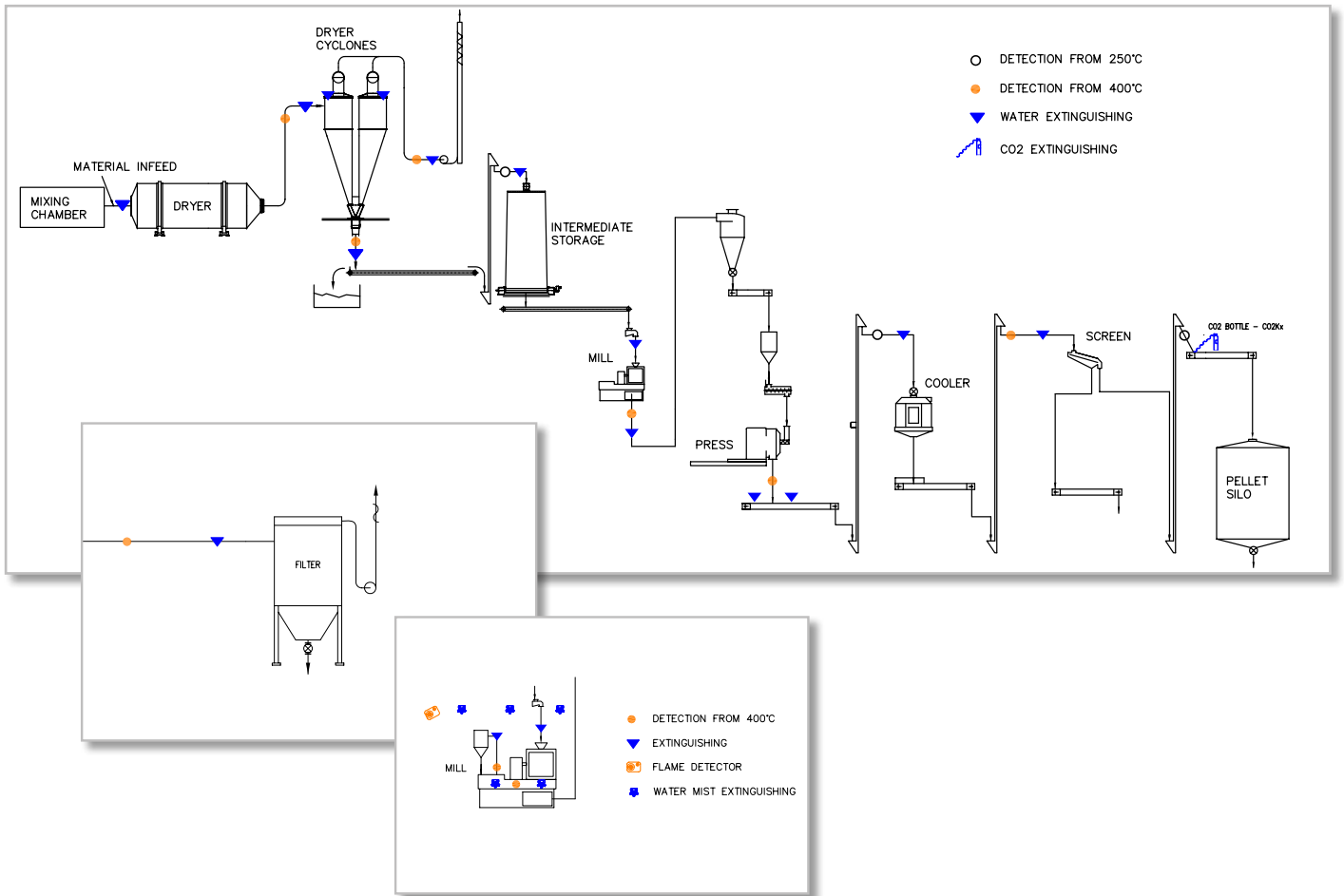
#### Protection of

- Dryers
- Dryer cyclones
- Intermediate storage
- Mills
- Presses
- Coolers
- Screens
- Pellet silos
- High risk machinery
- Filters
- Unloading areas
- Burners

