



Fire protection solutions
for wood based panel plants

*Cool down.
Fire Protection by*

MINIMAX

SAFETY

throughout the production process

The versatility of wood as a raw material and the fact that it is a renewable, natural resource are the main reasons for the popularity of wood as a working and building material. It is also widely used and an increasingly popular source of energy.

Integrated production processes featuring a high level of fire risk

The production sequences in the wood-processing industry are characterised by high complexity, where, for example, machines are being used for grinding and separating, drying, gluing and pressing as well as planing, milling and cutting the wood. The individual processing stages are linked by different conveying devices such as mechanically or pneumatically transport systems. Moreover, wood plants often have different peripheral areas that may range from energy buildings with turbines and transformers, different types of storage facilities to server rooms.

Increasing automation and ever higher production speeds significantly increase the risk of a fire breaking out. If sparks or glowing particles are generated during processing, fires may quickly spread to other processing areas due to the closely interlinked production processes. The high fire risk associated with wood may quickly give rise to a fire or an explosion with serious consequences for the plant.

Production down time and machine damage caused by a fire may bring the entire production process to a halt or serious damage. Very often such occurrences pose a threat to the lives of the workforce and threaten the existence of the enterprise.

Recognising risks — not only in the production process — and dealing with them

Especially in wood plants, a fire protection solution that is optimally and comprehensively adapted to the production process is indispensable. Integrated fire protection solutions are required to meet the needs of each individual area of application as well as the need to interact with the individual production stages. In the same way, the peripheral areas of the wood plant require a fire protection solution that must be tailor-made to meet the demands of the respective location. Only in this way you can provide comprehensive operational safety for your workforce while preventing at the same time the occurrence of major machine damage. Furthermore, you also comply with the requirements of the insurers.

Minimax, as a leading supplier of comprehensive fire protection solutions, offers reliable solutions for the broad range of risks related to the operation of wood plants. Strict compliance with applicable guidelines, the use of tested and in-house developed components as well as planning and installation by a qualified and certified fire contractor guarantee the reliability of our solutions. Moreover, we are also at all times available with a comprehensive range of worldwide services even after the installation of the fire protection system.



FIRE PROTECTION

Fire protection
technology
recommended by
Minimax

Sprinkler systems

Deluge systems

Minifog water mist systems

Foam systems

Hydrant systems / monitors

Spark extinguishing systems

Oxeo inert gas systems (Ar/N₂)

MX 1230 systems (Novec™ 1230)

CO₂ systems

Fire detection systems

| Manufacturing areas | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|
| Production buildings | ● | | | | ● | | | | | ● |
| Drying systems | | ● | ● | | | | | | | ● |
| Sorting machines | | ● | | | | | | | | ● |
| Gluing and forming stations | | ● | | | | | | | | ● |
| Presses | | | ● | | | | | | | ● |
| Press pits | | | ● | ● | | | | | | ● |
| Wood processing machines | | | ● | | | | | | | ● |
| Mechanical conveying systems | | ● | ● | | | ● | | | | ● |
| Pneumatic extraction and transport systems | | | | | | ● | | | | ● |
| Filter systems | | ● | | | | | ▲ | | ● | ● |
| Storage areas | | | | | | | | | | |
| Outside storage | | | | | ● | | | | | ● |
| Bunker, silo and cyclones | | ● | ● | | | | ▲ | | ● | ● |
| Board storages | ● | | | | | | | | | ● |
| Hazardous substance storage | ● | ● | | ● | | | ▲ | | ● | ● |
| Peripherals | | | | | | | | | | |
| Energy buildings | ● | ● | ● | ● | | | ▲ | | | ● |
| Oil transfer systems and areas | | | ● | ● | | | | | | ● |
| Electrical switch rooms | | | | | | | ▲ | ▲ | | ● |
| Server rooms | | | | | | | ▲ | ▲ | | ● |
| Offices and recreation rooms | ● | | | | ● | | | | | ● |

SOLUTIONS FOR WOOD

Sprinkler systems and water deluge systems:

Extinguishing water - selective or area-wide

Sprinkler systems detect and report fires, automatically initiate the water-based extinguishing process and thus offer reliable protection against fire for buildings and industrial plants. The concept of selective extinguishing makes them particularly efficient:

In the event of a fire, only the sprinklers located in immediate proximity to the fire source are opened: all others remain closed. Water deluge systems on the other hand protect areas in which a particularly rapid spread of fire must be expected. Activated hydraulically, pneumatically or electrically, they distribute the extinguishing water area-wide via open nozzles over a larger area and so fight the fire instantly.

