

Physical Specifications

The following specifications relate to the following PPT² varieties:

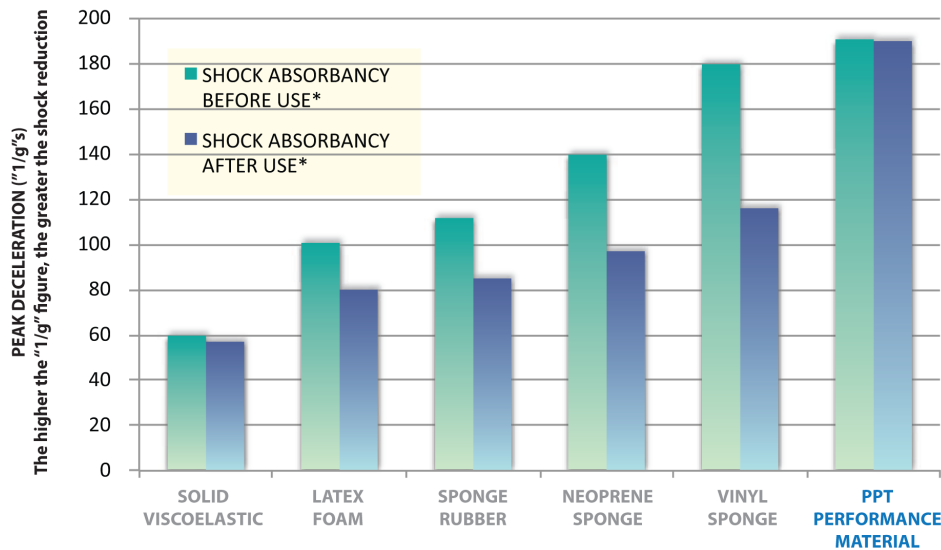
- PPT² Double Abraded (PPT2604/804)
- PPT² Smooth/Abraded (PPT2602/802/402/302/622)
- PPT² Ultralux/Abraded (PPT2609/809)
- PPT² Abraded + Mesh (PPT2603/803)
- PPT² Black Suade/Abraded (PPT2628)

PROPERTY	TEST METHOD	PRODUCT
FORMULATION		PPT [®] Medical Grade
DENSITY, lb./ft ³ Specific Gravity Tolerance, %	ASTM D3574-95 Test A	240 (15) .24 ±10
STANDARD THICKNESS Tolerance, %		See product availability ±10
STANDARD COLOR		Blue, Tan
STANDARD WIDTH, mm (inch)		1372 (54)
AIR PERMEABILITY	Gurley Densometer	Open Cell - Breathable
COMPRESSION SET, % max.	ASTM D35 74 @ 158°F (70°C)	10
COMPRESSION FORCE DEFLECTION, kPa (psi)	ASTM D 3574 @ 25% Deflection	28 - 55 (4 - 8)
HARDNESS, Durometer	Shore "00"	52
HYDROLYSIS RESISTANCE Tensile Strength, kPa (psi) Compression Set, % Max	ASTM D35 74 Test J/Test D after autoclaved 5 hrs @ 250°F (121°C)	Good Resistance 5
RESILIENCE, Shore Instrument Resiliometer, avg (Ball Rebound Tester)	ASTM D 2632 Vertical Rebound	24
WATER VAPOR TRANSFER, Typical g/ft ² /24hrs (g/m ² /24hrs)	Based on ASTM E 96	200 (19)
WATER ABSORPTION, % Wt Gain	Based on ASTM D 570	< 20
ANTIMICROBIAL, Fungal Resistance	ASTM G 21	Does not promote fungal growth
SURFACE CONTACT - MEDICAL DEVICE Primary Skin Irritation	ISO10993-10, 2010	Pass
TEAR STRENGTH, pli, min. kN/m	ASTM D 624	0.5 (3)
ELONGATION, % min.	ASTM D 3574	100
TENSILE STRENGTH, psi, min. kPa	ASTM D 3574	276 (40)
TEMPERATURE RESISTANCE, max Recommended Constant Use Recommended Intermittent Use	ASTM D746-98	70°C (158°F) 121°C (250°F)
CHEMICAL RESISTANCE		Larger PPT [®] is unaffected by mild organic acids and bases. They show modest swelling with oils and greases and other linera hydrocarbons. Strong polar solvents will greatly swell PPT [®] . In most cases, physical properties recover to a great extent as the solvents evaporate.

Impact Absorption

Drop Weight Impact Tests were performed on samples of PPT[®] and five untreated materials (aqua bars). Samples were then subjected to compression (per ASTM 3574 at 70° C [158° F]) and tested for impact absorption (blue bars). PPT[®]'s shock absorption remains the same, both before and after compression. Compression force deflection was 10 +/-3 PSI (25% ASTM 3574). Superior compression set performance enhances the excellent shock absorption characteristics of PPT[®].

MAINTAINS PERFORMANCE AND SHOCK ABSORBENCY FOR THE LIFE OF YOUR PRODUCT



Drop Weight = 4.98 lb. Drop Height = 2.00 in. Impact Area = 2.40 in.² Nominal Thickness = 0.125 in.
As measured by ASTM D 3574 Test D @ 158°F

Bondability

PPT[®] is easily bonded to any orthotic or prosthetic device, brace or assembly. It can be fastened to any support.

Chemical Resistance

PPT[®] is unaffected by mild inorganic acids and bases. It shows modest swelling with oils, greases, and other linear hydro-carbons. Strongly polar solvents will greatly swell PPT[®]. In most cases, physical properties recover to a great extent as the solvents evaporate.

Corrosion Resistance

Excellent (AMS 3568)

Energy Absorbing Ability

In competitive testing, PPT[®] has demonstrated superior ability to resist impact and absorb energy. Using approved, industry-accepted, standardized methodology, the U.S. Testing Company's Engineering Services Division found that PPT[®] demonstrated approximately twice (183%) the energy absorption of latex foam (ANZO Z 90 Test Method).

Test Methods

- (1) ASTM D 1667 (25% compression for 22 hrs. at 73° F, - 24 hrs. recovery).
- (2) ASTM D 3574 (50% compression for 22 hrs. at 158° F, - 1/2/hr. recovery).
- (3) ASTM D 3574 (After 5 hr. autoclaving at 250° F, - 1/2/hr. recovery).
- (4) 0.25+'' thick specimens tested on an Instron at 0.2 in./ min. strain rate.
- (5) ASTM DIE NO. 1564 run at 20''/min.
- (6) Thwing - Albert Test jigs 24 hrs. at 25° C, 77° F.

Note: The above data represent nominal values may vary with thickness. The performance data contained herein are based in standard laboratory tests. Since the test conditions cannot always duplicate actual end use, Langer Biomechanics makes no warranties with regard to such data, and assumes no responsibility for performance characteristics resulting from conditions which differ from those used in laboratory tests. The user should make their own tests to determine the suitability of this product for their intended use.

Mildew/Bacteria

Good resistance to bacteria and anti-fungicidal against pink stain and mixed fungi.

Skin Safety

The Biological Service Division for the U.S. Testing Co. performed human clinical tests. Erythema, edema, blisters and itching were allexplored following a patch test on the inner portion of the upper arm. The independent lab concluded that "the material did not produce skin irritation nor did it appear to be sensitising."

Temperatures

PPT® tolerates temperatures up to 121° C for brief periods. Its embrittlement temperature is 4° C.

Thermal Conductivity

0.5 ["K" Factor BTU/(Hr.-Ft.) (F/in)]

UV Resistance

Good

Physical Specifications

The following specifications relate to the following PPT2 varieties:

- PPT2 High Performance GREEN Double Abraded (PPT2634)
- PPT2 High Performance GREEN Smooth/Abraded (PPT2632)

PROPERTY	TEST METHOD	PRODUCT				
FORMULATION		PPT® High Performance (HP)				
*DENSITY, lb./ft ³ Specific Gravity Tolerance, %	ASTM D3574-95 Test A	9 0.14	12 0.19	15 0.24	20 0.32	25 0.40
*STANDARD THICKNESS Tolerance, %		See product availability ±10				
STANDARD COLOR		Bright Green				
AIR PERMEABILITY	Gurley Densometer	Open Cell - Breathable				
*COMPRESSION SET, % max.	ASTM D 3574 @ 158°F (70°C)	< 10				
*COMPRESSION FORCE DEFLECTION, kPa (psi)	0.2"/min. Strain Rate Force Measured @ 25% Deflection	1.1 - 3.4 (8-23)	1.5 - 5.5 (10-38)	4 - 9 (28-62)	5 - 12 (34-83)	10 - 20 (69-138)
HARDNESS, Durometer	Shore "O"	10	19	32	**	
HYDROLYSIS RESISTANCE Compression Set, % Max	ASTM D35 74 Test J/Test D after autoclaved 5 hrs @ 250°F (121°C)	**				
RESILIENCE, Shore Instrument Resiliometer, avg (Ball Rebound Tester)	ASTM D 2632-96, Vertical Rebound	**				
WATER VAPOR TRANSFER, Typical g/ft ² /24hrs (g/m ² /24hrs)	Sample Thickness, inches (mm) Based on ASTM E 96-00 Upright / 37°C / 0% RH Leakage - Inverted	0.158(4.0)	0.118(3.0)	0.118 3.0)	**	
		4150 Yes	3400 Yes	3100 Yes	** **	
WATER ABSORPTION, % Wt Gain	Based on ASTM D 570 - 2hr water immersion @ room temperature	Typical Value 10				
SURFACE CONTACT	Primary skin irritation-FHSA. Based on ISO10993-10 (2002), ISO 10993- 12 (2007), ISO/IEC 17025 (2005)	Negligible Irritant. Primary Irritation Index = 0				
TEAR STRENGTH, pli, min. (kN/m)	ASTM D 624 Die C	4.5 (0.8)	5 (0.9)	5 (0.9)	10 (1.8)	14 (2.5)
* TENSILE ELONGATION, % min.	ASTM D 3574 Test E	> 145				
*TENSILE STRENGTH, psi, min. kPa	ASTM D 3574 Test E	30(207)	45 (310)	70 (483)	100 (689)	140 (695)
RESTRICTED SUBSTANCE COMPLIANCE	Based on Adidas-Salomon policy for control and monitoring of hazardous substances.	Pass				
CHEMICAL RESISTANCE		Larger PPT® is unaffected by mild organic acids and bases. They show modest swelling with oils and greases and other linera hydrocarbons. Strong polar solvents will greatly swell PPT®. In most cases, physical properties recover to a great extent as the solvents evaporate.				