

# TUFFAK CA POLYCARBONATE SHEET

### **CLASS A PERFORMANCE**

TUFFAK CA is an optical grade transparent polycarbonate sheet product designed to meet Class A flammability requirements in the International Building Code (IBC) for interior wall and ceiling finishes. It features outstanding impact strength. high temperature resistance and high clarity and passes the National Fire Protection Association (NFPA) 286 flammability requirements. This UV stable, lightweight, thermoformable, and easy to fabricate sheet is available in smooth and patterns; clear and colors. TUFFAK CA sheet is offered with a five (5) year Limited Product Warranty against breakage. The terms of the warranty are available upon request.

### **APPLICATIONS**

Class A rated wall and ceiling finishes, coverings, decorative panels, protective coverings, partitions, interior windows, safety barriers, lighting diffusers and interior signage

# Regulatory code compliance and Certifications

Class A rated per the 2015 International Building Code Section 803.1 for interior wall and ceiling finishes

Property         Test Method         Units         Values           PHYSICAL         Specific Gravity         ASTM D792         -         1.2           Refractive Index         ASTM D542         -         1.586           Light Transmission, E59 White @ O.118°         ASTM D1003         %         88           Light Transmission, B59 White @ O.118°         ASTM D1003         %         27           Light Transmission, B54 White @ O.118°         ASTM D1003         %         27           Light Transmission, B48 White @ O.118°         ASTM D1003         %         50           Light Transmission, 130 Gray @ O.118°         ASTM D1003         %         50           Light Transmission, 130 Gray @ O.118°         ASTM D1003         %         50           Light Transmission, 130 Gray @ O.118°         ASTM D1003         %         50           Light Transmission, 1848 White @ O.118°         ASTM D1003         %         50           Light Transmission, 180 gray @ O.118°         ASTM D1003         %         50           Light Transmission, 180 gray @ O.118°         ASTM D1003         %         10           Light Transmission, 180 gray @ O.118°         ASTM D1003         %         10           Light Transmission, 180 gray @ O.118°         ASTM D1003	TYPICAL PROPERTIES*									
Specific Gravity	Property	Test Method	Units	Values						
Refractive Index         ASTM D542         −         1586           Light Transmission, Clear @ 0.118"         ASTM D1003         %         88           Light Transmission, B59 White @ > 0.118"         ASTM D1003         %         27           Light Transmission, B54 White @ > 0.118"         ASTM D1003         %         27           Light Transmission, B48 White @ 0.118"         ASTM D1003         %         50           Light Transmission, 130 Gray @ 0.118"         ASTM D1003         %         50           Light Transmission, 130 Gray @ 0.118"         ASTM D1003         %         50           Light Transmission, 150 Gray @ 0.118"         ASTM D1003         %         50           Light Transmission, 150 Gray @ 0.118"         ASTM D1003         %         50           Light Transmission, 150 Gray @ 0.118"         ASTM D1003         %         50           Water Absorption, 24 hours @ 73°F         ASTM D1003         %         50           Water Absorption, 24 hours @ 73°F         ASTM D570         %         0.15           Poisson's Ratio         ASTM D638         psi         9,500           Tensile Strength, Break         ASTM D638         psi         9,500           Tensile Strength, Yield         ASTM D638         psi         13,500 <td>PHYSICAL</td> <td></td> <td></td> <td></td>	PHYSICAL									
Light Transmission, Clear @ 0.118"         ASTM D1003         %         27           Light Transmission, B59 White @ 0.118"         ASTM D1003         %         27           Light Transmission, B54 White @ 0.118"         ASTM D1003         %         27           Light Transmission, B27 White @ 0.118"         ASTM D1003         %         27           Light Transmission, B48 White @ 0.118"         ASTM D1003         %         50           Light Transmission, 130 Gray @ 0.118"         ASTM D1003         %         50           Light Transmission, 155 Dark Gray @ 0.118"         ASTM D1003         %         18           Light Transmission, K09 Bronze @ 0.118"         ASTM D1003         %         18           Light Transmission, K09 Bronze @ 0.118"         ASTM D1003         %         18           Light Transmission, K09 Bronze @ 0.118"         ASTM D1003         %         18           Light Transmission, K09 Bronze @ 0.118"         ASTM D1003         %         10           Water Absorption, 24 hours @ 73°F         ASTM D1003         %         0.15           Poisson's Ratio         ASTM D638         psi         9.500           Tensile Strength, Preak         ASTM D638         psi         9.500           Tensile Ostula         ASTM D638         psi </td <td>Specific Gravity</td> <td>ASTM D792</td> <td>-</td> <td>1.2</td>	Specific Gravity	ASTM D792	-	1.2						
