

MASTERPLANK – A REVOLUTION IN SCAFFOLDING



MetsäWood

THE NATURAL CHOICE FOR SAFETY

When it comes to construction site safety, your workers deserve the best.

Master Plank® is an engineered wood known as Kerto® product and is designed specifically for use as a scaffold board. The unique process by which it is manufactured disperses the inherent defects found in solid-sawn timber. Natural characteristics such as knots and wane are randomised to maximise strength and minimise warping and splits.*

Manufactured from timber sourced from PEFC-certified forests, Master Plank® is supported by Metsä Wood's independently audited Chain of Custody. It is homogeneous, has superior strength properties and is proof-tested to ensure compliance to the OSHA and ANSI A10.8-2001 Standards and is stamped accordingly.

Manufactured from Nordic Spruce veneers, it is the lightest weight laminated wood scaffold board on the market and is remarkably durable due to its use of carefully selected Spruce veneers and waterproof exterior adhesive. It is manufactured under the ISO 9001 Quality Certification System and VTT Certificate No.184/03.

* SEE P.10 TO SEE HOW KERTO IS PRODUCED

TOLERANCES OF KERTO PRODUCTS

DIMENSION	SIZE, MM	TOLERANCE, MM OR %
Thickness	all standards	+ (0,8+0,03 t) mm and -(0,4+0,03 t) mm 51-75 mm max. ± 2 mm
Width	< 400	± 2 mm
	> 400	± 0,5 %
Length	All	± 5,0 mm

A superior scaffold board constructed from Kerto.

BENEFITS OF MASTER PLANK

- Individually proof-tested
- Enhanced durability and safety (OSHA/ANSI/BS/EN)
- Meets and exceeds industry standards
- Stamped/embossed as 'scaffold plank'
- Unrivalled structural rigidity, stability and strength
- Lightest in weight
- 33 x 225 specially engineered to optimise for 1.5m span (exceeds solid wood BS2482 board) available in lengths of 1.2m up to 7.315m
- 39 x 225 standard material available in lengths of 1.2m up to 7.315m
- Other board thicknesses and widths are available to order on request
- Longer lengths - fewer trip hazards and greater spans (potential savings on metalwork fixing and supply)
- No metal end-banding required
- Proven to last at least twice as long as solid wood equivalent
- No on-going maintenance or remedial repairs required
- Perfect for petrochemical and gas industry applications
- Excellent electrical insulation properties
- Excellent anti-corrosive and chemical properties
- Ideal for use where layouts inhibit modular systems
- Low inert temperature properties
- Inherent strength properties of Master Plank® mean that it can be cross-cut to exact lengths





SPECIFICATIONS



MASTER PLANK® SCAFFOLD SPAN & LOAD TABLES

SINGLE SPAN L/60 (MILLIMETRES)

LOAD CONDITION	33 x 225	39 x 225
50 PSF	2652	3200
75 PSF	2330	2743
One Man Load	2510	3190
Two Man Load	2072	2591
Three Man Load	1650	1829

NOTE: ABOVE SPAN TABLE BASED ON L/60 PER OSHA REQUIREMENTS.

LOAD TABLE

	33 x 225		39 x 225	
	UDL	PL	UDL	PL
	kN/m ²	kN	kN/m ²	kN
1200	19.50	2.95	27.30	4.05
1500	12.45	2.30	17.40	3.25
1800	7.95	1.90	12.00	2.70

L/60 DEFLECTION LIMIT, APPLICABLE FOR SINGLE SPAN AND CONTINUOUS PLANKS.
 UDL CALCULATED WITH 3 LOAD COMBINATIONS.
 PL CALCULATED WITH 7 LOAD COMBINATIONS. ONE PL ALLOWED IN EACH SPAN.
 UDL: UNIFORMLY DISTRIBUTED LOAD.
 PL: POINT LOAD.

SIZE/AVAILABILITY

THICKNESS	WIDTH	LENGTH	WEIGHT (kg/m)
33 mm	225 mm	2416 - 7315 mm	3.60
39 mm	225 mm	2416 - 7315 mm	4.25

NOTE: OTHER THICKNESSES, WIDTHS AND LENGTHS ARE AVAILABLE ON A CUSTOM ORDER BASIS.

DIMENSIONS AND COMPOSITION

NOMINAL THICKNESS (mm)	33	39
Widths	92 mm to 610 mm	
Lengths *	1.2 m to 7.315 m	
Number Plies	11	13
Thickness of Plies	3.0mm	

*OTHER BOARD SIZES AVAILABLE TO ORDER, ON REQUEST

MANUFACTURE

FINISHED PRODUCT

Widths: Widths are cut within our specified tolerances, with arised/eased edges, and including permanently embossed branding and showing mill identification, month/year of manufacture, OSHA/ANSI and customer brand (if required).

