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APPEAL SUMMARY

Status: Decision Rendered

Appeal ID: 18255	**Project Address:** 28 SE 28th Ave
Hearing Date: 8/8/18	**Appellant Name:** Alexander J Banicki
Case No.: P-002	**Appellant Phone:** +18017077775
Appeal Type: Plumbing	**Plans Examiner/Inspector:** Chuck Luttmann, Paul Klee, McKenzie James
Project Type: commercial	**Stories:** 4 **Occupancy:** Residential **Construction Type:** TYPE I-B
Building/Business Name: SunRose Condominiums	**Fire Sprinklers:** Yes - Per city code
Appeal Involves: Alteration of an existing structure	**LUR or Permit Application No.:** 4191775
Plan Submitted Option: pdf [File 1] [File 2] [File 3] [File 4] [File 5] [File 6]	**Proposed use:** Commercial-Mixed use w/Residential

APPEAL INFORMATION SHEET

Appeal item 1

Code Section	301.2
Requires	301.2 Minimum Standards. Pipe, pipe fittings, traps, fixtures, material, and devices used in a plumbing system shall be listed or labeled (third-party certified) by a listing agency (accredited conformity assessment body) and shall comply with the approved applicable recognized standards referenced in this code, and shall be free from defects. Unless otherwise provided for in this code, materials, fixtures, or devices used or entering into the construction of plumbing systems, or parts thereof, shall be submitted to the Building Official for approval.
Proposed Design	A teak wood washbasin was selected for a lavatory remodel. The washbasin is a slab of reclaimed teak wood with a sink and drain hole carved into the wood, as seen in the attached picture titled 'Lavatory Washbasin Picture'. The manufacture website can be viewed in the attachment titled 'Washbasin Manufacture Website'. The certification provided with this washbasin, supplied by the manufacture, is outlined in the attached document titled 'Karpenter FSC'. The sealant material used on the washbasin during manufacturing is described in the attachment titled 'Polyurethane Sealant Compound for Washbasin'. The species of teak wood selected for the washbasin is referenced in the attachment document titled 'Tectona Grandis Info'.
Reason for alternative	The species of teak wood (Tectona Grandis) used for this washbasin is one of the most durable, resilient to decay, and dense naturally occurring construction materials. Teak wood is rich with

natural oils and a high rubber and silica content; as a result, the wood has an exceptional resistance to fungi, impervious to water, and great dimensional stability. These qualities will also prevent teak wood from warping or splintering over time. Teak wood is commonly used in shipbuilding due to its resilience to rot and shipworm. Additionally, an abstract for a thesis compiled on the resiliency and wettability of this particular species of teak wood is described in the attachment titled 'Comparison of Teak Wood Properties'.

APPEAL DECISION

Use of teak lavatory: Denied. Proposal does not provide equivalent sanitary facilities. Appellant may contact Paul Klee (503-823-7288) with questions.

Pursuant to City Code Chapter 25.07, you may appeal this decision to the Plumbing Code Board of Appeal within 180 calendar days of the date this decision is published. For information on the appeals process and costs, including forms, appeal fee, payment methods and fee waivers, go to www.portlandoregon.gov/bds/appealsinfo, call (503) 823-7300 or come in to the Development Services Center.

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COMPARISON OF TEAK WOOD PROPERTIES ACCORDING TO FOREST MANAGEMENT: SHORT AND LONG ROTATION

Thesis (PDF Available) · March 2017

Thesis for: Master These, Advisor: Prof Wayan Darmawan and Prof Philippe Gérardin