Light Transmission, B59 White @ 0.118°         ASTM D1003         %         27           Light Transmission, B54 White @ > 0.118°         ASTM D1003         %         27           Light Transmission, B27 White @ 0.118°         ASTM D1003         %         27           Light Transmission, B27 White @ 0.118°         ASTM D1003         %         50           Light Transmission, 135 Dark Gray @ 0.118°         ASTM D1003         %         50           Light Transmission, K09 Bronze @ 0.118°         ASTM D1003         %         50           Light Transmission, K09 Bronze @ 0.118°         ASTM D1003         %         50           Water Absorption, 24 hours @ 73°F         ASTM D570         %         0.15           Poisson's Ratio         ASTM D570         %         0.15           Poisson's Ratio         ASTM D638         psi         9.500           MECHANICAL         Transile Strength, Break         ASTM D638         psi         9.500           Tensile Strength, Break         ASTM D638         psi         9.500           Tensile Strength, Yield         ASTM D638         psi         3.40,000           Elonyation         ASTM D638         psi         110           Flexural Modulus         ASTM D695         psi         12,500	Refractive Index	ASTM D542	-	1.586						
Light Transmission, B54 White @ > 0.118°         ASTM D1003         %         27           Light Transmission, B27 White @ 0.118°         ASTM D1003         %         27           Light Transmission, B48 White @ 0.118°         ASTM D1003         %         50           Light Transmission, 130 Gray @ 0.118°         ASTM D1003         %         50           Light Transmission, 135 Dark Gray @ 0.118°         ASTM D1003         %         50           Light Transmission, K09 Bronze @ 0.118°         ASTM D1003         %         50           Water Absorption, 24 hours @ 73°F         ASTM D570         %         0.15           Poisson's Ratio         ASTM D570         %         0.15           Poisson's Ratio         ASTM D570         %         0.15           Poisson's Ratio         ASTM D638         psi         9.500           Tensile Strength, Break         ASTM D638         psi         9.500           Tensile Strength, Yield         ASTM D638         psi         340,000           Tensile Modulus         ASTM D638         psi         340,000           Elongation         ASTM D638         psi         13,500           Flexural Modulus         ASTM D790         psi         12,500           Compressive Strength	Light Transmission, Clear @ 0.118"	ASTM D1003	%	88						
Light Transmission, B27 White @ 0.118" ASTM D1003 % 50  Light Transmission, B48 White @ 0.118" ASTM D1003 % 50  Light Transmission, 130 Gray @ 0.118" ASTM D1003 % 50  Light Transmission, 135 Dark Gray @ 0.118" ASTM D1003 % 18  Light Transmission, K09 Bronze @ 0.118" ASTM D1003 % 50  Water Absorption, 24 hours @ 73°F ASTM D570 % 0.15  Poisson's Ratio ASTM E132 − 0.38  MECHANICAL  Tensile Strength, Break ASTM D638 psi 9,500  Tensile Strength, Vield ASTM D638 psi 9,000  Tensile Strength, Vield ASTM D638 psi 340,000  Elongation ASTM D638 psi 340,000  Elongation ASTM D638 hsi 340,000  Flexural Strength ASTM D638 hsi 110  Flexural Strength ASTM D638 hsi 12,500  Compressive Strength ASTM D695 psi 12,500  Compressive Strength ASTM D695 psi 12,500  Compressive Modulus ASTM D695 psi 12,500  Compressive Modulus ASTM D256 ft·lbs/in 18  Izod Impact Strength, Unnotched @ 0.125" ASTM D256 ft·lbs/in 60 No Break Instrumented Impact @ 0.125" ASTM D256 ft·lbs/in 60 No Break Instrumented Impact & 0.125" ASTM D732 psi 10,000  Shear Strength, Freak ASTM D732 psi 114,000  Shear Strength, Pield ASTM D732 psi 114,000  Rockwell Hardness ASTM D732 psi 114,000	Light Transmission, B59 White @ 0.118"	ASTM D1003	%	27						