Lengths: Lengths are cut within our specified tolerances, and with square clear edges, including colour edge sealant paint for easy identification and enhanced durability.

Surface: Surface is unsanded (sanding is available by special order). Surface (face) veneer may be graded A (clear) if requested. To enhance dimensional stability, long edge seal coating can be provided upon special request.

FIRE PERFORMANCE

Based on testing carried out by VTT Expert Services Ltd, the charring rate for Master Plank® is better than other softwood species used in construction. Flame/fire retardant treatments can be applied by third party specialists.

QUALITY CONTROL AND ENVIRONMENTAL CREDENTIALS

Master Plank® is manufactured under the VTT 184/03 quality certification scheme. Quality control is under the supervision of VTT Expert Services Ltd. Renewable and recyclable, wood is a highly eco-effective building material throughout its life cycle. Wood raw material comes from the sustainably managed and PEFC-certified Metsä Group's Finnish forests, ensuring that the origin of the raw material is traceable.





DO NOT EXCEED
MAXIMUM SAFE
BOARD LOAD



DO NOT EXCEED
MAXIMUM SAFE
BOARD SPAN



DO NOT
DROP YOUR
BOARDS



DO NOT DROP
HEAVY MATERIALS
ON YOUR BOARDS



DO NOT SPILL STRONG
OR CORROSIVE CHEMICALS
ON YOUR BOARDS



DO NOT JUMP
ON YOUR BOARDS



DO NOT USE
FOR ANY PURPOSE
OTHER THAN AS
SCAFFOLD BOARDS



DO NOT ALLOW
OXYACETYLENE CUTTING
OR WELDING TO CAUSE
BURNS TO YOUR BOARDS



DO NOT DRIVE
VEHICLES OR PLANT
OVER YOUR
BOARDS



LOOKING AFTER YOUR MASTER PLANK® SCAFFOLD BOARDS

Proper care, storage, maintenance and handling are the best means of assuring safe performance of your Master Plank® scaffolding boards.

Your Master Plank® is a strong and reliable scaffolding board backed up by OSHA/ANSA/VTT certification. But, like all materials subject to the wear-and-tear of regular use, they must be properly maintained. The better the care, the longer your boards will last.

By following these maintenance guidelines, you will get the most from your investment in Master Plank® – a long and safe working life.

REGULAR INSPECTION IS VITAL

No matter how rigorous your Master Plank® maintenance routine, you must still inspect each board on a regular basis. Inspection gives you a chance to remove and discard boards that are reaching the end of their safe working lives. If appropriate, you should back up a physical inspection with strength testing.

MISUSE LEADS TO DAMAGE

The easiest way to shorten the life of a Master Plank® is to damage it through misuse:



DO NOT USE ANY BOARD WHICH HAS BEEN WORN, DAMAGED OR MISUSED UNTIL YOU HAVE SATISFIED YOURSELF THAT IT IS SAFE.

CAREFUL STORAGE

Store your boards under cover. Do not let the rain get to them. Store wet boards somewhere dry and well-ventilated. Stack them clear of the ground on level bearers. Insert spacers between the layers to let the air circulate. Use at least three bearers or spacers for each layer, making sure that the bearers and spacers are aligned vertically.

Store dry boards indoors on at least three level bearers to keep them clear of the ground. There's no need for spacers between layers.

Store dry boards outdoors under cover, stacked and ventilated as if they were wet boards.

ACIDS AND ALKALIS

In general, acids and alkalis within the pH range 2 (acids) to 10 (alkalis) will not harm your Master Plank® but strong acids or alkalis outside that range will, over time, reduce the strength of your boards by breaking down their lignin binding. Test these boards for strength on a regular basis.

FUNGAL ATTACK

In normal use, your boards are unlikely to stay wet or damp long enough to suffer fungal attack. Problems set in when boards remain wet or damp for a period measurable in months. This is most likely to occur when stored badly, i.e. too close together and with poor ventilation.

Do not use boards that come straight from damp or badly ventilated longterm storage. Dry them out, then re-test for strength.

Discard (and recycle where possible) any boards that show signs of fungal decay.

MASTER PLANK IS NOT JUST ANY SCAFFOLD BOARD

Given proper care and handling, workers can comfortably rely on Master Plank® scaffold boards for optimal safety and performance.

