



**TESTS THAT HAVE BEEN CONDUCTED TO ASSURE THE SAFE  
SERVICABLE USE OF YOUR PLI-DEK WALKING SURFACE**

(All tests on file and performed over plywood surfaces by ICC ES (ICBO) Authorized Testing Labs)

TESTS	PROCEDURE	LIMITATIONS	RESULTS
1. ASTM D1242 <b>Abrasion Test</b>	1000 Revolutions @ 1000 gm load No. 80 TP alum. Ox. Grit.	Allowable abrasion loss is 5%	Pli-Dek average loss: 2.9%
2. ASTM D570 <b>Water Absorption of Plastics</b>	24 hour immersion in distilled water	Allowable absorption by weight: 15%	Pli-Dek within specification average weight: 12.6%
3. ASTM E96 <b>Water Vapor Transmission</b>	Inverted water method wetted on one side	Allowable 2.4 gms/24 hours per 100 square inch	Vapor transmission: .31 grams/24 hours per 100 square inch
4. ASTM Pending <b>Percolating Test</b>	2" diameter tube/48" water column. 48 hours at room temp.- 72 °F RH 50%	Allowable total drop 1% in 48 hours	Pli-Dek percolation drop: .02%
5. ASTM C297 <b>Bond Strength</b>	Material is placed in a sandwich between plywood tensile load applied to the plane of the sandwich	Tests conducted to determine relative bond strengths usually within limits of plywood bond strength	Pli-Dek bond strength exceeded the strength of plywood on 5 separate tests with plywood bond failure at 126 psi
6. ASTM G23 <b>Weatherability Test</b>	2000 hours Atlas Twin Arc Weatherometer (equivalent to 6 yrs. Natural weathering)	No surface cracking, blistering, chalking, or other deleterious effects	Pli-Dek had no signs of deleterious effects
7. ASTM D2707L <b>Tensile Strength</b>	Specimens are pulled in longitudinal plane	Effects of weathering on strength: min. 290 psi	After weathering: 1505 psi
8. ASTM D270T <b>Tensile Strength</b>	Specimens are pulled in transverse plane	Effects of weathering on straight: min. 290 psi	After weathering: 411 psi
9. ASTM A756 <b>Freeze-Thaw Cycling</b>	3 Cycles: 24 hrs freezer @ -40 °C 24 hrs in oven @ 80 °C 75% RH	No evidence of cracking, splitting, blistering or other deleterious effect	Pli-Dek had no signs of deleterious effects
10. ASTM C67 <b>Freeze-Thaw Cycling</b>	50 Cycles: 24 hrs in oven @ 235 °F 24 hrs freezer @ 32 °F 4 hrs thaw @75/50%RH	Max. allowable weight loss of 1%	Percentage of weight loss was less 1%. No breakage or cracking on 5 test specimens
11. ASTM C150-72 <b>Compressive Strength</b>	Pressure exerted to crush sample	Low concrete 750 psi to high of 3000 psi	Pli-Dek average: 6075 psi
12. ASTM Pending <b>Impact Test</b>	2lb. Steel ball, drop height of 8ft.	No signs of cracking, chipping, flaking or delamination	Pli-Dek had no signs of deleterious effects
13. ASTM Pending <b>Concentrated Load</b>	5 cycles: 500lbs. Load on 1" diameter cylinder	To measure surface of penetration	Nominal residual readings
14. ASTM D2299 <b>Chemical Resistance</b>	Reagents applied to surface, then placed 16 hrs in oven @122 °F	Determine effects of reagents to surface	Pli-Dek had no signs of deleterious effects
15. ASTM C 1028-96 <b>Static Coefficient of Friction</b>	Specimens are tested in both wet and dry conditions; Five each in longitudinal and five each in the transverse direction.	The ADA minimum requirement for static coefficient of friction is an average value of no less than 0.65	Tests results after conducted in wet and dry conditions: Pli-Dek average in dry condition was .835 and in wet condition .74
16. ASTM E108 <b>Spread of Flame</b>	10 minutes application of 1400 °F flame on surface	Class "A" max. 6 feet	Pli-Dek decks had a heat effect area averaging 9.5 inches
17. ASTM E108 <b>Intermittent Flame</b>	15 cycles: 2 minute application of 1400 °F flame, followed by 2 minutes with flame off	Class "A" requires 15 intermittent cycles without displacement, spalling production of flying brands or flaming on underside	Pli-Dek decks passed all requirements for a Class "A" deck
18. ASTM E108 <b>Burning Brand</b>	6" x 6" brands ignited by gas flame for 4 min., placed at intersection of vertical and horizontal joints of deck	No flames of distress may occur on or below the decks or produce burning brands	Pli-Dek decks passed test, qualifying system as a fire retardant roof/deck covering
19. ASTM E119 <b>One-Hour System</b>	Burners generating up to one million BTU's are lit beneath deck surface with minimum temperatures of 1400° F	The exposed face of the deck may not rise in surface temperatures in excess of 250°F over ambient temperatures for 1 hour	Although under surface of the deck was over 1400 °F after 65 minutes of intense flame, the average unexposed face temperature never rose above 163 °F
20. Factory Mutual 1-52 <b>Wind Uplift Test</b>	Place the Factory Mutual 1-52 vacuum chamber onto the surface of the test specimen and evacuating the air within the chamber. During the air evacuation process, deflection readings were taken on the surface of the walking deck.	See the Pli-Dek ICC-ES ESR-2097 Report (Tables 3 and 4) for building height and exposure ratings.	The "Wind Uplift Strength" of the "Partial" Pli-Dek Walking Deck System exceeds the capacity of Ramtech's test fixture of 202 pounds per sq. ft. with a maximum deflection of 0.2 inches.

**PLI-DEK SYSTEMS, INC.**