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## Technical Leaflet GUARIUBA.

**Bot. Name** : Clarisia Racemosa, Spp.

**Familyname** : Moraceae.

**Commercial** : GUARIUBA, MURURE, Gameleiro, Guariuba Amarela, Oiti, Oiticica  
: Amarela, Aji, Tatajuba Amarela.

**Growing areas** : In Brazil States of Amazonas, Acre, Rondonia, Para, Bolivia, Ecuador,  
: Venezuela, Peru.

**Trees** : Usually medium sized to very heavy trees, according to the growing area. :  
: Used to be cut in the old Mata Atlantica so from Recife to Santos on the  
: eastern brazilian coast, but is occurring far more frequently in the South  
: Western areas and tropical countries, where Clarisia Racemosa normally  
: contains more silica and therefore is more durable, than f.i. in Para.  
: Logs are upto 40m. high with an average diameter of about 80cm, though  
: logs upto 120cm diameter are no exception..  
: Boules upto 18-20m without knots are normal. Well cylindrically formed,  
: without any big roots and usually on Drylands.

**Description** : Heartwood green is very yellow to yellow-brown, darkening in the air to :  
: golden-brown, is sharply demarcated from the tiny circle of white sapwood.

**Structure** : Radial with irregular striping, caused by the well visible growing rings.  
: Grain usually straight, sometimes crossgrained. Depending on the light with  
: a golden wavy design, though with a medium gloss. On riftsawn pieces,  
: one can often see a so-called "oak-design" (Spiegel). Pores are of medium size.

**Grain** : Can be cross-grained and if combined with a fairly high silica-content, planing  
: can be difficult. Clarisia R. in some parts may contain more silica but being  
: less cross-grained, which is the case in Western Brazilian States and Bolivia.

**Odor/Taste** : Without any specific odor or taste.

### **Bewerking**

**Caracteristics:** Fairly easy to saw and normal behaviour when planing, except when very  
: cross-grained or too high a percentage of silica. Surfaces after planning may  
: than be woolly as is the case in Para and Venezuela.  
: Nowadays with better saws and knives (Tungsten) the abrasive effect of this  
: specy is limited and give a far better yield and product.  
: The Bolivian specy is definitely harder and contains more silica.

**Drying** : Air-dries very rapidly and can be kilndried fairly easily with a very low  
: shrinkage-coefficient, although a carefull schedule should be applied to  
: avoid twisting or curving. Air-drying or pre-kilning before kilning or a  
: schedule I should be advised.



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**Fixation** : Retains nails/screws very well. Pre-drilling is not necessary though advisable.  
: towards the ends it has a tendency to split. Gluing is no problem whatsoever.

**Availability** : Occurs rather frequently, but has not been cut in big volumes, due to the little :  
: local interest so far. Guariuba is not highly resistant to 'Termites'.  
: In Bolivia reasonable volumes both FSC and NFSC are available, where it is  
: often exported for exterior doors to the U.S.A.

**Durability** : In old literature, based on studies made by Yale University early 20<sup>th</sup> Century,  
: this specy was generally considered 'fairly durable', based on tests made on  
: specimen from the lower Amazone Bassin, which show Class III.  
: However, there is a rather big variation in durability within the species, depen-  
: ding on growing region, and whether tested in green or in KD-condition.  
: We therefore base ourselves on very recent studies made on this specy from  
: other growing areas and both in green and KD-condition.

**Bolivia** : This specy has been tested by the Governmental Forest Laboratries and was  
: found to be naturally durable due to high Silica-contents. In green condition  
: it scored II/III and in KD-state I/II.

**West Brazil** : Specimen from Acre-Rondonia-Amazonas have been recently tested by both  
: the French A.T.I.B.T. as well as the Dutch Timber Research S.K.H., the latter  
: in order to establish whether this specy could be authorized for exterior buil-  
: ding purposes under Komo-KVT. Tests were done on basis of the latest criteria  
: with following results:

**Fungi** : Groundcontact Class I. Exposed above the soil Class I.

**Insects** : Resistance against Dry Wood Insects durability Class I/II.

**Termites** : Resistance against Termites, moderately durable Class II.

**Remark** : Kilndry Guariuba contains about 0,2-1% silica and is "very durable" in contact  
: with the soil.

#### G U A R I U B A K I L N D R Y

Brazil

Bolivia.