Light Transmission, B48 White @ 0.118" ASTM D1003 % 50  Light Transmission, 130 Gray @ 0.118" ASTM D1003 % 50  Light Transmission, 135 Dark Gray @ 0.118" ASTM D1003 % 18  Light Transmission, K09 Bronze @ 0.118" ASTM D1003 % 50  Water Absorption, 24 hours @ 73°F ASTM D570 % 0.15  Poisson's Ratio ASTM E132 − 0.38  MECHANICAL  Tensile Strength, Break ASTM D638 psi 9.500  Tensile Strength, Vield ASTM D638 psi 9.000  Tensile Modulus ASTM D638 psi 9.000  Tensile Modulus ASTM D638 psi 340,000  Elongation ASTM D638 psi 100  Flexural Strength ASTM D638 psi 13.500  Compressive Strength ASTM D695 psi 13.500  Compressive Strength ASTM D695 psi 12.500  Compressive Modulus ASTM D695 psi 345,000  Izod Impact Strength, Notched @ 0.125" ASTM D256 ft lbs/in 18  Izod Impact Strength, Unnotched @ 0.125" ASTM D256 ft lbs/in 60 No Break Instrumented Impact @ 0.125" ASTM D3763 ft lbs 47  Shear Strength, Yield ASTM D732 psi 114,000  Shear Modulus ASTM D732 psi 114,000  Rockwell Hardness ASTM D732 psi 12,000  Shear Strength, Yield ASTM D732 psi 13,000  Shear Strength, Yield ASTM D732 psi 14,000	Light Transmission, B54 White @ > 0.118"	ASTM D1003	%	27						
Light Transmission, 130 Gray @ 0.118"         ASTM D1003         %         50           Light Transmission, 135 Dark Gray @ 0.118"         ASTM D1003         %         18           Light Transmission, K09 Bronze @ 0.118"         ASTM D1003         %         50           Water Absorption, 24 hours @ 73°F         ASTM D570         %         0.15           Poisson's Ratio         ASTM E132         -         0.38           MECHANICAL           Tensile Strength, Break         ASTM D638         psi         9,500           Tensile Strength, Yield         ASTM D638         psi         9,000           Tensile Modulus         ASTM D638         psi         340,000           Elongation         ASTM D638         psi         340,000           Elongation         ASTM D638         %         110           Flexural Modulus         ASTM D790         psi         13,500           Flexural Modulus         ASTM D695         psi         12,500           Compressive Strength         ASTM D695         psi         345,000           Izod Impact Strength, Notched @ 0.125"         ASTM D256         ft lbs/in         18           Izod Impact Strength, Unnotched @ 0.125"         ASTM D256         ft lbs/in         60 No Break <td>Light Transmission, B27 White @ 0.118"</td> <td>ASTM D1003</td> <td>%</td> <td>27</td>	Light Transmission, B27 White @ 0.118"	ASTM D1003	%	27						
Light Transmission, 135 Dark Gray @ 0.118*         ASTM D1003         %         18           Light Transmission, K09 Bronze @ 0.118*         ASTM D1003         %         50           Water Absorption, 24 hours @ 73°F         ASTM D570         %         0.15           Poisson's Ratio         ASTM E132         -         0.38           MECHANICAL           Tensile Strength, Break         ASTM D638         psi         9,500           Tensile Strength, Yield         ASTM D638         psi         9,000           Tensile Modulus         ASTM D638         psi         340,000           Elongation         ASTM D638         %         110           Flexural Strength         ASTM D638         %         110           Flexural Modulus         ASTM D790         psi         345,000           Compressive Strength         ASTM D695         psi         12,500           Compressive Modulus         ASTM D695         psi         345,000           Izod Impact Strength, Notched @ 0.125"         ASTM D256         ft lbs/in         18           Izod Impact Strength, Unnotched @ 0.125"         ASTM D3763         ft lbs/in         60 No Break           Instrumented Impact @ 0.125"         ASTM D3763         ft lbs/in <td< td=""><td>Light Transmission, B48 White @ 0.118"</td><td>ASTM D1003</td><td>%</td><td>50</td></td<>	Light Transmission, B48 White @ 0.118"	ASTM D1003	%	50						
Light Transmission, KO9 Bronze @ 0.118°         ASTM D1003         %         50           Water Absorption, 24 hours @ 73°F         ASTM D570         %         0.15           Poisson's Ratio         ASTM E132         -         0.38           MECHANICAL           Tensile Strength, Break         ASTM D638         psi         9,500           Tensile Strength, Yield         ASTM D638         psi         9,000           Tensile Modulus         ASTM D638         psi         340,000           Elongation         ASTM D638         %         110           Flexural Strength         ASTM D790         psi         13,500           Flexural Modulus         ASTM D790         psi         345,000           Compressive Strength         ASTM D695         psi         12,500           Compressive Modulus         ASTM D695         psi         345,000           Lizod Impact Strength, Notched @ 0.125°         ASTM D256         ft lbs/in         60 No Break           Instrumented Impact @ 0.125°         ASTM D3763         ft lbs/in         60 No Break           Instrumented Impact @ 0.125°         ASTM D372         psi         10,000           Shear Strength, Sreak         ASTM D732         psi         10,000 <td>Light Transmission, 130 Gray @ 0.118"</td> <td>ASTM D1003</td> <td>%</td> <td>50</td>	Light Transmission, 130 Gray @ 0.118"	ASTM D1003	%	50						
