



Wood-Based Materials

– Innovation & Respect for Nature

Complete Portfolio

KRONOPLY GmbH

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KRONOPLY OSB – High Tech Made From Natural Wood



KRONO – Strong with Wood-Based Materials

The SWISS KRONO GROUP is one of the world's leading makers of wood-based materials. We make a wide range of products that are all the same in one respect: their quality is always first-class.

We are a strong family. Our committed, hard-working employees make environmentally sound products while setting clear international standards at our ten plants in seven countries, including Germany, France and Poland.

We offer customer-orientated solutions involving innovative, eco-friendly products as well as comprehensive consulting and support. In awareness of our responsibility to society, we use a natural raw material – wood – to produce custom-tailored wood-based materials.

Innovation – Getting Better All the Time

Day after day, we work hard to make our product portfolio even more innovative, more functional and more conducive to healthy living. One goal we never lose sight of is environmental protection. We're naturally also business-minded – but at the same time, we attach great importance to reducing environmental burdens.

In connection with all production processes and new products, we continually ask ourselves: "Could this be done even better?" And we aren't satisfied until we get the best possible results and can say with good reason: "Yes, houses can be even healthier to live in!"

KRONOPLY – Made in Germany

The employees of the SWISS KRONO GROUP's German operation have done pioneering work to advance environmentally friendly building with KRONOPLY OSB (Oriented Strand Board). KRONOPLY GmbH, headquartered in Heiligengrabe, produces KRONOPLY F**** OSB boards that have even been certified for use in food packaging.

Wood-Based Materials – Innovation & Respect for Nature



KRONOPLY OSB – the innovative wood-based material



Delivery Programme

	Format [mm]	Thickness [mm]								
		9	10	12	15	18	22	25	30	40
		Units/pallet								
KRONOPLY OSB/3, square-edge ContiFinish®	2500 x 1250	100	92	78	60	52	42	38		24
	2070 x 2770			78	60	52	42			
	2650 x 1250			78	60	52				
	2800 x 1250			78	60	52				
	3000 x 1250			78	60	52				
	5000 x 1250			36	30	26	22			
	5000 x 2500			18	16	14	12			
KRONOPLY OSB/3, T + G Sanded on both sides	2500 x 675 T + G on all 4 edges				60	52	48	38		
KRONOPLY OSB/3, T + G ContiFinish®	2500 x 675 T + G on all 4 edges			78	60	52	42	38		
	2500 x 1250 T + G on all 4 edges			78	60	52	42	38		
KRONOPLY OSB SF-B, square-edge	2500 x 1250				60	52				
	3000 x 1250			78	60	52				
KRONOPLY OSB SF-B, T + G	2500 x 1250 T + G on all 4 edges					52	42			
KRONOPLY OSB/F****, square-edge ContiFinish®	2500 x 1250			78	60	52	42	38	32	
	2650 x 1250			78	60					
	2800 x 1250			78	60	52				
	3000 x 1250			78	60					
	5000 x 2500				16	14	12	8		
KRONOPLY OSB/F****, T + G ContiFinish®	2500 x 675 T + G on all 4 edges				60	52	42	38	32	
	2500 x 1250 T + G on all 4 edges			78	60	52	42	38		
	6250 x 675 T + G on 2 edges						22	18		
KRONOTEC DP50, T + G LiquiSafe on all 4 edges	2500 x 675				60					
KRONOPLY OSB/4 Sanded MAGNUM BOARD raw board	15000 x 2800							30 per truck		
KRONOPLY OSB/Specialities	KRONOPLY OSB/3 (long boards)	6501 mm bis 15000 mm			*	*	*	*		
	KRONOPLY F**** (long boards)	6501 mm bis 15000 mm			*	*	*	*		

Special formats on request

* Minimum order: 1 load per thickness and format

	Format [mm]	Thickness [mm]										
		6	8	10	12	16	18	19	22	25	28	30
KRONOPLY MDF - raw E1	2800 x 2070	70	60	50	45	25	25	25	25	20	10	10
	4100 x 2070			35	25	25		25	20			
KRONOPLY MDF, melaminated on both sides White primed P099	2800 x 2070			50	45	25	25	25	25	25	20	20

Special formats on request

	Format [mm]	9	Thickness [mm]	
			18	20
KRONOPLY anti-termite, square-edge	2800 x 1196	100		
KRONOPLY anti-termite, T + G	2400 x 675		52	
KRONOPLY quicklyboard	2500 x 1250			46

Special formats on request

	Format [mm]							Thickness [mm]						
	5	40	50	60	80	100	120	140	160	180	200	220	240	
KRONOTHERM flex	1350 x 575	112	90	72	56	42	36	32	28	24	20	20	16	
KRONOTHERM sound	800 x 675	440												

Special formats on request

KRONOPLY OSB – High Tech Made from Natural Wood

From Trees to a Modern Wood-Based Material

KRONOPLY OSB (OSB stands for “oriented strand board”) is formed from long, slender strands or strips of wood (called flakes in the trade) which are layered in specific directions. It is a synthesis of a natural raw material and innovative technology. We make our KRONOPLY OSB boards on the world’s most advanced systems for continuous production of wood-based materials, using only fresh thinnings from sustainably managed forests.

Three Layers – Maximum Stability

Every KRONOPLY OSB product has three layers: two surface layers and a core layer. In order to optimise the stability of the finished boards, the natural wood strands of the cover layers are aligned in the direction of production, which defines the principal orientation. The strips that go into the two-ply core layer run perpendicular to the orientation of the surface layers. This approach maximises the bending strength of all KRONOPLY OSB products.

Formaldehyde-Free Binders

Before being pressed at a high pressure and temperature, the flakes are mixed with a small amount of binder. This consists of completely formaldehyde-free bonding resins, thus ensuring that KRONOPLY OSB products contain only the formaldehyde that naturally occurs in the wood flakes.

Conti-Roll Press for Top Quality

Our cutting-edge Conti-Roll press turns out KRONOPLY OSB products in a continuous process, which lets us guarantee first-class quality with improved thickness tolerances. The board surfaces are also given a high-quality finish: pressing causes the formation of a thin layer of wood and bonding resins with water- and moisture-repellent properties. Water rolls right off this ContiFinish® surface, allowing the boards to withstand brief exposure to moisture without harm.

Did You Know?

At our production facility in Heiligengrabe, Germany, all production waste – such as sanding dust and leftover wood chips – is used to fuel a special plant which generates electricity that is used on-site and/or sold as “eco-power”.



KRONOPLY OSB – The Original for Healthy Living



OSB Expertise Since 1997

The SWISS KRONO GROUP blazed new trails in 1997 by using the world's first Conti-Roll OSB system at KRONOPOL in Zary to produce storey-high formats. Since then, KRONOPLY has been the market standard. KRONOPLY OSB products are manufactured at our plants in Germany, Poland and France.

Always Ahead of the Crowd

KRONOPLY has a long tradition of developing innovative new products. One such innovation is the production of approved KRONOPLY OSB boards with a length of 15 metres. In fact, the SWISS KRONO GROUP is the only company in the world able to produce 15-metre-long boards, having invested in a long-board stacking system at its Heiligengrabe plant.

KRONOPLY OSB/3 and KRONOPLY OSB/F**** are made in long versions with board lengths between 6.501 and 15 metres. KRONOPLY OSB/4, the raw board used for the KRONOPLY MAGNUM BOARD building system, is also produced in a length of 15 metres.

The latest KRONOPLY OSB innovation is the flame-resistant product KRONOPLY OSB SF-B, which meets the European fire protection requirements for public buildings.

Builders of prefabricated houses and other structures can take advantage of this KRONOPLY OSB innovation to create large-size wall and roof elements. It also offers producers of prefabricated elements for timber-frame houses many opportunities to increase efficiency and to optimise costs. Plus, the latest storey-high long boards from the KRONOPLY OSB product family make it possible for a single board

to extend the entire length of a building, completely eliminating butt joints. This does away with the need to lay plasterboard over it.

Four Stars – Absolutely Food-Safe

The Food Process Engineering section of the Institute of Process Engineering in Life Sciences in Karlsruhe, Germany has prepared an expertise which shows that it is also suitable for packaging foods. It is well below the strict 0.03 ppm emissions ceiling that leading German associations are calling for, as only pinewood and completely formaldehyde-free binders are used to produce it. This also ensures that KRONOPLY OSB/F**** is optimally suited for modern, eco-friendly wood construction and furniture production.



You'll find additional information at: www.kronoply.com



KRONOPLY OSB – An Optimal Team Player

Protection from Heat

When it gets hot outside, innovative KRONO wood-based materials ensure a pleasant indoor climate. For example, a combination of KRONOTHERM feel-good insulation with KRONOPLY OSB in roofs and walls optimally shields building inhabitants from the summer heat.

Protection from Cold

When the thermometer drops below freezing in winter, roof and wall constructions that incorporate KRONOTHERM feel-good insulation and KRONOPLY OSB save valuable energy. Airtight and water vapour-permeable KRONOPLY OSB supplements the high insulating effect of KRONOTHERM feel-good insulation. Combined, these natural building materials effectively protect living space from low outdoor temperatures.

Protection from Noise

Working in tandem, KRONOPLY OSB and KRONOTHERM fibreboard insulating materials effectively block outside noise. A wide variety of tested constructions is available. Their outstanding sound-absorbing properties allow them to swallow external noise – making for a more relaxing life.

Protection from Moisture

KRONOTHERM feel-good insulation regulates the humidity of the air by absorbing excess moisture and releasing it again into the indoor air as needed. Every product of the KRONO portfolio has physical properties that are optimised for its particular applications. This enables you to create water vapour-permeable constructions that dispense with membranes and vapour barriers.

Protection from Fire

An officially accredited institute has issued a general test certificate confirming that KRONOPLY and KRONOTHERM products are suitable for making cost-effective, water vapour-permeable walls. Exterior walls made with these products meet the requirements for a F30 fire rating. Other constructions to meet fire protection requirements can be implemented in compliance with DIN 4102-4. The flame-resistant KRONOPLY OSB SF-B version has been officially approved for use in construction and meets strict fire protection requirements in Germany and Europe.

Environmental Friendliness

KRONO products are mainly made from thinnings from sustainably managed forests. We have been certified for these responsible practices under the Pan European Forest Certification (PEFC) scheme.

Applications

KRONOPLY OSB is a multifunctional wood-based material that lends itself to a vast range of uses. Besides applications in packaging, concrete formwork and privacy walls, it is mainly used in timber-frame housing constructions and for building interiors. In conjunction with KRONOTHERM wood-fibre insulation, KRONOPLY OSB is an excellent solution for realising cost-effective constructions that conform to energy conservation requirements and passive house standards.

