

CENAP-EC-EM

SUBJECT: Impracticality of non IPE lumber for Boardwalk Decking

5. Of the alternatives listed above, none have the durability of the IPE/Bethabara/Cumaru tropical hardwoods from Latin America. As an example, IPE has typically lasted decades despite the salt air and harsh conditions along the coast. The tropical wood lasts longer than it takes to grow. Ipe lasts a minimum of 25 years in ground, although with proper maintenance above ground it can last up to a century. In contrast, southern yellow pine typically only lasts five to eight years. Also Ipe has a Class A1 fire rating; the same fire rating as concrete and steel, meaning it resists flames much longer than softer woods. Ipe also has a lower heat retention than Recycled plastics or composites, a higher resistance to screw pull out, meets ADA requirements for slip resistance, requires no chemical or heat treatments or coatings to improve durability and is safe for human and animal contact.

5. The specifications for IPE/Bethabara/Cumaru tropical hardwoods from Latin America are extremely well suited for boardwalk decking. The specifications are listed below:

Average Dried Weight: 69 lbs/ft³ (1,100 kg/m³)

Specific Gravity (Basic, 12% MC): .91, 1.10

Janka Hardness: 3,510 lb_f (15,620 N)

Modulus of Rupture: 25,660 lb_f/in² (177.0 MPa)

Elastic Modulus: 3,200,000 lb_f/in² (22.07 GPa)

Crushing Strength: 13,600 lb_f/in² (93.8 MPa)

Shrinkage: Radial: 5.9%, Tangential: 7.2%, Volumetric: 12.4%, T/R Ratio: 1.2

6. For any questions, comments or concerns, I can be reached by email at Ravineel.r.francis@usace.army.mil or contacted by phone at 215-656-6928.

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