

Technical Data, Nordic X-Lam

NORDIC X-LAM PRODUCTS

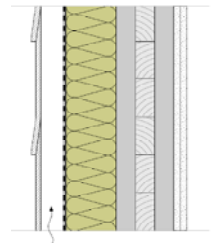
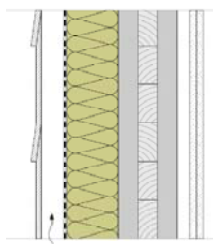
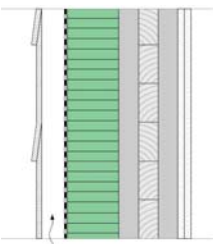
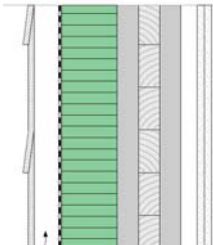
Construction	multi layered; 3, 5, and 7 plies « standard » stress grade
Dimensions	maximum width of 2438 mm (8 feet); including the lapped-joint of 64 mm lengths up to 19.5 metres (64 feet) thicknesses from 78 to 381 mm (3 to 15 inches); standards 105, 175 and 245 mm; others 78, 87 et 97 mm (3 plys); 131, 147 et 158 mm (5 plys); 208 et 220 mm (7 plys)
Appearance grade	industrial (architectural upon request)
Certification	product report by APA; FSC certified products available
Lumber species	Spruce-Pine-Fir (S-P-F)
Lamellas	longitudinal lamellas 1950F _b MSR, transversal No. 3/Stud
Adhesives	weatherproof adhesives, formaldehyde free low volatile organic compounds (VOC) limits.
Density	± 560 kg/m ³ , Spruce-Pine-Fir
Moisture content	12 ± 2 %
Dimensional changes	longitudinal and transversal: 0,01% per % change in moisture content panel thickness: 0,20% per % change in moisture content
Thermal resistance	RSI = 0,87 m ² °C/W, R = 5 ft ² h °F/BTU per 100 mm
Acoustic resistance	wood as a material has good sound attenuation properties; sound transmission (STC) and impact insulation (IIC) classes for typical assemblies are available upon request
Fire safety	- the fire separating function of CLT panel assemblies can easily be met provided that the panels and joints between panels are effectively sealed to prevent air or hot gases from penetrating the assembly during fire exposure - charring rate of 0,65 mm/min.; see fire-resistance ratings (FRR) for typical assemblies - the flammability of CLT panels is the same as that of the lumber with which it is manufactured; therefore, they may be left exposed anywhere the flame-spread rating is permitted to be 150 or less
Joint profile	64 mm width lapped joint, on both sides

ADVANTAGES

Flexible design	unrestricted designing without being bound to a grid
Simple component	simple building component construction and detailed planning
Detailed planning	minimum designing risk due to detailed planning documents
Advanced possibilities	advanced possibilities due to an efficient building material
Identical compositions	identical construction for all applications (wall/floor/roof)
Solid construction	massive timber building components, no extra bracing required
Short erection period	short construction period on site, economic assembly
Ready-to-install products	ready-to-install joined building components, delivered on time
Simple connection details	simple connection details, easy to execute
Durability	durable, solid and high quality timber construction
Sustainable material	ecological, carbon storing material (1 m ³ of wood = 1 ton less of CO ₂)
Warmth	pleasant, warm in-door climate

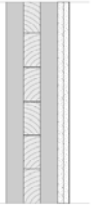
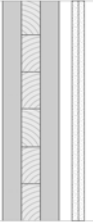

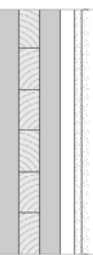


Typical compositions, exterior walls

Exterior wall type	No	Description	FRR	ITS	RSI
	E1	- fiberglass insulation, 2 layers - cross-laminated timber 87 mm - with or without gypsum board			
	E1a	- 1 layer 15,9 mm Type X gypsum board			
	E1b	- 2 layers 12,7 mm Type X gypsum board			
	E2	- fiberglass insulation, 2 layers - cross-laminated timber 87 mm - installation cavity, 38 mm - with or without gypsum board			
	E2a	- 1 layer 15,9 mm Type X gypsum board			
	E2b	- 2 layers 12,7 mm Type X gypsum board			
	E3	- sprayed foam insulation, 75 mm - cross-laminated timber 87 mm - with or without gypsum board			
	E3a	- 1 layer 15,9 mm Type X gypsum board			
	E3b	- 2 layers 12,7 mm Type X gypsum board			
	E4	- sprayed foam insulation, 75 mm - cross-laminated timber 87 mm - installation cavity, 38 mm - with or without gypsum board			
	E4a	- 1 layer 15,9 mm Type X gypsum board			
	E4b	- 2 layers 12,7 mm Type X gypsum board			

