

DECLARATION OF PERFORMANCE

NO. MW/LVL/313-001/CPR/DOP



1. **PRODUCT-TYPE:**

Kerto LVL Qp-panel
Structural Laminated Veneer Lumber

2. **INTENDED USES:**

Buildings and bridges

3. **MANUFACTURER:**

Metsäliitto Cooperative
Metsä Wood
P.O.Box 24
FI-08101 Lohja, Finland
Tel. +358 10 4656 499
www.metsawood.com

5. **SYSTEM OF ASSESSMENT AND VERIFICATION OF CONSTANCY OF PERFORMANCE:**

AVCP System 1

6a. **HARMONISED STANDARD:**

EN 14374:2004

Notified body:

Eurofins Expert Services Oy, Notified product certification body No. 0809

Certificate of constancy of performance:

0809 – CPR – 1002

7. DECLARED PERFORMANCES

ESSENTIAL CHARACTERISTICS	SYMBOL	PERFORMANCE	
		KERTO-Qp THICKNESS 39 - 51 mm	KERTO-Qp THICKNESS 54 - 75 mm
Modulus of elasticity and shear modulus		N/mm² or kg/m³	N/mm² or kg/m³
<u>Modulus of elasticity, mean values</u>			
Parallel to grain, along	$E_{0,mean}$	11700	12300
Parallel to grain, along, flatwise	$E_{0,flat,mean}$	11300	11400
Parallel to grain, across	$E_{90,mean}$	NPD	NPD
Perpendicular to grain, edgewise	$E_{90,edge,mean}$	NPD	NPD
Perpendicular to grain, flatwise	$E_{90,flat,mean}$	NPD	NPD
<u>Modulus of elasticity, fifth percentile value</u>			
Parallel to grain, along	$E_{0,k}$	9800	10300
Parallel to grain, along, flatwise	$E_{0,flat,k}$	9500	9600
Parallel to grain, across	$E_{90,k}$	NPD	NPD
Perpendicular to grain, edgewise	$E_{90,edge,k}$	NPD	NPD
Perpendicular to grain, flatwise	$E_{90,flat,k}$	NPD	NPD
<u>Shear modulus, mean values</u>			
Edgewise	$G_{0,edge,mean}$	600	600
Flatwise, parallel to grain	$G_{0,flat,mean}$	120	120
Flatwise, perpendicular to grain	$G_{90,flat,mean}$	NPD	NPD
<u>Shear modulus, fifth percentile value</u>			
Edgewise	$G_{0,edge,k}$	400	400
Flatwise, parallel to grain	$G_{0,flat,k}$	100	100
Flatwise, perpendicular to grain	$G_{90,flat,k}$	NPD	NPD
Strength, fifth percentile values			
<u>Bending strength</u>			
Edgewise (depth 300mm)	$f_{m,0,edge,k}$	36.0	38.0
Size effect parameter	s	0.12	0.12
Flatwise, parallel to grain	$f_{m,0,flat,k}$	36.0	36.0
Flatwise, perpendicular to grain	$f_{m,90,flat,k}$	NPD	NPD
<u>Compression strength</u>			
Parallel to grain	$f_{c,0,k}$	28.0 ¹	30.0 ¹
Perpendicular to grain, edgewise ²	$f_{c,90,edge,k}$	6.0	6.0
Perpendicular to grain, flatwise (spruce)	$f_{c,90,flat,k}$	1.8	1.8
Perpendicular to grain, flatwise (pine)	$f_{c,90,flat,k}$	3.3	3.3
<u>Tension strength</u>			
Parallel to grain (length 3000mm)	$f_{t,0,k}$	28.0	30.0
Perpendicular to grain, edgewise	$f_{t,90,edge,k}$	3.0	2.5
Perpendicular to grain, flatwise	$f_{t,90,flat,k}$	NPD	NPD
<u>Shear strength</u>			
Edgewise	$f_{v,0,edge,k}$	4.1	4.1
Flatwise, parallel to grain	$f_{v,0,flat,k}$	1.3	1.3
Flatwise, perpendicular to grain	$f_{v,90,flat,k}$	NPD	NPD
Density			
Density, mean value	ρ_{mean}	510	510
Density, fifth percentile value	ρ_k	480	480

¹ In service class 2 the values 28.0 N/mm² and 30.0 N/mm² is recommended to be divided by 1.2
The material values in this DoP are to be used for structural calculations with EN 1995 (Eurocode 5).

² In design of comp. perp. to grain related to edgewise bending, the contact length can be increased by a maximum of 30 mm at each side. The $k_{c,90}$ factor to be used is 1,0.

ESSENTIAL CHARACTERISTICS	PERFORMANCE			
Bonding quality	requirement fulfilled			
Reaction to fire	End use condition	Minimum thickness (mm)	Class (excluding floorings)	Class (floorings)
	- any substrate or air gap behind the product	39	D-s2, d0	Dfl-s1
	- with or without an air gap between the product and a substrate of class A1 or A2-s1,d0, thickness of at least 6 mm and density of at least 800 kg/m ³ - fixed mechanically to wooden or metallic frames	39	D-s1, d0	-
	- free standing applications	39	D-s1, d0	-
Release of formaldehyde	E1			
Natural durability against biological attack (EN 350-2)	Class 5 (includes sapwood)			

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The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

At Espoo on 19.12.2019

Henrik Söderström
SVP, Supply Chain Management
Metsä Wood



Juha Kasslin
VP, Product Management
Metsä Wood