Dwi Erikan Rizanti
2.93 · AgroParisTech

Abstract

Teak (Tectona grandis L.f.) is one of the most important tropical hardwood tree species in Indonesia. It has been processed to wood furniture in large quantities to fulfill an increasing need of both local and international consumers. To satisfy the increasing demand for wood products, teak wood has been supplied from the State forests (Perhutani) and Community teak plantations. Community teak has been harvested at shorter age rotations (7–10 years) than Perhutani teak (40–60 years). This paper discusses the characterization of technological properties of short and long rotation teak wood based on extractives contents, chemical composition, density, vessel frequency and wood porosity, swelling, water sorption isotherm, bending strength (modulus of rupture – MOR and modulus of elasticity - MOE), Brinell hardness, wettability, color changes, and decay durability. The results show that short rotation teak had lower extractives content, lower density, higher vessel frequency and porosity, lower dimensional stability in swelling and higher change in mass values in water sorption and desorption, lower MOE, MOR, and Brinell hardness, higher and better wettability, and lower durability compared to long rotation teak. These results also show that the short rotation teak was not remarkably different in swelling, MOE and MOR, and Brinell hardness compared to long rotation teak, although it was less dense and less durable due to lower heartwood and extractives contents. Therefore, careful attention should be given to the use of short rotation teak in some wood-processing technologies. Keywords: Short and long rotation teak, extractives, wettability, durability.

CERTIFICATE

Information from 2018/07/18 - 22:25 UTC
Certificate Code RA-COC-003197
Former Certificate Code SW-COC-003197
License Code FSC-C005743

MAIN ADDRESS

Name PT. Ide Studio Indonesia
Address Jl. Parangtritis Km. 8 Cabean
Sewon, Bantul
55188
Yogyakarta
INDONESIA
Website http://www.karpenter.com

CERTIFICATE DATA

Status Valid
First Issue Date 2008-05-20
Last Issue Date 2018-05-20
Expiry Date 2023-05-19
Standard FSC-STD-40-007 V2-0;FSC-STD-40-004 V3-0

GROUP MEMBER/SITES

No group member/sites found.

PRODUCTS

Product Type	Trade Name	Species	Primary Activity	Secondary Activity	Main Output Category
W13 Outdoor furniture and gardening W13.1	Outdoor Furniture and gardening	Tectona grandis	Secondary Processor		FSC Recycled

Product Type	Trade Name	Species	Primary Activity	Secondary Activity	Main Output Category
Garden furniture					
W12 Indoor furniture W12.1 Cabinet	Indoor Furniture	Acacia auriculiformis; Artocarpus heterophyllus Lam.; Dalbergia latifolia Roxb.; Eugenia spp; Pinus strobus; Shorea spp.; Swietenia mahogoni (L.) Jacq.; Tectona grandis	Secondary Processor		FSC Recycled
W12 Indoor furniture W12.2 Custom furniture	Indoor Furniture	Acacia auriculiformis; Artocarpus heterophyllus Lam.; Dalbergia latifolia Roxb.; Eugenia spp; Pinus strobus; Shorea spp.; Swietenia mahogoni (L.) Jacq.; Tectona grandis	Secondary Processor		FSC Recycled
W12 Indoor furniture W12.3 Tables	Indoor Furniture	Acacia auriculiformis; Artocarpus heterophyllus Lam.; Dalbergia latifolia Roxb.; Eugenia spp; Pinus strobus; Shorea spp.; Swietenia mahogoni (L.) Jacq.; Tectona grandis	Secondary Processor		FSC Recycled
W12 Indoor furniture W12.4 Beds	Indoor Furniture	Acacia auriculiformis; Artocarpus heterophyllus Lam.; Dalbergia latifolia Roxb.; Eugenia spp; Pinus strobus; Shorea spp.; Swietenia mahogoni (L.) Jacq.; Tectona grandis	Secondary Processor		FSC Recycled
W12 Indoor furniture W12.6 Chairs and stools	Indoor Furniture	Acacia auriculiformis; Artocarpus heterophyllus Lam.; Dalbergia latifolia Roxb.; Eugenia spp;	Secondary Processor		FSC Recycled