Minifog systems: Fire fighting with water mist

Minifog water mist systems use the physical properties of the water more efficiently than conventional water suppression systems. The extinguishing water is finely distributed by special nozzles and sprinklers and/or increased operating pressure. This increases the overall surface area of the extinguishing water so that it absorbs heat and evaporates faster. The resulting cooling and oxygen displacing effect enable a particularly effective fire fighting at a minimum consumption of extinguishing water. Different system versions customised to the application in each case always ensure an optimum building, room and equipment protection.

Foam extinguishing systems:

Large-scale wetting

In the event of fire, foam extinguishing systems disperse quantities of foam over large areas using foam pipes, foam monitors, sprinklers or nozzles. The foam is applied to the burning material, extinguishes the fire and prevents re-ignitions. Foam extinguishing systems are suitable for the protection of areas with increased risks where inflammable liquids or plastics are involved. Thanks to the option of adjusting a low to extremely high foam expansion rate, an optimal extinguishing effect is achieved for each risk.

Hydrant systems: Be prepared for action

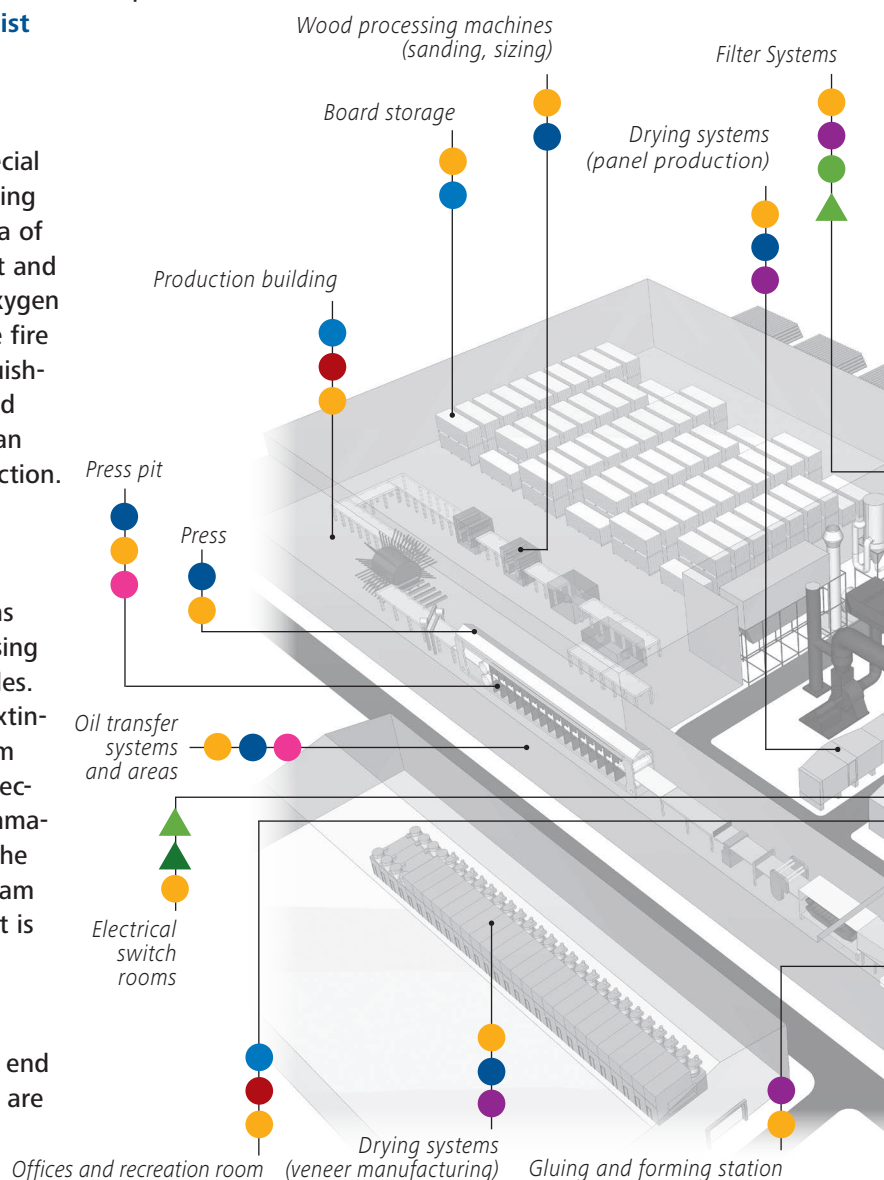
Wall and external hydrants are only the visible end of a reliable extinguishing water supply. These are backed by reliable water supply components,

