

## Technical Data, Nordic X-Lam

### NORDIC X-LAM PRODUCTS

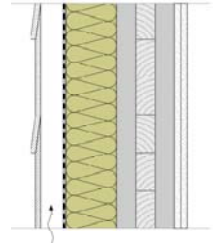
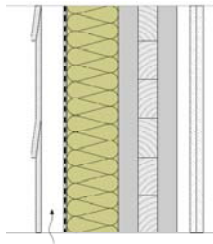
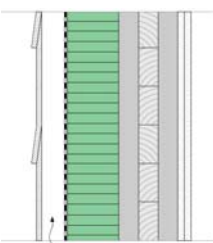
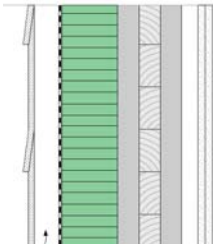
Construction	multi layered; 3, 5, and 7 plies « standard » stress grade
Dimensions	maximum width of 8 feet; including the lapped-joint of 2-1/2 inches lengths up to 64 feet thicknesses from 3 to 15 inches; standards 4-1/8, 6-7/8 and 9-5/8 inches; others 3-1/8, 3-3/8, 3-3/4 in. (3 plys); 5-1/8, 5-3/4, 6-1/4 in. (5 plys); 8-1/4 and 8-5/8 in. (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 MSR, transversal No. 3
Adhesives	weatherproof adhesives, formaldehyde free low volatile organic compounds (VOC) limits.
Density	± 35 pcf, 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 <sup>2</sup> °C/W, R = 5 ft <sup>2</sup> h °F/BTU per 4 inches
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 1.54 in./hr; 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	2-1/2-inch 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 <sup>3</sup> of wood = 1 ton less of CO <sub>2</sub> )
Warmth	pleasant, warm in-door climate

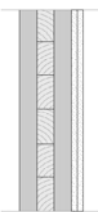
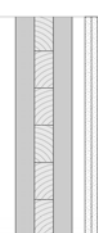
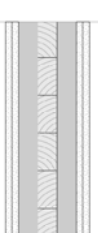
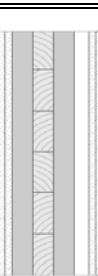


### Typical compositions, exterior walls

Exterior wall type	No	Description	FRR	ITS	RSI
	<b>E1</b>	- fiberglass insulation, 2 layers - cross-laminated timber 3-3/8 in. - with or without gypsum board			
	E1a	- 1 layer 5/8 in. Type X gypsum board			
	E1b	- 2 layers 1/2 in. Type X gypsum board			
	<b>E2</b>	- fiberglass insulation, 2 layers - cross-laminated timber 3-3/8 in. - installation cavity, 1-1/2 in. - with or without gypsum board			
	E2a	- 1 layer 5/8 in. Type X gypsum board			
	E2b	- 2 layers 1/2 in. Type X gypsum board			
	<b>E3</b>	- sprayed foam insulation, 3 in. - cross-laminated timber 3-3/8 in. - with or without gypsum board			
	E3a	- 1 layer 5/8 in. Type X gypsum board			
	E3b	- 2 layers 1/2 in. Type X gypsum board			
	<b>E4</b>	- sprayed foam insulation, 3 in. - cross-laminated timber 3-3/8 in. - installation cavity, 1-1/2 in. - with or without gypsum board			
	E4a	- 1 layer 5/8 in. Type X gypsum board			
	E4b	- 2 layers 1/2 in. Type X gypsum board			

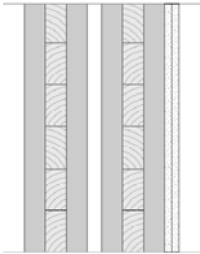
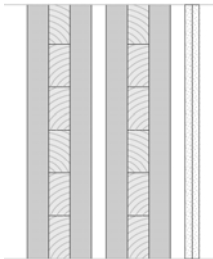
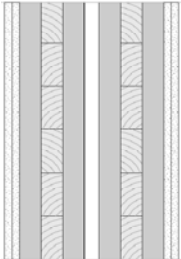
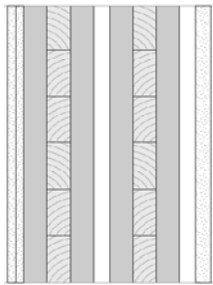
Notes:

### Typical compositions, interior walls

Interior wall type	No	Description	FRR	ITS
	<b>M1</b>	- cross-laminated timber 3-3/8 in. - with or without gypsum board		
	M1a	- 1 layer 5/8 in. Type X gypsum board		
	M1b	- 2 layers 1/2 in. Type X gypsum board		
	<b>M2</b>	- cross-laminated timber 3-3/8 in. - installation cavity, 1-1/2 in. - with or without gypsum board		
	M2a	- 1 layer 5/8 in. Type X gypsum board		
	M2b	- 2 layers 1/2 in. Type X gypsum board		
	<b>M3</b>	- with or without gypsum board - cross-laminated timber 3-3/8 in. - with or without gypsum board		
	M3a	- 1 layer 5/8 in. Type X gypsum board		
	M3b	- 2 layers 1/2 in. Type X gypsum board		
	<b>M4</b>	- with or without gypsum board - cross-laminated timber 3-3/8 in. - installation cavity, 1-1/2 in. - with or without gypsum board		
	M4a	- 1 layer 5/8 in. Type X gypsum board		
	M4b	- 2 layers 1/2 in. Type X gypsum board		

