

Woods of the world adhesion testing

By Tom Pawlak

We recently purchased a 154-piece wood sampler from Eisenbrand Inc., Torrance, California. The 3" × 6" × 1/2" specimens originated from points all around the world. Each specimen was provided with its common name, scientific name, and country of origin. There were several specimens we've never heard of.

We thought it would be interesting to find out how well WEST SYSTEM® epoxy adheres to the different wood species. The 3" × 6" samples were just large enough to accept two PATTI (pneumatic tensile test instrument) studs. Two results per species does not provide enough data for scientific conclusions, but does give a good idea of what to expect.

The samples were prepared for adhesion testing by sanding parallel to the grain with sharp 60-grit sandpaper. No solvents were used to remove any natural oils. All PATTI studs were glued in place using 105 Resin/206 Hardener. ■



The PATTI test uses compressed air to pull the stud from the surface. It records the force required to break the bond in pounds per square inch. In all cases tested, the epoxy held and the wood failed.

The following results are all woods from Africa and the Philippines. Adhesion results for woods from other parts of the world will be shared in future issues of *Epoxyworks*. The predominant failure mode for each species was wood failure.

	Common name	Scientific name	Country of origin	Average psi
1	African Wattle	Peltophorum africanum	Africa	1218
2	Afromosia	Afromosia elata	Africa	1462
3	Aniegre	Aninquera robusta	Africa	1564
4	Avodire	Turraeanthus africanus	Western Africa	1258
5	Black Limba	Terminalia spp.	Africa	1666
6	Bubinga	Guibourtia demueusei	Africa	1930
7	Boekenhout	Faurea saligna	Africa	1544
8	Camphor	Cinnamomum camphoratum	Africa	1156
9	Cape Blackwood	Acacia melanoxylon	Africa	1340
10	Ebony, Gabon	Diospyros spp.	Africa	1564
11	Imbuia	Phoebe parosa	Africa	1564
12	Iroko	Chlorophora excelsa	Africa	1299
13	Jacaranda	Jacaranda mimosifolia	Africa	1462
14	Leadwood	Combretum imberbe	Africa	1340
15	Monkey Thorn	Acacia galpinii	Africa	1258
16	Narra	Pterocarpus indicus	Philippines	994
17	Olive	Olea africana	Africa	1605
18	Padauk	Pterocarpus soyauxii	Africa	994
19	Paldao	Dracontomelum dao	Philippines	1544
20	Sapele	Entandophragma spp.	Africa	1198
21	Shedwa	Guibourtia spp.	Africa	1584
22	Silver Oak	Grevillea robusta	Africa	1462
23	Silver Terminalia	Terminalia sericea	Africa	1340
24	Stinkwood	Ocotea bullata	Africa	1544
25	Syringa	Melia azedarach	Africa	1218
26	Tambootie	Spyrotachys afr.	Africa	2033
27	Wenge	Milletia spp.	Africa	1482
28	White Limba	Terminalia amazonia	Africa	1034
29	Zebrawood	Microberlinia brazzavilensis	Africa	1604

A few of the 154 wood samples. These from Africa show a wide variety of colors, grain patterns and densities.

