Gang-Lam® W LVL Billet Beam

Production Description

LP Gang-Lam® W laminated veneer lumber (LVL) is made by combining exterior adhesives and ultrasonically graded veneers.

Basic Uses

Engineered for strength, Gang-Lam W LVL billet beams can be used for beams, headers or other primary load-carrying members.

Materials & Fabrication

LP Gang-Lam W LVL is manufactured from ultrasonically graded veneers. Veneer sheets are laid up with all the grain running parallel to the length of the beam. Defects such as knots and splits are distributed at random throughout the beam. This produces a billet beam which is stronger and more consistent than solid sawn lumber.

In addition, the veneers are dried in the manufacturing process, combined with exterior adhesives under heat and pressure producing straight consistent beams and reducing problems common to solid sawn lumber like twisting, splitting and checking.

Technical Data

Code Compliance Reports

Gang-Lam W LVL has evaluation reports from ICBO ER-5004, BOCA 97-53, SBCCI 9490C and other code agencies.

Third Party Inspection

While the manufacturing process is subject to rigorous quality controls and checking, the entire process is also audited by PFS Corporation, an independent, third party inspection agency.

Standard Sizes

Gang-Lam W LVL billet beams are available in standard thicknesses of 3-1/2", 5-1/4" and 7"; depths are 7-1/4", 9-1/2", 11-7/8", 14", 16" and 18" with lengths up to 60'.

Limitations

- If you do not know the correct design criteria and loading, seek qualified help from the architect, engineer or designer of the structure.
- Gang-Lam W LVL billet beams must be used under dry, well-ventilated conditions and should not be used where moisture content exceeds 16%. Careful on-site storage is also important.
- The tables and design values listed in this guide require continuous lateral restraint of the compression edge of Gang-Lam LVL beams. Continuous restraint is defined as a maximum unbraced length of 24". This restraint is normally provided by sheathing and/or framing members, which must be adequately anchored to the beam and the supporting structure. Framing conditions that do not provide continuous lateral restraint require special design. Contact your LP Engineered Wood Products distributor. Caution: Failure to provide adequate lateral restraint could result in unstable beams and reduced load capacity.
- Lateral restraint must also be provided at bearings or supports to prevent the beam from rotating or twisting.
- For other conditions such as concentrated loads, unequal spans, etc., contact your LP Engineered Wood Products distributor.

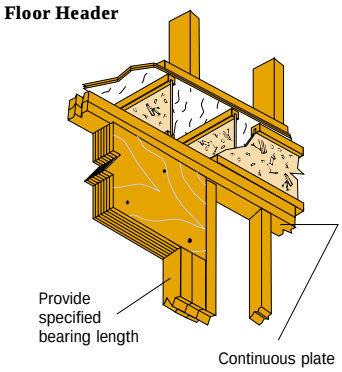
Environmental Impact

LP is committed to a healthy environment worldwide by taking a leadership role in our communities to be good neighbors. Our Corporate Policy on Protection of the Environment is a statement of our environmental goals. We believe sound business practices and efforts to enhance the environment go hand-in-hand.

- Meet or surpass the requirements of environmental laws and regulations.
- Maintain a responsible role in managing natural resources.
- Conserve non-renewable resources through efficient use and strategic planning.
- Fully account for environmental considerations in corporate planning and decision making.

Availability

Gang-Lam W LVL billet beams are available in the western United States.



Limited Lifetime Warranty

LP gives you a limited product warranty for the life of the structures you design using Gang-Lam W LVL. With this warranty, you can feel confident that Gang-Lam W LVL billet beams are free from defects in material and workmanship. For detailed limited warranty terms, contact the Customer Support number on the back.

LP™
Engineered Wood Products

ALLOWABLE STRESSES (PSI) FOR BEAMS

GRADE	BENDING	MOE	COMPRESSION	COMPRESSION	SHEAR
	F_b*	(x 10^6)	F_c (parallel to grain)	F_{cp} (perpendicular to grain)	F_v
2950 F_b-2.0E	2950	2.0	3200	1020	290

* F_b is for 12" depth (d).

For depths greater than 12", adjust F_b by $(12/d)^{1/7}$.
For depths less than 12", adjust F_b $(12/d)^{1/9}$.
For depths less than 5-1/2", adjust the F_b by 1.09.

SECTION PROPERTIES

	MAXIMUM MOMENT (lb-ft)				MAXIMUM SHEAR (lbs)				MOMENT OF INERTIA (in^4)				WEIGHT (plf)			
DEPTH (in)	1-3/4"	3-1/2"	5-1/4"	7"	1-3/4"	3-1/2"	5-1/4"	7"	1-3/4"	3-1/2"	5-1/4"	7"	1-3/4"	3-1/2"	5-1/4"	7"
7-1/4	3986	7972	11958	15944	2452	4905	7358	9808	55	111	168	220	3.17	6.34	9.51	12.68
9-1/2	6641	13282	19924	26564	3214	6428	9642	12856	125	250	375	500	4.16	8.31	12.47	16.64
11-7/8	10123	20246	30368	40492	4017	8035	12053	16068	244	488	732	976	5.20	10.39	15.59	20.80
14	13747	27494	41242	54988	4736	9473	14210	18944	400	800	1200	1600	6.13	12.25	18.38	24.52
16	17616	35233	52849	70464	5413	10826	16240	21652	597	1194	1792	2388	7.00	14.00	21.00	28.00
18	21923	43847	65771	87692	6090	12180	18270	24360	850	1701	2551	3400	7.88	15.75	23.63	31.52

