



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

P3T LAB – POLYURETHANE PHYSICAL PROPERTY TESTING LABORATORY  
A DIVISION OF WOODBRIDGE FOAM CORPORATION

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MECHANICAL

Valid To: March 31, 2011

Certificate Number: 2050.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on polyurethane foam (flexible and semi-rigid), foam / fiberglass laminated boards and foam / fabric laminated rolls:

<u>Test Description</u>	<u>Test Method(s)</u>
Adhesion	ASTM: D413 (A, B), D751 (45-48), D903, D1623 Chrysler 463LB-10-01 ESX 83220 (4.2.3) FLTM BN 151-05 GM: 3602M (3.5), 9207P (3.1), 9986183 (3.2.2.1), 9986242 (3.6) GMW 14892 (3.1.5) HES D6506-00 (5.24) Honda 98M-8320Z-S84-0000 (5.6) NES 87000 NDS00 TSL 2105G (4.11), 5100G (4.5) TSM 7100G (4.13)
Air Flow Resistivity	ASTM C522
Aged Load Loss	ESB-M2D221-D (3.5) WSB-M2D402-A3 (3.6.12)
Aged Weight Loss	ESB-M2D297-A4 (3.13) WSB-M2D456-A
Air Permeability	ASTM: D737, D3574 (G) GM 251M (4.1) HES D6506-00 (5.17) ISO 9237 JIS K6400 (13) TSL 2107G (4.1) TSM 7100G (4.15)
Ash Content	ASTM: D586, D1278 (14-17)

<u>Test Description</u>	<u>Test Method(s)</u>
Ball Rebound	ASTM D3574 (H) ESB-M2D221 (3.17) ESX 83218 (4.15) FM-LOS-ST-10-6-01E (4.7.5) ISO 8307 JASO B 408-89 (6.7) JIS: K6400 (9), K6401 (2) TS Tech Honda (4-6) TSM 7100G (4.7) Volvo STD 1024.1311 WSB-M2D402-A3 (3.6.16)
Cell Count	WSD-M2D243: -A2 (3.5.8), -A4 (3.5.8), -A5 (3.5.8) WSS-M2D491-A1 (3.5.8)
Circular Modulus	TSL 2104G (4.8)
Cleanability	Chrysler LP-463KC-04-01 (Procedures 1 and 2) GM 6291M (3.1.2)
Coefficient of Linear Thermal Expansion	TSM: 5725G (7.3.2.3), 6729G (5.8)
Cold Cracking	WSS-M99-P29-A
Cold (Low Temperature) Flexibility	ESA: M4D57-A (3.1.8), M4D200-B (3.1.8) ESF-M4D155-A (3.8) ESH-M4D291-F (3.1.8) FLTM BN 102-01 GM 251M (Table 1) Honda 7426Z-S3V-A000 (4.2.5) MS-AY: 301, 303, 326, 349, 350, 355, 545 WSS: M15P2-C, M99-P32-A
Cold Resistance	MS-AY 310
Compression and Recovery	ESB-M17H93-C2, C3, C4 (3.4.9)
Compression Deflection Stress	ISO 3386/1
Compression Force Deflection	ASTM: D1056 (17-22, 34-41), D3574 (C) BS 4443-2-7 DIN 53577 ESX 8318 (4.4/4.7) GME 60 283-5 ISO 6916-2 (Annex B) JIS K6400 (Annex) Kia MS200-34 (4.7, 4.8) Renault D47 1003 Renault D47 1003 TSM: 6716G (4.8.2, 4.8.3), 7100G (4.3, 4.4)
Compression Load Deflection Change	ESB-M2D221 (3.5.2) FLTM BO 13-2