Product Type	Trade Name	Species	Primary Activity	Secondary Activity	Main Output Category
		Shorea spp.; Swietenia mahogoni (L.) Jacq.; Tectona grandis			
W12 Indoor furniture W12.7 Office furniture	Indoor Furniture	Acacia auriculiformis; Artocarpus heterophyllus Lam.; Dalbergia latifolia Roxb.; Eugenia spp; Pinus strobus; Shorea spp.; Swietenia mahogoni (L.) Jacq.; Tectona grandis	Secondary Processor		FSC Recycled
W16 Household articles W16.1 Wooden frames	Household articles	Acacia auriculiformis; Artocarpus heterophyllus Lam.; Dalbergia latifolia Roxb.; Eugenia spp; Shorea spp.; Swietenia mahogoni (L.) Jacq.; Tectona grandis	Secondary Processor		FSC Recycled
W12 Indoor furniture W12.9 Wardrobes	Indoor Furniture	Acacia auriculiformis; Artocarpus heterophyllus Lam.; Dalbergia latifolia Roxb.; Eugenia spp; Pinus strobus; Shorea spp.; Swietenia mahogoni (L.) Jacq.; Tectona grandis	Secondary Processor		FSC Recycled
W16 Household articles W16.3 Tableware, kitchenware and similar	Household articles	Acacia auriculiformis; Artocarpus heterophyllus Lam.; Dalbergia latifolia Roxb.; Eugenia spp; Shorea spp.; Swietenia mahogoni (L.) Jacq.; Tectona grandis	Secondary Processor		FSC Recycled
W12 Indoor furniture W12.10	Indoor Furniture	Acacia auriculiformis; Artocarpus heterophyllus Lam.; Dalbergia latifolia	Secondary Processor		FSC Recycled

Product Type	Trade Name	Species	Primary Activity	Secondary Activity	Main Output Category
Cupboards and chests		Roxb.; Eugenia spp; Pinus strobus; Shorea spp.; Swietenia mahogoni (L.) Jacq.; Tectona grandis			
W16 Household articles W16.10 Bath items or accessories	Household articles	Acacia auriculiformis; Artocarpus heterophyllus Lam.; Dalbergia latifolia Roxb.; Eugenia spp; Shorea spp.; Swietenia mahogoni (L.) Jacq.; Tectona grandis	Secondary Processor		FSC Recycled
W12 Indoor furniture W12.12 Parts of furniture	Indoor Furniture	Acacia auriculiformis; Artocarpus heterophyllus Lam.; Dalbergia latifolia Roxb.; Eugenia spp; Pinus strobus; Shorea spp.; Swietenia mahogoni (L.) Jacq.; Tectona grandis	Secondary Processor		FSC Recycled
W13 Outdoor furniture and gardening W13.2 Trellis and plant support	Outdoor Furniture and gardening	Tectona grandis	Secondary Processor		FSC Recycled
W12 Indoor furniture W12.13 Shelves	Indoor Furniture	Acacia auriculiformis; Artocarpus heterophyllus Lam.; Dalbergia latifolia Roxb.; Eugenia spp; Pinus strobus; Shorea spp.; Swietenia mahogoni (L.) Jacq.; Tectona grandis	Secondary Processor		FSC Recycled
W13 Outdoor furniture and gardening	Outdoor Furniture	Tectona grandis	Secondary Processor		FSC Recycled

Product Type	Trade Name	Species	Primary Activity	Secondary Activity	Main Output Category
W13.7 Other furniture and garden prod.	and gardening				
W12 Indoor furniture W12.5 Couches and armchairs	Indoor furniture	Tectona grandis	Secondary Processor		FSC Recycled

DOCUMENTS

No documents found.