Water Absorption, 24 hours @ 73°F         ASTM D570         %         0.15           Poisson's Ratio         ASTM E132         –         0.38           MECHANICAL         Tensile Strength, Break         ASTM D638         psi         9,500           Tensile Strength, Break         ASTM D638         psi         9,000           Tensile Modulus         ASTM D638         psi         340,000           Elongation         ASTM D638         %         110           Flexural Strength         ASTM D638         %         110           Flexural Strength         ASTM D638         %         110           Flexural Modulus         ASTM D638         %         110           Flexural Modulus         ASTM D790         psi         345,000           Compressive Strength         ASTM D695         psi         12,500           Compressive Wodulus         ASTM D695         psi         345,000           Izod Impact Strength, Notched @ 0.125"         ASTM D256         ft-lbs/in         60 No Break           Instrumented Impact @ 0.125"         ASTM D3763         ft-lbs         47           Shear Strength, Break         ASTM D732         psi         10,000           Shear Strength, Wield         ASTM D732	Light Transmission, 135 Dark Gray @ 0.118"	ASTM D1003	%	18						
Poisson's Ratio         ASTM El32         -         0.38           MECHANICAL           Tensile Strength, Break         ASTM D638         psi         9,500           Tensile Strength, Yield         ASTM D638         psi         9,000           Tensile Modulus         ASTM D638         psi         340,000           Elongation         ASTM D638         %         110           Flexural Strength         ASTM D638         %         110           Compressive Modulus         ASTM D695         psi         345,000           Izod Impact Strength, Notched @ 0.125"         ASTM D256         ft lbs/in         18           Izod Impact Strength, Unnotched @ 0.125"         ASTM D256         ft lbs/in         60 No Break           Instrumented Impact @ 0.125"         ASTM D732         psi         10,000           Shear Strength, Yield         ASTM D732	Light Transmission, K09 Bronze @ 0.118"	ASTM D1003	%	50						
MECHANICAL           Tensile Strength, Break         ASTM D638         psi         9,500           Tensile Strength, Yield         ASTM D638         psi         9,000           Tensile Modulus         ASTM D638         psi         340,000           Elongation         ASTM D638         %         110           Flexural Strength         ASTM D790         psi         13,500           Flexural Modulus         ASTM D790         psi         345,000           Compressive Strength         ASTM D695         psi         12,500           Compressive Modulus         ASTM D695         psi         345,000           Izod Impact Strength, Notched @ 0.125"         ASTM D256         ft·lbs/in         18           Izod Impact Strength, Notched @ 0.125"         ASTM D256         ft·lbs/in         60 No Break           Instrumented Impact @ 0.125"         ASTM D3763         ft·lbs         47           Shear Strength, Spreak         ASTM D732         psi         10,000           Shear Strength, Yield         ASTM D732         psi         114,000           Rockwell Hardness         ASTM D732         psi         114,000           Rockwell Hardness         ASTM D696         in/in/"F         3.75 x 10°           <	Water Absorption, 24 hours @ 73°F	ASTM D570	%	0.15						
Tensile Strength, Break         ASTM D638         psi         9,500           Tensile Strength, Yield         ASTM D638         psi         9,000           Tensile Modulus         ASTM D638         psi         340,000           Elongation         ASTM D638         %         110           Flexural Strength         ASTM D790         psi         13,500           Flexural Modulus         ASTM D790         psi         345,000           Compressive Strength         ASTM D695         psi         12,500           Compressive Modulus         ASTM D695         psi         345,000           Izod Impact Strength, Notched @ 0.125"         ASTM D256         ft-lbs/in         18           Izod Impact Strength, Unnotched @ 0.125"         ASTM D256         ft-lbs/in         60 No Break           Instrumented Impact @ 0.125"         ASTM D3763         ft-lbs         47           Shear Strength, Unnotched @ 0.125"         ASTM D732         psi         10,000           Shear Strength, Yield         ASTM D732         psi         10,000           Shear Modulus         ASTM D732         psi         114,000           Rockwell Hardness         ASTM D785         -         M70 / R118           THERMAL <tr< td=""><td>Poisson's Ratio</td><td>ASTM E132</td><td>-</td><td>0.38</td></tr<>	Poisson's Ratio	ASTM E132	-	0.38						
