

ICS 91.080.20
CCS P 23

LY

**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

LY/T 3142-2019

**Technical standard for log house
(English Translation)**

Issued on: October 23, 2019

Implemented on: April 1, 2020

Issued by: State Forestry and Grassland Administration

Table of Contents

Foreword	
1 Scope	
2 Normative references	
3 Terms and definitions	
4 Materials	
4.1 Logs and sawn timber	
4.2 Laminate for structural use	
4.3 Metal connectors	
5 Yokogi	
5.1 Cross-section form	
5.2 Notch form at the end of the beam	
6 Basics	
7 Wall	
7.1 Cross-wood stacked form	
7.2 Horizontal beam connection	
7.3 Upper and lower crossbar seals	
7.3 Wall and post connection	
7.4 Minimum wall thickness	
7.5 Protruding length of crossbar end	
7.6 Structural Wall	
7.7 Strengthening pins	
7.8 Use of through bolts at the intersection of exterior walls	
9 Roof	
10 Antisepsis requirements and measures	
11 Fire retardant requirements and measures	
12 Thermal insulation requirements and measures	
13 Sound insulation requirements and measures	

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

Please note that some elements of this document may involve patents. The issuer of this

document is not responsible for identifying these patents.

This standard was proposed and managed by the National Timber Standardization Technical Committee Structural Timber Subcommittee (SAC/TC41/SC4).

This standard was drafted. Institute of Wood Industry, Chinese Academy of Forestry, Dalian Fangyuan Wooden Villa Manufacturing Co., Ltd., Beijing Jiaotong University, National Center for Quality Supervision and Inspection of Wood-based Panels and Wood and Bamboo Products, National Engineering Research Center of Wood Industry, Beijing Forestry University, Torch High-tech Industrial Development Center of the Ministry of Science and Technology, Guangdong Runcheng Chuangzhan Wood Industry Co., Ltd., Manzhouli Kairun Wood Industry Co., Ltd., Dongguan Fu Lin Energy-saving Housing Technology Co., Ltd., Manzhouli Lvyuan Wooden Products Development Co., Ltd., Beijing Hyde Wooden House Co., Ltd.

1 Scope

This standard specifies the basic rules, materials, components, protection, thermal insulation, sound insulation, construction and engineering acceptance of well-dried wood structures.

And other requirements.

This standard applies to the second floor or less (excluding the attic part), the building area does not exceed 500 m², and the building height is less than 10 m Well dry wood construction. For well-dried timber structure buildings exceeding the number of floors, area or building height, the structural calculation should be carried out separately.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this document.

For undated references, the latest version (including all amendments) applies to this document.

GB/T 144 Log Inspection GB/T 153 Coniferous sawn timber GB/T 700 carbon structural steel GB/T 4817 Hardwood sawnwood GB/T 5780 Hex head bolt C GB/T 5782 hexagon head bolt GB/T 6491 Drying quality of sawn timber GB/T 8484 Thermal insulation performance classification and detection methods for doors and windows of buildings GB/T 26899 Structural Laminate GB/T 27651 Classification and requirements for use of antiseptic wood GB/T 33041 Classification of terrestrial wood decay and termite hazards in China GB 50005 wood structure design standard GB/T 50083 Basic Terminology Standard for Engineering Structure Design GB 50206 Code for Construction Quality Acceptance of Timber Structure Engineering GB 50222 Code for fire protection design of building interior

decoration GB/T 50353 Code for calculation of construction area LY/T 2059 Steel nails for wood structures LY/T 2383 Structural timber strength grade JGJ/T 245 Technical term for house termite prevention

3 Terms and definitions

GB/T 50083, GB/T 50353 and the following terms and definitions apply to this document.

Horizontal member horizontal member in well dry structure applications, horizontally placed wooden members are called crossbars.

Log structure

The cross-sections of circular, rectangular and other cross-sections are stacked in parallel to the upper layer.

The structure is constructed by standing pillars on the wall.

Attic

Located at the uppermost part of the building, the clearance between the sloped roof and the lower horizontal floor should be less than 2.1m. Not counting buildings here Number of layers.

Building area

Floor area of a building (including walls).

[GB/T 50353, term 2.0.1] 3.4 Building height the flat roof is calculated from the height of the building's outdoor ground to its roofing surface, and the sloped roof should be based on the flatness of the building's outdoor ground to the eaves and ridge.

Average height calculation.

Structural wall

Load-bearing walls that are mainly subjected to lateral forces or earthquakes and maintain the overall stability of the structure, also known as shear walls, seismic walls, etc.

[GB/T 50083, structural term 3.2.24] 3.6 Through bolt A metal connecting piece that runs from the foundation to the top of the wall and connects the crossbars in series.

Anchor bolt

A kind of embedded in the foundation and connecting and fixing the foundation with the first wooden beam of the foundation or the first layer of horizontal wells of the well-dry wall

Metal connection.

4.1 Logs and sawn timber

4.1.1

Timber species are selected according to the species list in GB 50005. Timber should have the characteristics of not being easy to bend and strong in durability.

4.1.2

The material grade of logs shall reach the second and higher grades specified in GB/T 144.

4.1.3

The material grade of coniferous sawn timber should reach the second and higher grades specified in GB/T 153; the material grade of hardwood sawn timber should reach GB/T

4817 Class 2 and above.

4.1.4

For unlisted logs or sawn timber, the strength level of softwood is not lower than S18 in LY/T 2383, and the strength level of hardwood is not lower than LY/T H14 in 2383.

4.1.5

The wood moisture content of the product should be less than 20%.

4.2 Laminate for structural use

4.2.1

Timber species are selected according to the species list in GB 50005. Timber should have the characteristics of not being easy to bend and having high durability.

4.2.2

The quality level of the material surface of the product shall reach the second and higher grades specified in GB/T 26899.

5.2.3 The average shear strength of all adhesive layers of the product should not be less than 6.0MPa. For needlewood, poplar, etc. with a density of 0.5g/cm³ or density for lower broad-leaved wood, if the wood breaking rate is 100%, the average shear strength of all glue layers should not be less than 4.0MPa.

4.2.4

The product strength level should not be lower than TCT21, or TCYD18, or TCYF20 specified in GB/T 26899.

4.2.5

The wood moisture content of the product shall be less than 15%.