SWELLING DATA ON LIGNUM-VITAE IMMERSED IN WATER

SIZE (D)	NUMBER OF DAYS TO REACH 25% OF MAXIMUM SWELLING	NUMBER OF DAYS TO REACH 50% OF MAXIMUM SWELLING	NUMBER OF DAYS TO REACH 75% OF MAXIMUM SWELLING	NUMBER OF DAYS TO REACH 100% OF MAXIMUM SWELLING	MAXIMUM DIMENSIONAL CHANGE IN MILS — PER INCH OF DIMENSION ("D")
¼"	1.00	2.75	6.25	16.00	1.50 MPI OF (d) 
½"	2.50	5.50	12.50	32.00	
¾"	3.50	8.50	18.50	48.00	16.00 MPI OF (d) 
1"	4.50	11.50	24.75	64.00	
1½"	6.75	17.00	37.25	96.00	22.50 MPI OF (d) 
1¾"	8.00	20.00	43.50	112.00	
2"	8.75	23.00	49.50	128.00	
2½"	11.00	28.50	62.00	160.00	28.00 MPI OF (d) 
3"	12.75	34.00	74.50	192.00	

DIELECTRIC STRENGTH	AVERAGE VOLTAGE BREAKDOWN	AVERAGE THICKNESS	AVERAGE VOLTS
Discs cut on bias to grain direction	11750	.1180"	99.5 mil.
Discs cut in grain direction	9150	.1188"	80.0 mil.

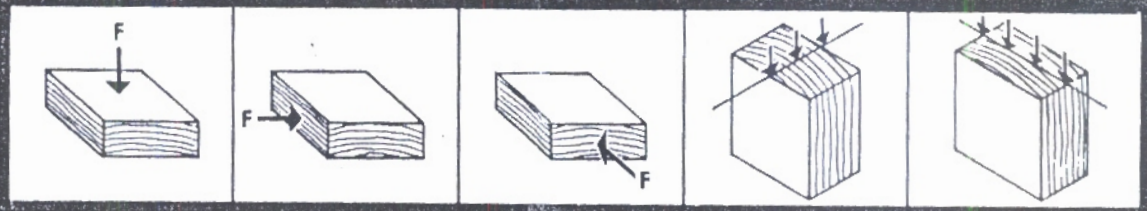
SUMMARY—: CHEMICAL RESISTANCE OF LIGNUM-VITAE WITH DIFFERENT REAGENTS

REAGENT	WEIGHT CHANGE	LENGTH CHANGE	WIDTH CHANGE	THICKNESS CHANGE	ABRASION	INDEX OF ABRASION RESISTANCE AIR-DRY = 100	INDEX OF ABRASION RESISTANCE WATER-SOAKED = 100
	Per cent	Per cent	Per cent	Per cent	Inches		
Sodium Hydroxide (10%)	+ 7.60	+ 0.09	+ 1.26	+ 4.46	0.0180	57	61
Toluene	- 1.39	- 0.06	— 0.65	— 0.40	0.0150	68	73
Sodium Chloride (10%)	+ 2.29	— 0.10	+ 0.92	+ 0.80	0.0147	69	75
Ethyl Alcohol (50%)	+ 0.89	- 0.02	— 0.38	+ 1.00	0.0138	74	80
Heptane	1.15	- 0.04	— 0.47	— 0.30	0.0138	74	80
Sulphuric Acid (3%)	+ 3.99	- 0.09	+ 1.68	+ 1.59	0.0132	77	83
Sodium Hydroxide (1%)	+ 3.89	+ 0.10	+ 1.52	+ 2.05	0.0132	77	83
Acetic Acid (5%)	+ 3.14	— 0.07	+ 1.46	+ 1.32	0.0132	77	83
Ethyl Acetate	1.29	- 0.01	— 0.48	— 0.27	0.0128	80	86
Ethyl Alcohol (95%)	- 2.01	— 0.03	— 0.01	0.00	0.0115	89	96
Acetone	- 3.35	- 0.09	+ 0.33	+ 1.11	0.0115	89	96
Carbon Tetrachloride	- 1.54	— 0.11	— 0.47	— 0.66	0.0113	90	97
Sulphuric Acid (30%)	+ 0.72	— 0.05	— 0.27	— 0.20	0.0110	93	100
Water	+ 5.30	+ 0.19	+ 2.36	+ 1.68	0.0110	93	100

Lignum-Vitae - A SUMMARY OF ITS PROPERTIES

DIRECTION OF FORCE IN RELATION TO GRAIN

he following Tests ere conducted by mber Engineering Co. S. Testing Co., and rtain U.S. Government gencies. ("A")



PROPERTY	RADIAL	TANGENTIAL	END	END RADIAL	END TANGENTIAL
mpression	10360 PSI	9930 PSI	14850 PSI		
rdness	22180 PSI	19770 PSI	16450 PSI		
ughness	195.5 In.-Lbs.	135.0 In.-Lbs.			
ear parallel to grain				1977 PSI	1701 PSI
nding (Rupture Mod.)	20100 PSI	16800 PSI			
rasion Resistance (dry)	.0102 ... 100%				
rasion Resistance ays soak —8 hours boiled	.0161 = 63%				
rasion Resistance ays water soaked	.0110 = 93%				
asion Resistance -zero freeze	.0101 = 101%				

COEFFICIENT OF FRICTION FOR LIGNUM-VITAE AND COMPARABLE BEARING MATERIALS

MATERIAL	DIRECTION OF MOTION	KINETIC - DRY	KINETIC - WATER IMMERSED
gnum-Vitae	Parallel to cross section	.160	.094
gnum-Vitae	Perpendicular to grain	.158	.192
gnum-Vitae	Parallel to grain	.158	.253
egnated Maple	Parallel to cross section	.125	.206
egnated Maple	Perpendicular to grain	.123	.235
egnated Maple	Parallel to grain	.123	.256
n		.160	.141
ck (Rubber)		.229	.193
rta	Parallel to laminations	.225	.318

NOTE: Coefficient of Friction Tests were conducted using different samples of each material in contact with a cold rolled steel plate. These results represent an average of the various Tests taken in each specific grouping.

NOTE: All data is stated in the form of an average, and is a compilation of accurate figures taken from specific Tests. Due to the natural variation in the material itself, these figures will vary (moderately) with each particular piece of Lignum-Vitae