MASTER PLANK® SCAFFOLD BOARDS ARE ONLY INTENDED FOR USE AS SCAFFOLD BOARDS

i.e. for the support of persons, equipment and materials on scaffold constructed and loaded in accordance with VTT Certificate 184/03.

USE FOR ANY OTHER PURPOSE VOIDS CONTINUED USE AS SCAFFOLD BOARDS

Master Plank® used for any other purpose (or subject to trauma) should:

- Have edge labelling on both sides planed off.
- Be indelibly and permanently marked by painting or stencilling as no longer suitable for use as a scaffold board.

NOTE: IF A MASTER PLANK® DOES SUFFER ANY FORM OF MISUSE (INCLUDING MISUSE OF A TYPE NOT SPECIFIED IN THE PRECEDING LIST), YOU SHOULD CHECK IT IMMEDIATELY. BEAR IN MIND THAT FRACTURES AND OTHER INTERNAL DAMAGE MAY NOT BE VISIBLE. IF IN DOUBT, PUT YOUR BOARD THROUGH AN INDEPENDENT PROOF/GRADING TEST.

TYPICAL DEGRADATION EFFECTS AND GUIDELINES FOR CONTINUED USE

CONDITION	APPEARANCE	POSSIBLE CAUSE/EFFECT	NECESSARY ACTION
MOULD	On surface.	Indicates onset of fungal attack which may have become sufficiently established to result in loss of strength.	Do not use boards. Await validation for continued use. Wash mould off and then allow to dry, examine for soft patches or other evidence of decay. If there is no decay, proof test and return validated planks for service.
BURNS	In aggregate, more than 75mm across the width of the board and less than 1mm maximum depth.	Welding slag or torch burns causing loss of section and loss of strength.	Proof test board to validate for continued use. Either remove defect by cutting off affected portion or discard board.
	In aggregate, more than 75mm across the width of the board and more than one veneer thickness or (3mm) maximum depth.	Welding slag or torch burns causing loss of section and loss of strength.	
SAW CUTS	In aggregate, more than 75mm across width of the plank and more than 1mm deep. Edge cuts more than 10mm deep.	Notches, such as saw cuts, can result in a disproportionate loss of strength.	Discard board or cut off affected area.
NOTCHES OR HOLES	Any notches or holes other than nail holes.	Holes or notches made in boards to permit penetrations, bolting etc. may result in excessive loss of strength.	Discard board or cut off affected area.
DISCOLOURED PATCHES	Not identified as due to paint/stain, cement, oil or other common substances with moderate pH.	Fungal decay or chemical degradation leading to softening of wood and loss of strength.	Discard board or cut off affected area. Otherwise, proof test to validate continued use.
	Oil, grease, paint or other substance on surface with potential to increase slipperiness.	Slip hazard.	Withdraw boards from service. Gently scrape material and/or wash from surface with detergent. Clean boards may be returned to service.
GENERAL DISCOLOURATION	Board surface grey in colour, possibly accompanied by fine checks (splits) in surface veneers. No evidence of defibration or softening of the surface.	Normal bleaching by the sun. Surface checking is also normal and not critical early effect of weathering.	No action required.
	Dark grey or bleached, accompanied by softening of the wood surface and defibration - ridges of harder wood, parallel to the grain may be left and soft wood readily removed if scratched or rubbed.	Chemical degradation or advanced weathering leading to loss of strength.	Discard boards exhibiting defibration or softening of the wood fibre on the surface. For boards subjected to strong acids and alkalis, proof testing at intervals related to time, usage cycles and exposure is recommended.