Use in Roofs

KRONOPLY OSB is an ideal load-bearing board for roofs. Its vapour-blocking function maximises the energy-saving potential of KRONOTHERM wood-fibre insulation. When using the water vapour-permeable product KRONOTEK MDF (medium-density fibreboard) for the underroof panels, you can create roofs without having to resort to vapour-permeable membranes or sealing layers. Representing the state of the art in technology and complying with current standards, KRONOPLY may also be used in flat roof constructions. This lets you build large-area roofs much faster and simpler than with boarding.

Use in Walls

In wall constructions in timber-frame buildings, KRONOPLY OSB excels by serving as a stiffening, vapour-inhibiting and airtight plane. The storey-high formats allow efficient use with a minimum of cutting and trimming.

Use in Ceilings

Also in ceiling constructions, combinations of KRONOPLY OSB and KRONOTHERM optimally attenuate footfall noise and insulate against cold.

KRONOPLY OSB – The Sustainable Energy-Storing Product



Positive Environmental Balance Sheets

In addition to the outstanding constructive properties of KRONOPLY OSB products, they also actively contribute to protecting the climate. Each cubic metre of KRONOPLY OSB stores about 1000 kg of CO₂ and keeps it bound up during the entire lifetime of the product. The pinewood used for environmentally gentle production comes from sustainably managed forests in the German states of Mecklenburg/Western Pomerania and Brandenburg, and most of it is PEFC-certified.

Wood and wood-based materials are the only load-bearing materials that can be described as energy-conserving products, because they store more energy than it takes to produce them. In addition, all KRONO wood-based materials are classified as components with a negative "global warming potential" (GWP). The stored carbon is not released during the entire lifetime of these components. And history teaches us that optimally planned and built structures consisting of wood and sustainably produced wood-based materials can last for several centuries.

Drive Without Guilt with KRONO

The calculation below shows how using KRONO products can effectively minimise your personal carbon emissions so you'll have a CO₂ budget left over for driving your car.

It can take the following amounts of wood and wood-based materials to build an average single-family house:

Solid wood and construction timber:	10 cubic metres
KRONOPLY OSB:	12 cubic metres
KRONOTEC DP50:	4 cubic metres
KRONOTHERM flex:	70 cubic metres

Added together, this means that the house will store a total of 27,800 kilos of CO₂. So if you protect the environment by building it, in return you could drive a VW Golf BlueMotion, which according to Volkswagen VW emits 99 grammes of CO₂ per km, about 280,800 km.



You'll find additional information at: www.kronoply.com



KRONOPLY OSB – Energetically Optimised Constructions

Highly Specialised Systems

Roofs and exterior walls pose considerable demands in terms of stability and insulation. Pitched roofs in particular are exposed to weather and temperature extremes to a greater extent than any other part of a building's outer shell. Optimally insulated, loadable constructions can only be made with professionally planned and installed, harmonized system components.

KRONO offers a wide range of constructive and highly insulating wood-based materials that are ideal for creating environmentally friendly, efficient solutions when erecting modern timber-frame houses or modernising or extending existing buildings.

Fire Protection with KRONOPLY OSB

KRONOPLY OSB products also meet the special requirements for materials used in fire-resistant constructions. For example, in order to fulfil the requirements for wood-based boards specified by the EN 13986 standard, KRONO produces its KRONOPLY OSB/3 with a density of at least 600 kg/cu.m.

You'll find loads of suggestions on our website for using KRONOPLY OSB and other KRONO wood-based materials to build, renovate or add an extra storey to houses. There are also practical examples taken from actual projects, including detailed explanations and illustrations.

Check it out at www.kronoply.com.



You'll find additional information at: www.kronoply.com



Built by: Holzbau Kühlborn GmbH, 34286 Spangenberg
Photograph: Wiedemann Fotografie, 34117 Kassel

KRONOPLY OSB – The Innovative Multitalent



Save Money with Energy-Conserving Renovation

In many countries, the biggest potential for saving energy can be realised when renovating old buildings. Special techniques such as infrared photography can precisely reveal how heat is distributed over a building's exterior. They make it easy to identify insufficient insulation and thermal bridges. Professionally planned and executed building renovation projects using reliable KRONOPLY OSB products and KRONOTHERM fibreboard insulation as harmonised parts of a coordinated system increase the value of properties, enhance the wellbeing of their residents and reduce heating costs.

In many countries including Canada, the United States and the UK, government grants are available to help homeowners renovate – especially if the improvements increase energy efficiency. Find out how you can get assistance for reducing energy consumption and releasing less climate-damaging carbon dioxide.

Did You Know?

An example calculation illustrates the realistically achievable savings and environmental benefits. Interior roof insulation with KRONOTHERM and KRONOPLY OSB: the annual saving can easily amount to about 180 kWh per square metre. That is equivalent to 13 litres of heating oil, 18 cu.m of natural gas or 40 kg of wood per square metre.

Give It Secure, Eco-Friendly Packaging

If you choose KRONOPLY OSB as your packaging material, you'll be protecting both your products and the environment. KRONOPLY OSB meets the demanding requirements of the packaging industry with its excellent technical attributes, and our eco-friendly KRONOPLY OSB/F**** is a certified high-tech product that is suitable in every respect for packaging food.

KRONOPLY OSB even meets with flying colours the strict import rules that some countries, for example China, have for wooden packaging: during production of it on the Conti-Roll system with pressing temperatures of around 200°C, any insects or germs in the wood are reliably killed.



You'll find additional information at: www.kronoply.com



Sustainable Roof Renovation

The most important part of a house is its roof. It is extremely exposed to fluctuating temperatures and the weather. If it is inadequately insulated, the space beneath it is heated up greatly during the summer, and in the winter heating costs increase. Using sustainable materials to renovate the roof creates modern, healthy living space.

Eco-Friendly Systems Involving Wood-Based Materials

In order to achieve the best possible results, the materials used must be highly insulating while also meeting other requirements such as airtightness, wind tightness and fire protection. Challenges are posed by extreme fluctuations in temperature and relative humidity. KRONOPLY and KRONOTHERM are eco-friendly wood-based materials that are specially designed to deal with them. Used as a system, they regulate the natural fluctuations between cold and heat and between dryness and moisture. By using KRONOPLY OSB for the load-bearing construction in combination with water vapour-permeable KRONOTHERM feel-good insulation, you can create living space with a high feel-good factor.

Did You Know?

KRONOPLY OSB has an environmental product declaration (EPD) in accordance with ISO 14025, issued by the Institute Construction and Environment e.V. An EPD evaluates a product's entire lifecycle according to international standards to establish a basis for sustainable construction.



Gaining Space by Adding Another Storey

When there is no room left to laterally expand, for example in cramped inner cities, or when there is a wish to avoid encroaching on the garden, it is still possible to gain extra living space. The solution is to add another storey. Just how easy, fast and cleanly this can be done is shown by the photographs of a KRONO reference project on this page.

In 2009 the Gottfried family in Röslau, Germany decided to add another storey to an annex they had already built onto their single-family house. They also wanted to take advantage of the opportunity to renovate. It was important to them to complete the project quickly and without letting the construction work introduce any damp into the existing building. They chose a system consisting of wood-based materials from KRONO.

A Consistently Pleasant Indoor Climate

"We made the right decision," says the Gottfried family now. "In both winter and summer we now enjoy a very agreeable, constant indoor climate." This feel-good climate was implemented with KRONOPLY OSB, which lends the construction a high degree of stability without adding much additional weight.



You'll find additional information at: www.kronoply.com

Roof Insulation Without Loss of Space

The Gottfried family decided to insulate the roof with KRONOTHERM flex and water vapour-permeable KRONOTEK DP50, which avoided any loss of space on the top floor. Another advantage of this insulation system is that the indoor rooms are not needed for the installation work – thus eliminating the annoyance of having to move or remove furniture etc. All of the materials are brought up and all of the work is done outside, and the high inherent stiffness of KRONOTHERM flex makes it even easier to install as roof insulation. These benefits convinced the Gottfried family, who are now completely satisfied with the quickly achieved final results of their "KRONO project".



Topics/Segments/Applications

Construction Without Thermal Bridges

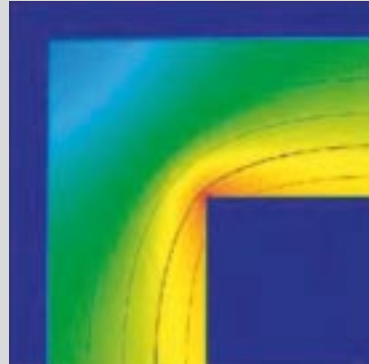
A thermal bridge is a building part through which heat can escape to the outside significantly faster than via other parts. Lower temperatures result locally on the inside of the affected component. This cooling effect increases energy consumption and causes moisture problems such as condensation or even mould. Eventually it results in damage to the building. However, these risks can be avoided with professionally planned insulation and the use of coordinated materials in the context of a system.

Intelligent, Flexible Solutions

To ensure energy-conserving, hygienically sound constructions, they must be intelligently planned and built. KRONO offers a large number of flexible solutions for new houses, renovation projects, and adding an extra storey. For example, it is typically not allowed to install exterior insulation on old buildings with protected status. The only alternative in such cases is to insulate the walls on the inside, which poses considerable thermal, acoustical and ventilation challenges.

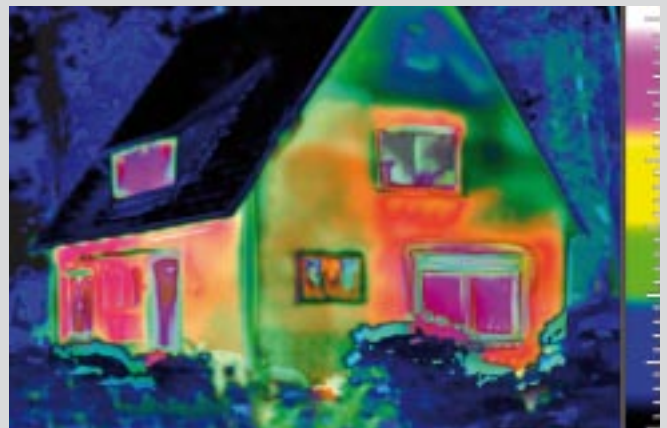
Did You Know?

Infrared thermography, also known as thermal imaging, reveals the energetic weak points and thermal bridges in a building's outer shell. It is then obvious where there is a need for renovation. Pictures taken with special infrared cameras precisely show which parts of a building are losing significant amounts of heat.



Thermography:
A thermal bridge - there is an "energy leak" here.

