

## Denix 12™ PHYSICAL PROPERTY AND CHEMICAL RESISTANCE INFORMATION

The following tests were performed by major independent laboratories with results summarized in the accompanying tables.

### Chemical Resistance

Chemical resistance testing has been performed both according to the SEFA required ASTM Standard (ASTM D3023) with a passing grade (no staining or graying), as well as a comprehensive series of general tests to determine the work surface's resistance to the most commonly chemicals found in the laboratory workplace. The general tests include testing to a variety of common inorganic and organic acids, bases, organic solvents and organic compounds. The general test criteria and its results are spelled out in the separate detailed Chemical Resistance Testing.

### Bacterial Resistance (35-Day Exposure)

Bacterial Resistance testing was performed according to the SEFA requirement of ASTM G22. Denix 12 is highly resistant to bacterial growth due to the chemical make-up and smooth finish of its exterior gel coat surface. This makes the product suitable for use in microbiological testing and research facilities.

### Ease of Cleaning

Denix 12 was tested to ASTM G122, which tests the products effectiveness in terms of ability to be cleaned with respect to chemicals and cleaning performed under the ASTM D3023 test. One of the major benefits of Denix 12 is its ability to be readily and easily cleaned, and as a result, it received a passing mark under this test.

### Impact Resistance

Impact resistance testing was performed to the required SEFA standard of ASTM D256. Under this test, Denix 12 demonstrates outstanding impact resistance (8.6 ft-lb/in; 459 J/m), well in excess of values shown by competing products. In addition, Denix 12 maintains impact resistance due to its tough gel coat exterior down to low temperature conditions, such as after dry ice is placed on the work surface for extended periods.

### Rockwell Hardness M-Scale

Impact testing was performed to ASTM D785. This required SEFA test is directly related to the scratch and wear resistance of the worksurface. Denix 12 exhibits results that are well in excess of other competing worksurfaces. In addition to the fact that it has higher resistance to scratching, Denix 12 has the further benefit of being readily repairable in the event of a scratch or nick.

### Fire Resistance (Horizontal Burn Test)

Denix 12 has been tested to ASTM D635 (HB), one of the tests SEFA requires testing to and the most commonly used test by all competitors of Denix 12. Denix 12 has passed the test and has been judged to be self-extinguishing according to the test. Specifically, the fire was extinguished prior to the flame reaching the 25 mm mark.

**Water Absorption**

Denix 12 is very resistant to moisture absorption, as evidenced by the results of tests performed to the SEFA-required ASTM D570 test. The results of the test are well within the range which would designate Denix 12 as being moisture resistant, and is consistent within the range reported by other common competing worksurface materials.

**Flexural Strength**

Denix 12 is flexible by comparison to many common rigid worksurface materials, but has significant strength. Due to its flexibility, it does have to be supported correctly, especially where heavy pieces of equipment are located on horizontal sections of the material. The tests were performed according to ASTM D790.

**Heat Deflection**

Denix 12 has been tested to ASTM D648 for heat deflection and has exhibited test values that are adequate in terms of heat deflection. At a load of 264 psi, the test result is way above temperatures that would be anticipated in normal laboratory settings.

**Tensile Strength**

Denix 12 has tensile strength, according to ASTM D638 that is similar to a solid thermoplastic material, which makes it tough and durable. By comparison to many common rigid worksurface materials, it is lower in comparative tensile rating, but a very comparable tensile modulus. When supported correctly according to factory recommended installation criteria, the material is more than adequate in terms of tensile strength.

**Compressive Strength**

Denix 12 demonstrates compressive strengths similar to a rigid thermoplastic material when tested according to ASTM D695. Compressive strength is adequate for resisting compressive loads that would be anticipated in normal laboratory settings.

**Physical Testing Properties for Denix 12**

Test	ASTM Test #	Results (imperial)	Results (metric)
Notched Izod Impact @ 23°C	D 256	8.6 ft-lb/in	459 J/m
Chemical Resistance	D 3023	Pass - - - -	Pass - - -
Bacterial Resistance	G 22	Pass 35-Day	Pass 35-Day
Ease of Cleaning	G 122	Pass - - - -	Pass - - - - -
Rockwell Hardness @23°C	D 785	118.3 M-scale	- - - - - - - -
Fire Resistance (Horizontal Burn)	D 635	Self Extinguishing	< 25mm

<b>Water Absorption</b>	<b>D 570</b>	<b>0.33 %</b>	<b>0.33 %</b>
<b>Flexural Strength</b>	<b>D 790</b>	<b>7,311 psi</b>	<b>50.4 Mpa</b>
<b>Flexural Modulus</b>	<b>D 790</b>	<b>561,388 psi</b>	<b>3,871 Mpa</b>
<b>Heat Deflection @ 264 PSI</b>	<b>D 648</b>	<b>172F</b>	<b>78C</b>
<b>Tensile Strength @23°C</b>	<b>D 638</b>	<b>2,384 PSI</b>	<b>16.4 MPa</b>
<b>Tensile Modulus @23°C</b>	<b>D 638</b>	<b>316,900 PSI</b>	<b>2,185 MPa</b>
<b>Compressive Strength (yield)</b>	<b>D 695</b>	<b>4,295 PSI</b>	<b>29.6 MPa</b>
<b>Compressive Strength (ultimate)</b>	<b>D 695</b>	<b>4,304 PSI</b>	<b>29.7 MPa</b>