LBV

PERFORATED PLATE

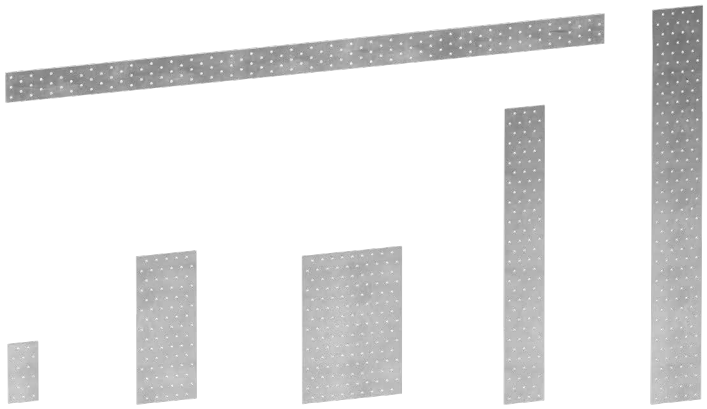
CE
EN 14545

WIDE RANGE
Several versions are available, designed to face all timber construction needs. The LBV plates can create simple beam and joist joints through to the most important inter-story connections.

READY FOR USE
An "off the shelf solution" that meets the most common requirements and minimises installation times. It offers an excellent cost to performance ratio.

EFFICIENCY
The new LBA nails achieve excellent strengths with a reduced number of fasteners.

USA DESIGN VALUES
CANADA, EU and more design values available online.



SERVICE CONDITION

DRY

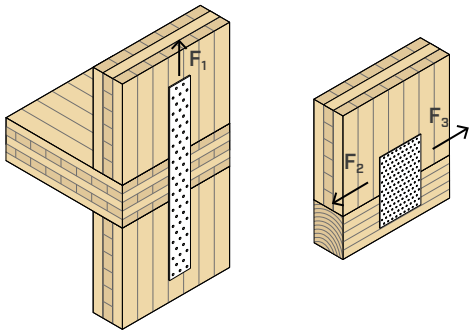
MATERIAL

S250 Z275 S250GD + Z275 carbon steel

THICKNESS [ga | in]

16 ga | 0.06 in
14 ga | 0.08 in

EXTERNAL LOADS



FIELD OF USE

Tension joints with small to medium stresses through a simple and cost-effective solution.
Timber-to-timber configuration.
To be used in dry condition.

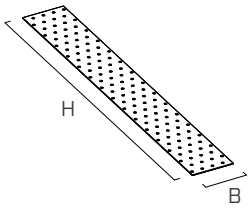
Can be applied to:
- solid timber and glulam
- timber frame
- CLT and LVL panels

CODES AND DIMENSIONS

LBV 16 ga [0.06 in]

S250 Z275

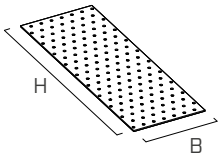
CODE	B [in]	H [in]	s [in]	n Ø0.20 [pcs]		pcs
LBV60600	2 3/8	23 5/8	0.06	75	●	10
LBV60800	2 3/8	31 1/2	0.06	100	●	10
LBV80600	3 1/8	23 5/8	0.06	105	●	10
LBV80800	3 1/8	31 1/2	0.06	140	●	10
LBV100800	4	31 1/2	0.06	180	●	10



LBV 14 ga [0.08 in]

S250 Z275

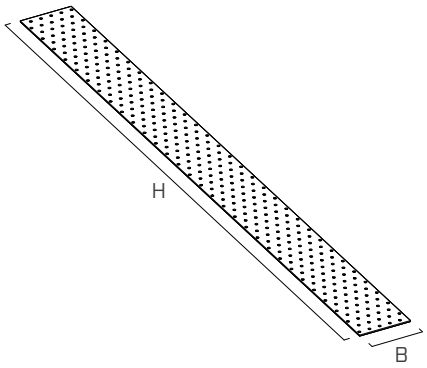
CODE	B [in]	H [in]	s [in]	n Ø0.20 [pcs]		pcs
LBV40120	1 9/16	4 3/4	0.08	9	●	200
LBV40160	1 9/16	6 1/4	0.08	12	●	50
LBV60140	2 3/8	5 1/2	0.08	18	●	50
LBV60200	2 3/8	8	0.08	25	●	100
LBV60240	2 3/8	9 1/2	0.08	30	●	100
LBV80200	3 1/8	8	0.08	35	●	50
LBV80240	3 1/8	9 1/2	0.08	42	●	50
LBV80300	3 1/8	11 3/4	0.08	53	●	50
LBV100140	4	5 1/2	0.08	32	●	50
LBV100200	4	8	0.08	45	●	50
LBV100240	4	9 1/2	0.08	54	●	50
LBV100300	4	11 3/4	0.08	68	●	50
LBV100400	4	15 3/4	0.08	90	●	20
LBV100500	4	19 3/4	0.08	112	●	20
LBV120200	4 3/4	8	0.08	55	●	50
LBV120240	4 3/4	9 1/2	0.08	66	●	50
LBV120300	4 3/4	11 3/4	0.08	83	●	50
LBV140400	5 1/2	15 3/4	0.08	130	●	15
LBV160400	6 1/4	15 3/4	0.08	150	●	15
LBV200300	8	11 3/4	0.08	142	●	15