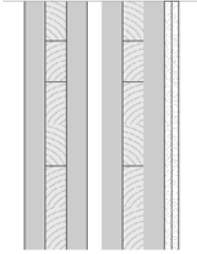
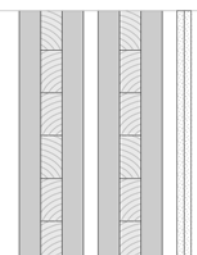
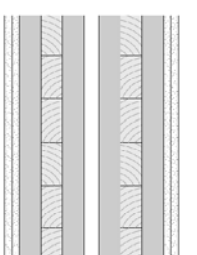
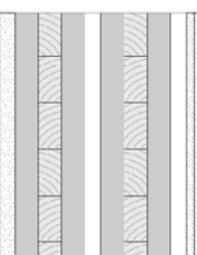
Notes:

Typical compositions, interior walls

Interior wall type	No	Description	FRR	ITS
	M1	- cross-laminated timber 87 mm - with or without gypsum board		
	M1a	- 1 layer 15,9 mm Type X gypsum board		
	M1b	- 2 layers 12,7 mm Type X gypsum board		
	M2	- cross-laminated timber 87 mm - installation cavity, 38 mm - with or without gypsum board		
	M2a	- 1 layer 15,9 mm Type X gypsum board		
	M2b	- 2 layers 12,7 mm Type X gypsum board		
	M3	- with or without gypsum board - cross-laminated timber 87 mm - with or without gypsum board		
	M3a	- 1 layer 15,9 mm Type X gypsum board		
	M3b	- 2 layers 12,7 mm Type X gypsum board		
	M4	- with or without gypsum board - cross-laminated timber 87 mm - installation cavity, 38 mm - with or without gypsum board		
	M4a	- 1 layer 15,9 mm Type X gypsum board		
	M4b	- 2 layers 12,7 mm Type X gypsum board		

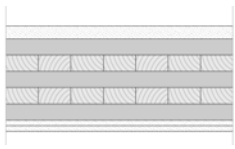
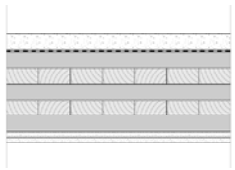
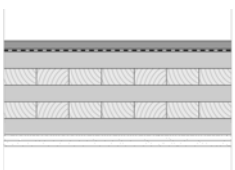
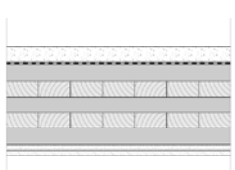
Notes:

Typical compositions, partition walls

Partition wall type	No	Description	FRR	ITS
	M5	<ul style="list-style-type: none"> - cross-laminated timber 87 mm - air space, 25 mm - cross-laminated timber 87 mm - with or without gypsum board 		
	M5a	- 1 layer 15,9 mm Type X gypsum board		
	M5b	- 2 layers 12,7 mm Type X gypsum board		
	M6	<ul style="list-style-type: none"> - cross-laminated timber 87 mm - air space, 25 mm - cross-laminated timber 87 mm - installation cavity, 38 mm - with or without gypsum board 		
	M6a	- 1 layer 15,9 mm Type X gypsum board		
	M6b	- 2 layers 12,7 mm Type X gypsum board		
	M7	<ul style="list-style-type: none"> - with or without gypsum board - cross-laminated timber 87 mm - air space, 25 mm - cross-laminated timber 87 mm - with or without gypsum board 		
	M7a	- 1 layer 15,9 mm Type X gypsum board		
	M7b	- 2 layers 12,7 mm Type X gypsum board		
	M8	<ul style="list-style-type: none"> - with or without gypsum board - cross-laminated timber 87 mm - air space, 25 mm - cross-laminated timber 87 mm - installation cavity, 38 mm - with or without gypsum board 		
	M8a	- 1 layer 15,9 mm Type X gypsum board		
	M8b	- 2 layers 12,7 mm Type X gypsum board		

Notes:

Typical compositions, floors

Floor type	No	Description	FRR	ITS	IIC
	P1	- dry-lining board <i>Fermacell</i> - cross-laminated timber 175 mm - with or without gypsum board			
	P1a	- 1 layer 15,9 mm Type X gypsum board			
	P1b	- 2 layers 12,7 mm Type X gypsum board			
	P2	- 38 mm concrete topping (at least 70 kg/m ²) - acoustic panels <i>Sonopan</i> , 11 mm - cross-laminated timber 175 mm - with or without gypsum board			
	P2a	- 1 layer 15,9 mm Type X gypsum board			
	P2b	- 2 layers 12,7 mm Type X gypsum board			
	P3	- 19 mm wood panels - acoustic panels <i>Sonopan</i> , 11 mm - cross-laminated timber 175 mm - with or without gypsum board			
	P3a	- 1 layer 15,9 mm Type X gypsum board			
	P3b	- 2 layers 12,7 mm Type X gypsum board			
	P4	- 25 mm gypsum-concrete topping (> 44 kg/m ²) - acoustic panels <i>Sonopan</i> , 11 mm - cross-laminated timber 175 mm - with or without gypsum board			
	P4a	- 1 layer 15,9 mm Type X gypsum board			
	P4b	- 2 layers 12,7 mm Type X gypsum board			

Notes:

Typical compositions, roofs

Roof type	No	Description	FRR	RSI
	T1	- xxx - cross-laminated timber 175 mm - with or without gypsum board		
	T1a	- 1 layer 15,9 mm Type X gypsum board		
	T1b	- 2 layers 12,7 mm Type X gypsum board		

Notes: