



# NC PROOFBOARD®

## Hi-Temp Density 20 (HT-D20) Datasheet

### DESCRIPTION & APPLICATION:

HT-D20 is a rigid, High Density Urethane, (HDU), Tooling/Modeling board designed for Prototype Machining, Water Jet Cutting, Pattern Making, Thermoforming, Prepreg Composite Layup Tooling Vacuum Form Tooling, Tool Path Proofing, Lost Wax Casting Masters, Master Model Making, Artistic Carving Blocks, Indoor and Outdoor Signage. NC Proofboard is made in the USA.

HT-D20 is formulated with eco-friendly, "Green" urethane components. The new NC Proofboard material has a Certified "Carbon Foot Print" of 3 to 1 and a Certified "Rapidly Renewable Green Resource Content" of 11.9%. This means each 3"x 4'x8' sheet of D-20 saves 19 pounds of plastic material which assists meeting LEED requirements for obtaining USGBC and ICC 700 building credits.

NC Proofboard **does not contain: CFCs or VOCs.** See MSDS for details.

NC Proofboard comes in standard sizes of 20"x60", 24"x60", 30"x80", 48"x60" 4'x8', 4'x10', 5'x8' and 5'x10'. Thickness ranges from 1/2" to 24". Custom bonded blocks available in any size. NC Proofboard standard densities are 15, 18, 20, 30, 34, 40, 48, 60, 70, & 75 pcf. Other densities available.

NC Proofboard is **non-abrasive**, can be machined with HSS bits or cut with any standard cutting tool. NC Proofboard's tight cell structure allows adjusting spindle speed & table feed to produce either chips or dust as desired. NC Proofboard does not outgas or affect prepreg resin cure.

NC Proofboard can be bonded to itself or most other substrates using one part urethane or, a two part, epoxy adhesive available from Goldenwest Manufacturing, Inc.

### PHYSICAL PROPERTIES:

|  |                               |                                      |
|--|-------------------------------|--------------------------------------|
| Density                                | ASTM D-1623                   | 20 lbs./Cubic Foot                   |
| Compressive Strength                   | ASTM D-1621                   | 968 psi                              |
| Compressive Modulus                    | ASTM D-1621                   | 39,129 psi                           |
| Tensile Strength                       | ASTM D-1623                   | 628 psi                              |
| Tensile Modulus                        | ASTM D-1623                   | 59,998 psi                           |
| Shear Strength                         | ASTM C-273                    | 532 psi                              |
| Shear Modulus                          | ASTM C-273                    | 7,928 psi                            |
| Flexural Strength Method 1A            | ASTM D-790                    | 973 psi                              |
| Flexural Modulus Method 1 A            | ASTM D-790                    | 30,146 psi                           |
| Hardness - Shore D                     | ASTM D-2240                   | 46                                   |
| Elongation                             |                               | 5.3%                                 |
| Dimensional Stability                  | ASTM D-2126                   | 1.2% Max.                            |
| Water Absorption                       | ASTM D-2842                   | 0.01% by Vol. after 96 hrs.          |
| Closed Cell Content                    | ASTM D-2856                   | 97%                                  |
| "K" Value Insulation Factor            | ASTM C-177                    | 0.771                                |
| Impact Resistance                      | 0°F 4.6 oz. 1" Dia. 9'6" drop | No cracking observed                 |
| Freeze Thaw                            | ASTM D-2126, 25 Cycles        | No de-bonding or distortion occurred |
| Mold and Mildew Resistance             | ASTM D-3273                   | Does not support growth              |
| Dielectric Constant                    | ASTM D-1678                   | 1.3                                  |
| Maximum Service Temperature            | Dry                           | 300° F                               |
| Coefficient of Thermal Expansion (CTE) |                               | 26 X 10 <sup>-6</sup> °F             |
| Glass Transition                       | DMA/TMA                       | 284°F                                |
| Specific Heat                          | ASTM E-1269                   | 0.235                                |
| Flammability Tests:                    | FAR 25.853 Vertical Burn      | Pass                                 |
|  | MIL P 26514 Burn Test         | Pass                                 |
|  | ASTM D-1692-74 Burn Test      | Pass                                 |
|  | ASTM D635-06 Burn Test        | Pass                                 |

Follow heat temperature ramping of 1°F up per minute & 2°F down per minute.

**Questions? Please contact Goldenwest Manufacturing, Inc.**

**(530) 272-1133 or email [sales@goldenwestmfg.com](mailto:sales@goldenwestmfg.com)**

**[www.goldenwestmfg.com](http://www.goldenwestmfg.com)**

**WARRANTY:** All recommendations for product use have been derived from experience and test data believed to be reliable. We warrant and guarantee the uniformity of our products within manufacturing tolerance. However, since the use of our products is beyond our direct control, they are furnished upon the condition that each party shall make his/her own tests to determine their suitability for his/her particular purpose. Except as stated herein, Goldenwest Manufacturing Inc. makes no warranty or guarantee, expressed or implied, and disclaims all responsibility for results obtained, nor assumes any liability for any damages, whether arising out of negligence or breach of guarantee and is hereby expressly limited to replacement of product only. For additional information on product handling, please refer to NC Proofboard MSDS.