LBV 14 ga [0.08 in] x 47 1/4 in

S250 Z275

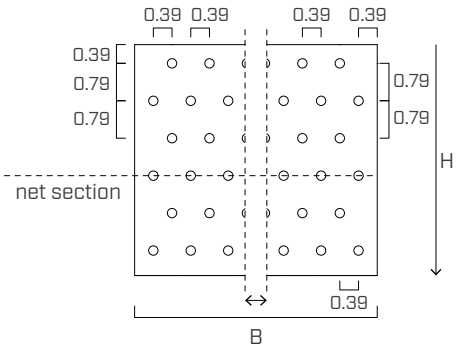
CODE	B [in]	H [in]	s [in]	n Ø0.20 [pcs]		pcs
LBV401200	1 9/16	47 1/4	0.08	90	●	20
LBV601200	2 3/8	47 1/4	0.08	150	●	20
LBV801200	3 1/8	47 1/4	0.08	210	●	20
LBV1001200	4	47 1/4	0.08	270	●	10
LBV1201200	4 3/4	47 1/4	0.08	330	●	10
LBV1401200	5 1/2	47 1/4	0.08	390	●	10
LBV1601200	6 1/4	47 1/4	0.08	450	●	10
LBV1801200	7 1/8	47 1/4	0.08	510	●	10
LBV2001200	8	47 1/4	0.08	570	●	5
LBV2201200	8 5/8	47 1/4	0.08	630	●	5
LBV2401200	9 1/2	47 1/4	0.08	690	●	5
LBV2601200	10 1/4	47 1/4	0.08	750	●	5
LBV2801200	11	47 1/4	0.08	810	●	5
LBV3001200	11 3/4	47 1/4	0.08	870	●	5
LBV4001200	15 3/4	47 1/4	0.08	1170	●	5



FASTENERS

type	description		d [in]	support
LBA	high bond nail		0.157	

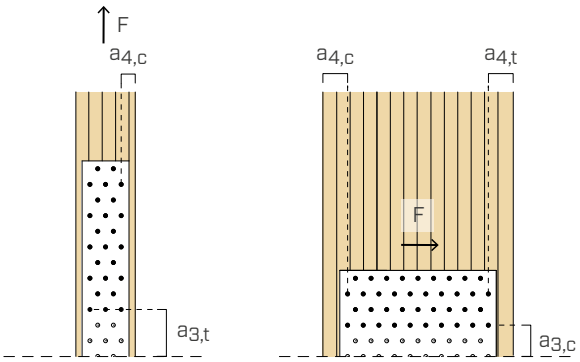
GEOMETRY



B [in]	net area holes pcs	B [in]	net area holes [pcs]	B [in]	net area holes [pcs]
1 9/16	2	5 1/2	7	9 1/2	12
2 3/8	3	6 1/4	8	10 1/4	13
3 1/8	4	7 1/8	9	11	14
4	5	8	10	11 3/4	15
4 3/4	6	8 5/8	11	15 3/4	20

INSTALLATION

MINIMUM DISTANCES

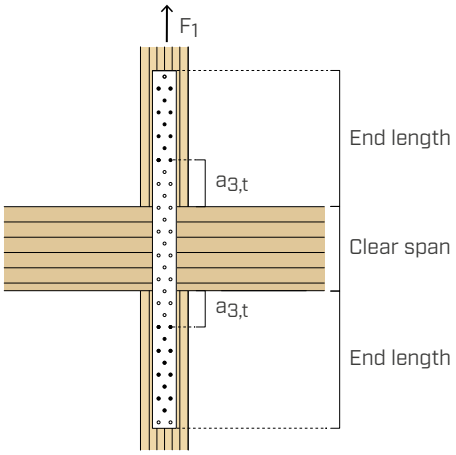


load-to-grain angle α = 0°			nail LBA Ø0.157
lateral connector - unloaded edge	$a_{4,c}$	[in]	≥ 0.39
connector - loaded end	$a_{3,t}$	[in]	≥ 1.57

load-to-grain angle α = 90°			nail LBA Ø4
lateral connector - loaded edge	$a_{4,t}$	[in]	≥ 0.63
lateral connector - unloaded edge	$a_{4,c}$	[in]	≥ 0.24
connector - unloaded end	$a_{3,c}$	[in]	≥ 0.63