BEARING CHARTS

1-3/4" THICKNESS											
Bearing Length (in)	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	4-1/2"	5"	5-1/2"	6"	6-1/2"
Maximum Reaction	2677	3570	4462	5355	6247	7140	8032	8925	9817	10710	11602
Bearing Length (in)	7"	7-1/2"	8"	8-1/2"	9"	9-1/2"	10"	10-1/2"	11"	11-1/2"	12"
Maximum Reaction	12495	13387	14280	15172	16065	16957	17850	18742	19635	20527	21420
3-1/2" THICKNESS											
Bearing Length (in)	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	4-1/2"	5"	5-1/2"	6"	6-1/2"
Maximum Reaction	5355	7140	8925	10710	12495	14280	16065	17850	19635	21420	23205
Bearing Length (in)	7"	7-1/2"	8"	8-1/2"	9"	9-1/2	10"	10-1/2"	11"	11-1/2"	12"
Maximum Reaction	24990	26775	28560	30345	32130	33915	35700	37485	39270	41055	42840
5-1/4" THICKNESS											
Bearing Length (in)	1-1/4"	2"	2-1/2"	3"	3-1/2"	4"	4-1/2"	5"	5-1/2"	6"	6-1/2"
Maximum Reaction	8032	10710	13387	16065	18742	21420	24097	26775	29452	32130	34807
Bearing Length (in)	7"	7-1/2"	8"	8-1/2"	9"	9-1/2"	10"	10-1/2"	11"	11-1/2"	12"
Maximum Reaction	37485	40162	42840	45517	48195	50872	53550	56227	58905	61582	64260
7" THICKNESS											
Bearing Length (in)	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	4-1/2"	5"	5-1/2"	6"	6-1/2"
Maximum Reaction	10710	14280	17850	21420	24990	28560	32130	35700	39270	42840	46410
Bearing Length (in)	7"	7-1/2"	8"	8-1/2"	9"	9-1/2"	10"	10-1/2"	11"	11-1/2"	12"
Maximum Reaction	49980	53550	57120	60690	64260	67830	71400	74970	78540	82110	85680

Modification Factors: Allowable stresses listed above for bending (F_b), compression parallel to grain (F_c), shear (F_v); also maximum moment and maximum shear values are for normal duration. These may be increased where allowed by code for shorter load durations.

Fastener Values: Allowable withdrawal loads for nails installed perpendicular and parallel to glue lines of the LVL are as provided in the code for sawn lumber having a minimum specific gravity of 0.46. Allowable lateral loads for nails installed perpendicular and parallel to glue lines of the LVL are as provided in the code for solid sawn lumber having a minimum specific gravity of 0.50. Nails installed perpendicular to the wide face of veneers may be installed in accordance with the code. Nails installed parallel to the wide face of veneers must be spaced at least 3" on center for 8d common nails and 4" on center for 10d common nails.

Allowable loads for bolts installed perpendicular to the wide face of veneers with the loads applied parallel and perpendicular to the grain of the veneers are as provided in the code for solid sawn lumber having specific gravities of 0.42 and 0.50 respectively.

How to use bearing charts:

1. Determine the thickness required for the Gang-Lam W LVL beam and calculate the maximum reaction.
2. Select the appropriate table for 1-3/4", 3-1/2", 5-1/4" or 7".
3. Select a bearing length with a maximum reaction that meets or exceeds your calculated value.
4. Make sure the support is structurally adequate to carry the reaction.

Example: 3-1/2" Gang-Lam W LVL with a reaction of 9200 lbs.

Solution: Select a 3" beam bearing length with a maximum reaction of 10710 Lbs.

Notes:

1. Tabulated values are based on a support with minimum allowable bearing strength of 1020 psi. This is suitable for beams bearing on steel or the end grain of studs.
2. Make sure the support is structurally adequate to carry the reaction. Compressive strength parallel to grain of studs may require more studs than the bearing length above indicates.
3. For beams bearing on wood plates, the required bearing length will increase based on the bearing strength (compression perpendicular to grain) of the species and grade used for the plate material.
4. Verify local code requirements concerning minimum bearing.

For additional information as well as handling and installation details and procedures, consult LP's Gang-Lam W LVL product guide as well as handling and installation recommendations.

Note: Material Safety Data Sheets are available. Please contact Customer Support.

For more information on the full line of LP Engineered Wood Products, including our warranty, or the nearest distributor, please contact 1.800.648.6893 or e-mail customer.support@lpcorp.com.
Visit our web site at www.lpcorp.com.

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Third Party Inspection by: PFS Corporation

LP™ Engineered Wood Products