

## Product Information

### Laminated beam MUF system 1242 / 2542

- Long storage time

Light coloured system for laminated beam and finger joints in load bearing timber structures.  
Mixed application of adhesive and hardener

#### Product Specification

	1242			2542	
<b>Product</b>	MUF adhesive			Hardener	
<b>Delivery Form</b>	Liquid			Liquid	
<b>Colour</b>	Opaque white			Cream (light yellow)	
<b>Viscosity</b> (at time of production)	10000 - 20000 mPas (Brookfield LVT, sp.4, 12 rpm, 25°C / 77°F)			10000 - 20000 mPas (Brookfield LVT, sp.4, 12 rpm, 25°C / 77°F)	
<b>Density</b>	Appr. 1250 kg/m <sup>3</sup>			Appr. 1340 kg/m <sup>3</sup>	
<b>pH</b> (at time of production)	9,5 - 11,0 (at 25°C / 77°F)			0.8 – 1.5 (at 25°C / 77°F)	
<b>Dry content</b>	66 - 69%			Not applicable	
<b>Storage Life</b> (months from time of production)	15°C/59°F	20°C/68°F	30°C/86°F	20°C/68°F	30°C/86°F
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<b>Storage Condition</b>	Recommended storage temperature 15°C to 25°C (59°F to 77°F). Only short time exposure to temperatures below 10°C / 50°F and above 30°C / 86°F are acceptable. If the product has been frozen it cannot be thawed and used because of irreversible changes in its properties.			Recommended storage temperature; 15°C to 25°C (59°F to 77°F). Only short time exposure to temperatures below 10°C / 50°F and above 30°C / 86°F are acceptable. Frozen and thawed product cannot be used due to irreversible changes in the product.	
<b>Formaldehyde Info</b>	≤0.7% free formaldehyde			Contains no formaldehyde	
<b>Glue Line Properties</b>	Fulfils the requirements according to EN 301 (for glue type I and II, service classes 1, 2, 3) and DIN 68141.				

#### Contact Information

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 High Point, USA +1 336 841 5111  
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Version: 06 (2021-05-21)

**Reason for changes:** Update of approvals paragraph and clarified instructions added to the paragraphs regarding pressing time, assembly time and glue spread.

## Approvals

1242 with hardener 2542 is approved by Norsk Treteknis Institutt (NTI), Norway, Materialprüfungsanstalt Universität Stuttgart - Otto - Graf - Institut (MPA), Germany, and SKH/KOMO (DHBC No.32389), Holland for the production of load-bearing timber structures.

1242 with hardener 2542 have been tested in accordance with EN 301 and fulfils the requirements for Adhesive type I-90-GP-0,6-M-w and I-90-FJ-0,1-M for use with the wood species spruce, fir and pine. The product is suitable for the production of glued laminated timber according to EN 14080:2013.

## Gluing Operation Information

**Applications** Structural elements (face lamination) and finger joints

**Press Type** Cold Press, Hot Press

**Press Temperature** Minimum pressing temperature is 20°C / 68°F

<b>Pressing Time</b>	<b>Glue joint temperature</b>		<b>Mixing ratio 100:20</b>	
	when a thin glue line is guaranteed (250 g/m <sup>2</sup> , approx. 0,1 mm)	20°C / 68°F		10h
30°C / 86°F		3h		
<b>Glue joint temperature</b>		<b>Mixing ratio 100:25</b>		
20°C / 68°F		9h		
	30°C / 86°F		2h 45'	

The given pressing times are related to the production of straight beams with a moisture content of approximately 12%. When gluing curved beams or using wood with higher moisture content, the pressing times have to be prolonged.

Numerous parameters influence the performance of the glue system, such as the condition of the press, the moisture content of the substrate, the ambient temperature and relative humidity, the type of construction, bond-line thickness, and the species of wood.

The given pressing times are related to a material temperature of approximately 20°C / 68°F and 30°C / 86°F. If the temperature of the material is lower, the pressing time must be prolonged. The values given in the table are minimum values and are to be used as guidelines.

	<b>Mixing ratio</b>	<b>15°C/59°F</b>	<b>20°C/68°C</b>	<b>30°C/86°C</b>
<b>Pot Life</b>	100:20	2h 30'	1h 40'	50'
	100:25	2h	1h 20'	40'

**Pressure**

Minimum 0,5 MPa for soft wood.  
 Minimum 1,0 MPa for hard wood.  
 In laminated beam production:  
 Minimum 0,7 MPa for 33 mm lamellas.  
 Minimum 0,9 MPa for 45 mm lamellas.

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	Gluing conditions	Mixing Ratio	Max Closed
<b>Assembly Time</b> (20°C / 68°F)	250 g/m <sup>2</sup> / 51 lbs/1000 ft <sup>2</sup>	100:20	1h 20'
	400 g/m <sup>2</sup> / 82 lbs/1000 ft <sup>2</sup>	100:20	1h 50'
	250 g/m <sup>2</sup> / 51 lbs/1000 ft <sup>2</sup>	100:25	1h 10'
	400 g/m <sup>2</sup> / 82 lbs/1000 ft <sup>2</sup>	100:25	1h 40'

The assembly time is influenced by the glue spread, the moisture content in the wood, and the ambient temperature and humidity. Higher glue spread, lower temperature, and higher moisture content in the wood and in the surrounding air will extend the assembly time.

The pressure must be applied while the adhesive is still tacky. The total assembly time (open assembly time + closed assembly time) must be evaluated in each specific case.

A slight squeeze out of adhesive along the edge of all the joints when pressure is applied indicates adequate glue spread and that the total assembly time has not been exceeded.

