

LCBO Stringer Pallet Specification Sheet

Pallet ID: LCBO Standard Stringer Class Pallet Classification: Wooden 48" x 40" x 5.63" double faced non-reversible, notched stringer type, partial 4-way pallet, new manufacture	All LCBO pallets must be manufactured and repaired to these specifications. All dimensions are in inches and represent the finished lengths, widths and thicknesses of all materials. All lumber are new.
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Side View

End View

** Not drawn to scale*

Top View

Bottom View

Nominal Load Capacity:
Block stacked up to 5 unit loads high.

53' Trailer Load Quantity:
Minimum 390 pieces
Maximum 420 pieces

Pallet Weight Std. Capacity:
2,800 lbs (1.27 Tons) in normal operating circumstances with a uniformly distributed load

Average Pallet Weight:
50-55 lbs (23-25 Kg)

Top Deck

Style: Top Deckboards

Number	Thickness	Width	Length	
4	0.875"	5.75"	40"	Lead boards
4	0.875"	3.75"	40"	Inner centre board

Pallet area coverage: 83%

Bottom Deck

Style: Bottom deck boards - chamfered¹

Number	Thickness	Width	Length	
2	0.875"	5.75"	40.0"	Lead boards chamfered
2	0.875"	3.75"	40.0"	Inner board chamfered
1	0.875"	5.75"	40.0"	Centre long board

Pallet area coverage: 54%

Stringers

Style: Stringers with 2 notches 10" length and end plated

Number	Width	Height	Length	
2	2.75"	3.875"	48.0"	Outside stringer board
1	1.75"	3.875"	48.0"	Centre stringer board

End Plates

Style: Zinc coated, galvanized end plate, Grade B or better Ga. #18

Number	Size	Location
4	2.375" x 3.5"	Both ends of the two outside pallet stringer
2	1.625" x 3.5"	Both ends of the centre stringer

Nail Fasteners

Fastener Type: Helically fluted or threaded with multiple flutes per fastener

Fastener Length: 2.5" +/- 0.0625"

Thread Length: 1.5" min.um

Wire Diameter: No less than 0.118"

Head Diameter: 0.281" +/- 0.02"

Head height: 0.042" minimum

Thread Angle: 60 - 69 degrees

MIBANT Angle: 8 - 24 degrees

FSI: 68% - 100%

FSI: No less than 98%

Fastener Point: Blunt diamond or chisel

Total Number: 99 Fasteners

All pallets must be manufactured & repaired using a machine.

Paint and Stenciling

Name/ID	Trade Name	Application
18 Y005 MF2	Yellow Latex Paint	Stringer ends and outside stringers
18 A002 MF2	Flat Black Latex Paint	Logo Stenciling & Pallet Manufacturing Code

Non-toxic, lead free, latex, water based, water resistant

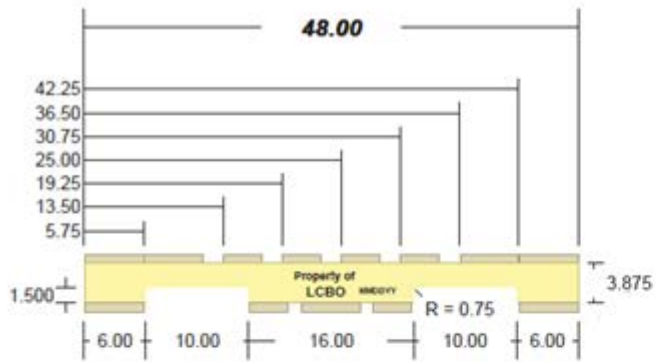
Chamfered¹
The bottom lead boards must be chamfered on both sides and the bottom inner lead boards must be chamfered on the upper exposed side or chamfered on both upper exposed sides. The vertical edge of lead boards under a chamfer must be no less than 1/4" (6 mm) or more than 3/8" (9 mm). All chamfers must be cut at 40 degrees, plus or minus 5 degrees. Each chamfer must come to within 2 1/2" (64 mm) of each stringer with a plus or minus 1/2" (13 mm) tolerance.

Lumber: Utility & BTR

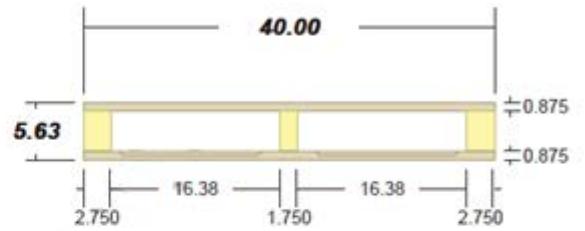
Acceptable Wood Species: Class 1, 2, 3, 4, 6, 11, 12, 21, 22, 29²
Stringers are manufactured from hardwood species from Class 1, 2, 3, 4, 6, 21, 29² (11, 12 and 22 are not permitted)

² Refer to the LCBO Approved Wood Species for Use in Manufacturing Stringer and Block Pallets on pages 3 & 4