<u>Test Description</u>	<u>Test Method(s)</u>
Compression Ratio and Recovery	Honda 8330Z-SDCA-A000 (4.2.3)
Compression Set	ASTM: D1056 (49-55), D3574 (D) BS 4443-1-6A DIN 53572 ESX 83218 (4.9) FLTM BN 115-07 FM-LOS-ST-10-6-01E (4.7.6) GME 60 283-4 (B2, C2, B4) Honda 7426Z-S3V-A000 (4.3.3) Hyundai MS-200-34 ISO: 815-1, 1856 (A), 6916-2 (Annex D) JASO B 408-89 (6.9) JIS: K6301 (10), K6400 (7) NES M0086 (8) Renault D45 1046 TS Tech Honda (4-8-1) TSM: 5725G (7.1.2.3), 7100G (4.8) Volvo STD 1024.1111
Compressive Strength	ASTM D1621 (A) DIN 53421 FLTM BO 115-08 TSM: 5725G (7.1), 6729G (5.6)
Conditioning	ASTM D3574 (Section 6) GMW 3221
Crease	GM 9201P WSS: M8P3 (3.29.1), M8P18 (3.13.2)
Curling	GM 2737M (5.9) GMW 4089 WSS-M8P18 (3.19)
Density	ASTM: C 271/C271M, D1056 (61-66), D1622, D3574 (A) BS 4443-1-2 ESX 83218 FM-LOS-ST-10-6-01E (4.7.1) GME 60 283-1 HES D6506-00 (5.1) Honda 8330Z-SDCA-A000 (4.2.1) Hyundai MS-200-34 ISO 845 JASO B 408-89 (6.1) JIS K6400 (5) NES M0086 (4) Renault D45 1045 TS Tech Honda (4-1) TSM: 5725G (7.1.2), 6729G, 7100G (4.1) Volvo STD 1026.6122

*Peter Mlynar*

Test Description

Test Method(s)

Dimensional Stability

ASTM: D2126 (except -73°C), D3574 (K)  
DIN 53424 (3)  
GMW 4217  
Honda 98M-8320Z-S84-0000 (5.23)  
MS DC600 (Table 3.8)  
NES: D6505 (5.25, 5.26), M0086 (9)  
SAE: J315 (3.15), J883  
TSL 2104G (4.5)  
TSM: 5725G (7.3), 6729G (5.7)  
WB 0001 (3.3.1)  
WSS-M2D494-A1 (3.5.1)

Dry Heat Aging

ASTM D3574 (K)  
Chrysler LP-463LB-13-01  
ESX 83218 (4.4a)  
GME 60 283-6  
GMW 14358  
Honda 98M-8320Z-S84-0000 (5.2)  
ISO 2440  
Kia MS200-34 (4.4)  
TSM 7100G (4.11)  
Volvo STD 1027.2221

Effect of Liquids

ISO 1817 (7.2)

Environmental Aging

ASTM D896  
Chrysler 463LB-12-01  
GM: 9200P, 9505P (Cycles: H, M, N, P)  
GMW 14124 (Cycles: H, M, N, P, Q, R, S, T, W)  
Honda 98M-8320Z-S84-0000 (5.4)  
ISO 2440  
SK-M98D9736-A  
TSM: 5725G (3, 4, 5, 6),  
6729G (5.6.2, 5.6.3, 5.6.4, 5.6.5, 5.6.6),  
7100G (4.10)  
WSB-M2D403-A3 (3.4.7)  
WSS-M99-P29-A (3.4.7)

Fatigue Resistance  
by Roller Shear

ASTM D3574 (I2)  
FLTM BO 12-4

by Constant Force Pounding

ASTM D3574 (I3)  
ESX 83218 (4.10)  
Honda: 7426Z-S3V-A000 (4.3.4), 8330Z-SDCA-A000  
Hyundai MS-200-34 (4.10)  
ISO 3385  
JASO B 408-89 (6.8)  
JIS: K6382, K6400 (8)  
NES M0086 (11)  
TS Tech Honda (4-7)  
TSM 7100G (4.9)

Test Description

Test Method(s)

Fatigue Resistance (cont'd)  
by Static Force

ASTM D3574 (I1)

Flammability

CAL 117, Section A, Part I, Vertical Burn  
CAL 117, Section D, Part II, Smoldering  
TL 1011

Flammability, Horizontal Burn

ASTM D5132  
CMVSS 302  
DIN 75200  
ES-E97B-1011014-AA  
ESX 60410  
FLTM BN 024-02  
FM-LOS-ST-10-6-01E (4.7.7)  
FMVSS 302  
GM: 6090M, 9070P  
GMW 3232  
HES: C206-99 (A), D6003  
ISO 3795  
JIS K6400 (12)  
Kia MS300-08  
MES CF 050A  
MS JP 9-4  
NES M0094  
Renault D45 1333  
SAE J369  
TSM 0500G  
Volvo STD 5031.1  
VW TL 1010