Minimum distances for solid timber or glulam consistent with specific gravity G = <0.5

STRUCTURAL VALUES | TIMBER-TO-TIMBER | F_1



type	Ga.	DF/SP		SPF/HF		T_{ASD} [2][3]
		fasteners	end length[1]	fasteners	end length[1]	
		pcs. - LBA Ø x L [in]	[in]	pcs. - LBA Ø x L [in]	[in]	[lbf]
LBV60XXX	16	16 - Ø 0.157 x 2 3/8	4 1/3	20 - Ø 0.157 x 2 3/8	5 1/8	**3187**
LBV80XXX	16	20 - Ø 0.157 x 2 3/8	4 1/3	26 - Ø 0.157 x 2 3/8	5 1/8	**4249**
LBV100XXX	16	26 - Ø 0.157 x 2 3/8	4 1/3	32 - Ø 0.157 x 2 3/8	5 1/8	**5311**
LBV40XXX	14	14 - Ø 0.157 x 2 3/8	4 1/3	14 - Ø 0.157 x 2 3/8	6	**2833**
LBV60XXX	14	18 - Ø 0.157 x 2 3/8	5 1/8	18 - Ø 0.157 x 2 3/8	5 1/8	**3777**
LBV80XXX	14	22 - Ø 0.157 x 2 3/9	4 1/3	26 - Ø 0.157 x 2 3/9	5 1/8	**5665**
LBV100XXX	14	28 - Ø 0.157 x 2 3/10	4 1/3	32 - Ø 0.157 x 2 3/10	5 1/8	**7082**
LBV120XXX	14	34 - Ø 0.157 x 2 3/11	4 1/3	38 - Ø 0.157 x 2 3/11	5 1/8	**8498**
LBV140XXX	14	38 - Ø 0.157 x 2 3/12	4 1/3	44 - Ø 0.157 x 2 3/12	5 1/8	**9914**
LBV160XXX	14	44 - Ø 0.157 x 2 3/13	4 1/3	50 - Ø 0.157 x 2 3/13	5 1/8	**11330**
LBV180XXX	14	50 - Ø 0.157 x 2 3/13	4 1/3	56 - Ø 0.157 x 2 3/13	5 1/8	**12747**
LBV200XXX	14	54 - Ø 0.157 x 2 3/14	4 1/3	64 - Ø 0.157 x 2 3/14	5 1/8	**14163**
LBV220XXX	14	60 - Ø 0.157 x 2 3/15	4 1/3	68 - Ø 0.157 x 2 3/15	5 1/8	**15579**
LBV240XXX	14	66 - Ø 0.157 x 2 3/16	4 1/3	72 - Ø 0.157 x 2 3/16	5 1/8	**16996**
LBV260XXX	14	70 - Ø 0.157 x 2 3/17	4 1/3	80 - Ø 0.157 x 2 3/17	5 1/8	**184122**
LBV280XXX	14	76 - Ø 0.157 x 2 3/18	4 1/3	86 - Ø 0.157 x 2 3/18	5 1/8	**19828**
LBV300XXX	14	82 - Ø 0.157 x 2 3/19	4 1/3	94 - Ø 0.157 x 2 3/19	5 1/8	**21245**
LBV400XXX	14	108 - Ø 0.157 x 2 3/20	4 1/3	122 - Ø 0.157 x 2 3/20	5 1/8	**28326**

[1] Ensure minimum edge distance $a_{3,t}$ =1.57" is satisfied.
[2] C_d = 1.6 has been considered in this table to account for temporarily uplift load.
[3] The tensile strength of the system T_{ASD} is the minimum between the $T_{ASD,steel}$ (plate side tensile strength) and $T_{ASD,timber}$ (shear resistance of the connectors used for fastening).

GENERAL PRINCIPLES

- Structural values are calculated according to NDS2024.
- Dimensioning and verification of the timber elements must be carried out separately.
- It is recommended to place the connectors symmetrically with respect to the load direction.