Tensile Strength, Yield         ASTM D638         psi         9,000           Tensile Modulus         ASTM D638         psi         340,000           Elongation         ASTM D638         %         110           Flexural Strength         ASTM D790         psi         13,500           Flexural Modulus         ASTM D790         psi         345,000           Compressive Strength         ASTM D695         psi         12,500           Compressive Modulus         ASTM D695         psi         345,000           Izod Impact Strength, Notched @ 0.125"         ASTM D256         ft.lbs/in         18           Izod Impact Strength, Unnotched @ 0.125"         ASTM D256         ft.lbs/in         60 No Break           Instrumented Impact @ 0.125"         ASTM D3763         ft.lbs         47           Shear Strength, Break         ASTM D732         psi         10,000           Shear Strength, Yield         ASTM D732         psi         114,000           Rockwell Hardness         ASTM D732         psi         114,000           Rockwell Hardness         ASTM D785         -         M70 / R118           THERMAL           Coefficient of Thermal Expansion         ASTM D696         in/in/*F         3.75 x 10* </td <td>MECHANICAL</td> <td></td> <td></td> <td></td>	MECHANICAL									
Tensile Strength, Yield         ASTM D638         psi         9,000           Tensile Modulus         ASTM D638         psi         340,000           Elongation         ASTM D638         %         110           Flexural Strength         ASTM D790         psi         13,500           Flexural Modulus         ASTM D790         psi         345,000           Compressive Strength         ASTM D695         psi         12,500           Compressive Modulus         ASTM D695         psi         345,000           Izod Impact Strength, Notched @ 0.125"         ASTM D256         ft.lbs/in         18           Izod Impact Strength, Unnotched @ 0.125"         ASTM D256         ft.lbs/in         60 No Break           Instrumented Impact @ 0.125"         ASTM D3763         ft.lbs         47           Shear Strength, Break         ASTM D732         psi         10,000           Shear Strength, Yield         ASTM D732         psi         114,000           Rockwell Hardness         ASTM D732         psi         114,000           Rockwell Hardness         ASTM D785         -         M70 / R118           THERMAL           Coefficient of Thermal Expansion         ASTM D696         in/in/*F         3.75 x 10* </td <td></td> <td>ASTM D638</td> <td>psi</td> <td>9.500</td>		ASTM D638	psi	9.500						
Tensile Modulus         ASTM D638         psi         340,000           Elongation         ASTM D638         %         110           Flexural Strength         ASTM D790         psi         13,500           Flexural Modulus         ASTM D790         psi         345,000           Compressive Strength         ASTM D695         psi         12,500           Compressive Modulus         ASTM D695         psi         345,000           Izod Impact Strength, Notched @ 0.125"         ASTM D256         ft-lbs/in         18           Izod Impact Strength, Unnotched @ 0.125"         ASTM D256         ft-lbs/in         60 No Break           Instrumented Impact @ 0.125"         ASTM D3763         ft-lbs         47           Shear Strength, Break         ASTM D3732         psi         10,000           Shear Strength, Yield         ASTM D732         psi         10,000           Shear Modulus         ASTM D732         psi         114,000           Rockwell Hardness         ASTM D732         psi         114,000           Rockwell Hardness         ASTM D696         in/in/o*F         3.75 x 10-5           Coefficient of Thermal Expansion         ASTM D696         in/in/o*F         1.35           Coefficien	<u> </u>		·	.,						
Elongation	<u> </u>		·							
