

# Solid Rigid Polyurethane Foam

Solid rigid polyurethane foam provides a uniform structure with only +/-10% variation in density. Material properties cover a broad range of human bone qualities allowing you to select an appropriate density for your study. This closed cell foam

conforms to ASTM F-1839-08 "Standard Specification for Rigid Polyurethane Foam for Use as a Standard Material for Testing Orthopaedic Devices and Instruments" and has the largest density range available from 0.08g/cc up to 0.80g/cc (5pcf to 50pcf).

| DENSITY             |                           |      | COMPRESSION                  |               | TENSION                      |               | SHEAR                       |               | Shore D Hardness |
|---------------------|---------------------------|------|------------------------------|---------------|------------------------------|---------------|-----------------------------|---------------|------------------|
| ASTM D1622<br>(pcf) | Volume Fraction<br>(g/cc) |      | ASTM D1621<br>Strength (MPa) | Modulus (MPa) | ASTM D1623<br>Strength (MPa) | Modulus (MPa) | ASTM C273<br>Strength (MPa) | Modulus (MPa) |                  |
| 5*                  | 0.08                      | 0.07 | 0.6                          | 16            | 1.0                          | 32            | .59                         | 7.1           | 10               |
| 8                   | 0.13                      | 0.11 | 1.5                          | 38            | 1.3                          | 56            | 1.2                         | 14            | 14               |
| 10*                 | 0.16                      | 0.14 | 2.2                          | 58            | 2.1                          | 86            | 1.6                         | 19            | 15               |
| 12*                 | 0.19                      | 0.16 | 3.2                          | 81            | 2.5                          | 112           | 2.1                         | 24            | 21               |
| 15*                 | 0.24                      | 0.20 | 4.9                          | 123           | 3.7                          | 173           | 2.8                         | 33            | 25               |
| 17**                | 0.27                      | 0.23 | 6.2                          | 155           | 4.6                          | 205           | 3.4                         | 39            | 29               |
| 20*                 | 0.32                      | 0.27 | 8.4                          | 210           | 5.6                          | 284           | 4.3                         | 49            | 35               |
| 25*                 | 0.40                      | 0.34 | 13                           | 317           | 8.8                          | 399           | 5.9                         | 68            | 43               |
| 30*                 | 0.48                      | 0.41 | 18                           | 445           | 12                           | 592           | 7.6                         | 87            | 55               |
| 35*                 | 0.56                      | 0.47 | 24                           | 592           | 16                           | 713           | 9.4                         | 108           | 59               |
| 40*                 | 0.64                      | 0.54 | 31                           | 759           | 19                           | 1000          | 11                          | 130           | 65               |
| 50*                 | 0.80                      | 0.68 | 48                           | 1148          | 27                           | 1469          | 16                          | 178           | 85               |

\*Solid rigid polyurethane foam meets ASTM F1839-08 material specification

\*\*standard cancellous foam used in absolute™ bones

Our foam is available in a range of sizes and densities, from 0.08 to 0.80 grams per cubic centimeter (5 to 50 pounds per cubic foot).

| SOLID FOAM BLOCK TOLERANCES: |          |
|------------------------------|----------|
| Foam density                 | + /- 10% |
| Block dimensions             | +/- 2mm  |