LJA 99

PRODUCT	LJA 99 Acryl fond
TECHNICAL DEFINITION	Acrylic PU sealer
SECOND COMPONENT	20% LNB 99
THINNER	LZC 1026
MAIN FIELDS OF APPLICATION	Closed and open-grain furniture coatings, window frames, door frames and bleached wooden surfaces
FEATURES	Accentuates open-grain design, very fast drying schedules, excellent sanding

CHEMICAL-FISICAL PROPERTIES	
- Specific weight	= 0,930 ± 0,010
- Solid content	= 27% ± 1%
- Viscosity CF4 of first component	= 28" ± 2"
- Pot-life	= 3 hours
- Time between coats (min./max)	= 1-12 hours
- Drying schedule at room temperature	
a) dust free/time gel b) touch dry c) hard dry	= 10 minutes = 30 minutes = 6 hours
- Sanding after (minimum)	= 12 hours
- Application of top coat (minimum)	= 20 hours
- Shelf life of first component	= 8 months
- Shelf life of second component	= 4 months

APPLICATION	SPRAY	AIRLESS	CURTAIN-COATER
QUANTITIES			
1° hand gr/m2 2nd hand gr/m2 **Max tot. gr/m2**	100 120 **300**	100 120 **300**	100 120 **300**
THINNER	10%	10%	0-10%

milesi vernici

RACCOMANDED COATING SCHEDULES

a)	- SUBSTRATE	Oak or Ash veneer	
	- BASE COAT	LJA 99 + LNB 99 sanding sealer	1 - 2 coats
	- TOP COAT	LUA 460 series Polyurethane satin finish	1 coat

OBSERVATIONS

- This particular sanding sealer has been created mainly for open-grain coatings on porous wood such as Ash, Oak and Chestnut veneers.
- Due to the sealer cure of LNB 99 Isocyanine, it is advisable to wait at least one hour between first and second coat, and not to apply more than 2 coats of the sanding sealer.
- LNB 99 and LNB 9066 can sometimes present a slight Palo-yellow color, which however does not modify at least the excellent non-yellowing properties of this second component.
- Using LNB 9066 (10%) the reticulation will be slower.

LJA 99 - October 2005 - I°

milesi vernici

Tectona grandis

Teak learn more about names for this taxon

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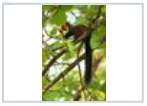

Tectona grandis TRUSTED
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Teak

For the nuclear test, see Hardtack Teak.

Teak (/tik/) is a tropical hardwood tree of species ***Tectona grandis***. The species is placed in the family Lamiaceae. *Tectona grandis* is a large, deciduous tree that is dominant in mixed hardwood forests. It has small, fragrant white flowers and papery leaves that are often hairy on the lower surface. It is sometimes known as the "Burmese Teak (မြန်မာ့ကျွန်း)". Teak wood has a leather-like smell when it is freshly milled. Teak timber is particularly valued for its durability and water resistance, and is used for boat building, exterior construction, veneer, furniture, carving, turnings, and other small wood projects.[1] *Tectona grandis* is native to south and southeast Asia, mainly India, Indonesia, Malaysia, Thailand and Burma, but is naturalized and cultivated in many countries in Africa and the Caribbean. Burma accounts for nearly one third of the world's total teak production.[*citation needed*]

The word teak comes from Tamil "tekku" (தேக்கு), Malayalam word *thekku* (തേക്ക്), From there it went to Portuguese *teca*.[2]

Contents

EOL has data for 10 traits

see all

wood density		0.49 g/cm³ 0.52 g/cm³ 0.53 g/cm³ more
geographic distribution		Africa & Madagascar - Madagascar Asia - Burma Asia - China - Fujian more
wetland indicator status (NWPL)		upland upland
habitat		arid cultivated habitat forest more
life cycle habit		perennial
growth habit		tree
introduced range includes		Hawaii, USA Puerto Rico U. S. Virgin Islands
elevation	(measurement)	400 m
habitat includes		non-marine