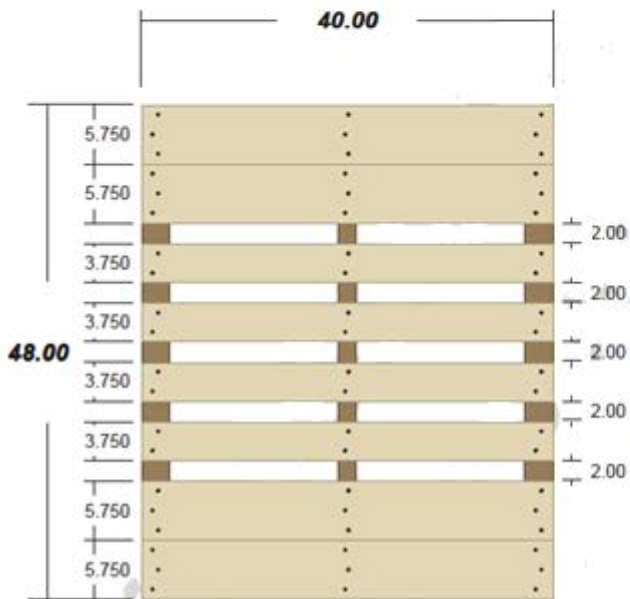
Side View



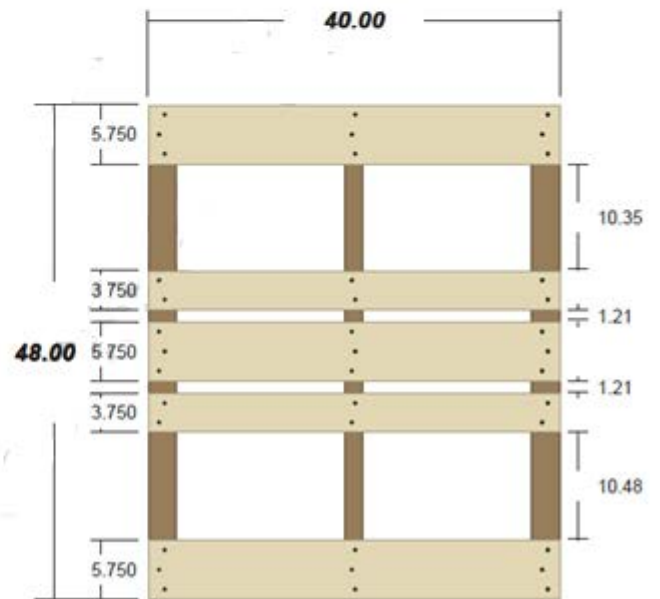
End View



Top View



Bottom View



LCBO Approved Wood Species for Use in Manufacturing Stringer and Block Pallets

Class ④	Hardwood	Common Name	Genus	Species	① & ② Specific Gravity	① & ② Density (lb/cf)	③ Static Bending (10 ⁶ psi)	③ Impact Bending (inches)	③ Crushing Strength (psi)	③ Fiber Stress (psi)	③ Shear Strength (psi)
21	Yes	Oak, Eastern Red	Quercus	rubra	0.63	39.3	1.82	43	6760	1010	1780
21	Yes	Oak, Eastern White	Quercus	alba	0.68	42.4	1.78	37	7440	1070	2000
1	Yes	Ash, Green	Fraxinus	pennsylvanica	0.56	34.9	1.66	32	7080	1310	1910
1	Yes	Ash, White	Fraxinus	americana	0.60	37.4	1.74	43	7410	1160	1910
1	Yes	Beech, American	Fagus	grandifolia	0.64	39.9	1.72	41	7300	1010	2010
1	Yes	Birch, Sweet	Betula	lenta	0.65	40.6	2.17	47	8540	1080	2240
1	Yes	Birch, Yellow	Betula	alleghaniensis	0.62	38.7	2.01	55	8170	970	1880
1	Yes	Cherry, Black	Prunus	serotina	0.50	31.2	1.49	29	7110	690	1700
1	Yes	Elm, Rock	Ulmus	thomasii	0.63	39.3	1.54	56	7050	1230	1920
1	Yes	Elm, Slippery	Ulmus	rubra	0.53	33.1	1.49	45	6360	820	1630
1	Yes	Hickory, Bitternut	Carya	cordiformis	0.66	41.2	1.79	66	9040	1680	n/a
1	Yes	Hickory, Mockernut	Carya	alba	0.72	44.9	2.22	77	8940	1730	1740
1	Yes	Hickory, Nutmeg	Carya	myristiciformis	0.60	37.4	1.70	n/a	6910	1570	n/a
1	Yes	Hickory, Pecan	Carya	illinoensis	0.66	41.2	1.73	44	7850	1720	2080
1	Yes	Hickory, Pignut	Carya	glabra	0.75	46.8	2.26	74	9190	1980	2150
1	Yes	Hickory, Shagbark	Carya	ovata	0.72	44.9	2.16	67	9210	1760	2430
1	Yes	Hickory, Shellbark	Carya	laciniosa	0.69	43.1	1.89	88	8000	1800	2110
1	Yes	Hickory, Water	Carya	aquatica	0.62	38.7	2.02	53	8600	1550	n/a
1	Yes	Honeylocust	Gleditsia	triacanthos	0.65	40.6	1.63	47	7500	1840	2250
1	Yes	Locust, Black	Robinia	pseudoacacia	0.69	43.1	2.05	57	10180	1830	2480
1	Yes	Maple, Black	Acer	nigrum	0.57	35.6	1.62	40	6680	1020	1820
1	Yes	Maple, Red	Acer	rubrum	0.54	33.7	1.64	32	6540	1000	1850
1	Yes	Maple, Sugar	Acer	saccharum	0.63	39.3	1.83	39	7830	1470	2330
1	Yes	Tanoak	Lithocarpus	densiflorus	0.62	38.7	n/a	n/a	n/a	n/a	n/a
1	Yes	Walnut, Black	Juglans	nigra	0.55	34.3	1.68	34	7580	1010	1370
2	Yes	Ash, Oregon	Fraxinus	latifolia	0.55	34.3	1.36	33	6040	1250	1790
2	Yes	Maple, Bigleaf (Oregon)	Acer	macrophyllum	0.48	30.0	1.45	28	5950	750	1730