Flexural Strength         ASTM D790         psi         13,500           Flexural Modulus         ASTM D790         psi         345,000           Compressive Strength         ASTM D695         psi         12,500           Compressive Modulus         ASTM D695         psi         345,000           Izod Impact Strength, Notched @ 0.125″         ASTM D256         ft-lbs/in         18           Izod Impact Strength, Unnotched @ 0.125″         ASTM D256         ft-lbs/in         60 No Break           Instrumented Impact @ 0.125″         ASTM D3763         ft-lbs         47           Shear Strength, Break         ASTM D732         psi         10,000           Shear Strength, Yield         ASTM D732         psi         6,000           Shear Modulus         ASTM D732         psi         114,000           Rockwell Hardness         ASTM D785         -         M70 / R118           THERMAL           Coefficient of Thermal Expansion         ASTM D696         in/in/eF         3.75 x 10-s           Coefficient of Thermal Conductivity         ASTM D648         °F         270           Heat Deflection Temperature @ 264 psi         ASTM D648         °F         280           Brittleness Temperature         ASTM D746 <td< td=""><td></td><td></td><td>·</td><td></td></td<>			·							
Flexural Modulus  ASTM D790  Compressive Strength  ASTM D695  Compressive Modulus  ASTM D695  D95  ASTM D695  D96  ASTM D695  D97  ASTM D695  D98  ASTM D695  D98  ASTM D695  D98  ASTM D695  D99  ASTM D695  D99  ASTM D695  D99  B10,000  B1		ASTM D790	psi	13.500						
Compressive Strength ASTM D695 psi 12,500 Compressive Modulus ASTM D695 psi 345,000 Izod Impact Strength, Notched @ 0.125" ASTM D256 ft lbs/in 18 Izod Impact Strength, Unnotched @ 0.125" ASTM D256 ft lbs/in 60 No Break Instrumented Impact @ 0.125" ASTM D3763 ft lbs 47 Shear Strength, Break ASTM D732 psi 10,000 Shear Strength, Yield ASTM D732 psi 6,000 Shear Modulus ASTM D732 psi 114,000 Rockwell Hardness ASTM D785 - M70 / R118  THERMAL  Coefficient of Thermal Expansion ASTM D696 in/in/°F 3.75 x 10-5 Coefficient of Thermal Conductivity ASTM C177 BTU-in/hr-ft²-°F 1.35 Heat Deflection Temperature @ 264 psi ASTM D648 °F 270 Heat Deflection Temperature @ 66 psi ASTM D648 °F 280 Brittleness Temperature ASTM D746 °F -200  FLAMMABILITY  Horizontal Burn, AEB ASTM D635 °F <1 Ignition Temperature, Self ASTM D1929 in 1022	•	ASTM D790	·							
Compressive Modulus  Izod Impact Strength, Notched @ 0.125" ASTM D256 ft lbs/in 18  Izod Impact Strength, Unnotched @ 0.125" ASTM D256 ft lbs/in 60 No Break Instrumented Impact @ 0.125" ASTM D3763 ft lbs 47  Shear Strength, Break ASTM D732 psi 10,000  Shear Strength, Yield ASTM D732 psi 6,000  Shear Modulus ASTM D732 psi 114,000  Rockwell Hardness ASTM D785 - M70 / R118  THERMAL  Coefficient of Thermal Expansion ASTM D696 in/in/°F 3.75 x 10-5  Coefficient of Thermal Conductivity ASTM C177 BTU-in/hr-ft²-°F 1.35  Heat Deflection Temperature @ 264 psi ASTM D648 °F 270  Heat Deflection Temperature @ 66 psi ASTM D648 °F 280  Brittleness Temperature & ASTM D746 °F -200  FLAMMABILITY  Horizontal Burn, AEB ASTM D635 °F <1  Ignition Temperature, Self ASTM D1929 in 1022	Compressive Strength	ASTM D695	·							
Izod Impact Strength, Unnotched @ 0.125" ASTM D256 ft lbs/in 60 No Break Instrumented Impact @ 0.125" ASTM D3763 ft lbs 47  Shear Strength, Break ASTM D732 psi 10,000 Shear Strength, Yield ASTM D732 psi 6,000 Shear Modulus ASTM D732 psi 114,000 Rockwell Hardness ASTM D785 - M70 / R118  THERMAL  Coefficient of Thermal Expansion ASTM D696 in/in/°F 3.75 x 10-5 Coefficient of Thermal Conductivity ASTM C177 BTU-in/hr-ft²-°F 1.35 Heat Deflection Temperature @ 264 psi ASTM D648 °F 270 Heat Deflection Temperature @ 66 psi ASTM D648 °F 280 Brittleness Temperature & ASTM D746 °F -200  FLAMMABILITY  Horizontal Burn, AEB ASTM D635 °F <1 Ignition Temperature, Self ASTM D1929 in 1022		ASTM D695	psi	345,000						
Izod Impact Strength, Unnotched @ 0.125" ASTM D256 ft lbs/in 60 No Break Instrumented Impact @ 0.125" ASTM D3763 ft lbs 47  Shear Strength, Break ASTM D732 psi 10,000 Shear Strength, Yield ASTM D732 psi 6,000 Shear Modulus ASTM D732 psi 114,000 Rockwell Hardness ASTM D785 - M70 / R118  THERMAL  Coefficient of Thermal Expansion ASTM D696 in/in/°F 3.75 x 10-5 Coefficient of Thermal Conductivity ASTM C177 BTU-in/hr-ft²-°F 1.35 Heat Deflection Temperature @ 264 psi ASTM D648 °F 270 Heat Deflection Temperature @ 66 psi ASTM D648 °F 280 Brittleness Temperature & ASTM D746 °F -200  FLAMMABILITY  Horizontal Burn, AEB ASTM D635 °F <1 Ignition Temperature, Self ASTM D1929 in 1022	Izod Impact Strength, Notched @ 0.125"	ASTM D256	ft·lbs/in	18						