Found in 34 classifications

see all

Species recognized by Integrated Taxonomic Information System (I

Plantae +
Viridiplantae +
Streptophyta +
Embryophyta +
Tracheophyta +
Spermatophytina +
Magnoliopsida +
Asteranae +
Lamiales +
Lamiaceae +
Tectona L. f. +
***Tectona grandis* L. f.**

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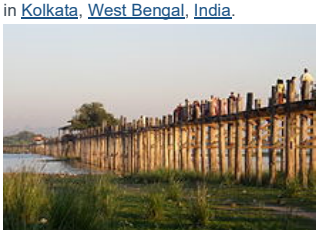
Maggie Whitson

Description[edit]

Teak is a large, deciduous tree up to 40 m (131 ft) tall with gray to grayish brown branches. Leaves are ovate-elliptic to ovate, 15–45 cm (5.9–17.7 in) long by 8–23 cm (3.1–9.1 in) wide, and are held on robust petioles that are 2–4 cm (0.8–1.6 in) long. Leaf margins are entire.[3]

Flowers at Ananthagiri Hills, in Rangareddy district of Andhra Pradesh, India.

Flower, fruit & leaves of *Tectona grandis* in Kolkata, West Bengal, India.



U Bein Bridge Amarapura, Myanmar. The longest teak bridge in the world at 1.2 km (0.75 mi) in length.

Botanist

Latest updates see all

Maggie Whitson marked "File:Malabar giant squirrel by Joseph Lazer.jpg" as trusted on the "Tectona grandis L. f." page.

7 MONTHS AGO

reply

Maggie Whitson changed the thumbnail image of "File:Malabar giant squirrel by Joseph Lazer.jpg".

OVER 1 YEAR AGO

reply

Maggie Whitson marked "File:Malabar giant squirrel by Joseph Lazer.jpg" as trusted on the "Ratufa indica (Erxleben, 1777)" page.

OVER 1 YEAR AGO

reply

Maggie Whitson marked "File:Malabar giant squirrel (1) by Joseph Lazer.jpg" as trusted on the "Ratufa indica (Erxleben, 1777)" page.

OVER 1 YEAR AGO

reply

Jennifer Hammock split the classifications by Smithsonian type specimen data from *Tectona grandis* L. f. to their own page.

ABOUT 2 YEARS AGO

reply

post comment

Leaves of *Tectona grandis* in Palakkad, Kerala.

Teak defoliator in Kerala

Fragrant white flowers are borne on 25–40 cm (10–16 in) long by 30 cm (12 in) wide panicles from June to August. The corolla tube is 2.5–3 mm long with 2 mm wide obtuse lobes. *Tectona grandis* sets fruit from September to December; fruits are globose and 1.2-1.8 cm in diameter.[3] Flowers are weakly protandrous in that the anthers precede the stigma in maturity and pollen is shed within a few hours of the flower opening.[4] The flowers are primarily entomophilous (insect-pollinated), but can occasionally be anemophilous (wind-pollinated).[5] A 1996 study found that in its native range in Thailand, the major pollinator were species in the *Ceratina* genus of bees.[4]

Wood[edit]

- heartwood is brownish red in color. It becomes darker with getting older. Sometimes there are dark patches on it. There is a strange scent in newly cut wood.
- sapwood is whitish to pale yellowish brown in color. It can easily separate from heartwood.
- wood texture is hard and ring porous.
- density is 720 kg/meter cube.