CONDITION	APPEARANCE	POSSIBLE CAUSE/EFFECT	NECESSARY ACTION
SPLITS	Discontinuous surface splits, usually not extending deeper than the 3rd layer of veneer.	The result of weathering effects of constant wetting and drying. Called 'checks'.	No action required. Checking of this type is normal and has little effect on structural capacity.
	End splits, extending through the full thickness, but not more than 300mm in length.	Result from moisture differentials near the end of boards and the moisture-induced shrink and swell characteristics.	No action required. Where splits exceed 300mm, cut off and paint seal end of board to limit the ingress of moisture.
SPLITS IN EDGES	Splits in edges between plies. Individually more than 150mm long and allowing insertion of a knife blade to a depth of more than 10mm.	Possibly a manufacturing defect. Bond defects are usually apparent after first exposure to moisture. (Not to be confused with numerous small checks associated with weathering) - unlikely to be critical unless extensive.	Remove board from service and seek advice from manufacturer.
LIFTING VENEER	Veneer lifting from surface, bubbles etc. or veneer separation at face scarf joint.	Defective manufacture, usually evident very early in the life of the board. Poorly made scarf joints may be critical.	Remove board from service and seek advice from manufacturer.
	Any observation suggesting boards have been used as 'duck boards', sole plates, formwork, or for any other purpose other than as scaffold boards.	Damaged board - damage may not be immediately obvious but board may break suddenly under normal load in future.	Discard board. Tag, paint or otherwise clearly and permanently distinguish as not suitable for scaffolding purposes.
	Any board seen to be subjected to unusually severe loading - impact loading from falling objects excessively loaded (more than 210 kg) with stacked materials, subjected to vehicular traffic etc.	Weakened board - weakening may not be immediately obvious but board may break under normal load in future.	Remove immediately. Discard and tag, paint or otherwise clearly and permanently distinguish as not suitable for scaffolding purposes.
CORNER DAMAGE AT ENDS	Part of the width of the board near the end or ends (more than 15% of the width) has been broken away reducing the width of bearing at the end support.	Usually the result of dropping. The loss of the width may result in the board rolling at the affected support.	Cut off affected end and paint seal to reduce moisture ingress.
	Corner or other part of cross-section area exceeding 400mm ² broken away.	The result of damage. Will reduce strength depending upon the loss of cross-section.	Cut off affected portion or reject for continued use as a scaffold board.

MASTER PLANK® IDENTIFICATION



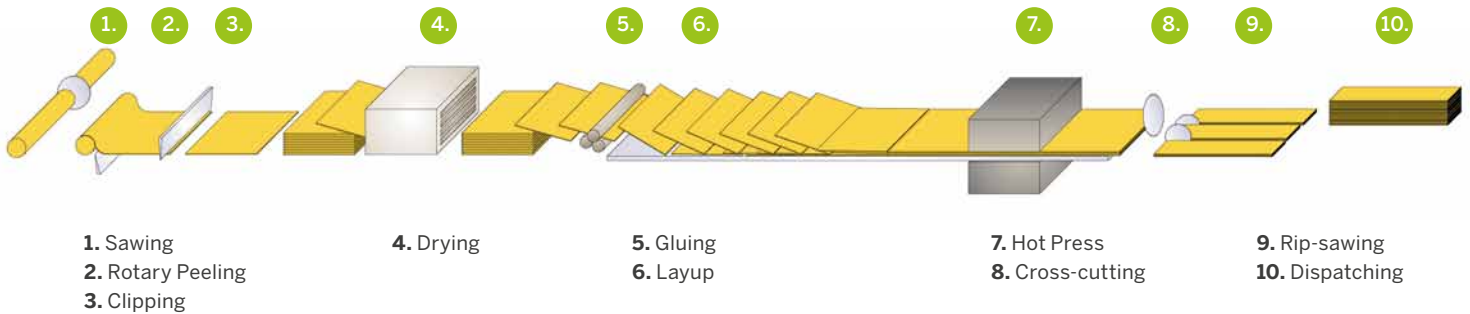
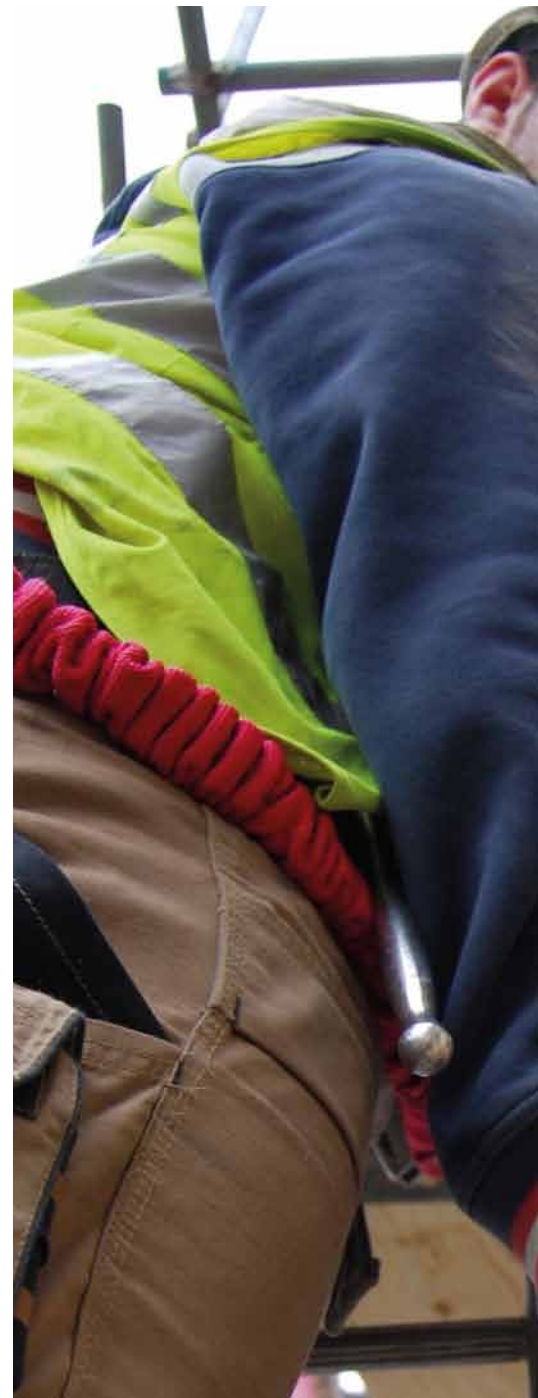
KERTO® AT A GLANCE

