

# Madera de ingeniería

MSc. Ing. Mederico Pascual Rojas Rojas

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1ra versión en redacción

Se denomina madera de ingeniería o reconstituida aquella que es obtenida de la madera natural a través de diferentes tecnologías, las cuales le aportan una gama de propiedades físico-mecánicas especiales.



Fuente: E30\_SCL engineered wood construction guide

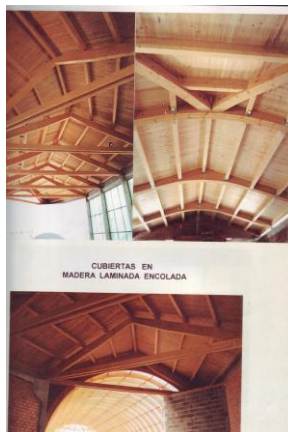
Madera de ingeniería	Engineered Wood Products	Abreviatura
1. Madera laminada encolada	Glulam	MLE*
2. Tablero de virutas orientadas	Oriented Strand Board	OSB
3. Madera de chapas laminadas	Laminated Veneer Lumber	LVL
4. Madera de cintas laminadas	Parallel Strand Lumber	PSL
5. Madera de virutas laminadas paralelas	Laminated Strand Lumber	LSL
6. Tablero de madera contralaminado	Cross laminated Timber	CLT
Composite estructural de madera de ingeniería	Structural Composite Lumber	SCL

MSc. Ing. Mederico Pascual Rojas Rojas

Correo electrónico: [medericop@nauta.cu](mailto:medericop@nauta.cu) , alternativo: [mederico2025@gmail.com](mailto:mederico2025@gmail.com) [aramisr@nauta.cu](mailto:aramisr@nauta.cu)  
Teléfono móvil: +53 58756105, La Habana, Cuba



1. Madera laminada encolada (MLE\*)



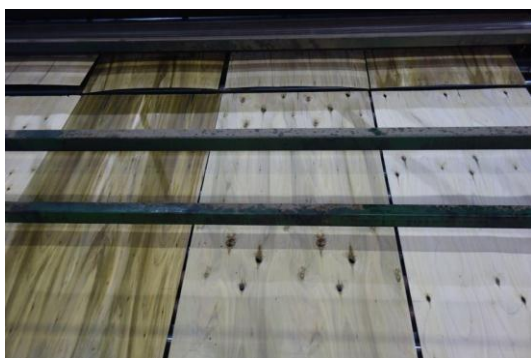
Aplicaciones de la MLE



2. Tableros de virutas orientadas (OSB)



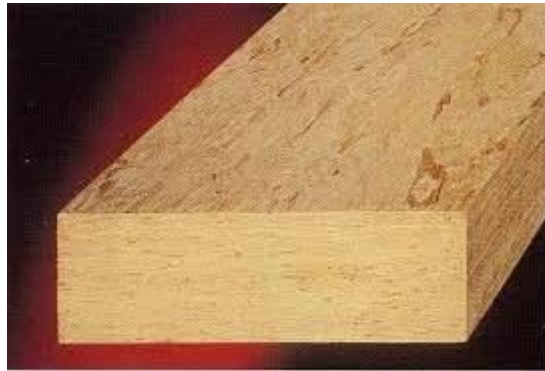
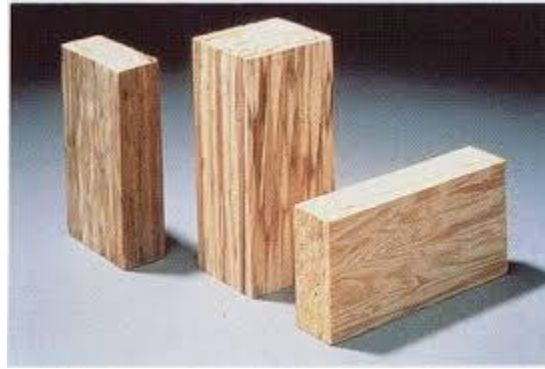
Aplicaciones de OSB



3. Chapas de madera para LVL

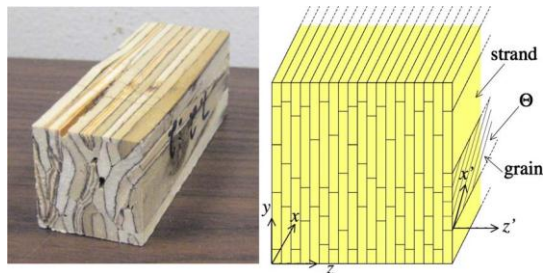


Madera de chapas laminadas (LVL)



#### 4. Cintas de madera para PSL

#### Madera de cintas laminadas (PSL)



#### 5. Madera de virutas laminadas paralelas (LSL)



Fig. 1. Schematic of CLT layer configuration



## 6. Tablero de madera contralaminado (CLT)



## Composite estructural de madera de ingeniería (SCL)

### **Oriented Strand Lumber (OSL and OSB)**

Oriented strand lumber (OSL) is made from flaked wood strands with a high length-to-thickness ratio. The manufacture of OSL also represents the efficient utilization of wood resources because it makes use of strands from fast-growing and underutilized species. The strands are oriented and combined with an adhesive to form a large mat or billet and then pressed.

El tablero de virutas orientadas **OSB** (Oriented Strand Board) es un producto derivado de la madera de concepción técnica avanzada, elaborado a partir de virutas de madera, las cuales son unidas mediante una cola sintética; las virutas son posteriormente prensadas sometiénolas a unas presiones y temperaturas determinadas. Las virutas que conforman el tablero van dispuestas en capas perfectamente diferenciadas y orientadas: las capas exteriores son orientadas generalmente en dirección longitudinal mientras que las virutas de las capas internas son orientadas en dirección perpendicular a la longitud del tablero.

Fuente: Información Técnica OSB

### **Glulam Basics**

Glued laminated timber, or glulam, is a highly innovative construction material. Pound for pound, glulam is stronger than steel and has greater strength and stiffness than comparably sized dimensional lumber. Increased design values, improved product performance, and cost competitiveness make glulam the superior choice for projects from simple beams and headers in residential construction to soaring arches for domed roofs spanning more than 500 feet.

### **Laminated Veneer Lumber (LVL)**

Laminated veneer lumber is manufactured by bonding thin wood veneers together under heat and pressure. Once it is fabricated into billets of various thicknesses and widths, it can be cut at the factory into stock for headers and beams, flanges for prefabricated wood I-joists, or for other specific uses. Veneer thicknesses range from 2.5mm (0.10") to 4.8mm (3/16") and common species are Douglas fir, larch, southern yellow pine and poplar.

### **Parallel Strand Lumber (PSL)**

Parallel strand lumber (PSL) is a high strength structural composite lumber product manufactured by gluing strands of wood together under pressure.

### **Laminated Strand Lumber (LSL)**

Similar to PSL, Laminated Strand Lumber is made from flaked wood strands that have a length-to-thickness ratio of approximately 150. Combined with adhesive, the strands are oriented and formed into a large mat or billet and pressed.

### **Structural Composite Lumber (SCL)**

Structural composite lumber, which includes laminated veneer lumber (LVL), parallel strand lumber (PSL), laminated strand lumber (LSL) and oriented strand lumber (OSL), is a family of engineered wood products created by layering dried and graded wood veneers, strands or flakes with moisture resistant adhesive into blocks of material known as billets, which are subsequently resawn into specified sizes.

**Bibliografía**

Compressive Strength of PSL USA 2010

E30\_SCL engineered wood construction guide

MANUFACTURING OF LSL Turkia 2011

Laminated Veneer Lumber and Parallel Strand Lumber

Olatek - Catalogo CLT (Cross Laminated Timber)

Uruguay CLT 2015

Lesson 6 Laminated Veneer Lumber (LVL)

MSc. Ing. Mederico Pascual Rojas Rojas

Correo electrónico: [medericop@nauta.cu](mailto:medericop@nauta.cu) , alternativo: [mederico2025@gmail.com](mailto:mederico2025@gmail.com) [aramisr@nauta.cu](mailto:aramisr@nauta.cu)  
Teléfono móvil: +53 58756105, La Habana, Cuba