<b>Mixing Ratio</b> (by weight)	100 : 20 or 25 (adhesive:hardener) The accuracy in the hardener amount shall be ±1 pbw.
<b>Glue Spread</b>	170 - 450 g/m <sup>2</sup> , for laminated beams preferably 250 - 450 g/m <sup>2</sup>
<p>The glue spread can vary depending on the wood species, wood moisture, relative humidity, room temperature, press type, assembly time and planing quality. However, the lower limit of glue spread should not be lower than the value in the table above.</p> <p>In the production of load-bearing components, a reduction of the glue spread, e.g. in the case of very short assembly times, may only be carried out with the approval of AkzoNobel's technical support, taking into account the production parameters on the respective production line. This optimisation requires that the specified parameters are adhered to and that continuous checks in the form of delamination tests are carried out. A written and signed confirmation from AkzoNobel and the adhesive testing body is mandatory for this.</p>	
<b>Moisture content of wood</b>	8-15%, for laminated beams preferably 10-12%
<b>Preparation of wood</b>	For best result the wood must be smoothly planed. For optimum bond strength the bonding operation shall take place within 24 hours after preparation.
<b>Temperature of wood</b>	In order to meet the given press times the temperature of the wood must not be below 20°C / 68°F.
<b>Post curing</b>	Up to 5 days at 20°C / 68°F. After the pressing time the bond-line has enough strength for the construction to be handled. Full strength will be reached after a certain time, depending on the pressing time and the pressing temperature.

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## Gluing operation information for finger jointing of lamellae for load-bearing timber structures

<b>General</b>	For the production of finger joints by producers controlled by Otto-Graf-Institut (MPA) the requirements in DIN 68140-1:1998-02 and EN 14080:2013 must be followed.						
<b>Application equipment</b>	<u>With glue mixture</u> : Profiled rollers or similar equipment						
<b>Moisture content of wood</b>	The moisture content shall be similar to the moisture content for the construction when in use. See also DIN 68140-1.						
<b>Glue and hardener application</b>	<u>With glue mixture</u> : Double sided application with 125-150 g/m <sup>2</sup> on each side. The glue mixture must cover at least ¾ of the length of the fingers. Within the frame of the producer's production control a sample of finger joints with both glue and hardener must be sampled every day. The sample must be marked with the date and be kept for the control authorities. Apart from this a documentation of the consumption of glue and hardener per day and per cross section of the finger joints must be done.						
<b>Temperature of wood</b>	When finger jointing lamellae for laminated beams the temperature of the wood must not be lower than 18°C / 64°F.						
<b>Mixing ratio</b>	For finger-jointing of lamellae for laminated beams the following glue mixture is also approved <table data-bbox="590 1164 1117 1288"> <tr> <td>1242</td> <td>100 parts by weight (pbw)</td> </tr> <tr> <td>2542</td> <td>20 parts by weight (pbw)</td> </tr> <tr> <td>Water</td> <td>0 - 5 parts by weight (pbw)</td> </tr> </table> The accuracy of the hardener amount shall be ± 1pbw	1242	100 parts by weight (pbw)	2542	20 parts by weight (pbw)	Water	0 - 5 parts by weight (pbw)
1242	100 parts by weight (pbw)						
2542	20 parts by weight (pbw)						
Water	0 - 5 parts by weight (pbw)						
<b>Pot life</b>	5 pbw of water will increase the pot-life with approx. 10%						
<b>Pressing temperature</b>	The minimum pressing temperature shall be 20°C / 68°F.						
<b>Gluing without HF press</b>	When finger jointing lamellae for structural timber the temperature of the wood must be at least 20°C / 68°F.						
<b>Gluing in HF with pre-heating</b>	The temperature in the zone of the finger joint should reach a temperature of minimum 60°C / 140°F.						
<b>Gluing in HF without pre-heating</b>	The temperature in the zone of the finger joint should reach a temperature of minimum 85°C / 185°F.						
<b>Curing time</b>	With a bond line temperature of 60°C / 140°F the curing time is 2 hours. At 20°C / 68°F the curing time is 5 days.						
<b>Further processing after finger jointing</b>	Finger jointed lamellae may only be further processed directly after the finger jointing operation if the transportation equipment and the planning of the lamellae do not expose the joints to any damaging stresses. Otherwise, the curing time stated above shall be used.						

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## Handling and HSE info

<b>Handling</b>	Always use gloves and goggles when handling the product.
<b>Cleaning</b>	Glue on skin should be washed with soap and water. For the equipment, use lukewarm water with addition of Glue wash 4450 or Washing agent 2704 (for more info see General Info). Cleaning must start before the system cures.
<b>Waste handling - of the products</b>	Glue - Is normally classified as hazardous waste (contains free formaldehyde.) Hardener - Depending on classification hardeners may be considered as hazardous waste, check the SDS (section 13). Mixed glue and hardener – Can normally be treated as non hazardous waste when fully cured.  <b>NOTE!</b> There might be national and/or local regulatory differences, therefore always keep a dialogue with the local authorities.
<b>Waste water treatment - of the waste water</b>	Chemical precipitation → drain* Biological treatment → drain* Mechanical precipitation → drain* * municipal sewage with biological treatment <b>For more info, see General Information.</b>  <b>NOTE!</b> There might be national and/or local regulatory differences, therefore always keep a dialogue with the local authorities.
<b>Health and Safety</b>	For more information, see respective SDS.

### Legal clause

The information is based on laboratory tests and practical experience. It is introductory and intended to help the user find the most suitable method of working. Since the user's production conditions are beyond our control, we cannot be held responsible for the results of the work which is affected by local circumstances. In each particular case testing and continuous control are recommended.

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