Also in renovation projects, which call for special solutions, a system consisting of KRONOTHERM insulation and load-bearing layers of KRONOPLY OSB let you create modern, energy-efficient feel-good houses.



Built by: Holzbau Kühlborn GmbH, 34286 Spangenberg
Photograph: Wiedemann Fotografie, 34117 Kassel

Flat Roofs – Economical Constructions

Flat roofs are roof constructions that are horizontal or have a low pitch. The entire surface area is typically covered with a waterproof membrane. Modern timber-frame houses allow the installation of economical flat roof constructions that are largely prefabricated and lie on rafters spaced far apart. Predestined for use in many flat roofs are KRONOPLY OSB/3 and KRONOPLY F****. KRONOPLY products let you create durable constructions that meet thermal, acoustical and ventilation requirements while also complying with the stipulations of the new DIN 68800 standard.

Fast to Lay and No Chemicals

KRONOPLY OSB/3 and KRONOPLY F**** fulfil the requirements of various standards owing to their moisture-resistant PMDI binders. Outstanding results have been obtained with these materials in a large number of flat roof constructions. In contrast to the wood-based materials ordinarily used in flat roofs, KRONOPLY OSB/3 and KRONOPLY F**** do not require any chemical treatment. Another advantage is that KRONOPLY OSB is much faster to lay than roof boarding. If you use it together with eco-friendly KRONOTHERM flex wood-fibre insulation, you can count on a very good moisture barrier.



You'll find additional information at: www.kronoply.com

Did You Know?

Because they are made with formaldehyde-free PMDI binders, KRONOPLY OSB/3 and KRONOPLY F**** comply widely with the requirements for use in flat roofs. In Germany, for example, they are allowed by Holzbau Deutschland – Bund Deutscher Zimmermeister and the German Plumbers' Association (ZVSHK).



Built by: Bema, 69483 Wald-Michelbach

Topics/Segments/Applications

Flat Roofs – You Can Even Plant Them

A green or living roof is an alternative to a conventional garden. It is a way to recover a piece of nature in urban areas. Apart from environmental benefits, planting is effective for protecting a roof from temperature extremes and wind. It also keeps heat in and noise out. The latest construction standards and the current state of technology allow the use of KRONOPLY OSB in flat roofs, and recent tests have shown that it is also suitable for implementing green roofs.

Test Result: Durable and Robust

Both trials and statistics have revealed that the hygrothermic* behaviour of low-pitch timber roofs made of ecological building products with upper vapour-proof sealing constitute non-polluting, forward-looking constructions that meet market expectations. If properly planned, unventilated single-skin wood roofs that ideally manage moisture can be built with KRONOPLY OSB.

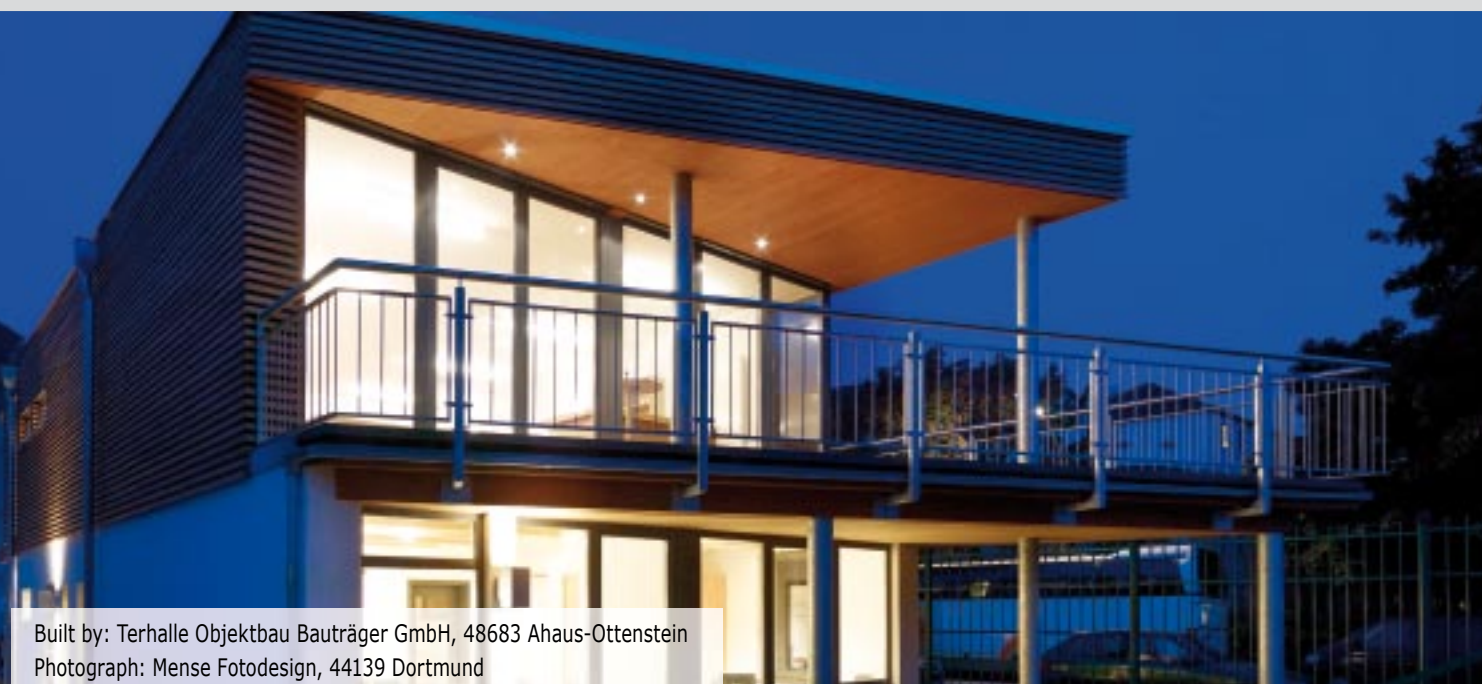
The OSB constructions that have been tested and shown to be durable and robust while adequately meeting safety requirements include a green roof variant. The most important test results have been published by the Leipzig Institute for Materials Research and Testing (MFPA).

* Hygrothermic refers to processes that take place at different temperatures and involve water.

The calculations are described in DIN EN 15026. A well-known and frequently used software program is WUFI, which was also used in the research project at the MFPA in Leipzig.



KRONOPLY OSB lets you build large-area roofs much faster and more easily than with roof boarding, and even create green roofs.



Built by: Terhalle Objektbau Bauträger GmbH, 48683 Ahaus-Ottenstein
Photograph: Mense Fotodesign, 44139 Dortmund

Airtight – Naturally So

KRONOPLY OSB is airtight – a “pure board” beyond a shadow of a doubt. In addition to good thermal insulation, airtightness is an important requirement for modern, energy-efficient construction. Nowadays, in many countries houses must be provided with an airtight layer – in Germany, this is prescribed by the Energy Saving Ordinance (EnEV 2009). The heat-transmitting outer surface (including joints) must be sealed in accordance with acknowledged technical principles to be lastingly airtight.

Tested and Confirmed

KRONOPLY GmbH is one of Europe’s most successful producers of OSB boards bonded without formaldehyde. And these high-tech natural-wood products are also ideal for making airtight building shells, which has now been officially confirmed. HFB Engineering GmbH, an officially approved and acknowledged testing and development institute in Leipzig, Germany, measured the airtightness of KRONOPLY OSB/3 in. Four different thicknesses were tested: 10, 12, 15 and 18 millimetres. At a pressure differential of 50 pascals, an average air permeability (pressure/suction) of no more than 0.14 [m³/hm²] was determined for all of the board thicknesses.

Practical Example

Assuming this value, consider a house that was built by an employee of KRONOPLY GmbH:

Total area of exterior walls and roof:	413.3 sq.m
Total area of all windows:	51.7 sq.m
KRONOPLY OSB area:	361.6 sq.m

At a pressure differential of 50 pascals, the following amount of air flows through the boards: 361.6 x 0.14 = 44.3 cu.m/h

The total contained volume of the house is 724.50 cu.m. This yields an air exchange rate of $n_{50} = 44.3 / 724.5 = 0.06$ [h⁻¹], thanks to KRONOPLY OSB.

Buildings with ventilation systems are allowed to have an n_{50} value of 1.5 [h⁻¹]. KRONOPLY OSB results in only four percent of this, which can be safely regarded as negligible. Even in a passive house, which may not have an n_{50} value of more than 0.6 [h⁻¹], with KRONOPLY OSB the air exchange rate would not exceed 10 percent of this.