	Class I-I/II	Class I-II/II
<b>Durability</b>	Class I-I/II	Class I-II/II
<b>Impregnation</b>	Not possible.	Difficult
<b>Specific Weight : Green</b>	950-1160 kg/m <sup>3</sup>	1000-1200kg/m <sup>3</sup>
<b>KD on 12% MC</b>	570-700 kg/m <sup>3</sup>	700kg/m <sup>3</sup>
<b>Shrinkage (R%)</b>	3,1% to 0% mc	2,5% to 0% mc
<b>Shrinkage (T%)</b>	5,2% to 0% mc	4,8% to 0% mc
<b>Volume-shrinkage</b>	8,9%	7,7%



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**Mechanical Properties**

	<b>Brazil</b>	<b>Bolivia</b>
<b>Bending Strength (limit</b>	<b>844 kgf/cm<sup>2</sup></b>	<b>985kgf/cm<sup>2</sup></b>
<b>Tension-moment (limit</b>	<b>70 kgf/cm<sup>2</sup></b>	
<b>Elasticity-module</b>	<b>110.000 kgf/cm<sup>2</sup></b>	<b>129.000 kgf/cm<sup>2</sup></b>
<b>Compression Axial</b>	<b>446 kgf/cm<sup>2</sup>; (rupture)</b>	<b>784 kgf/cm<sup>2</sup></b>
	<b>73 kgf/cm<sup>2</sup>; proportional limit</b>	
<b>Janka-hardness top</b>	<b>563 kgf/cm<sup>2</sup></b>	
<b>Janka-hardness par.</b>	<b>530 kgf/cm<sup>2</sup></b>	<b>893 kgf/cm<sup>2</sup></b>
<b>Shear-strength</b>	<b>109 kgf/cm<sup>2</sup></b>	
<b>Fiber-traction</b>	<b>42 kgf/cm<sup>2</sup></b>	
<b>Fiber-Saturation point</b>	<b>22%</b>	

**Applications** : Windowframes, Doors, Floors, Panelling, Posts and Beams, all Exterior Constructions, Plywood, Furniture, Tools, Carpentry, Truck- and Waggon floorings.

**Sources** : Instituto Brasileiro de Desenvolvimento Florestal, U.S.Forest Service and Forest Products Lab., Instituto de Pesquisas Technologicas, C.F.de B. Madeiras Tropicais Brasileiras, Laboratorio de Produtos Florestais, I.B.A.M.A. (Min. Ecology Brasil.), Camara Forestal de Bolivia, A.T.I.B.T. , S.H.R. Hout-Research Wageningen, T.N.O. Rijswijk.



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**Guariuba Pictures M.D.**

**Timber after Planing**

**Timber after 4 weeks.**



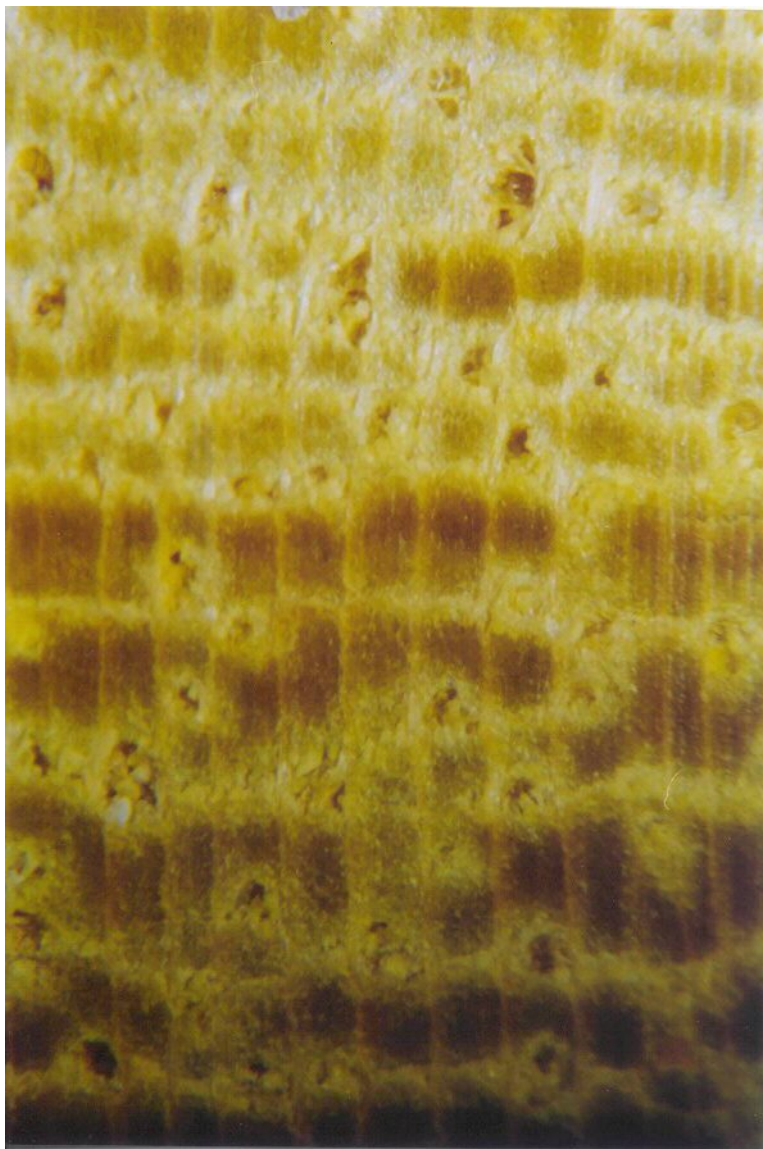




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**Extension 20x**





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**Extension 40x**

