



A commitment to the future

Composite wood products





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Committed to the future of composite wood products

Huntsman was an early pioneer of polyurethane-based resins for the manufacture of composite wood products – and our commitment to innovating for this exciting, fast-growing market remains the same today.

We have a successful track record of developing new products, services and technologies that can help producers of composite wood products achieve their strategic goals. Ambitious, inventive and reliable, our aim is to be the partner of choice for the composite wood industry – providing customers with an extensive portfolio of resins and release agents, and the highest levels of service and innovation.

At Huntsman, we are proud to deliver groundbreaking solutions, which can help to enrich lives and create a sustainable future.



Dedicated application specialists

Our dedicated composite wood product experts provide frontline technical support whenever and wherever it is needed. From the initial design of board products, to optimizing the throughput of established manufacturing plants, we help our customers improve product performance and profitability.

Through continuous innovation we have developed a full portfolio of polyurethane solutions for companies specializing in different areas of the wood binding industry. Marketed under the brand names of I-BOND and I-RELEASE, our resins and release agents can be used in a wide range of applications including the production of oriented strand board (OSB), medium density fiberboard (MDF), particleboard (PB) and wood fiber Insulation board (WFI).

With a variety of resins and release agents at our disposal, we are well placed to help composite wood product manufacturers select the systems best suited to their specific production line requirements.

Industrial hygiene expertise

Being a global chemical company, Huntsman and its worldwide subsidiaries are committed to achieving excellence in environmental, health and safety (EHS).

In all aspects of our work, we strive to increase awareness and standards in the design and safe handling of our chemicals throughout their life cycle to ensure optimal protection for users and the environment.

We regularly carry out bulk audits and engage our customers in the industry program “Walk-the-Talk”, which focuses on increasing awareness and behavioral safety in the workplace.

In addition, we have our own team of industrial hygiene specialists, who can help our composite wood product customers attain and maintain safe production environments.



Oriented strand board (OSB) and MDI

A winning combination

We are one of the leading manufacturers of resins for the OSB market. OSB, produced to the EN 300 standard, is a structural engineered wood panel product that continues to gain in popularity around the world.

OSB applications typically include:

- Timber frame construction
- Boardings and barriers
- Shutters, fences and hoardings
- Exhibition, trade fair and shop fittings – structural and decorative
- Vehicle and truck interiors
- Structural applications such as walls, roofs, floors and cladding
- Packaging
- Furniture
- DIY.



The advantages of MDI

The use of a 100% I-BOND MDI resin in OSB production can deliver a high-performance panel with excellent mechanical strength and durability, good moisture resistance and high dimensional stability.

Using I-BOND MDI can also result in reduced blender maintenance costs (time / frequency), a faster cure, lower formaldehyde emissions and lower drier energy.

We also have a range of I-BOND fast cure resins and I-RELEASE release systems that can offer OSB manufacturers opportunities to increase production output.

I-BOND OSB FC 4310 resin is our catalyzed, fast cure resin. We also produce I-BOND OSB EFC 4362 resin, an enhanced fast cure system, which has the potential to provide an even greater increase in production capacity.

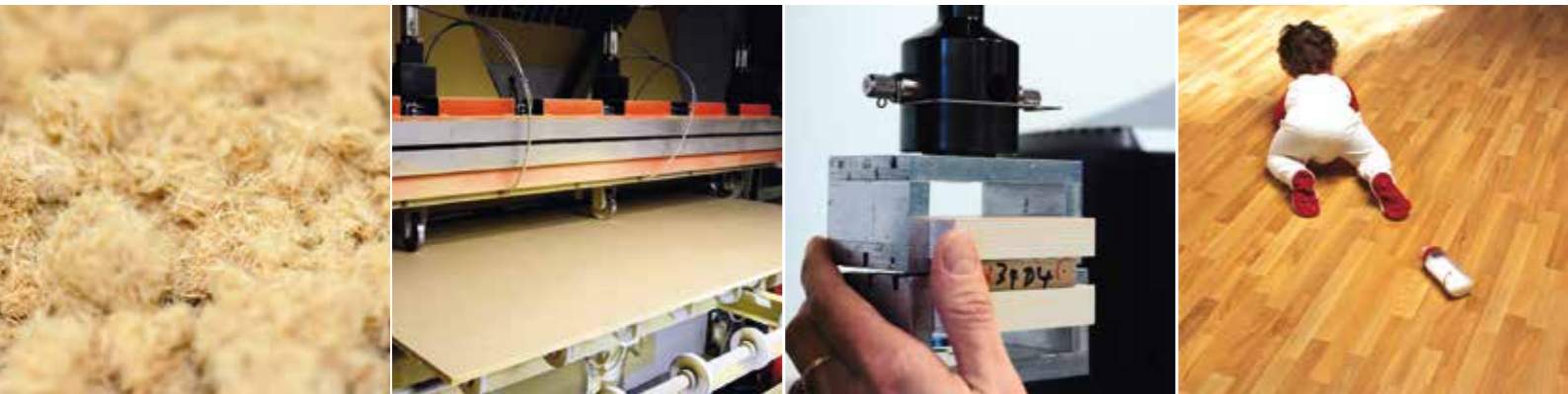
When it comes to specifying release agents for OSB production, I-RELEASE OSB 9128 release agent gives excellent performance on continuous press systems and can be applied externally on the press belt.