The KRONO Feel-Good House

Contemporary, Energy-Efficient and Durable

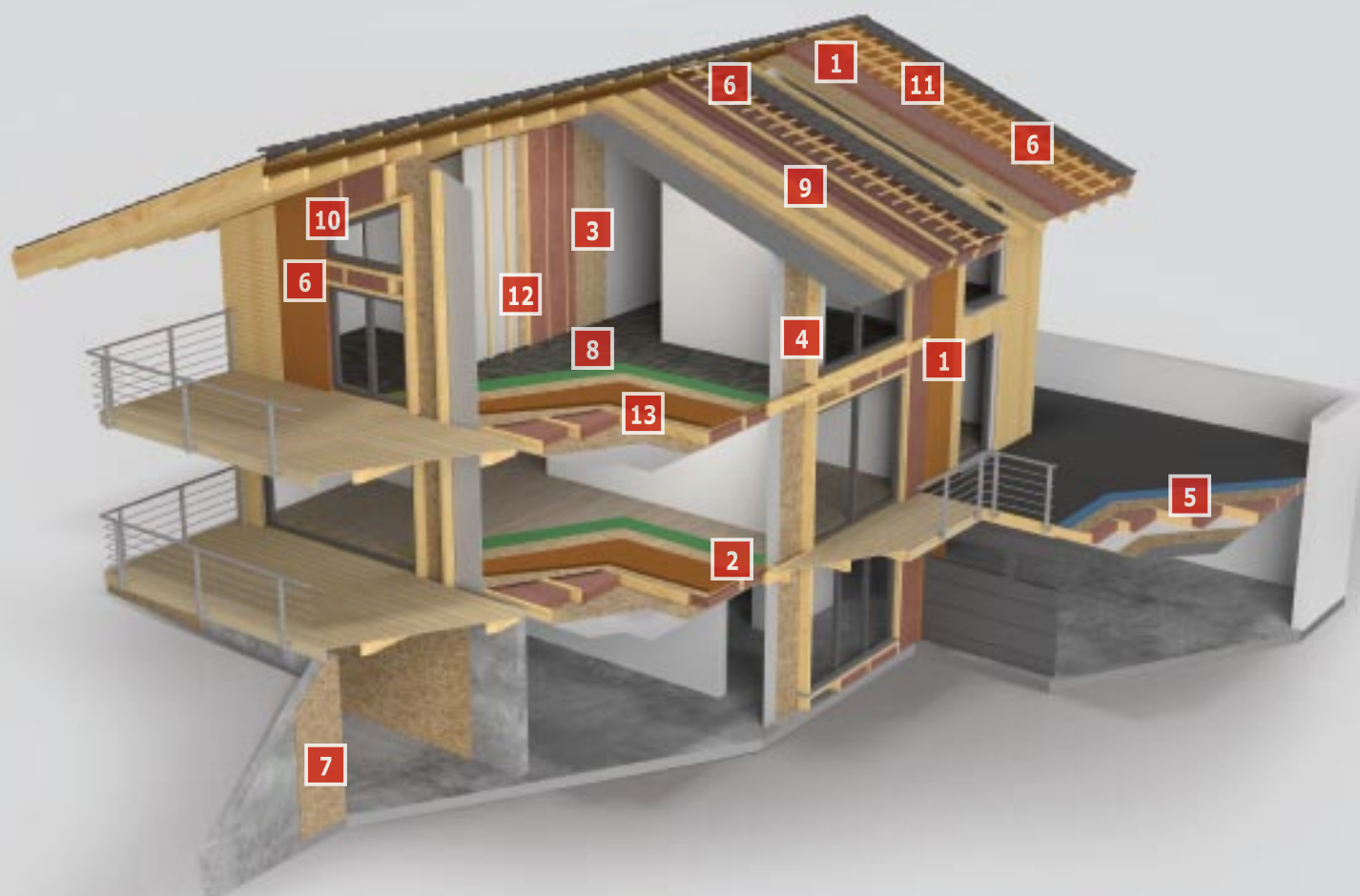
The solution to future challenges for modern, energy-efficient construction and renovation is simple: highly specialised, coordinated product systems from KRONOPLY that make for optimally insulated, architecturally attractive feel-good houses.

Every single product in the KRONO feel-good programme excels with outstanding stability, insulating performance and eco-friendliness. A KRONOPLY roof system alone can pare up to 30 per cent off your heating costs. At the same time, the carbon stored in the wood – a natural, renewable raw material – makes an active contribution to protecting the environment.

All KRONOPLY system modules are intelligently designed down to the tiniest detail and have proven themselves in practice. Thanks to high level of prefabrication of the roof, wall and ceiling elements, it takes only between one and three days to assemble a rain-tight KRONO feel-good house. The exclusive use of eco-friendly wood-based materials eliminates drying phases with the costly waits they entail.

The various KRONOPLY system modules are freely combinable and also suitable for meeting special requirements such as fire protection. A selection of our intelligent KRONOPLY system modules is shown on the right.

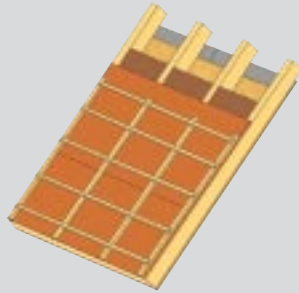
You'll find more system variants, information on installation and detailed data on our KRONOPLY system products at www.kronoply.com.



9 KRONOPLY system for between rafters insulation

Components from the inside out

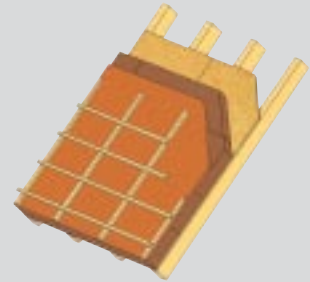
- 12.5 mm of GKF gypsum fireboard
- 18 mm of KRONOPLY OSB
- 200 mm of KRONOTHERM flex
- 15 mm of KRONOTEC DP50
- Counterbattens/battens
- U-value: 0.21 W/m²K
- Phase shift: 11.4 hours
- Heat retention: 96%
- F30-B acc. to DIN 4102-4, table 66



11 KRONOPLY system for on rafters insulation

Components from the inside out

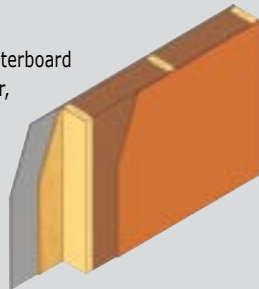
- Rafters, visible
- 18 mm of KRONOPLY OSB
- 200 mm of KRONOTHERM flex
- 15 mm of KRONOTEC DP50
- Counterbattens/battens
- U-value: 0.18 W/m²K
- Phase shift: 11 hours
- Heat retention: 94%



10 KRONOPLY system for exterior walls with F30 fire protection:

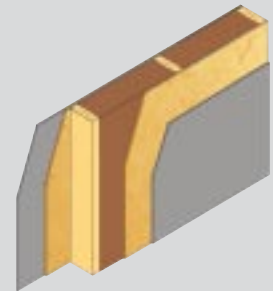
Components from the inside out

- 9.5 mm of plasterboard
- 12 mm of KRONOPLY OSB/3 or KRONOPLY F****
- 200 mm of KRONOTHERM flex / studs (min. of 160 mm)
- 15 mm of KRONOTEC WP or DP50
- U-value: 0.21 W/m²K
- Phase shift: 11 hours
- Heat retention: 94%
- Alternatively, there can be 12.5 mm of plasterboard on the inside and a 60 mm installation layer, insulated with KRONOTHERM flex.
- F30-B acc. to AbP P-3014/7701-MPA BS



12 KRONOPLY interior wall system Fire protection:

- 9.5 mm of plasterboard
- 15 mm of KRONOPLY OSB
- 80 mm of studs / KRONOTHERM flex
- 15 mm of KRONOPLY OSB
- 9.5 mm of plasterboard
- F30-B acc. to DIN 4102-4, table 50



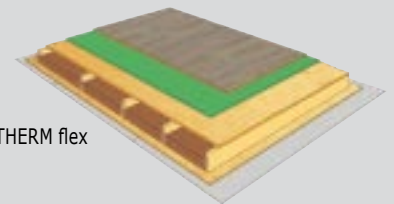
Various KRONO system products were used in the KRONO feel-good house shown on the left:

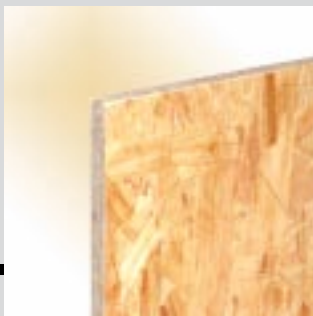
- 1 KRONOTHERM flex
- 2 KRONOTHERM sound
- 3 KRONOPLY OSB/3 T + G, sanded on both sides
- 4 KRONOPLY OSB/F****, square-edge ContiFinish®
- 5 KRONOPLY OSB/F****, T + G ContiFinish®
- 6 KRONOTEC DP50
- 7 KRONOPLY quicklyboard
- 8 KRONOTEX laminate flooring

13 KRONOPLY Ceiling System

Components from the inside out

- KRONOTEX laminate flooring
- 5 mm of KRONOTHERM sound
- 22 mm of KRONOPLY OSB
- 200 mm of rafters
- Between them, 160 mm KRONOTHERM flex
- 18 mm of KRONOPLY OSB
- 9.5 mm of plasterboard





KRONOPLY OSB/3, square-edge

ContiFinish®, made with formaldehyde-free binders, CE, PEFC

The High-Performance Classic All-Rounder

For load-bearing and stiffening applications, the ideal wood-based material is KRONOPLY OSB/3, CE-certified according to EN 13986 and produced in compliance with EN 300. Featuring a ContiFinish® surface, this sturdy board is also excellently suited for load-bearing uses in kitchens, bathrooms and laundry rooms.

High Strength and ContiFinish® Surface

Designed to withstand normal stresses, KRONOPLY OSB/3 is outstanding value for money. Produced exclusively with formaldehyde-free binders, these robust boards contain only the formaldehyde that is bound up in natural wood. Consequently, their formaldehyde emissions not only comply with the stipulations of the E1 guideline, but are also significantly less than the much stricter ceiling of 0.03 ppm called for by various associations (e.g. BDF, AKÖH and RAL in Germany). KRONOPLY OSB/3 boards are also used as eco-friendly wood-based materials in packaging and furniture.

Did You Know?

KRONOPLY OSB/3 corresponds to European utilisation classes 1 + 2 in accordance with EN 1995-1-1 and is therefore suitable for moist rooms and exterior uses if not exposed to the weather.

Applications

- Interior and exterior wall boarding with a stiffening effect
- Load-bearing ceiling boarding
- Roof boarding (instead of raw timber)
- Wall cladding
- Floors
- Packaging
- Shelves
- Furniture
- Doors



Modern architectural highlights: implemented with KRONO wood-based materials



You'll find additional information at: www.kronoply.com

Technical Data Characteristic values acc. to EN 13986

Strand direction Nominal board thicknesses [mm]	d	Major axis			Minor axis		
		6-10	>10-18	>18-25	6-10	>10-18	>18-25
Strength values [N/mm²]							
Stresses on board							
Bending	$f_{m,k}$	18.0	16.4	14.8	9.0	8.2	7.4
Compression	$f_{c,90,k}$		10.0			10.0	
Shear	$f_{v,k}$		1.0			1.0	
Plate loading							
Bending	$f_{m,k}$	9.9	9.4	9.0	7.2	7.0	6.8
Tensile force	$f_{t,k}$	9.9	9.4	9.0	7.2	7.0	6.8
Compression	$f_{c,k}$	15.9	15.4	14.8	12.9	12.7	12.4
Shear	$f_{v,k}$		6.8			6.8	
Stiffness values [N/mm²]							
Stresses on board							
Bending modulus of elasticity	E_{mean}^a		4930			1980	
Shear modulus	G_{mean}^a		50			50	
Plate loading							
Modulus of elasticity	E_{mean}^a		3800			3000	
Shear modulus	G_{mean}^a		1080			1080	
^a The characteristic stiffness values E_{05} and G_{05} are calculated as follows: $E_{05} = 0.85 \times E_{mean}$ and $G_{05} = 0.85 \times E_{mean}$							
General and building physics values							
Bulk density acc. to EN 323	m	600 kg/m ³					
Max. deviations in board thickness		± 0.8 mm (unsanded) ± 0.4 mm (sanded)					
Tensile strength perpendicular to plane acc. to EN 319	perm. σ_{zy}	0.18	0.15	0.13	0.18	0.15	0.13
Thermal conductivity acc. to EN 13986	λ	0.13 W/mK					
Water vapour permeability value	μ	200 / 300					
Thickness swelling acc. to EN 317		≤ 15%					
Emissions class		E1 – 100% formaldehyde-free binders					
Utilisation classes acc. to EN V 1995-1-1		1 + 2					
Reaction to fire performance class acc. to EN 13501-1		B-s2, d0					
CE certificate no.		1034 – CPD – 1291 / 1 / 09					

Note: The characteristic values are for structural calculations acc. to EC5 and DIN 1052:2008-12.