Distribution and habitat[edit]

Tectona grandis is one of three species in the genus *Tectona*. The other two species, *T. hamiltoniana* and *T. philippinensis*, are endemics with relatively small native distributions in Myanmar and the Philippines, respectively.[6] *Tectona grandis* is native to India, Indonesia, Myanmar, northern Thailand, and northwestern Laos.[3][4]

Tectona grandis is found in a variety of habitats and climatic conditions from arid areas with only 500 mm of rain per year to very moist forests with up to 5,000 mm of rain per year. Typically, though, the annual rainfall in areas where teak grows averages 1,250-1,650 mm with a 3-5 month dry season.[7]

Botanical history[edit]

Tectona grandis was first formally described by Carl Linnaeus the Younger in his 1782 work *Supplementum Plantarum*.[8] In 1975, Harold Norman Moldenke published new descriptions of four forms of this species in the journal *Phytologia*. Moldenke described each form as varying slightly from the type specimen: *T. grandis* f. *canescens* is distinguished from the type material by being densely canescent, or covered in hairs, on the underside of the leaf, *T. grandis* f. *pilosula* is distinct from the type material in the varying morphology of the leaf veins, *T. grandis* f. *punctata* is only hairy on the larger veins on the underside of the leaf, and *T. grandis* f. *tomentella* is noted for its dense yellowish tomentose hairs on the lower surface of the leaf.[9]

Cultivation[edit]

Teak's natural oils make it useful in exposed locations, and make the timber termite and pest resistant. Teak is durable even when not treated with oil or varnish. Timber cut from old teak trees was once believed to be more durable and harder than plantation grown teak. Studies have shown that plantation

teak performs on par with old-growth teak in erosion rate, dimensional stability, warping, and surface checking, but is more susceptible to color change from UV exposure.[10]

The vast majority of commercially harvested teak is grown on teak plantations found in Indonesia and controlled by Perum Perhutani (a state owned forest enterprise) that manages the country's forests. The primary use of teak harvested in Indonesia is in the production of outdoor teak furniture for export.Nilambur in Kerala, India is also a major producer of Teak of fine quality, holds the world's oldest Teak plantation.

Teak consumption raises a number of environmental concerns, such as the disappearance of rare old-growth teak. However, its popularity has led to growth in sustainable plantation teak production throughout the seasonally dry tropics in forestry plantations. The Forest Stewardship Council offers certification of sustainably grown and harvested teak products. Propagation of teak via tissue culture for plantation purposes is commercially viable.[11]

Teak plantations were widely established in Equatorial Africa during the Colonial era. These timber resources, as well as the oil reserves, are at the heart of the current (2014) South Sudanese conflict.[12] [13]

Much of the world's teak is exported by Indonesia and Myanmar. There is also a rapidly growing plantation grown market in Central America (Costa Rica) and South America.

Hyblaea puera, a moth native to southeast Asia, is a teak pest whose caterpillar feeds on teak and other species of trees common in the region.[14]

Uses[edit]

Teak table

Teak is a yellowish brown timber with good grain and texture. Teak, though easily worked, can cause severe blunting on edged tools because of the presence of silica in the wood. Teak is often an effective material for the construction of both indoor and outdoor furniture. Teak's high oil content, high tensile strength and tight grain makes it particularly suitable for outdoor furniture applications. Over time teak can mature to a silvery-grey finish, especially when exposed to sunlight.[15] It is used in the manufacture of outdoor furniture, boat decks, and other articles where weather resistance is desired. It is also used for cutting boards, indoor flooring, countertops and as a veneer for indoor furnishings. Teak is used extensively in India to make doors and window frames, furniture, and columns and beams in old type houses. It is very resistant to termite attacks. Mature teak fetches a very good price. It is grown extensively by forest departments of different states in forest areas.

Leaves of the teak wood tree are used in making Pellakai gatti (jackfruit dumpling), where batter is poured into a teak leaf and is steamed.[16] This type of usage is found in the coastal district of Udupi in the Tulunadu region in South India. The leaves are also used in gudeg, a dish of young jackfruit made in Central Java, Indonesia, and give the dish its dark brown color.

Teak is used as a food plant by the larvae of moths of the genus *Endoclita* including *E. aroura*, *E. chalybeatus*, *E. damor*, *E. gmelina*, *E. malabaricus*, *E. sericeus* and *E. signifer* and other Lepidoptera including Turnip Moth.

