

# FLOORING SOLUTIONS THAT LAST FOR 30+ YEARS

## STRUCTURAL FLOORING SYSTEM WITH INTEGRATED COVERING

The ABRASTOP™ / FOAM system combines the ABRASTOP™ Floor Covering and an integrated sub-floor to provide structural support for passenger load. It results in a flooring system that is durable, light-weight and fully adapted to the Mass Transit market.

### FEATURES INCLUDE

- Bonded to car structural beams
- Reduced installation time
- Meets Mass Transit standards
- Very high resistance to wear
- High-impact resistance
- Good noise attenuation
- Rot-proof
- Sized as per customer's requirements
- Available in variable thicknesses
- Customized colours available
- Options for integrated logo, HPPL or tactile strips



*Never Underestimate Materials Intelligence.*



**mason grogan**  
**INDUSTRIAL**

SPECIALIST MATERIALS FOR DESIGN ENGINEERS

## SPECIFICATIONS

The Abrastop™ / Foam is a laminate of the Abrastop™ Floor Covering, a thermosetting foam and a reinforcement fiber. This integrated floor is bonded directly on the vehicle floor structures with a flexible high-performance adhesive. The 5mm (3/16 inch) seams between the panels are filled with a coloured flexible sealant.

GENERAL									
<b>Dimensions</b>	Panels size up to 1,500mm x 3,000mm (59in x 118in)								
<b>Thickness<sup>1</sup></b>	From 13mm ± 1.0mm (0.512 ± 0.04in) to 23mm ± 1.0mm (0.866 ± 0.04in)								
<b>Surface Density</b>	<table border="1"> <thead> <tr> <th>Thickness<sup>1</sup> mm (in)</th> <th>Weight kg/m<sup>2</sup> (lbs/ft<sup>2</sup>)</th> </tr> </thead> <tbody> <tr> <td>13 (0.51)</td> <td>15.62 ± 1 (3.20 ± 0.2)</td> </tr> <tr> <td>15 (0.59)</td> <td>16.84 ± 1 (3.45 ± 0.2)</td> </tr> <tr> <td>18 (0.71)</td> <td>18.80 ± 1 (3.85 ± 0.2)</td> </tr> </tbody> </table>	Thickness <sup>1</sup> mm (in)	Weight kg/m <sup>2</sup> (lbs/ft <sup>2</sup> )	13 (0.51)	15.62 ± 1 (3.20 ± 0.2)	15 (0.59)	16.84 ± 1 (3.45 ± 0.2)	18 (0.71)	18.80 ± 1 (3.85 ± 0.2)
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<b>Foam Density</b>	0.64 g/cm <sup>3</sup> (39.95 lbs/ft <sup>3</sup> )								
PHYSICAL PROPERTIES									
Thickness	13mm	18mm							
<b>Deflection<sup>2</sup></b>									
	375 (76.6)	450 (92.0)	525 (107.3)	600 (122.6)	375 (76.6)	450 (92.0)	525 (107.3)	600 (122.6)	
<b>Span</b>	Deflection value mm (in)								
400 (15.75)	0.39 (0.015)	0.46 (0.018)	0.54 (0.021)	0.62 (0.024)	0.17 (0.007)	0.21 (0.008)	0.24 (0.010)	0.28 (0.011)	
450 (17.62)	0.62 (0.024)	0.74 (0.029)	0.87 (0.034)	0.99 (0.039)	0.28 (0.011)	0.33 (0.013)	0.39 (0.015)	0.44 (0.017)	
500 (19.69)	0.94 (0.037)	1.13 (0.044)	1.32 (0.052)	1.51 (0.059)	0.42 (0.017)	0.50 (0.020)	0.59 (0.023)	0.67 (0.027)	
<b>Tensile</b>									
Flatwise Tensile Strength (ASTM C297)									
Maximum Tensile Stress	7.47 MPa (1083 psi)		7.65 MPa (1110 psi)						
<b>Compressive</b>									
Compressive Strength (ASTM D1621-10)	30 MPa (4351 psi)		29 MPa (4206 psi)						
Stress at Yield (ASTM C365)	-		22.5 MPa (3263 psi)						
<b>Shear<sup>3</sup></b>									
Ultimate Shear Strength (ASTM 273)	3.15 Mpa (457 psi)		3.14 Mpa (455 psi)						
Core Shear Ultimate Strength (ASTM C393)	3.37 Mpa (489 psi)		4.02 MPa (583 psi)						
<b>Impact Resistance (ASTM D5420-10)</b>	GC geometry with a 2 lbs hammer								
Mean Failure Height	-		55.88 cm (22 in)						
Mean Failure Energy	-		2.5 Joules						
<b>Thermal (ASTM C518-04)</b>	W/m <sup>2</sup> K (Btu*in/h*in <sup>2</sup> *° F)								
Apparent Thermal Conductivity (λ)	0.130 (0.904)		0.129 (0.897)						

<sup>1</sup> Additional thicknesses may be available upon request. <sup>2</sup> Deflections are evaluated with a Young's modulus calculated with a three-span continuous beam. <sup>3</sup> Results shown are for the Abrastop™/Foam Lite covering. The results for the Abrastop™/Foam should be superior.

PHYSICAL PROPERTIES (continued)				
Thickness	13mm	18mm		
<b>Acoustical Performance</b>				
Sound Transmission Loss (ASTM E90)	STC: 30 Rw: 30 OITC: 27	STC: 30 Rw: 31 OITC: 28		
Sound Absorption (ASTM C423)	NRC: 0.05 SAA: 0.04	NRC: 0.05 SAA: 0.04		
<b>Coefficient of Linear Thermal Expansion (ASTM D696-08)</b>	2.5 x 10 <sup>-5</sup> /°C (between -30°C and +60°C)			
CHEMICAL PROPERTIES				
<b>Water Absorption (ASTM D570)</b>				
After 48h	-	1.16%		
After 14 days	-	1.88%		
<b>SAFETY*</b>				
<b>Fire Resistance (NF P92 501/507)</b>	M2			
<b>Smoke Test (NF F16-101/102)</b>	F1			
<b>Critical Radiant Flux (ASTM E648)</b>	> 1.1 W/cm <sup>2</sup>			
Specified Minimum	0.5 W/cm <sup>2</sup>			
<b>Specific Optical Density of Smoke (ASTM E662)</b>				
Mode	Specified Maximum	Flaming	Non-flaming	
D <sub>s</sub> at 1.5 min	100	0	0	
D <sub>s</sub> at 4.0 min	200	29	2	
<b>Toxic Gas Generation** (Boeing BSS 7239) (ppm)</b>				
Mode	Specified Maximum	Flaming	Non-flaming	
CO max	3500	1303	80	
NO <sub>x</sub>	100	< 1	< 1	
SO <sub>2</sub>	100	< 6	< 6	
HCl	500	< 12	< 12	
HF	200	< 12	< 12	
HBr	-	< 3	< 3	
HCN	150	9	< 1	
<b>Caloric Content (ASTM E1354)</b>	13 mm		18 mm	
Heat Flux	20 kW/m <sup>2</sup>	50 kW/m <sup>2</sup>	20 kW/m <sup>2</sup>	50 kW/m <sup>2</sup>
Average Effective Heat of Combustion MJ/Kg (BTU/lbs)	21.29 (9169)	21.09 (9083)	28.69 (12354)	24.34 (10484)
Overall average Caloric Content MJ/Kg (BTU/lbs)	6.71 (2891)	9.08 (3909)	8.10 (3487)	11.27 (4853)

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