Delivery Programme and Product Overview

Format [mm]	Thickness [mm]								
	9	10	12	15	18	22	25	30	40
2500 x 1250	•	•	•	•	•	•	•		•
2070 x 2770			•	•	•	•			
2650 x 1250			•	•	•				
2800 x 1250			•	•	•				
3000 x 1250			•	•	•				
5000 x 1250			•	•	•	•			
5000 x 2500			•	•	•	•			



KRONOPLY OSB/3, T + G

Sanded on both sides, made with formaldehyde-free binders, CE, PEFC

Naturally Stable with Tongue-and-Groove Joints

KRONOPLY OSB/3 T + G is sanded on both sides, CE-certified under EN 13986 and produced in compliance with EN 300. All four edges are profiled for tongue-and-groove joints, making it excellently suited for seamless laying.

Ideal for Direct Coating

Being sanded on both sides, KRONOPLY OSB/3 T + G can be coated just like normal wood. Varnishes, oils, waxes and glazes of all kinds should be applied in multiple coats (as a rule, at least three). Intermediate sanding after applying the first coat improves the final result.

The good technical properties and seamless surface of KRONOPLY OSB/3 T + G make it excellently suited for renovation and for building new, eco-friendly houses. The precisely fitting tongue-and-groove system makes it quick and easy to lay directly on rafters or over footfall noise insulation.

Did You Know?

The boards can be worked with ordinary, commercially available tools such as portable power saws, although carbide-tipped blades are recommended. They can be affixed using staples, nails or screws.

Applications

- Floor renovation
- Dry and screed floors
- Roof or floor boarding with a stiffening effect
- Walls, closets and stairs
- Decorative uses



Quick and easy laying, also for large surfaces:
KRONOPLY OSB/3, T + G



Built by: Holzbau Kühlborn GmbH, 34286 Spangenberg
Photograph: Wiedemann Fotografie, 34117 Kassel

Technical Data Characteristic values acc. to EN 13986

Strand direction Nominal board thicknesses [mm]	d	Major axis		Minor axis	
		>10-18	>18-25	>10-18	>18-25
Strength values [N/mm²]					
Stresses on board					
Bending	$f_{m,k}$	16.4	14.8	8.2	7.4
Compression	$f_{c,90,k}$		10.0		10.0
Shear	$f_{v,k}$		1.0		1.0
Plate loading					
Bending	$f_{m,k}$	9.4	9.0	7.0	6.8
Tensile force	$f_{t,k}$	9.4	9.0	7.0	6.8
Compression	$f_{c,k}$	15.4	14.8	12.7	12.4
Shear	$f_{v,k}$		6.8		6.8
Stiffness values [N/mm²]					
Stresses on board					
Bending modulus of elasticity	E_{mean}^a		4930		1980
Shear modulus	G_{mean}^a		50		50
Plate loading					
Modulus of elasticity	E_{mean}^a		3800		3000
Shear modulus	G_{mean}^a		1080		1080
^a The characteristic stiffness values E_{05} and G_{05} are calculated as follows: $E_{05} = 0.85 \times E_{mean}$ and $G_{05} = 0.85 \times E_{mean}$					
General and building physics values					
Bulk density acc. to EN 323	m		600 kg/m ³		
Max. deviations in board thickness			± 0.8 mm (unsanded) ± 0.4 mm (sanded)		
Tensile strength perpendicular to plane acc. to EN 319	perm. σ_{zy}	0.15	0.13	0.15	0.13
Thermal conductivity acc. to EN 13986	λ		0.13 W/mK		
Water vapour permeability value	μ		200 / 300		
Thickness swelling acc. to EN 317			≤ 15%		
Emissions class			E1 – 100% formaldehyde-free binders		
Utilisation classes acc. to EN V 1995-1-1			1 + 2		
Reaction to fire performance class acc. to EN 13501-1			B-s2, d0		
CE certificate no.			1034 – CPD – 1291 / 1 / 09		

Note: The characteristic values are for structural calculations acc. to EC5 and DIN 1052:2008-12.

Delivery Programme and Product Overview

Format [mm]	Thickness [mm]								
	9	10	12	15	18	22	25	30	40
2500 x 675 T + G on all 4 edges				•	•	•	•		



KRONOPLY OSB/3, T + G

ContiFinish®, made with formaldehyde-free binders,
 CE, PEFC

Quick to Lay, with a Stiffening Effect

With its water- and moisture-repellent ContiFinish® surface, KRONOPLY OSB/3, T + G is specifically designed for use in moist rooms such as kitchens, bathrooms and laundry rooms. It is CE-certified under EN 13986 and produced in accordance with EN 300. All four edges are profiled for tongue-and-groove joints, making this board extremely versatile.

Bending Resistance for Stability

KRONOPLY OSB/3, T + G excels in a wide range of applications due to its high strength. Despite its relatively low weight, it achieves bending resistance values comparable to those of plywood. Its high-quality ContiFinish® surface repels water.

Because it inhibits water vapour diffusion, when using this material for boarding the inside of exterior walls in timber-frame houses there is no need to seal with a water vapour-impermeable membrane.

Applications

- Floor renovation / dry floors / under dry screed
- Stiffening interior wall boarding
- Roof panelling (instead of raw timber)
- For reinforcing heavily stressed roofs (application class 2 as per EN 1995-1-1)
- As bearing ceiling boards | interior constructions / decorative uses

Did You Know?

EN 13986 "Wood-based panels for use in construction" now has the force of law. It is no longer necessary to apply for a permit.

Technical Data Characteristic values acc. to EN 13986

Strand direction Nominal board thicknesses [mm]	d	Major axis		Minor axis	
		>10-18	>18-25	>10-18	>18-25
Strength values [N/mm²]					
Stresses on board					
Bending	$f_{m,k}$	16.4	14.8	8.2	7.4
Compression	$f_{c,90,k}$		10.0		10.0
Shear	$f_{v,k}$		1.0		1.0
Plate loading					
Bending	$f_{m,k}$	9.4	9.0	7.0	6.8
Tensile force	$f_{t,k}$	9.4	9.0	7.0	6.8
Compression	$f_{c,k}$	15.4	14.8	12.7	12.4
Shear	$f_{v,k}$		6.8		6.8
Stiffness values [N/mm²]					
Stresses on board					
Bending modulus of elasticity	E_{mean}^a		4930		1980
Shear modulus	G_{mean}^a		50		50
Plate loading					
Modulus of elasticity	E_{mean}^a		3800		3000
Shear modulus	G_{mean}^a		1080		1080
<small>^a The characteristic stiffness values E_{05} and G_{05} are calculated as follows: $E_{05} = 0.85 \times E_{mean}$ and $G_{05} = 0.85 \times G_{mean}$</small>					
General and building physics values					
Bulk density acc. to EN 323	m		600 kg/m³		
Max. deviations in board thickness			± 0.8 mm (unsanded) ± 0.4 mm (sanded)		
Tensile strength perpendicular to plane acc. to EN 319	perm. σ_{zy}	0.15	0.13	0.15	0.13
Thermal conductivity acc. to EN 13986	λ		0.13 W/mK		
Water vapour permeability value μ			200 / 300		
Thickness swelling acc. to EN 317			≤ 15%		
Emissions class			E1 - 100% formaldehyde-free binders		
Utilisation classes acc. to EN V 1995-1-1			1 + 2		
Reaction to fire performance class acc. to EN 13501-1			B-s2, d0		
CE certificate no.			1034 - CPD - 1291 / 1 / 09		

Note: The characteristic values are for structural calculations acc. to EC5 and DIN 1052:2008-12.

Delivery Programme and Product Overview

Format [mm]	Thickness [mm]								
	9	10	12	15	18	22	25	30	40
2500 x 675 T + G on all 4 edges			•	•	•	•	•		
2500 x 1250 T + G on all 4 edges			•	•	•	•	•		



Built by: Terhalle Objektbau Bauträger GmbH, 48683 Ahaus-Ottenstein
Photograph: Mense Fotodesign, 44139 Dortmund



NEW



KRONOPLY OSB SF-B, square-edge

Flame-resistant, ContiFinish®, German technical approval no. Z 56.275-3563, formaldehyde-free binders, CE

DIN EN 13501-1

The Board with Built-in Fire Protection

With the new KRONOPLY OSB SF-B, the SWISS KRONO GROUP has once again demonstrated its forward-looking, innovative expertise in wood-based materials. This flame-resistant OSB version has been tested by a certified institute in Germany and assigned to the B-s2, d0 reaction-to-fire performance Euroclass for flame-resistant building elements.

Innovative Production Technology

In order to comply with the latest and strictest European fire resistance requirements, the SWISS KRONO GROUP has developed an innovative technology for producing flame-resistant OSB boards. The Deutsches Institut für Bautechnik (DIBt) has given KRONOPOLY OSB SF-B the official approval (abZ) for building products and methods.

Applications

The new KRONOPLY OSB SF-B meets the fire protection requirements for public buildings such as schools, hospitals, kindergartens and sports facilities and also for commercial, residential and trade fair structures.

- Wall and ceiling cladding
- Timber-frame construction and wood panelling
- Public buildings and trade fair stands

Did You Know?

Euroclass B-s2, d0 means that a board is flame-resistant (B) and releases a moderate amount of smoke (s2) when burning, but without any dripping from the burning board (d0).