Shear Strength, Break ASTM D732 psi 10,000 Shear Strength, Yield ASTM D732 psi 6,000 Shear Modulus ASTM D732 psi 114,000 Rockwell Hardness ASTM D785 - M70 / R118  THERMAL Coefficient of Thermal Expansion ASTM D696 in/in/°F 3.75 x 10-5 Coefficient of Thermal Conductivity ASTM C177 BTU-in/hr-ft²-°F 1.35 Heat Deflection Temperature @ 264 psi ASTM D648 °F 270 Heat Deflection Temperature @ 66 psi Brittleness Temperature & ASTM D746 °F 280 Brittleness Temperature ASTM D635 °F		ASTM D256	ft·lbs/in	60 No Break						
Shear Strength, Yield ASTM D732 psi 6,000 Shear Modulus ASTM D732 psi 114,000 Rockwell Hardness ASTM D785 - M70 / R118  THERMAL  Coefficient of Thermal Expansion ASTM D696 in/in/°F 3.75 x 10-5 Coefficient of Thermal Conductivity ASTM C177 BTU-in/hr-ft²-°F 1.35 Heat Deflection Temperature @ 264 psi ASTM D648 °F 270 Heat Deflection Temperature @ 66 psi ASTM D648 °F 280 Brittleness Temperature ASTM D746 °F -200  FLAMMABILITY  Horizontal Burn, AEB ASTM D635 °F <1 Ignition Temperature, Self ASTM D1929 in 1022	Instrumented Impact @ 0.125"	ASTM D3763	ft·lbs	47						
Shear Modulus Rockwell Hardness ASTM D732 Psi 114,000 Rockwell Hardness ASTM D785 - M70 / R118  THERMAL Coefficient of Thermal Expansion ASTM D696 in/in/°F 3.75 x 10-5 Coefficient of Thermal Conductivity ASTM C177 BTU-in/hr-ft²-°F 1.35 Heat Deflection Temperature @ 264 psi ASTM D648 °F 270 Heat Deflection Temperature @ 66 psi ASTM D648 °F 280 Brittleness Temperature ASTM D746 °F -200  FLAMMABILITY Horizontal Burn, AEB ASTM D635 °F <1 Ignition Temperature, Self ASTM D1929 in 1022	Shear Strength, Break	ASTM D732	psi	10,000						
Rockwell Hardness ASTM D785 - M70 / R118  THERMAL  Coefficient of Thermal Expansion ASTM D696 in/in/°F 3.75 x 10-5  Coefficient of Thermal Conductivity ASTM C177 BTU-in/hr-ft²-°F 1.35  Heat Deflection Temperature @ 264 psi ASTM D648 °F 270  Heat Deflection Temperature @ 66 psi ASTM D648 °F 280  Brittleness Temperature ASTM D746 °F -200  FLAMMABILITY  Horizontal Burn, AEB ASTM D635 °F <1  Ignition Temperature, Self ASTM D1929 in 1022	Shear Strength, Yield	ASTM D732	psi	6,000						
THERMAL  Coefficient of Thermal Expansion  ASTM D696  in/in/°F  3.75 x 10-5  Coefficient of Thermal Conductivity  ASTM C177  BTU-in/hr-ft²-°F  1.35  Heat Deflection Temperature @ 264 psi  ASTM D648  °F  270  Heat Deflection Temperature @ 66 psi  ASTM D648  °F  280  Brittleness Temperature  ASTM D746  °F  -200  FLAMMABILITY  Horizontal Burn, AEB  ASTM D635  °F  <1  Ignition Temperature, Self  ASTM D1929  in 1022	Shear Modulus	ASTM D732	psi	114,000						
Coefficient of Thermal Expansion ASTM D696 in/in/°F 3.75 x 10°S Coefficient of Thermal Conductivity ASTM C177 BTU-in/hr-ft².°F 1.35 Heat Deflection Temperature @ 264 psi ASTM D648 °F 270 Heat Deflection Temperature @ 66 psi ASTM D648 °F 280 Brittleness Temperature ASTM D746 °F -200  FLAMMABILITY Horizontal Burn, AEB ASTM D635 °F <1 Ignition Temperature, Self ASTM D1929 in 1022	Rockwell Hardness	ASTM D785	-	M70 / R118						
Coefficient of Thermal Expansion ASTM D696 in/in/°F 3.75 x 10°S Coefficient of Thermal Conductivity ASTM C177 BTU-in/hr-ft².°F 1.35 Heat Deflection Temperature @ 264 psi ASTM D648 °F 270 Heat Deflection Temperature @ 66 psi ASTM D648 °F 280 Brittleness Temperature ASTM D746 °F -200  FLAMMABILITY Horizontal Burn, AEB ASTM D635 °F <1 Ignition Temperature, Self ASTM D1929 in 1022	THEDMAI									
Coefficient of Thermal Conductivity  ASTM C177 BTU-in/hr-ft².°F 1.35 Heat Deflection Temperature @ 264 psi Heat Deflection Temperature @ 66 psi ASTM D648 °F 280 Brittleness Temperature ASTM D746 °F -200  FLAMMABILITY Horizontal Burn, AEB ASTM D635 °F <1 Ignition Temperature, Self ASTM D1929 in 1022		ASTM D696	in/in/°E	3 75 ∨ 10-5						
Heat Deflection Temperature @ 264 psi ASTM D648 °F 270 Heat Deflection Temperature @ 66 psi ASTM D648 °F 280 Brittleness Temperature ASTM D746 °F -200  FLAMMABILITY Horizontal Burn, AEB ASTM D635 °F <1 Ignition Temperature, Self ASTM D1929 in 1022	'									
Heat Deflection Temperature @ 66 psi ASTM D648 °F 280 Brittleness Temperature ASTM D746 °F -200  FLAMMABILITY Horizontal Burn, AEB ASTM D635 °F <1 Ignition Temperature, Self ASTM D1929 in 1022	· ·									
Brittleness Temperature ASTM D746 °F -200  FLAMMABILITY  Horizontal Burn, AEB ASTM D635 °F <1 Ignition Temperature, Self ASTM D1929 in 1022	· · · · · · ·									
FLAMMABILITY Horizontal Burn, AEB ASTM D635 °F <1 Ignition Temperature, Self ASTM D1929 in 1022										
Horizontal Burn, AEB ASTM D635 °F <1 Ignition Temperature, Self ASTM D1929 in 1022	·	7.01110740	1	200						
Ignition Temperature, Self ASTM D1929 in 1022		A STM D675	°E	<b>~1</b>						
			•							
Ignition Temperature Flash ASTM D1020 °E 924	Ignition Temperature, Sell Ignition Temperature, Flash	ASTM D1929 ASTM D1929	°F	824						

