Elasticity & Beam Shear

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| Common Species Name | Moisture Content | Elasticity | Beam Shear (Flat-grained) G = GLT/EL | Beam Shear (Edge-grained) G = GLR/EL |
| Ash – White | Green | 1.44 x 10^6 \* 10% = 1.584 x 10^6 = **1,584,000** | GLT/1.584 x 10^6 \* 0.077 = 0.121968 = 1.21968 x 10^5 = **121,968** | GLR/1.584 x 10^6 \* 0.109 = 0.172656 = 1.72656 = **172,656** |
|  | 12% | 1.74 x 10^6 \* 10% = 1.914 x 10^6 = **1,914,000** | GLT/1.914 x 10^6 \* 0.077 = 0.147378 = 1.47378 x 10^5 = **147,378** | GLR/1.914 x 10^6 \* 0.109 = 0.208626 = 2.08626 x 10^5 = **208,626** |
| Cherry – Black | Green | 1.31 x 10^6 \* 10% = 1.441 x 10^6 = **1,441,000** | GLT/1.441 x 10^6 \* 0.097 = 0.137977 = 1.37977 x 10^5 = **137,977** | GLR/1.441 x 10^6 \* 0.147 = 0.211827 = 2.11827 x 10^5 = **211,827** |
|  | 12% | 1.49 x 10^6 \* 10% = 1.639 x 10^6 = **1,639,000** | GLT/1.639 x 10^6 \* 0.097 = 0.158983 = 1.58983 x 10^5 = **158,983** | GLR/1.639 x 10^6 \* 0.147 = 0.240933 = 2.40933 x 10^5 = **240,933** |
| Magnolia – Cucumber | Green | 1.56 x 10^6 \* 10% = 1.716 x 10^6 = **1,716,000** |  |  |
|  | 12% | 1.82 x 10^6 \* 10% = 2.002 x 10^6 = **2,002,000** |  |  |
| Oak – Southern Red | Green | 1.14 x 10^6 \* 10% = 1.254 x 10^6 = **1,254,000** | GLT/1.254 x 10^6 \* 0.081 = 0.101574 = 1.01574 x 10^5 = **101,574** | GLR/1.254 x 10^6 \* 0.089 = 0.111606 = 1.11606 x 10^5 = **111,606** |
|  | 12% | 1.49 x 10^6 \* 10% = 1.639 x 10^6 = **1,639,000** | GLT/1.639 x 10^6 \* 0.081 = 0.132759 = 1.32759 x 10^5 = **132,759** | GLR/1.639 x 10^6 \* 0.089 = 0.145871 = 1.45871 x 10^5 = **145,871** |
| Oak – White | Green | 1.25 x 10^6 \* 10% = 1.375 x 10^6 = **1,375,000** | - | GLR/1.25 x 10^6 \* 0.086 = 0.1075 = 1.075 x 10^5 = **107,500** |
|  | 12% | 1.78 x 10^6 \* 10% = 1.958 x 10^6 = **1,958,000** | - | GLR/1.958 x 10^6 \* 0.086 = 0.168388 = 1.68388 x 10^5 = **168,388** |
| Walnut – Black | Green | 1.42 x 10^6 \* 10% = 1.562 x 10^6 = **1,562,000** | GLT/1.562 x 10^6 \* 0.062 = 0.096844 = 9.6844 x 10^4 = **96,844** | GLR/1.562 x 10^6 \* 0.085 = 0.13277 = 1.3277 x 10^5 = **132,770** |
|  | 12% | 1.68 x 10^6 \* 10% = 1.848 x 10^6 = **1,848,000** | GLT/1.848 x 10^6 \* 0.062 = 0.114576 = 1.14576 x 10^5 = **114,576** | GLR/1.848 x 10^6 \* 0.085 = 0.15708 = 1.5708 x 10^5 = **157,080** |
| Cedar – Western Red | Green | 0.94 x 10^6 \* 10% = 1.034 x 10^6 = **1,034,000** | GLT/1.034 x 10^6 \* 0.086 = 0.088924 = 8.8924 x 10^4 = **88,924** | GLR/1.034 x 10^6 \* 0.087 = 0.089958 = 8.9958 x 10^4 = **89,958** |
|  | 12% | 1.11 x 10^6 \* 10% = 1.221 x 10^6 = **1,221,000** | GLT/1.221 x 10^6 \* 0.086 = 0.105006 = 1.05006 x 10^5 = **105,006** | GLR/1.221 x 10^6 \* 0.087 = 0.106227 = 1.06227 x 10^5 = **106,227** |
| Douglas-fir – Interior Western | Green | 1.51 x 10^6 \* 10% = 1.661 x 10^6 = **1,661,000** | GLT/1.661 x 10^6 \* 0.078 = 0.129558 = 1.29558 x 10^5 = **129,558** | GLR/1.661 x 10^6 \* 0.064 = 0.106304 = 1.06304 x 10^5 = **106,304** |
|  | 12% | 1.83 x 10^6 \* 10% = 2.013 x 10^6 = **2,013,000** | GLT/2.013 x 10^6 \* 0.078 = 0.157014 = 1.57014 x 10^5 = **157,014** | GLR/2.013 x 10^6 \* 0.064 = 0.128832 = 1.28832 x 10^5 = **128,832** |
| Hemlock – Eastern | Green | 1.07 x 10^6 \* 10% = 1.111 x 10^6 = **1,111,000** |  |  |
|  | 12% | 1.20 x 10^6 \* 10% = 1.32 x 10^6 = **1,320,000** |  |  |
| Pine – Eastern White | Green | 0.99 x 10^6 \* 10% = 1.089 x 10^6 = **1,089,000** |  |  |
|  | 12% | 1.24 x 10^6 \* 10% = 1.364 x 10^6 = **1,364,000** |  |  |
| Pine – Sugar Pine | Green | 1.03 x 10^6 \* 10% = 1.133 x 10^6 = **1,133,000** | GLT/1.133 x 10^6 \* 0.113 = 0.128029 = 1.28029 x 10^5 = **128,029** | GLR/1.133 x 10^6 \* 0.124 = 0.140492 = 1.40492 x 10^5 = **140,492** |
|  | 12% | 1.19 x 10^6 \* 10% = 1.309 x 10^6 = **1,309,000** | GLT/1.309 x 10^6 \* 0.113 = 0.147917 = 1.47917 x 10^5 = **147,917** | GLR/1.309 x 10^6 \* 0.124 = 0.162316 = 1.62316 x 10^5 = **162,316** |
| Maple - Black | Green | 1.33 x 10^6 \* 10% = 1.463 x 10^6 = **1,463,000** |  |  |
|  | 12% | 1.62 x 10^6 \* 10% = 1.782 x 10^6 = **1,782,000** |  |  |