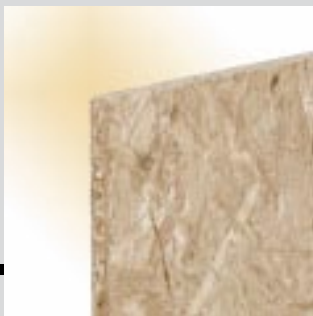
Technical Data Characteristic values acc. to EN 13986

Strand direction Nominal board thicknesses [mm]	d	Major axis		Minor axis	
		12-18	> 18-22	12-18	> 18-22
Strength values [N/mm²]					
Stresses on board					
Bending	$f_{m,k}$	16.4	14.8	8.2	7.4
Compression	$f_{c,90,k}$		10.0		10.0
Shear	$f_{v,k}$		1.0		1.0
Plate loading					
Bending	$f_{m,k}$	9.4	9.0	7.0	6.8
Tensile force	$f_{t,k}$	9.4	9.0	7.0	6.8
Compression	$f_{c,k}$	15.4	14.8	12.7	12.4
Shear	$f_{v,k}$		6.8		6.8
Stiffness values [N/mm²]					
Stresses on board					
Bending modulus of elasticity	E_{mean}^a		4930		1980
Shear modulus	G_{mean}^a		50		50
Plate loading					
Modulus of elasticity	E_{mean}^a		3800		3000
Shear modulus	G_{mean}^a		1080		1080
<small>^a The characteristic stiffness values E_{ns} and G_{ns} are calculated as follows: $E_{ns} = 0.85 \times E_{mean}$ and $G_{ns} = 0.85 \times E_{mean}$</small>					
General and building physics values					
Bulk density acc. to EN 323	m			600 kg/m ³	
Max. deviations in board thickness				± 0.8 mm (unsanded)	
Tensile strength perpendicular to plane acc. to EN 319	perm. σ_{zy}	0.15	0.13	0.15	0.13
Thermal conductivity acc. to EN 13986	λ			0.13 W/mK	
Water vapour permeability coefficient	μ			200 / 300	
Thickness swelling acc. to EN 317				≤ 15%	
Emissions class				E1 – 100% formaldehyde-free binders	
Utilisation classes acc. to EN V 1995-1-1				1 + 2	
Reaction to fire performance class acc. to EN 13501-1				B-s2, d0	
Applicable German technical approval				Z-56.275-3563	
CE certificate no.				1034 – CPD – 1899/1/2010	

Note: The characteristic values are for structural calculations acc. to EC5 and DIN 1052:2008-12.

Delivery Programme and Product Overview

Format [mm]	Thickness [mm]								
	9	10	12	15	18	22	25	30	40
2500 x 1250				•	•				
3000 x 1250			•	•	•				



NEW



KRONOPLY OSB SF-B, T + G

Flame-resistant, ContiFinish®, German technical

approval no. Z 56.275-3563, formaldehyde-free binders, CE

DIN EN 13501-1

Dimensionally Stable Safety and Reliability

Apart from providing outstanding protection from fire risks, the officially approved KRONOPLY OSB SF-B, T + G scores points because all four edges are profiled for tongue-and-groove joints, which enables fast, easy installation.

Integrated Fire Protection

When the causes of fires are analysed, in most cases they turn out to be something minor and actually harmless. It is only when they quickly spread to ready flammable building materials that, for example, a burning wastebasket can turn into a burning house. Numerous test series have shown that KRONOPLY OSB SF-B does not catch fire even

when it is continuously exposed to flame. Instead, its surface chars, forming a safely fireproof layer. KRONOPLY OSB SF-B thus comes with built-in fire protection.

Applications

(Fire protection requirements like KRONOPLY OSB SF-B, square-edge)

- Wall and ceiling cladding
- Timber-frame construction and wood panelling
- Ceilings / floors

Did You Know?

Fire protection also safeguards the environment: every fire releases toxic gases such as dioxins, hydrogen cyanide, nitrogen oxides etc. The use of flame-resistant building materials therefore contributes to protecting the environment.

Technical Data Characteristic values acc. to EN 13986

Strand direction Nominal board thicknesses [mm]	d	Major axis		Minor axis	
		12-18	> 18-22	12-18	> 18-22
Strength values [N/mm²]					
Stresses on board					
Bending	$f_{m,k}$	16.4	14.8	8.2	7.4
Compression	$f_{c,90,k}$	10.0		10.0	
Shear	$f_{v,k}$	1.0		1.0	
Plate loading					
Bending	$f_{m,k}$	9.4	9.0	7.0	6.8
Tensile force	$f_{t,k}$	9.4	9.0	7.0	6.8
Compression	$f_{c,k}$	15.4	14.8	12.7	12.4
Shear	$f_{v,k}$	6.8		6.8	
Stiffness values [N/mm²]					
Stresses on board					
Bending modulus of elasticity	E_{mean}^a	4930		1980	
Shear modulus	G_{mean}^a	50		50	
Plate loading					
Modulus of elasticity	E_{mean}^a	3800		3000	
Shear modulus	G_{mean}^a	1080		1080	
<small>^a The characteristic stiffness values E_{n5} and G_{n5} are calculated as follows: $E_{n5} = 0.85 \times E_{mean}$ and $G_{n5} = 0.85 \times E_{mean}$</small>					
General and building physics values					
Bulk density acc. to EN 323	m	600 kg/m ³			
Max. deviations in board thickness		± 0.8 mm (unsanded)			
Tensile strength perpendicular to plane acc. to EN 319	perm. σ_{zy}	0.15	0.13	0.15	0.13
Thermal conductivity acc. to EN 13986	λ	0.13 W/mK			
Water vapour permeability coefficient	μ	200 / 300			
Thickness swelling acc. to EN 317		≤ 15%			
Emissions class		E1 – 100% formaldehyde-free binders			
Utilisation classes acc. to EN V 1995-1-1		1 + 2			
Reaction to fire performance class acc. to EN 13501-1		B-s2, d0			
Applicable German technical approval		Z-56.275-3563			
CE certificate no.		1034 – CPD – 1899/1/2010			

Delivery Programme and Product Overview

Format [mm]	Thickness [mm]	
	18	22
2500 x 1250 T + G on all 4 edges	•	•

Note: The characteristic values are for structural calculations acc. to EC5 and DIN 1052:2008-1



KRONOPLY OSB/F****, square-edge

ContiFinish®, German technical approval Z-9.1-618, monitored by HFB ENGINEERING GMBH, made with formaldehyde-free binders, CE, PEFC

Complete Security

Simply our best: KRONOPLY OSB/ F**** ("F four stars"), Conti-Finish®, German technical approval Z-9.1- 618, monitored by HFB ENGINEERING GMBH, conforms to CE EN 13986 (OSB/4). It is as strong as MAGNUM BOARD, which is made from it, and absolutely conducive to healthy living, as it is made with completely formaldehyde-free binders. Its principal application is in eco-friendly timber-frame construction.

The Eco-Friendly Wood-Based Material of the Future

As one of the world's leading producers of environmentally friendly wood-based materials, we rely entirely on natural raw materials. That means using wood from the maintenance and thinning of sustainably managed forests to make our premium product: KRONOPLY OSB/ F****. Its formaldehyde emissions are not only below the E1 ceiling of 0.1 ppm, but are even considerably lower than the stricter maximum of 0.03 ppm that other organisations are calling for. As a result, it is even suitable for packaging food. When it is used in transport or to package sensitive foods, the ContiFinish® surface effectively keeps out moisture and damp.

Applications

- Wood-frame and engineered wood construction
- Construction for industry / commercial housing construction
- Shops and trade fair stands (for decorative uses)
- Trade fair stands / concrete formwork / prefabricated houses
- As load-bearing ceiling boards
- Floors subject to heavy foot traffic
- For reinforcing heavily loaded walls
- Packaging

Did You Know?

With cutting-edge production equipment, it is possible to make boards up to 15 metres long. Used to build homes and industry structures, these long boards speed construction work.



You'll find additional information at: www.kronoply.com

Technical Data

Strand direction Nominal board thicknesses [mm]	d	Major axis			Minor axis		
		8-≤18	>18-≤25	>25-30	8-≤18	>18-≤25	>25-30
Strength values [N/mm²]							
Stresses on board							
Bending	$f_{m,k}$	28.0	23.0	23.0	14.0	12.5	12.5
Shear	$f_{v,k}$		1.5			1.5	
Plate loading							
Bending	$f_{m,k}$	19.5	17.0	17.0	13.5	12.5	12.5
Tensile force	$f_{t,k}$	12.0	10.5	10.5	8.0	7.5	7.5
Compression	$f_{c,k}$	14.0	12.5	12.5	11.0	10.5	10.5
Shear	$f_{v,k}$	8.0	7.0	7.0	8.0	7.0	7.0
Stiffness values [N/mm²]							
Stresses on board							
Bending modulus of elasticity	$E_{m,mean}^a$		6500			3000	
Shear modulus	G_{mean}^a		100			100	
Plate loading							
Bending modulus of elasticity	$E_{m,mean}^a$		3500			2500	
Tensile modulus of elasticity	$E_{t,mean}^a$		3500			2500	
Bulk modulus of elasticity	$E_{c,mean}^a$		3500			2500	
Shear modulus	G_{mean}^a		1000			1000	
^a The characteristic stiffness values E_{05} and G_{05} are calculated as follows: $E_{05} = 0.9 \times E_{mean}$ and $G_{05} = 0.9 \times E_{mean}$							
General and building physics values							
Bulk density acc. to EN 323	m				620 kg/m ³		
Max. deviations in board thickness					± 0.4 mm		
Embedment strength	perm σ_1		5.0		4.0		
Tensile strength perpendicular to plane acc. to EN 1087-1	σ_{zy}	0.14	0.12	0.10	0.14	0.12	0.10
Thermal conductivity acc. to DIN EN 13986	λ				0.13 W/mK		
Water vapour permeability value	μ				200 / 300		
Thickness swelling acc. to EN 317					≤ 9%		
Emissions class					E1 - 100% formaldehyde-free binders <0.03 ppm		
Utilisation classes acc. to EN V 1995-1-1					1 + 2		
Reaction to fire performance class acc. to EN 13501-1					D - s2, d0		
Applicable German technical approval					Z-9.1-618		

Delivery Programme and Product Overview

Format [mm]	Thickness [mm]								
	9	10	12	15	18	22	25	30	40
2500 x 1250			•	•	•	•	•	•	
2650 x 1250			•	•					
2800 x 1250			•	•	•				
3000 x 1250			•	•					
5000 x 2500				•	•	•	•		



KRONOPLY OSB/F****, T + G

ContiFinish®, German technical approval Z-9.1-618, monitored by HFB ENGINEERING GMBH, made with formaldehyde-free binders, CE, PEFC

Make Roofs for Extreme Stresses Fast

With tongue-and-groove joints on two or four sides, KRONOPLY OSB/F**** ("F four stars") – T + G, ContiFinish®, German technical approval Z-9.1- 618, monitored by HFB ENGINEERING GMBH, conforms to CE EN 13986 (OSB/4) – ensures rapid progress in building your roof. Especially for applications that call for high strength and dimensional stability, this constructive, eco-friendly wood-based material is the right choice.

Outstanding Environmental Properties and Structural Strength

With its excellent technical properties and made using only formaldehyde-free binders, KRONOPLY OSB/ F**** is the modern all-rounder. Whenever there are considerable expectations with regard to structural strength, building physics and healthy living, the pros go for KRONOPLY OSB/ F****. This diffusion-inhibiting material is approved for stiffening interior and exterior walls, ceilings and roofs, amongst other uses.