Flexibility

ESB: M2D221 (3.5.3), M2D243-A (3.3.8.2),  
M2D297-A4 (3.12), M4D113 (3.4.2),  
M4D262-C (3.4.2), M17H93 (3.4.3)  
FLTM: BN 102-01, BO 012-01  
WSB: M2D402-A3 (3.6.13), M17H93-C7 (3.6.4)

Flexural Modulus

ASTM: C203, D790 (Test A)  
Honda: 8320Z-SDA-0000 (6.17),  
98M-8320Z-S84-0000 (5.21)  
ISO 178

Fogging

Chrysler LP-463DB-12-01  
DIN 75201  
GM 9305P  
GMW 3235  
FM-LOS-ST-10-6-01E (4.7.9)  
SAE J1756  
TSM 0503G  
Volvo STD: 1027.2711, 1027.2719

Friability

ASTM C421

Gloss

ASTM D523

<u>Test Description</u>	<u>Test Method(s)</u>
Hardness	GM 6084M (3.11)
Heat Aged Weight Loss	Honda 7426Z-S3V-A000 (4.2.6) MS-AY 352 (Table 1)
Heat and Humidity Discoloration Resistance	Chrysler LP-463LB-13-01 GM 9131P NES 8700 NDS00 (12.1.1)
Humidity Aging	ASTM: D2126 (except -73°C), D3574 (J1, J2) BS 4023:1975 (Appendix C) FLTM BO 12-1 GME 60 283-5E GMW 14357 ISO 2440 JASO B 408-89 (6.11) JIS K6400 (2) Renault 1637 TS Tech Honda (4-8-2) TSM 7100G (4.8) Volvo STD 1027.2421
Hydrolytic Stability	GM 9231P
Hysteresis Loss of Foams	ASTM D3574 (X6) JASO B408-89 (6.3) JIS K6400 (Annex) TS Tech Honda (4-3-5) TSM 7100G (4.3)
Ignitability of Upholstered Furniture	SN EN 1021-1, -2
Indentation Force Deflection	ASTM D3574 (B1, B2) BS 4443-2-7 DIN: 53576, 53579 (T1) ESX 83218 (4.7) FLTM BO 12-1 FM-LOS-ST-10-6-01E (4.7.2) GME 60 283-7B GMW: 14359, 14363 ISO: 2439, 3386/1 JASO B 408-89 (6.2) JIS: K6382 (5.3), K6400 Kia MS200-34 (4.7, 4.8) MS DC-649 (Appendix A) MS DC69<S> (Table 2) NES M0086 (5) SAE J815 TS Tech Honda (4-2) TSM: 6715G (4.8.2), 7100G (4.2) Volvo STD 1024.3131
Inverted Bending Test	TSL 2104G (4.9)

*Peter Mlynar*

<u>Test Description</u>	<u>Test Method(s)</u>
Linear Dimensions	ISO 1923 Volvo STD 1022.2315
Load Height Change (Loss)	ESB: M2D221 (3.5.1), M17H93-C1, C2, C3, C4, C5, C6 (3.4.2)
Low Temperature Load Compression	ESB: M2D221 (3.6), M2D243-A (3.3.9), M4D262 (3.5)
Mass Per Area	ASTM: D3776, D3887 FLTM BN 106-01 GM 2737M (5.1) GMW 3182 SAE J860 TSL 2104G (4.1)
Mildew Resistance	ESB-M2D297-A4 (3.11) GM 9128P GMW 3259 WSS-M99-P32-A (3.15)
Moisture Uptake	WSS-M2D491-A1 (3.5.14)
Odor	ESB-M2D221 (3.8) FLTM: BO 131-01, BO 131-03 FM-LOS-ST-10-6-01E (4.7.8) GM 9130P GME 60276 GMW 3205 Honda: 7426Z-S3V-A000 (4.4.9), 8330Z-SDCA-A000 (4.2.10) MS DC634-B5 SAE J1351 TSM 0505G VDA 270
Open Cell Content	ASTM D6226
Polycarbonate Contamination	Honda 8330Z-SDCA-A000 (4.2.8)
Recoverability	MS DC600 (Table 3.9)
Resistance to Blocking	GM 2737M (5.14)
Resistance to Heat	Chrysler 463LB-13-01
Resistance to Cold Cracking	GM 9140P (A) SAE J323 (A)
Resistance to Deterioration	ESB: M2D221-A, B, C (3.5), M4D113-C (3.4), M4D262-C FLTM BO 12-1