Uses in boatbuilding[edit]

Teak tree in Panchkhal valley in Nepal

Teak has been used as a boatbuilding material for over 2000 years (it was found in an archaeological dig in Berenike a port on the Indian Roman trade [17]). In addition to relatively high strength, teak is also highly resistant to rot, fungi and mildew. In addition, teak has a relatively low shrinkage ratio, which makes it excellent for applications where it undergoes periodic changes in moisture. Teak has the unusual properties of being both an excellent structural timber for framing, planking, etc., while at the same time being easily worked, unlike some other similar woods such as purpleheart, and finished to a high degree. For this reason, it is also prized for the trim work on boat interiors. Due to the oily nature of the wood, care must be taken to properly prepare the wood before gluing.

When used on boats, teak is also very flexible in the finishes that may be applied. One option is to use no finish at all, in which case the wood will naturally weather to a pleasing silver-grey. The wood may also be oiled with a finishing agent such as linseed or tung oil. This results in a pleasant, somewhat bland finish. Finally, teak may also be varnished for a deep, lustrous glow.

Teak is also used extensively in boat decks, as it is extremely durable and requires very little maintenance. The teak tends to wear in to the softer 'summer' growth bands first, forming a natural 'non-slip' surface. Any sanding is therefore only damaging. Use of modern cleaning compounds, oils or preservatives will shorten the life of the teak, as it contains natural teak-oil a very small distance below the white surface. Wooden boat experts will only wash the teak with salt water, and re-caulk when needed. This cleans the deck, and prevents it from drying out and the wood shrinking. The salt helps it absorb and retain moisture, and prevents any mildew and algal growth. People with poor knowledge often over-maintain the teak, and drastically shorten its life.

Alternatives to teak[edit]

Due to the increasing cost of teak, various alternatives have been employed. These include purpleheart, iroko, and angelique.

Propagation[edit]

Tree in new leaves in Kolkata, West Bengal, India.

Teak is propagated mainly from seeds. Germination of the seeds involves pretreatment to remove dormancy arising from the thick pericarp. Pretreatment involves alternate wetting and drying of the seed. The seeds are soaked in water for 12 hours and then spread to dry in the sun for 12 hours. This is repeated for 10–14 days and then the seeds are sown in shallow germination beds of coarse peat covered by sand. The seeds then germinate after 15 to 30 days.[18][19]

Clonal propagation of teak has been successfully done through grafting, rooted stem cuttings and micro propagation. While bud grafting on to seedling root stock has been the method used for establishing

clonal seed orchards that enables assemblage of clones of the superior trees to encourage crossing, rooted stem cuttings and micro propagated plants are being increasingly used around the world for raising clonal plantations.[citation needed]

The oldest and biggest teak in the world[edit]

The oldest and biggest teak in the world is in Uttaradit Province, Thailand. It is more than 1,500 years old. The tree is 47 metres tall, and the circumference of the trunk is 10.23 metres.[citation needed]

References[edit]

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 • Source: Wikipedia

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SEARCH BY : BRAN COLLE PROI MATI

MATERIAL 100% FSC RECLAIMEI TEAKWOOI (HTTPS://KARPENTER.CO

(https://karpenter.com/info/form_info.html)

FINISHING

WASH BASIN 110

LENGTH | 110 cm | 43.3 in
WIDTH | 50 cm | 19.6 in
HEIGHT | 9 cm | 3.54 in

Lena's design is pure and minimalist in all its lines, soft curves and angles. The basin is smoothly integrated into the surface. Running water onto the wood will be a daily reminder of the serenity of a natural stream. The piece comes in golden reclaimed teakwood, or the darker, warmer American walnut.

SHARE

LENA | STANDING TOWEL HANGER (HTTPS://KARPENTER.COM/PRODUCT/DETAIL/298)

LENA | MIRROR 110 (HTTPS://KARPENTER.COM/PRODUCT/DETAIL/306)

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