Applications

- Wood-frame and engineered wood construction
- Construction for industry / commercial housing construction
- Shops and trade fair stands (for decorative uses)
- Trade fair stands / concrete formwork / prefabricated houses
- As load-bearing ceiling boards
- Floors subject to heavy foot traffic
- Roof panelling (instead of raw timber)
- For reinforcing heavily stressed roofs (application 2 as per EN 1995-1-1)

Did You Know?

You'll find data sheets and dimensional tables for the entire KRONOPLY OSB range as PDFs for free downloading at www.kronoply.com.



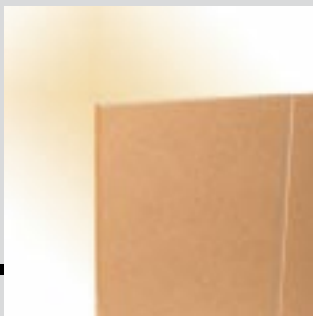
Built by: Terhalle Objektbau Bauträger GmbH, 48683 Ahaus-Ottenstein
Photograph: Mense Fotodesign, 44139 Dortmund

Technical Data Characteristic values

Strand direction Nominal board thicknesses [mm]	d	Major axis			Minor axis		
		8-≤18	>18-≤25	>25-30	8-≤18	>18-≤25	>25-30
Strength values [N/mm²]							
Stresses on board							
Bending	$f_{m,k}$	28.0	23.0	23.0	14.0	12.5	12.5
Shear	$f_{v,k}$		1.5			1.5	
Plate loading							
Bending	$f_{m,k}$	19.5	17.0	17.0	13.5	12.5	12.5
Tensile force	$f_{t,k}$	12.0	10.5	10.5	8.0	7.5	7.5
Compression	$f_{c,k}$	14.0	12.5	12.5	11.0	10.5	10.5
Shear	$f_{v,k}$	8.0	7.0	7.0	8.0	7.0	7.0
Stiffness values [N/mm²]							
Stresses on board							
Bending modulus of elasticity	$E_{m,mean}^a$		6500			3000	
Shear modulus	G_{mean}^a		100			100	
Plate loading							
Bending modulus of elasticity	$E_{m,mean}^a$		3500			2500	
Tensile modulus of elasticity	$E_{t,mean}^a$		3500			2500	
Bulk modulus of elasticity	$E_{c,mean}^a$		3500			2500	
Shear modulus	G_{mean}^a		1000			1000	
^a The characteristic stiffness values E_{05} and G_{05} are calculated as follows: $E_{05} = 0.9 \times E_{mean}$ and $G_{05} = 0.9 \times E_{mean}$							
General and building physics values							
Bulk density acc. to EN 323	m				620 kg/m ³		
Max. deviations in board thickness					± 0.4 mm		
Embedment strength	perm σ_1		5.0		4.0		
Tensile strength perpendicular to plane acc. to EN 1087-1	σ_{zy}	0.14	0.12	0.10	0.14	0.12	0.10
Thermal conductivity acc. to DIN EN 13986	λ				0.13 W/mK		
Water vapour permeability value	μ				200 / 300		
Thickness swelling acc. to EN 317					≤ 9%		
Emissions class					E1 - 100% formaldehyde-free binders < 0.03 ppm		
Utilisation classes acc. to EN V 1995-1-1					1 + 2		
Reaction to fire performance class acc. to EN 13501-1					D - s2, d0		
Applicable German technical approval					Z-9.1-618		

Delivery Programme and Product Overview

Format [mm]	Thickness [mm]								
	9	10	12	15	18	22	25	30	40
2500 x 675 T + G on all 4 edges				•	•	•	•	•	
2500 x 1250 T + G on all 4 edges			•	•	•	•	•		
6250 x 675 T + G on all 4 edges						•	•		



KRONOTEC DP50, T + G

LiquiSafe on all 4 edges, German technical approval 9.1-442,
CE, PEFC

The Multifunctional Underroof Board

KRONOTEC DP50, T + G, with LiquiSafe on all four edges is water vapour-permeable MDF (medium-density fibreboard) for use as underroof panelling. With a bulk density of about 500 kg/cu.m, KRONOTEC DP50 is very easy to work and, with a thickness of 15 mm, highly loadable.

LiquiSafe Protects the Building Frame

At roof pitches of just 15° or more, the application-friendly LiquiSafe tongue-and-groove system is watertight, thus protecting the building frame. This eliminates the need for additional boarding and a water vapour-permeable membrane or multiple plies of bitumen to keep out rainwater. KRONOTEC DP50 performs all of these functions and is also faster to lay than individual boards. When dry, the boards are puncture-resistant up to a rafter spacing of one metre.

Applications

- Underroof panelling (class UDP-A as defined by the German Roofing Association)
- Outer boarding for walls of timber-frame houses

Did You Know?

KRONOTEC DP50 has been approved by the state Deutsches Institut für Bautechnik in Berlin for stiffening applications.



You'll find additional information at: www.kronoply.com

Technical Data Characteristic values acc. to Z-9.1-442

Nominal board thicknesses [mm]	d	12-15
Strength values [N/mm²]		
Stresses on board		
Bending	$f_{m,k}$	17.0
Shear	$f_{v,k}$	0.8
Plate loading		
Bending	$f_{m,k}$	14.0
Tensile force	$f_{t,k}$	9.5
Compression	$f_{c,k}$	7.5
Shear	$f_{v,k}$	5.5
Stiffness values [N/mm²]		
Stresses on board		
Modulus of elasticity	$E_{m,mean}^a$	2700
Shear modulus	G_{mean}^a	50
Plate loading		
Bending modulus of elasticity	$E_{m,mean}^a$	1300
Tensile modulus of elasticity	$E_{t,mean}^a$	1300
Bulk modulus of elasticity	$E_{c,mean}^a$	1300
Shear modulus	G_{mean}^a	600
<small>^aThe characteristic stiffness values E_{05} and G_{05} are calculated as follows: $E_{05} = 0.9 \times E_{mean}$ and $G_{05} = 0.9 \times G_{mean}$</small>		
General and building physics values		
Bulk density acc. to EN 323	m	510-550 kg/m ³
Max. deviations in board thickness		± 0.5 mm
Embedment strength	$f_{b,k}$	18.0 N/mm
Thermal conductivity	λ	0.09 W/mK
Water vapour permeability value	μ	11
Thickness swelling acc. to EN 317		≤ 6.5%
Emissions class		E1 – 100% formaldehyde free binders
Utilisation classes acc. to EN V 1995-1-1		1 + 2
Flammability class		B2 - normal combustibility
Applicable German technical approval		Z-9.1-442

The values given in DIN 1052:2008-12, tables F.1 and F.2, for the board type "fibreboard as per MBH.LA2 DIN EN 622-3:2004-07" must be used as the modification coefficients k_{mod} and deformation coefficients k_{def} .

The shear modulus K_{ser} must be determined using table G.1 of DIN 1052:2008-12, lines 4 and 5. The bulk density of the material should be assumed to be $\rho_k = 510$ kg/cu.m.

Delivery Programme and Product Overview

Format [mm]	Thickness [mm]
	15
2500 x 675	•



KRONOPLY OSB/4, sanded

German technical approval Z-9.1-503, CE, PEFC, MAGNUM BOARD raw board

The Fast, Innovative Building System

KRONOPLY MAGNUM BOARD is a solid building system approved by the German building authorities. It consists of several 25-mm-thick KRONOPLY OSB/4 boards glued together. The KRONOPLY OSB/4 used to make it is a wood-based material that is certified as safe for food applications, free of formaldehyde-containing binders and extremely resistant to pests. It is made entirely from thinnings from managed German forests. Only completely formaldehyde-free binders are used to achieve highly stable bonding of the raw materials. KRONOPLY OSB/4 is produced in a size of 15 x 2.8 metres with a thickness of 25 mm and sanded surfaces. This innovative KRONOPLY OSB product is optimally suited for making large wall and roof elements for prefabricated and built houses. It offers producers of prefabricated components for timber-frame houses many opportunities to work more efficiently and optimise costs. Storey-high long boards of the KRONOPLY OSB product family can cover the entire length of buildings, thus resulting in constructions that are free of butt joints. It is then no longer necessary to add plasterboard, and it is easy to directly cover them with wallpaper, plaster or tiles.

Dimensionally Stable and Certified

KRONOPLY MAGNUM BOARD, like KRONOPLY OSB/4, is extremely dimensionally stable, structurally very strong, and excellently suited for thermal and acoustic insulation and fire protection. Planned apertures for stairways, windows and doors, electrical conduits and sanitary and heating installations are cut out and precisely milled to the required size and shape prior to gluing. This considerably reduces the subsequently required work. The boards are pressed to thicknesses from 75 to 250 mm with between three and ten plies. The final sizes are freely selectable.

Interior Coating – Everything Is Possible

KRONOPLY MAGNUM BOARD elements have a sanded surface that can be directly painted, papered, smoothed with filler, plastered or finished with a veneer, laminate, etc. Depending on the stresses they will be subjected to, they can also be optionally covered with plasterboard.

Did You Know?

Every element of the KRONOPLY MAGNUM BOARD wood building system is covered by technical approval no. Z-9.1-591 of the state Deutsches Institut für Bautechnik in Berlin.