PRODUCTS FOR ORIENTED STRAND BOARD	
Resin	
I-BOND OSB PM 4300	Standard polymeric MDI resin
I-BOND OSB FC 4310	Fast cure MDI resin (FC1)
I-BOND OSB FC 4312	Fast cure MDI resin (FC2)
I-BOND OSB EFC 4362	Enhanced fast cure MDI resin (EFC1)
I-BOND OSB EFC 4364	Enhanced fast cure MDI resin (EFC2)
Release agent	
I-RELEASE OSB 9128	External release for continuous lines (wax free) with 21% solid content

Medium density fiberboard (MDF)

A continously growing market

Since 1965, when the first MDF panel was produced commercially in the USA, demand for MDF has increased dramatically around the world. Today, thanks to its availability in a wide range of thicknesses and its excellent performance, MDF has a wide variety of uses.



Traditional MDF applications include construction, furniture and flooring. However, this is a continuously evolving market and in recent years, composite wood producers have brought many innovative MDF products to market to address customer needs. Examples include anti-bacterial treatments, sound absorbing systems and direct printing applications.

Through innovation and the development of pioneering, cutting-edge technologies, we have established ourselves as one of the key MDI-resin suppliers. Our I-BOND MDI products can be used as the only resin in the production of standard quality MDF. They can also be used in the production of special quality MDF for exterior grade panels, moisture resistant panels, thin panels for flooring applications and low-density panels. Using our I-BOND MDI products, MDF producers can be confident that their panels will conform to F **** or NAF (non-added formaldehyde) and ULEF (ultra-low emitting formaldehyde) emission standards.

MEDIUM DENSITY FIBERBOARD	
Resin	
I-BOND MDF PM 4390	Standard polymeric MDI resin
I-BOND MDF PM 4394	Polymeric MDI resin (dry blending)
I-BOND MDF EM 4330	Emulsifiable MDI resin
I-BOND MDF EMFC 4332	Emulsifiable fast cure MDI resin
I-BOND MDF FC 4392	Fast cure MDI resin
Release agent	
I-RELEASE MDF 9132	Internal release for multi-daylight and continuous lines (synthetic wax) with 40% solid content
I-RELEASE MDF 9141	External release for continuous lines (wax free) with 21% solid content



I-BOND MDF EM 4330 resin is the result of the continual advances we have made in the development of resin technologies. The main advantage of this resin is that it forms a stable emulsion with water, providing better distribution on the fibers in the blow line. The outcome is a significant increase in panel performance.

We have also developed release agents for MDF production. I-RELEASE MDF 9132 release agent is applied internally on the fibers. This product can be mixed with the resin and added into the blow line. As an alternative, I-RELEASE MDF 9141 release agent can be sprayed externally on the press belt or, in the case of a multi-daylight press, on to the screen.

Particleboard (PB)
A sustainable way to reuse wood

As a base material, PB provides an enormous range of possibilities in furniture manufacture and helps to make wood furniture more affordable. Easy to work with, and flexible in its use, different types of specialty boards can be produced according to individual building application requirements. Moisture resistance, fire retardancy and acoustic insulation are all properties that can be achieved by using specific types of PB.



