

DECLARATION OF PERFORMANCE

NO. MW/LVL/311-001/CPR/DOP



1. **PRODUCT-TYPE:**

Kerto LVL S-beam
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-S THICKNESS 21 - 90 mm
Modulus of elasticity and shear modulus		N/mm² or kg/m³
<u>Modulus of elasticity, mean values</u>		
Parallel to grain, along	$E_{0,mean}$	13800
Parallel to grain, across	$E_{90,mean}$	NPD
Perpendicular to grain, edgewise	$E_{90,edge,mean}$	NPD
Perpendicular to grain, flatwise	$E_{90,flat,mean}$	NPD
<u>Modulus of elasticity, fifth percentile value</u>		
Parallel to grain, along	$E_{0,k}$	11600
Parallel to grain, across	$E_{90,k}$	NPD
Perpendicular to grain, edgewise	$E_{90,edge,k}$	NPD
Perpendicular to grain, flatwise	$E_{90,flat,k}$	NPD
<u>Shear modulus, mean values</u>		
Edgewise	$G_{0,edge,mean}$	600
Flatwise, parallel to grain	$G_{0,flat,mean}$	380
Flatwise, perpendicular to grain	$G_{90,flat,mean}$	NPD
<u>Shear modulus, fifth percentile value</u>		
Edgewise	$G_{0,edge,k}$	400
Flatwise, parallel to grain	$G_{0,flat,k}$	270
Flatwise, perpendicular to grain	$G_{90,flat,k}$	NPD
Strength, fifth percentile values		
<u>Bending strength</u>		
Edgewise (depth 300mm)	$f_{m,0,edge,k}$	44.0
Size effect parameter	s	0.12
Flatwise, parallel to grain	$f_{m,0,flat,k}$	50.0
Flatwise, perpendicular to grain	$f_{m,90,flat,k}$	NPD
<u>Compression strength</u>		
Parallel to grain	$f_{c,0,k}$	35.0 ¹
Perpendicular to grain, edgewise	$f_{c,90,edge,k}$	6.0
Perpendicular to grain, flatwise (spruce)	$f_{c,90,flat,k}$	2.2
Perpendicular to grain, flatwise (pine)	$f_{c,90,flat,k}$	3.3
<u>Tension strength</u>		
Parallel to grain (length 3000mm)	$f_{t,0,k}$	35.0
Perpendicular to grain, edgewise	$f_{t,90,edge,k}$	0.8
Perpendicular to grain, flatwise	$f_{t,90,flat,k}$	NPD
<u>Shear strength</u>		
Edgewise	$f_{v,0,edge,k}$	4.2
Flatwise, parallel to grain	$f_{v,0,flat,k}$	2.3
Flatwise, perpendicular to grain	$f_{v,90,flat,k}$	NPD
Density		
Density, mean value	ρ_{mean}	510
Density, fifth percentile value	ρ_k	480

¹ In service class 2 the value 35.0 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).

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	21	D-s2, d0	D _{fl} -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	27	D-s1, d0	-
	- free standing applications	27	D-s1, d0	-
Release of formaldehyde	E1			
Natural durability against biological attack (EN 350-2)	Class 5 (includes sapwood)			

The material values in this DoP are to be used for structural calculations with EN 1995 (Eurocode 5).

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