You'll find additional information at: www.kronoply.com



Technical Data Characteristic values

Strand direction Nominal board thickness [mm]	d	Major axis 25	Minor axis 25
Strength values [N/mm²] Stresses on board			
Bending	$f_{m,k}$	27.5	19.0
Shear	$f_{v,k}$	1.5	1.5
Plate loading			
Bending	$f_{m,k}$	10.9	8.0
Tensile force	$f_{t,k}$	11.5	11.0
Compression	$f_{c,k}$	14.5	14.5
Shear	$f_{v,k}$	7.0	7.0
Stiffness values [N/mm²] Stresses on board			
Bending modulus of elasticity	$E_{m,mean}$	7500	3500
Shear modulus	G_{mean}	70	90
Plate loading			
Tensile modulus of elasticity	$E_{t,mean}$	3500	3000
Bulk modulus of elasticity	$E_{c,mean}$	3500	2500
Shear modulus	G_{mean}	1100	1100
*The characteristic stiffness values E_{05} and G_{05} are calculated as follows: $E_{05} = 0.9 \times E_{mean}$ and $G_{05} = 0.9 \times E_{mean}$			
General and building physics values			
Bulk density acc. to EN 323	m	620 kg/m ³	
Max. deviations in board thickness		± 0.8 mm	± 0.8 mm
Embedment strength acc. to EN 1087-1	σ_{zy}	0.13	0.13
Thermal conductivity acc. to EN 13986	λ	0.13 W/mK	
Water vapour permeability value	μ	200 / 300	
Change in length when rel. humidity increases/decreases	%/%	0.005	
Thickness swelling acc. to EN 317		≤ 8%	≤ 8%
Emissions class		E1 - 100% formaldehyde-free binders < 0.03 ppm	
Reaction to fire performance class acc. to EN V 1995-1-1		1 + 2	
Flammability class to EN 13501-1		B - s2, d0	
Applicable German technical approval		Z-9.1-503	

Format [mm]	Thickness [mm]
	25
15000 x 2800	•

Information on Use



Transport and Handling

- Take steps to prevent the boards, and especially the unprotected edges, from absorbing large amounts of moisture during transport and installation. Be careful not to damage the edges when lifting, moving and stacking boards (this applies especially to tongue-and-groove boards).
- Check against the labels or producer's documentation on-site to make sure that the following are correct: thickness, approved utilisation class, surface (sanded or ContiFinish®) and edge type (square-edged or tongue-and-groove).
- During installation, boards may be briefly leaned against a solid structure at a 70° angle.
- Always carry individual boards in an upright (vertical) position.



Acclimatisation

- Precondition boards prior to installation.
- Store boards for about three days under the same climatic conditions that prevail at the installation site.
- This adjustment to the ambient moisture at the installation site will prevent excessive shrinkage or swelling.



Storage

- Protect boards from exposure to significant moisture or very high relative humidity.
- Prevent direct contact of the boards with the floor.
- Only store outdoors temporarily, and if unavoidable cover stacks with watertight but water vapour-permeable tarpaulins.
- Always stack boards horizontally on pallets and wooden supports (spaced no more than 600 mm apart).
- Align wooden supports precisely with one another and parallel to the shorter side of the boards.
- Lay the boards so their edges line up (with a maximum overhang of 15 mm).



Sawing, Milling, Sanding and Drilling

- KRONOPLY OSB can be sanded, sawn, milled and drilled just like solid wood and using all of the same tools.



Built by: Holzbau Kühlborn GmbH, 34286 Spangenberg
Photograph: Wiedemann Fotografie, 34117 Kassel



Laying and Boarding

- For interior or exterior boarding applications, leave expansion joints at least 3 mm wide between boards.
- When laid closely with butt joints in interior walls, leave room for expansion where the boards adjoin other structures.
- The storey-high formats are produced with a slightly reduced width (of 1247 mm) to allow for expansion.



Nailing, Stapling, Screwing and Gluing

- KRONOPLY OSB can be attached to wooden studs and rafters using screws, nails or staples.
- Use in accordance with the official approvals and standards (Z-9.1-618, Z-9.1-503 and DIN 1052 in Germany as well as EN 1995-1-1 (EC 5)).
- Additionally bond or glue tongue-and-groove joints.

You'll find additional information at: www.kronoply.com



Coating and Painting

- KRONOPLY OSB with a ContiFinish® surface may be coated with a solvent-containing PU (DD) or synthetic-resin varnish.
- Sanded surfaces may be coated like normal wood (e.g. with varnishes, paints, oils, waxes and glazes).
- It is advisable to apply at least three coats, sanding after the first one.
- Application of at least three coats is recommended.
- The only way to achieve an absolutely smooth surface is to apply filler.

Important Note on Coating and Painting!

When coating KRONOPLY OSB with oil or hard wax oil, under some circumstances ingredients in the oil may interact with the natural wood resin in the KRONOPLY OSB. This can result in an intense, lasting odour in the room. We therefore recommend that you contact the manufacturer of the oil or hard wax oil before using it.



Built by: Holzbau Kühlborn GmbH, 34286 Spangenberg
Photograph: Wiedemann Fotografie, 34117 Kassel

KRONOPLY MDF

Made entirely out of debarked pine and spruce wood, KRONOPLY MDF (medium-density fibreboard) excels with consistently high-quality fibre and a light colour. This is a versatile, high-quality product for all applications for which solid wood and other wood-based materials are inadequate or unsuitable.

KRONOPLY MDF - raw E1

- Bulk density of about 690-810 kg/cu.m, ideal for varnishing, painting, coating, veneering, laminating and sheathing
- A classic material for furniture and the full range of interior applications (stairs, shelves, doors, etc.), for shops and trade fair stands
- Excellently suited for drilling, milling, etc.

KRONOPLY MDF - melaminated on both sides

White primed P099

- Combines the advantages of raw KRONOPLY MDF with the ruggedness of a plastic coating
- Ideal for interior applications, restaurant and kitchen cabinets, laboratory installations and building mobile homes

KRONOPLY Special

The KRONOPLY Special series with outstanding technical properties is for applications under special conditions, for example in parts of the world where termites are endemic and at construction sites.

KRONOPLY anti-termite, square-edge

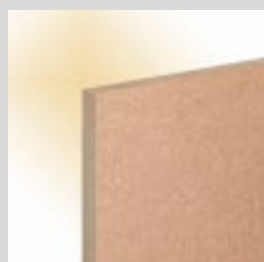
- Termite-resistant OSB quality
- For use in termite-infested areas
- Completely impregnated and lastingly effective

KRONOPLY anti-termite, T + G

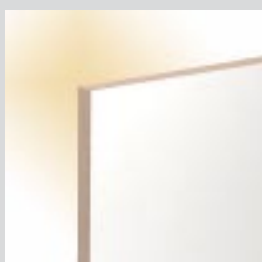
- Termite-resistant OSB quality, edged for versatile tongue-and-groove joints
- For wooden constructions for export to afflicted regions
- Completely impregnated and lastingly effective

KRONOPLY quicklyboard

- A versatile formwork board for facilitating concreting work
- Superb bending properties
- ContiFinish® surface prevents penetration of moisture



KRONOPLY MDF
raw



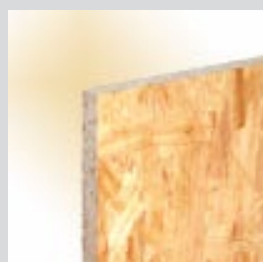
KRONOPLY MDF
coated on both sides



KRONOPLY
anti-termite, square-edge



KRONOPLY
anti-termite, T + G



KRONOPLY
quicklyboard

The KRONOTHERM Feel-Good Programme

KRONOTHERM feel-good insulation made from natural wood fibre turns roofs, ceilings, floors, interior and exterior walls, and wall infills into energetically optimised components.

KRONOTHERM flex

- Flexible infill insulation for roofs, ceiling and walls
- Highly insulating and water vapour-permeable
- Protects against heat, cold and noise
- Creates an excellent indoor climate
- For filling large spaces
- Highly resistant to loss of volume
- Absorbent (able to take up and release moisture)
- Also suitable for use as on-rafter insulation
- Easy to use

KRONOTHERM sound

- Floor board for reducing footfall sound
- Can be used under all hardwood and laminate floors
- Compression-resistant, elastic, optimises acoustics
- Pleasantly shifts frequency of footfall sound for acoustic wellbeing
- Compensates for unevenness up to 3 mm
- Suitable for hot-water underfloor heating (up to 9 mm of laminate or hardwood flooring)

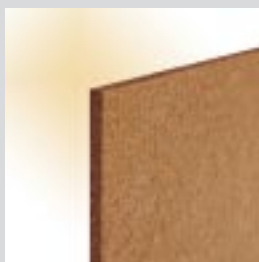
Did You Know?

The production of KRONOTHERM feel-good insulation is rigorously monitored both by us and by an external institute. Every KRONOTHERM product is made on state-of-the-art equipment and is CE-certified in compliance with EN 13171 and German technical approval no. Z-23.15-1581.

You'll find more information at: www.kronoply.com



KRONOTHERM flex



KRONOTHERM sound

KRONO Feel-Good References

Adding a Storey with KRONO – More Room for Feeling Good



Built by: Bema, 69483 Wald-Michelbach

After

This single-storey detached house was extended upwards with a KRONO system involving wood-based materials to create a two-storey KRONO feel-good house.

To prevent the expanded living space from incurring significantly greater heating costs, the work was done with eco-friendly, highly insulating KRONO products. For this reference project, a combination of KRONOPLY MAGNUM BOARD and KRONOTHERM flex was used.



Before

A New House Built with KRONO – Environmentally Friendly Living Space for Children



You'll find additional information at: www.kronoply.com

This project focused on health considerations. In order to prevent environmental toxins or solvents from posing health hazards to small children, top priority was given to using optimally installed, natural materials.

To make this eco-friendly wooden house, the planners opted for KRONOPLY OSB and KRONOTHERM wood-fibre insulation.



In this project, the owners of a single-family detached house wanted to make fast progress while preventing the work from introducing any damp into the building.

The project was carried out with the eco-friendly KRONOPLY MAGNUM BOARD wood building system. And the house's residents were thrilled with the results! Thanks to the high insulating effect of the KRONOTHERM wood-fibre insulation used, it is pleasantly cool in the summer – even right under the roof – and the heating costs in the wintertime are low.

Renovation with KRONO – for a Constant Feel-Good Climate



Before After

As this example shows, it is possible to build architecturally ambitious houses out of wood. This block-shaped building is characterised by both modernity and functionality.

Contemporary wooden houses like this one sport a flat roof and cost-effective constructions. Many of its components are prefabricated, and rafters and studs are spaced well apart. Thanks to KRONOPLY OSB/3 and KRONOPLY F****, which are approved for use in flat roofs without any chemical treatment, its inhabitants enjoy a feel-good climate, even beneath a flat roof.

Construction of a New House with KRONO – Architectural Solutions for the Future





Built by: Bema, 69483 Wald-Michelbach

More Service from Us, Greater Success for You



KRONOPLY on the Internet

Our completely redesigned and reorganised KRONO website now features even more service and a stronger customer orientation. It's easy, straightforward and quick to access product information, news, services, specials and downloads. You can take advantage of the following content 24/7:

- Information materials
- Data sheets
- Certificates
- Construction details
- Condensation calculator
- Trade fairs and other events
- Environment and sustainability
- References
- Delivery programme
- Bidding documents
- Example applications
- U-value calculator
- Contacts
- And much, much more!



Telephone Hotline

Ring our Service Hotline to get advice and tips on all products, issues and installation methods. You can reach our experts from Monday to Thursday between 8 am and 5 pm and on Fridays until 2:30 pm (Central European Time).



Service hotline: +49 (0) 33962 69-751



You'll find additional information at: www.kronoply.com



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