such as pump systems, underground lines and firehose cabinets which are tuned to the local conditions. These components ensure the safe supply of the hydrants so that manual extinguishing measures can be taken quickly by fire brigades, operating staff or building users.

Spark extinguishing systems:

Before the spark can ignite

Spark extinguishing systems detect ignition sources in exhaust and conveying equipment and create a water curtain at lightning speed via a valve unit in order to extinguish the burning particles. They are used wherever inflammable materials are pneumatically conveyed and a high risk exists that fires or dust explosions are caused by sparks or glowing of embers. Normally, the extinguishing process is carried out without any interruption of the ongoing operation.



D PROCESSING PLANTS

Oxeo inert gas systems:

Residue-free suppression

Oxeo inert gas systems extinguish fires by introducing inert gases, such as argon or nitrogen and the associated reduction of the oxygen content in the air. They are especially suited to protect rooms accommodating high-quality and sensitive equipment for which residue-free suppression – without using water, foam or powder as an extinguishing agent – is preferable. Argon and nitrogen are natural components of the ambient air; moreover, they are non-toxic and electrically non-conductive.

CO₂ extinguishing systems:

Highly effective for many applications

The extinguishing effect of carbon dioxide is based on the fast displacement of the oxygen from the source of fire. The high heat absorption ability of the gas extracts in addition energy from the source of fire thus supporting the extinguishing effect. Due to its special extinguishing agent properties, not only entire rooms but also stand-alone equipment can be protected selectively by CO₂ extinguishing systems. Carbon dioxide is a natural component of the ambient air and electrically non-conductive. CO₂ extinguishing agent systems require little storage space for the supply

of extinguishing agent because larger volumes of CO₂ can be stored cost-effectively in low-pressure tanks.

Chemical extinguishing systems MX 1230:

Effective and compact

MX 1230 systems extinguish fires using the chemical extinguishing agent Novec™ 1230 by 3M™. This extinguishant is neither corrosive nor electrically conductive and thus especially suited to protect rooms containing electronic and electrical equipment. MX 1230 systems also extinguish fires without leaving any residues, while at the same time ensuring high personal safety and environmental compatibility. Beyond this, they offer the advantages of a particularly compact extinguishant supply, making them especially attractive for the protection of small and medium-sized rooms.