LCBO Approved Wood Species for Use in Manufacturing Stringer and Block Pallets

Class ④	Hardwood	Common Name	Genus	Species	① & ② Specific Gravity	① & ② Density (lb/cf)	③ Static Bending (10 ⁶ psi)	③ Impact Bending (inches)	③ Crushing Strength (psi)	③ Fiber Stress (psi)	③ Shear Strength (psi)
11	No	Douglas-Fir, Coast	Pseudotsuga	menziesii	0.48	30.0	1.95	31	7230	800	1130
11	No	Douglas-Fir, Interior North	Pseudotsuga	menziesii	0.48	30.0	1.79	26	6900	770	1400
11	No	Douglas-Fir, Interior South	Pseudotsuga	menziesii	0.48	30.0	1.49	20	6230	740	1510
11	No	Douglas-Fir, Interior West	Pseudotsuga	menziesii	0.48	30.0	1.83	32	7430	760	1290
11	No	Larch, Eastern (Tamarack)	Larix	laricina	0.53	33.1	1.64	23	7160	800	1280
11	No	Larch, Western	Larix	occidentalis	0.52	32.4	1.87	35	7620	930	1360
22	No	Pine, Loblolly (SYP)	Pinus	taeda	0.51	31.8	1.79	30	7130	790	1390
22	No	Pine, Longleaf (SYP)	Pinus	palustris	0.59	36.8	1.98	34	8470	960	1510
22	No	Pine, Shortleaf (SYP)	Pinus	echinata	0.51	31.8	1.75	33	7270	820	1390
29	Yes	Yellow-Poplar (Tuliptree)	Liriodendron	tulipifera	0.42	26.2	1.58	24	5540	500	1190
4	Yes	Oak, Black	Quercus	kelloggii	0.55	34.3	1.64	41	6520	930	1910
4	Yes	Oak, Oregon White	Quercus	garryana	0.72	44.9	2.05	49	8600	1190	2000
6	Yes	Alder, Red	Alnus	rubra	0.41	25.6	1.38	20	5820	440	1080
3	Yes	Ash, Black	Fraxinus	nigra	0.49	30.6	1.60	35	5970	760	1570
3	Yes	Ash, Pumpkin	Fraxinus	profunda	0.52	32.4	n/a	n/a	n/a	n/a	n/a
3	Yes	Birch, Paper	Betula	papyrifera	0.55	34.3	1.59	34	5690	600	1210
3	Yes	Hackberry	Celtis	occidentalis	0.53	33.1	1.19	43	5440	890	1590
3	Yes	Magnolia, Southern	Magnolia	grandiflora	0.50	31.2	1.40	29	5460	860	1530
3	Yes	Magnolia, Cucumbertree	Magnolia	acuminata	0.48	30.0	1.82	35	6310	570	1340
3	Yes	Sweetgum	Liquidamba	styraciflua	0.52	32.4	1.64	32	6320	620	1600
3	Yes	Sycamore, American	Platanus	occidentalis	0.49	30.6	1.42	26	5380	700	1470
12	No	Fir, Pacific silver	Pseudotsuga	amabilis	0.43	26.8	1.76	24	6410	450	1220
12	No	Hemlock, Western	Tsuga	heterophylla	0.45	28.1	1.63	23	7200	550	1290

① 12% moisture content by volume basis (average) ② Source - U.S. Dept. of Agriculture, Forest Service Northern Research Station ③ Source - U.S. Forest Products Laboratory ④ Source – NWPCA ¹ , Uniform Standard for Wood Pallets (2011) ¹ National Wooden Pallet and Container Association	Wood Group ④ Medium/High Density Woods Low Density Woods Hardwoods Softwoods	Wood Species Classes Contained In Group All species listed in Species Classes 1, 2, 3, 4, 11, 21, 22 All species listed in Species Classes 6, 7, 12, 13, 14, 29 All species listed in Species Classes 1, 2, 3, 4, 6, 7, 21, 29 All species listed in Species Classes 11, 12, 13, 14, 22
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