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



## PELLET PRODUCTION SOLUTIONS



### We protect your entire process

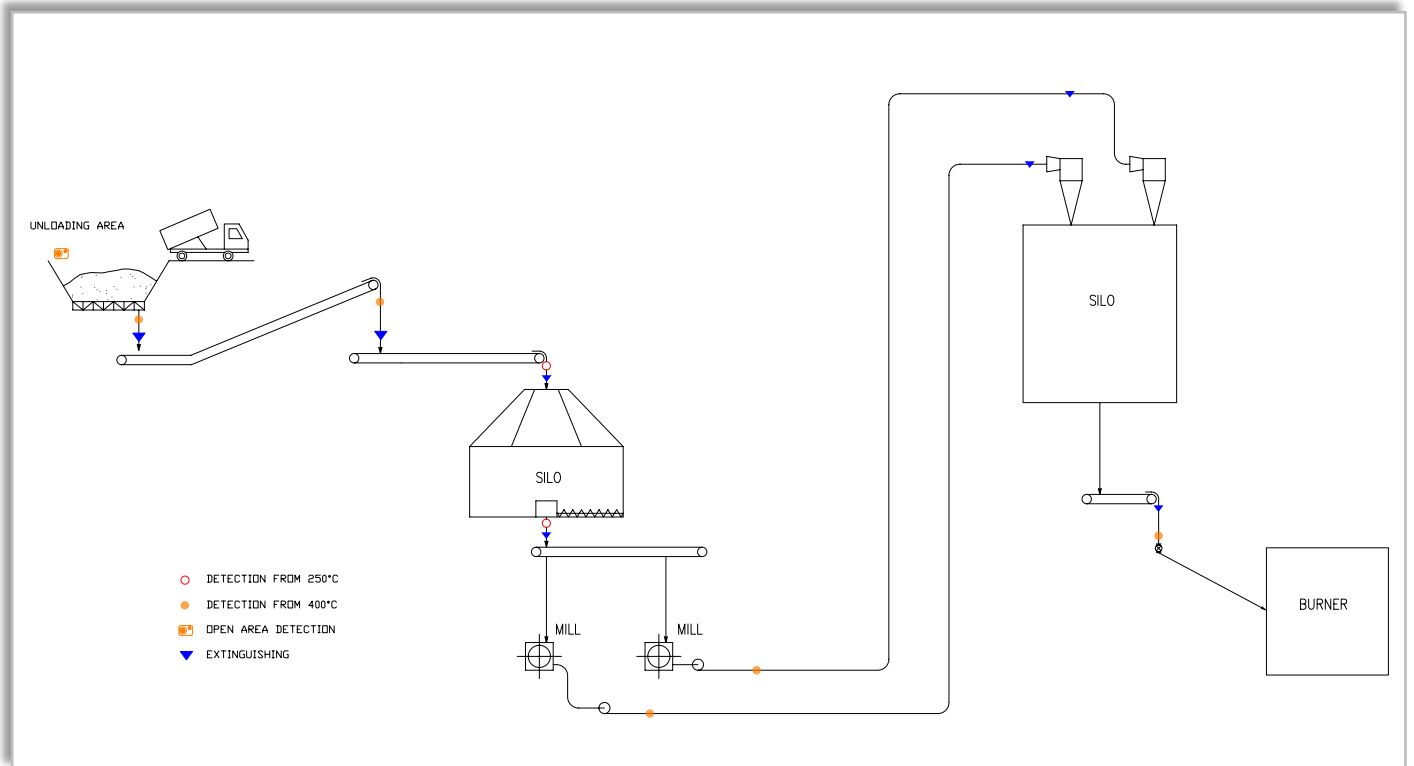
Have you every had fire problems at for example your dryer, mill or press? With over 30 years of experience in the pellet industry Firefly has developed tailor-made protection solutions for the entire pellet producing process.

From dryer to press, from cooler to silo, protection of high risk machinery or filters; our technical competence and our highly sophisticated detectors ensures the best protection solution for your pellet production.

### Firefly – Keeps you in production



## POWER PLANT SOLUTIONS



### Protection of power plants

When inflammable material is crushed, milled, conveyed and stored, the risk of fire increases. The use of renewable sources of energy, such as pellets, increases this risk as this material usually is dry and needs only low ignition energy to ignite.

Firefly has over 30 years of experience in protecting power plants from fire and explosions. With unique patented technology Firefly can detect sparks and hot particles in your process and eliminate them before they create a fire or explosion.

### Firefly – Keeps you in production



### Detection of sparks and hot particles down to 250°C

If you extinguish a match, its temperature will be around 470°C / 800°F. This is about the same temperature that is needed to ignite whirling wood dust, which exists in for example a filter. Layers of wood dust, that exist in a pellet silo, can ignite at even lower temperatures (~260°C / 500°F). Firefly detects sparks and hot particles down to 250°C / 480°F.