DESIGN VALUES [N/mm²] AND PHYSICAL PROPERTIES

PROPERTY	SYMBOL	KERTO-S 1) 21-90 mm
BENDING STRENGTH		
Edgewise	$f_{m,0,edge,k}$	44.0
Size effective parameter	s	0.12
Flatwise, parallel to grain	$f_{m,0,flat,k}$	50.0
Flatwise, perpendicular to grain	$f_{m,90,flat,k}$	-
TENSION STRENGTH		
Parallel to the grain	$f_{t,0,k}$	35.0
Perpendicular to the grain edgewise	$f_{t,90,edge,k}$	0.8
COMPRESSION STRENGTH		
Parallel to the grain	$f_{c,0,k}$	35.0
Perpendicular to the grain edgewise	$f_{c,90,edge,k}$	6.0
Perpendicular to the grain flatwise	$f_{c,90,flat,k}$	1.8
SHEAR STRENGTH		
Edgewise	$f_{v,0,edge,k}$	4.1
Parallel to grain, flatwise	$f_{v,0,flat,k}$	2.3
Perpendicular to grain, flatwise	$f_{v,90,flat,k}$	-
MODULUS OF ELASTICITY		
Parallel to grain	$E_{0,mean}$	13,800
Compression, perpendicular to grain edgewise	$E_{c,90,edge,mean}$	430
Compression, perpendicular to grain, flatwise	$E_{c,90,flat,mean}$	130
Bending, perpendicular to grain of surface veneer	$E_{m,90,mean}$	-
SHEAR MODULUS		
Edgewise	$G_{0,edge,mean}$	600
Flatwise, parallel to grain	$G_{0,flat,mean}$	600
DENSITY, KG/M³		
Moisture content (when leaving the mill)	P_k	480
DIMENSIONAL VARIATION CO-EFFICIENT 3)		
Thickness		0.0024
Width/height		0.0032
Length		0.0001
Average density (kg/m ³)		510
Fire resistance, charring rate (mm/min.)		$\beta_n = 0.70$
Reaction to fire		D-s1,d0

1) VTT certificate 184/03

2) Dimensional variation of cross-section due to moisture content (change of moisture content in % x dimensional variation co-efficient x cross-section in mm)





PRODUCTION

It is produced from 3 mm thick, rotary peeled softwood veneer layers of Spruce, glued together using a WBP glue to form a continuous 2.5 metre wide sheet, with thicknesses ranging from 27 to 75mm and a maximum length of 26 metres. The sheet is then hot pressed and cut to size to make beams, boards, posts or panels, or processed into a variety of other products.

PROPERTIES & BENEFITS

Kerto® is a strong and dimensionally stable product which does not warp or twist. It derives its high strength from the homogeneous structure which also keeps the effects of any defective single veneers down to a minimum.

MATERIAL

Veneer plies: Face, back and inner plies are all of the same species and meet PEFC requirements.

Species: Nordic Spruce (Picea Abies).

Thickness: The thickness of each veneer is nominal 3.0 mm.

Weight/Mass: 510 kg/m³

CONSTRUCTION

Glue bond requirements: Exterior grade WBP phenol adhesive.

Grain direction: All veneers are oriented with the grain parallel to the long dimension of the sheet.

Veneer joints: All individual veneer joints are scarfed and staggered.



Commercial and office buildings



Industrial and agricultural buildings



Residential buildings and gardens



Schools and daycare centres



Special constructions

Metsä Wood offers competitive and eco-efficient wood-based solutions for industrial construction customers, other industrial customers and the home and lifestyle sectors. We manufacture products from Nordic wood, a sustainable raw material of premium quality. Our sales were EUR 904 million in 2012, and we employ about 2,700 people. Metsä Wood is part of Metsä Group.

For more information and contacts:

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