<u>Test Description</u>	<u>Test Method(s)</u>
Resistance to Humidity (Hot and Cold Cycling)	Chrysler 463LB-12-01
Resistance to Steaming	Chrysler LP-463KC-15-01
Rust Acceleration Test	TSL 2106G (4.12)
Sag	Honda: 8320Z-SDA-0000 (6.18), 98M-8320Z-S84-0000 (5.22)
Shrinkage	FLTM BN 105-01 HES D6506-00 (5.12) Honda 7426Z-S3V-A000 (4.2.6)
Solvent Resistance	ESB: M2D221-A, B, C (3.11), M2D221-D (3.10), M2D243-A (3.3.13), M4D113 (3.10), M4D262-C (3.10), M17H93 (3.4.7) MS-AY: 309, 310
Staining	ASTM D925 (A) GM: 9131P, 9141P MS-DC-649 (Appendix A) TSM 7100G (4.14) VW staining PV 3937 WSS M15P20-B1/B2 (3.3.13)
Staining of Polycarbonate	Honda 7426Z-S3V-A000 (4.3.5)
Stress Relaxation Test	TSM 7100G (4.4)
Stretch and Set	GM 6291M (Table 5) HES D6506-00 (5.5) SAE J855 TSL: 2104G (4.6), 2105G (4.2)
Tear Resistance	ASTM: D624 (Die C), D1004, D2261, D3574 (F), D5587, D5733 DIN 53356 A ESX-83218 (4.3) GME 60 283-3 GMW 3326 HES D6506-00 (5.6) Hyundai MS-200-34 (4.3) ISO: 34-1, 8067, 13937-2 JASO B 408-89 (6.6) JIS: K6301, K6400 NES M0086 (12) Renault D41 1048 TS Tech Honda (4-5) TSL: 2105G (4.3), 2106G (4.2, 4.3) TSM 7100G (4.6) Volvo STD 1024.3721

Test Description

Test Method(s)

Tensile / Elongation

ASTM: D412, D1623, D3574 (E), D5034  
BS 4443-1-3A  
DIN 53571 A2  
ESX-83218 (4.2)  
GME 60 283-2  
GMW 3010M  
HES D6506-00 (5.4)  
Honda 98M-8320Z-S84-0000 (5.3)  
Hyundai MS-200-34 (4.2)  
ISO: 527-1, -2 (except 5.1.5), 1798  
JASO B 408-89 (6.5)  
JIS: K6251, K6301 (3), K6400 (10)  
NES M0086 (6)  
Renault D41 1029  
TS Tech Honda (4-4)  
TSL: 2105G (4.1), 2106G (4.1)  
TSM 7100G (4.5)  
Volvo STD 1024.2115

Thickness

ASTM: D1777, D1813, D5736  
*(deviation: lab uses 1.0 inch diameter presser foot)*  
ISO 5084  
SAE J882

Water Absorption

ASTM: C272, D570  
GM 9986183 (3.2.2.4)  
ISO 6916-2 (Annex E)  
MS DC600 (Table 3.10)  
NES M0086  
SAE J315

Water Vapor Transmission

ASTM E96/E96M

Wet Heat Aging Compression Set

ASTM D3574 (L)  
ESX-83218 (4.9)  
JIS K6400  
TS Tech Honda (4-8-2)  
TSM 7100G (4.8.2)



The American Association for Laboratory Accreditation

World Class Accreditation

# Accredited Laboratory

A2LA has accredited

## P3T LAB - POLYURETHANE PHYSICAL PROPERTY TESTING LABORATORY A DIVISION OF WOODBRIDGE FOAM CORPORATION

*Woodbridge, Ontario, CANADA*

for technical competence in the field of

### Mechanical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).



Presented this 22th day of June 2009.

A handwritten signature in black ink, reading "Peter Abney".

President & CEO  
For the Accreditation Council  
Certificate Number 2050.01  
Valid to March 31, 2011  
Revised June 15, 2010

*For the tests or types of tests to which this accreditation applies, please refer to the laboratory's Mechanical Scope of Accreditation.*