*Conventional spark detection systems detect light from a spark, i.e. temperatures from about 700°C / 1290°F and up.*



#### Minimum ignition temperature for wood in:

Cloud	Layer
470 °C / 800°F	260 °C / 500°F

Source: NFPA (National Fire Protection Association)

### Do you believe that sparks are the cause of fires and explosions in pellet plants?

Consider this:

**Incidents still occur in pellet plants, even though a conventional spark detection system has been installed.**

**WHY?**

**Firefly detectors are NOT daylight sensitive**

The key to minimising loss of revenue and production downtime due to fire and dust explosions is the detection of hot particles. Research clearly shows\* that detecting only sparks has much less effect than first thought.

Firefly provides you with a unique patented technology based on Infrared (IR) radiation detection to eliminate both sparks and hot particles in your process.

*Conventional spark detection systems detect daylight, which dramatically increases the risk of false alarms.*

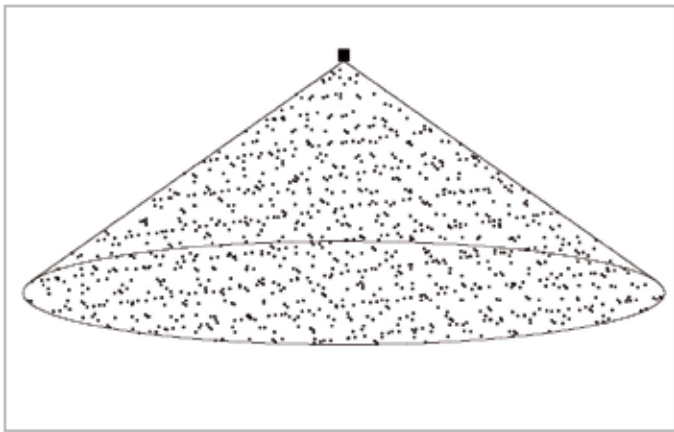
\*Prof. Rolf K. Eckhoff, "Dust explosions in the process industries" (2<sup>nd</sup> edition)

### Powerful extinguishing with full-cone water spray

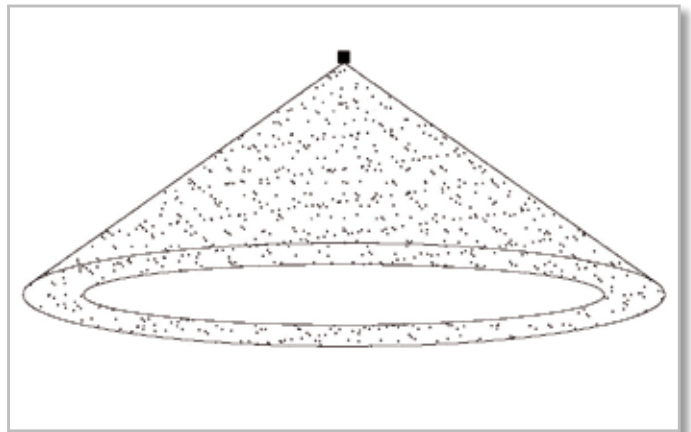
The pellet industry handles large amounts of material; from hundreds of kilos up to several tons per hour. High flows of compact material demand a powerful extinguishing which is able to penetrate large production flows. Firefly provides powerful extinguishing using full-cone water spray.

*Conventional systems use extinguishing with small water droplets. The water is only divided in the periphery (hollow-cone nozzles).*

Firefly



Conventional spark detection system





## Swedish spark detection systems

New England Wood Pellets

Lantmännen  
Agroenergi

Fortum

Baltic Energy Group

Eon

STOD

Dong Energi

Norrlands Trä

RosPoliTekhGroup

Statoil

Nells Ltd

Neova

Drax Power

Vattenfall

Norsk Trepellets

Södra

## Firefly – Keeps you in production

Firefly is a Swedish company with more than 30 years of experience in the pellet industry. We deliver complete systems to protect your company against fires and dust explosions.

With unique solutions, quick delivery and excellent service, Firefly has become the natural choice for many customers within the pellet industry worldwide.

Contact us and we will tell you more about how we can provide you with the best safety for your process!



Ph +46 8 449 25 00 | Fax +46 8 449 25 01 | [info@firefly.se](mailto:info@firefly.se) | [www.firefly.se](http://www.firefly.se)

CONTACT US



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Please visit our website to view our limited warranty for all product related claims and limited warranties.