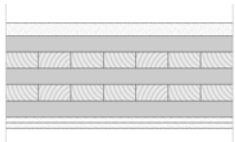
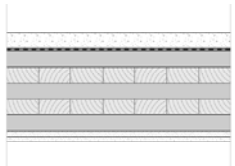
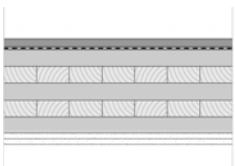
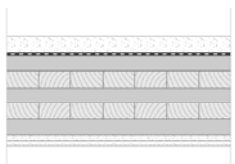
Notes:

## Typical compositions, partition walls

Partition wall type	No	Description	FRR	ITS
	<b>M5</b>	<ul style="list-style-type: none"> <li>- cross-laminated timber 3-3/8 in.</li> <li>- air space, 1 in.</li> <li>- cross-laminated timber 3-3/8 in.</li> <li>- with or without gypsum board</li> </ul>		
	M5a	- 1 layer 5/8 in. Type X gypsum board		
	M5b	- 2 layers 1/2 in. Type X gypsum board		
	<b>M6</b>	<ul style="list-style-type: none"> <li>- cross-laminated timber 3-3/8 in.</li> <li>- air space, 1 in.</li> <li>- cross-laminated timber 3-3/8 in.</li> <li>- installation cavity, 1-1/2 in.</li> <li>- with or without gypsum board</li> </ul>		
	M6a	- 1 layer 5/8 in. Type X gypsum board		
	M6b	- 2 layers 1/2 in. Type X gypsum board		
	<b>M7</b>	<ul style="list-style-type: none"> <li>- with or without gypsum board</li> <li>- cross-laminated timber 3-3/8 in.</li> <li>- air space, 1 in.</li> <li>- cross-laminated timber 3-3/8 in.</li> <li>- with or without gypsum board</li> </ul>		
	M7a	- 1 layer 5/8 in. Type X gypsum board		
	M7b	- 2 layers 1/2 in. Type X gypsum board		
	<b>M8</b>	<ul style="list-style-type: none"> <li>- with or without gypsum board</li> <li>- cross-laminated timber 3-3/8 in.</li> <li>- air space, 1 in.</li> <li>- cross-laminated timber 3-3/8 in.</li> <li>- installation cavity, 1-1/2 in.</li> <li>- with or without gypsum board</li> </ul>		
	M8a	- 1 layer 5/8 in. Type X gypsum board		
	M8b	- 2 layers 1/2 in. Type X gypsum board		

Notes:

## Typical compositions, floors

Floor type	No	Description	FRR	ITS	IIC
	<b>P1</b>	- dry-lining board <i>Fermacell</i> - cross-laminated timber 6-7/8 in. - with or without gypsum board			
	P1a	- 1 layer 5/8 in. Type X gypsum board			
	P1b	- 2 layers 1/2 in. Type X gypsum board			
	<b>P2</b>	- 1-1/2 in. concrete topping (at least 15 lb/pi <sup>2</sup> ) - acoustic panels <i>Sonopan</i> , 7/16 in. - cross-laminated timber 6-7/8 in. - with or without gypsum board			
	P2a	- 1 layer 5/8 in. Type X gypsum board			
	P2b	- 2 layers 1/2 in. Type X gypsum board			
	<b>P3</b>	- 3/4 in. wood panels - acoustic panels <i>Sonopan</i> , 7/16 in. - cross-laminated timber 6-7/8 in. - with or without gypsum board			
	P3a	- 1 layer 5/8 in. Type X gypsum board			
	P3b	- 2 layers 1/2 in. Type X gypsum board			
	<b>P4</b>	- 1 in. gypsum-concrete topping (> 9 lb/pi <sup>2</sup> ) - acoustic panels <i>Sonopan</i> , 7/16 in. - cross-laminated timber 6-7/8 in. - with or without gypsum board			
	P4a	- 1 layer 5/8 in. Type X gypsum board			
	P4b	- 2 layers 1/2 in. Type X gypsum board			

Notes:

### Typical compositions, roofs

Roof type	No	Description	FRR	RSI
	<b>T1</b>	- xxx - cross-laminated timber 6-7/8 in. - with or without gypsum board		
	T1a	- 1 layer 5/8 in. Type X gypsum board		
	T1b	- 2 layers 1/2 in. Type X gypsum board		

Notes: