

**LYPTUS®**

**Botanical nomenclature:** *Eucalyptus uro-grandis*  
**Lyptus®** is the trade name of a hybrid from the two species *E. grandis* and *E. urophylla*  
 Family MYRTACEAE

**Geographical distribution:** **Lyptus®** is primarily originated from plantations (with FSC/PEFC-Certification) in south-eastern Brazil, occasionally also cultivated in other regions

**Colour, texture and grain:** Heartwood basically light red, darkening upon exposure to red-brown (without streaks). Sapwood distinct from heartwood colour. Growth ring boundaries distinct (darker zones owing to a lower pore frequency). The rather plain surface is somewhat enhanced by pronounced pore lines. Interlocked grain present (causing a slight ribbon figure).

**General description:** **Lyptus®** is characterised by a homogenous colour and texture, but a high natural variation of the wood density. In trade, the assortments are provided in selected classes of wood densities (classification of assortments with a density<sub>air-dried</sub>  $\rho < 0,60 \text{ g/cm}^3$  and  $\rho > 0,60 \text{ g/cm}^3$ , respectively).

**Physical/mechanical properties:**

<b>Density</b> <sub>air-dried</sub> (12-15% mc) [g/cm <sup>3</sup> ]	0.48 – <b>0.72</b> – 0.98
<b>Compression strength</b> mc 12-15% [N/mm <sup>2</sup> ]	46 -- 66
<b>Bending strength</b> mc 12-15% [N/mm <sup>2</sup> ]	77 -- 108
<b>MOE</b> (bending) mc 12-15% [N/mm <sup>2</sup> ]	11700 -- 15700
<b>Shear strength</b> mc 12-15% [N/mm <sup>2</sup> ]	8.0 – 10.6
<b>Shrinkage</b> from green to 12% mc	
radial [%]	~ 4.1
tangential [%]	~ 8.7
<b>Durability class</b> (according to DIN EN 350-2)*	3 (variable)
Density classes <sub>air dried</sub> (12-15% mc)	
$\rho < 0,60 \text{ [g/cm}^3\text{]}$	3 bis 4
$\rho > 0,60 \text{ [g/cm}^3\text{]}$	2 bis 3

\*not listed in EN 350-2, tested according to DIN EN 350-1 at the Federal Research Institute for Rural Areas, Forestry and Fisheries (vTI)

**Drying:** The rates of shrinkage from green to oven dry are high, thus a sensitive drying of **Lyptus®** is necessary. The risk of distortion and checking can be avoided by careful control of the conditions during the early stages of drying.

**Wood processing:** **Lyptus®** works well with machine and hand tools, it saws cleanly, planes excellently and takes all kinds of finishing. Nail and screw holding properties are good, but the wood tends to split on nailing. A pre-boring for nails and screws is advisable for assortments with higher density  $\rho > 0,60 \text{ [g/cm}^3\text{]}$ . The extractives (tannins) of **Lyptus®** cause distinct discolourations in contact with iron.

**Natural durability:** The resistance of the hardwood is moderately durable (average classification) according to class 3 [DIN EN 350-2] and reveals a significant correlation with wood density (based on scientific investigations at the Federal Research Institute for Rural Areas, Forestry and Fisheries, vTI). Specimens with a density  $\rho > 0,60 \text{ g/cm}^3$  vary from class 1 (high density  $> 0,8 \text{ g/cm}^3$ ) to class 3. Specimens with a density  $\rho < 0,60 \text{ g/cm}^3$  correspond to the durability classes 3 to 4.

**Uses:** The utilisation of **Lyptus**<sup>®</sup> is mainly determined by the wood density of the assortments. Woods with high density  $\rho > 0,60 \text{ g/cm}^3$  are particularly suitable for framing (windows, doors, winter gardens) (laminated scantlings), flooring (parquet, floor boards, etc.) and stair cases, etc. Assortments with a density  $\rho > 0,65 \text{ g/cm}^3$  and good natural durability are additionally suitable for exterior applications, e.g., terrace flooring (gardening) without ground contact (hazard class 3). Assortments with lower density  $\rho < 0,60 \text{ g/cm}^3$  are mainly used for interior applications, e.g., glue boards for furniture.

**Substitution:** **Lyptus**<sup>®</sup> is suitable as substitute for construction timbers with similar density and natural durability, e.g., Red meranti, White oak etc.. In contrast to the more established and traded species *E. grandis* and *E. saligna*, the hybrid **Lyptus**<sup>®</sup> (*Eucalyptus uro-grandis*) is characterised by improved physical-mechanical properties and a higher natural durability (assortments with a density  $\rho > 0,60 \text{ g/cm}^3$ ).

### Literature:

Arbeitsgemeinschaft Holz (1991): Eukalyptus-Hölzer – nur aus Plantagen. Informationsdienst Holz, Blatt No. 95.

Richter, H.G.; Leithoff (2002): LYPTUS<sup>®</sup> - Determination of selected wood properties, Research report, Bundesforschungsanstalt für Forst- und Holzwirtschaft, 33 p.

Keinert, S. (1980): Laboratory evaluation of *Eucalyptus grandis* and *Eucalyptus robusta* for the manufacture of composition board. Diss. Michigan State University

Schwab, E. (2000): Prüfung von verleimten Eukalyptus-Kanteln, Untersuchungsbericht der Bundesforschungsanstalt für Forst- und Holzwirtschaft, 4 S.