Using I-BOND MDI on PB lines can bring significant benefits including an improvement in board properties and a significant increase in production capacity. I-BOND PB EM 4352 resin was developed specifically for the PB industry. This resin is compatible with standard (melamine) urea formaldehyde (M)UF resins and is commonly used as a catalyst in hybrid systems, where it can help to achieve an increase of up to 15% in production output depending on the gluing system. Our other catalyzed, fast cure resins are also suitable for PB production either in hybrid systems or as full MDI system to produce NAF panels. Together with our I-RELEASE PB 9156 internal release agent, we provide a full package of products suitable for all PB production requirements.

PARTICLEBOARD	
Resin	
I-BOND PB PM 4350	Standard polymeric MDI resin
I-BOND PB EM 4352	Emulsifiable MDI (can also be used in hybrid systems)
I-BOND PB FC 4320	Fast cure MDI resin
I-BONDPB EFC 4322	Enhanced fast cure MDI resin
I-BONDPB EMFC 4324	Emulsifiable fast cure MDI resin
Release agent	
I-RELEASE PB 9156	Internal release agent for multi-daylight and continuous lines (synthetic wax) with 40% solid content

Wood fiber insulation board (WFI)
The next generation insulation board

Our commitment to continuous innovation for the composite wood product market has contributed to the development of WFI board with a thickness of up to 240mm. This type of panel offers high performance in terms of sound and thermal insulation and provides an eco-friendly and sustainable alternative to standard insulation materials such as mineral fiber.

I-BOND WFI 4370 resin was developed specifically for the production of WFI boards. With low temperature curing properties, this product is designed to deliver excellent board properties. Under extreme conditions, for example at low press temperatures or where moisture content is high, I-BOND WFI 4370 MDI resin can be used to maintain stable production output.

WOOD FIBER INSULATION BOARD	
Resin	
I-BOND WFI 4370	Low temperature curing MDI resin
I-BOND WFI 4372	Low temperature and faster curing MDI resin
I-BOND WFI 4376	Emulsifiable low temperature curing MDI resin
Release agent	
I-RELEASE WFI 9162	External release agent for continuous lines (wax free) with 20% solid content



Composite wood products **Building a sustainable future**

At Huntsman we are proud that our composite wood products business plays a major role in supporting sustainable and environmentally responsible construction and manufacturing techniques that will help safeguard our planet for future generations.

Global warming

The manufacture of composite wood products relies on timber sourced from managed and sustainable forestry resources. This helps ensure that a greater number of trees are planted than harvested. Fast growing, young trees absorb more carbon dioxide than mature trees, helping to trap the carbon contained in one of the principal greenhouse gases.

Sustainable forestry

In many areas of the world, illegal logging and deforestation are significant issues, which are contributing to the destruction of habitats, a reduction in biodiversity and damage to the water cycle. Composite wood products, produced using sustainable forestry resources, are a real and sustainable solution for keeping pace with consumer demand for wood.



Energy conservation

Timber frame buildings are increasingly used as an efficient, high quality and sustainable construction method that can help combat the higher cost of energy and reduce greenhouse gas emissions. Timber frame construction is seen as an alternative to traditional brick and concrete construction in many areas of the world. For example, in the UK, timber frame construction is increasingly specified by housing associations looking to develop affordable, high quality, energy efficient homes.

Indoor air quality

Consumers are concerned about air quality in their homes and the levels of volatile organic compounds emitted by the buildings and furniture around them. Composite wood products, manufactured using our high efficiency I-BOND MDI resins, contain no added formaldehyde - ensuring they meet the most stringent standards specified around the world

Global supply capabilities

We are committed to offering our customers the highest quality products and services available, and we strive for consistent and reliable supply throughout the world. We have regional teams of composite wood product experts available in Europe, Asia and the Americas, ready to offer technical assistance to our customers, whenever and wherever it is needed. For additional information visit: www.huntsman.com



HUNTSMAN

Enriching lives through innovation

European headquarters

Huntsman
Everslaan 45
3078 Everberg Belgium
Telephone: +32 2 758 9289

American headquarters

Huntsman
10003 Woodloch Forest Drive The
Woodlands
Texas 77380 USA
Telephone: +1 281 719 6000

Asian headquarters

Huntsman
No. 452 Wen Jing Road Minhang
Development Zone Shanghai 200245
China
Telephone: +86 21 2403 7288

www.ibondwood.com
polyurethanes_eu@huntsman.com

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