



(BS) EN 14279 : 2004 + A1: 2009 (confirmed 2014)

Laminated Veneer Lumber (LVL) - Definitions, classification and specifications

This standard gives definitions, a classification and specifies the requirements for LVL for general purposes or for use in construction in dry, humid or exterior conditions. It is referenced in the European harmonised standard for wood-based panel products EN 13986.

LVL is covered by two European standards: EN 14374 and EN 14279. Under Mandate M/112 'Structural timber products and ancillaries', LVL is a material used for manufacturing structural products. However, under Mandate M/113 'Wood-based panels', LVL is classified as a product. Therefore, EN 14279 applies to LVL products for general purpose as well as for use in non-load bearing construction, while EN 14374 covers the use of LVL for structural applications.

For standards guidance on durability issues, APA refers specifiers to DD CEN/TS 1099 and EN 636:2012+A1:2015, also see below.

| Classification of LVL and its appropriate end use service conditions | |
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| LVL Classification | Service Class Description |
| LVL/1: - for use in dry conditions | Service Class 1 in Eurocode 5 These conditions correspond to a moisture content in the LVL arising from a temperature of 20°C with a relative humidity of the surrounding air only exceeding 65% for a few weeks of the year. Panels of this type are suitable for use in Use Class 1 of EN 335-3. |
| LVL/2: - for use in humid conditions including protected external applications. It is also capable of resisting exposure to the weather for short periods. Use in interior applications where the humidity rises above that given for dry use is also acceptable. | Service Class 2 in Eurocode 5 These conditions correspond to a moisture content in the LVL arising from a temperature of 20°C with a relative humidity of the surrounding air only exceeding 85% for a few weeks of the year. Panels of this type are suitable for use in Use Classes 1 & 2 of EN 335-3. |
| LVL/3: - for use in exterior conditions including liquid water or water vapour in damp but ventilated locations. | Service Class 3 in Eurocode 5 -LVL for use in climatic conditions leading to a higher moisture content than in service class 2. Panels of this type are suitable for use in Use Classes 1, 2 & 3 of EN 335-3. |



The general requirement for LVL covered by this standard are:-

- Tolerances on dimensions
 - o Thickness (sanded and unsanded)
 - o Length
 - o Width
- Edge straightness
- Squareness
- Moisture content
- Mean density tolerances
- Bending strength
 - o Major axis
 - o Minor axis
- Modulus of elasticity in bending
 - o Major axis
 - o Minor axis

- Bond quality
- Veneer grade
 - o Hardwood
 - o Softwood

- Formaldehyde release
- Biological durability
- Verification of compliance with the standards
- Factory production control
- Marking

The durability of LVL - where to find additional guidance

- The updated standard EN 335:2013 has no information on the durability for LVL (neither did its earlier edition, EN 335-3:1995). For guidance, APA refers specifiers to CEN/TC 1099 and EN 636:2012+A1:2015.
- To find guidance on the durability of LVL, refer to the Use Class definitions for plywood in EN 636:2012+A1:2015.
- CEN/TC 1099 provides guidance on factors affecting durability and on precautionary measures to be considered for plywood.
- EN 14279:2004 - Laminated Veneer Lumber (LVL) - Definitions, classification and specification, refers to the Use Class definitions in the now withdrawn EN 335-3:1995 for plywood. This info is in EN 14279:2004, clauses 5.3.2, 5.4.2 and 5.5.2 on biological durability.