<sup>\*</sup>Typical properties are not intended for specification purposes.

# TUFFAK CA POLYCARBONATE SHEET

TUFFAK CA has been fire tested and certified in numerous installation configurations; both on and off wall and off ceiling. For maximum fire resistance, TUFFAK CA meets IBC code compliance for Class A performance when installed as outlined below.

#### Regulatory code compliance and certifications

NFPA 286 Wall or Ceiling	Pass
2015 IBC Section 803	Class A Performance, also can be used wherever Class B or C is required

Grade	Location	Attachment	Gauge	Distance from Ceiling	Distance from Wall	Rating
TUFFAK CA	Ceiling	Standoffs / Hanger Bars	0.118″- 0.500″	≥ 2″		Class A Equivalent
	Wall	On wall at corners	0.118"- 0.236"		0″	Class A Equivalent
	Wall	Standoffs	0.118"- 0.236"		≥ 0.5″	Class A Equivalent
	Wall	Plastic Channels	0.118"- 0.236"		0″	Class A Equivalent

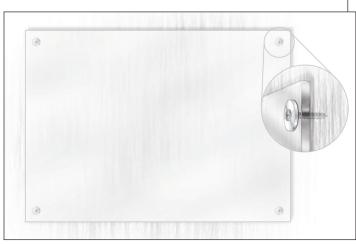
### Ceiling Stand-offs / Hanger bars



### Rigid plastic H-channels



Cap / Barrel Stand-offs mounts to wall



Screw / Washer attachments on corners

# Additional information can be found in TUFFAK CA fabrication guidelines at www.plastolite.com

These suggestions and data are based on information we believe to be reliable. They are offered in good faith, but without guarantee, as conditions and methods of use are beyond our control. We recommend that the prospective user determines the suitability of our materials and suggestions before adopting them on a commercial scale.





400 W Nationwide Blvd, Suite 400 Columbus, OH 43215 800.848.9124 • Fax: 877.538.0754 plaskolite@plaskolite.com www.plaskolite.com