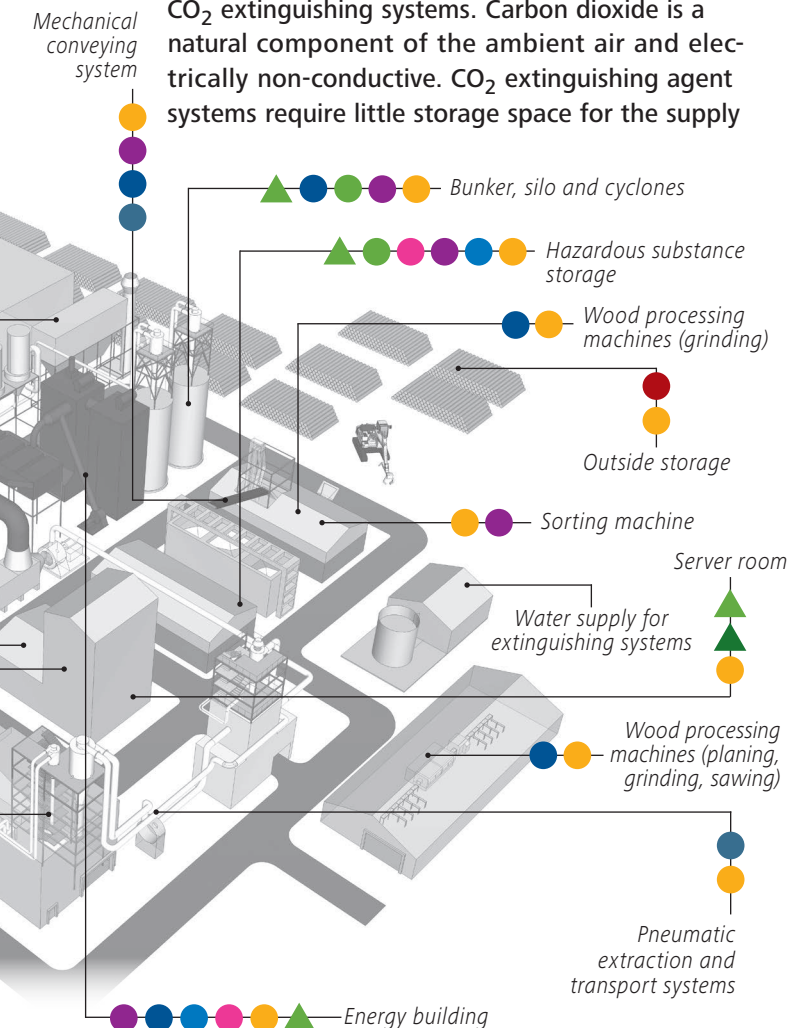
Fire detection systems and extinguishing system control:

Optimal overview and high flexibility

Smoke, flames, heat – a developing fire has different characteristics. Minimax has the right fire detectors for every kind of fire and each development stage of a fire. Special sensors are available for the early detection of thermolysis-gases or sparks. All fire detectors and sensors transmit signals to the FMZ 5000 fire detection control panel. The FMZ 5000 panel controls alarm devices and sends alarm messages to a permanently manned location and to the fire brigade. Beyond this, the FMZ 5000 can trigger the fire protection systems electrically and continuously monitor their proper functioning. The communication with hazard and facility management systems or via web interfaces with internet compatible devices is another feature of the FMZ 5000.

WinGuard: Safety at a glance

WinGuard from Minimax is a clearly laid-out and user-friendly system for visualising and operating fire detection, extinguishing and hazard detection systems. All messages and events are graphically displayed on a PC or smartphone and forwarded upon request by SMS or E-mail to designated individuals. WinGuard consequently allows for perfect monitoring, especially for extensive and complex building structures. In addition WinGuard supplies the user with a range of additional information via individual messages and thus supports him in carrying out the required measures.



REFERENCES

Fire protection solutions for wood processing plants

For more than 40 years, Minimax has been developing fire protection solutions especially for wood processing plants. Thanks to the numerous product innovations, the fire protection equipment is regularly adapted to the technological progresses of the production processes while taking into account the applicable laws and directives. For this reason, many leading companies of the woodworking industry place already trust in us:



As an integrated solutions provider, Minimax offers everything from a single source:

Fire protection advice
Fire protection planning
Spark extinguishing systems
Sprinkler systems
Minifog water mist systems
Deluge systems
Foam systems

Oxeo inert gas systems
MX 1230 systems
CO₂ systems
Fire detection systems
HELIOS smoke aspirating systems
UniVario industrial fire detectors
Hydrant systems/monitors

Fire extinguishers
Inspection and maintenance
Repairs
Training courses
Cyclone blockage monitoring
WinGuard visualisation



We also design and supply systems in accordance with the guidelines of the NFPA (National Fire Protection Association).

Minimax GmbH & Co. KG
Competence Center Wood
Industriestrasse 10/12
23840 Bad Oldesloe
Germany
Phone: +49 4531 803-8036
Fax: +49 4531 803-144
E-mail: wood@minimax.de
www.minimax.de



* Approvals relate to specific systems and/or components

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Image source

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