AERO

Sheets

Mitigate Fear. Prevent Injury.

D3O's materials are designed to absorb and dissipate energy in response to blunt force impact.

D3O Aero is a lightweight set foam material available in solid sheet formats, which can be used in multiple protection applications. On the softer end of D3O's foam offering, this material offers a great comfort-protection ratio.

Product Features

- Suitable for low to moderate impact energies
- Available in 4 and 6mm thicknesses
- Formulated without the use of PFAS or organotin compounds

Product Details

Material	Aero	
Product Name	Solid 4mm	Solid 6mm
Product Code	11191	11192
Colour	Orange	Orange
Dimensions (mm)	369 x 255	369 x 255
Thickness (mm)	4	6
Material Type	Foam	Foam

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Physical Properties

Property	Unit	Test Method	Test Condition	Value
Thickness	mm	-	-	10
Density	kg/m3	ISO 845:2009	-	270
Hardness	Shore 00	ASTM D2240-05 (2010); 3s	23°C, 50% RH	51
Compressive Stress at 25% Strain	MPa	ISO 3386-1:1997; 100mm/min	23°C, 50% RH	0.13
Compressive Stress at 50% Strain	MPa	ISO 3386-1:1997; 100mm/min	23°C, 50% RH	0.27
Compression Set	%	EN ISO 1856:2000; Method B 50% Compression, 72 h	23°C, 50% RH	3.8
Dimensional Stability, Max Change	%	EN ISO 2440:2000	72 hrs at 125°C	<2%
			20 hrs at 85°C 100% RH	0%
Tensile Strength	MPa	ISO 1798:2008; 500mm/min	23°C, 50% RH	0.91
Tensile Elongation at Break	%	ISO 1798:2008; 500mm/min	23°C, 50% RH	160
Tear Strength	n/mm	SATRA TM65/ BS 5131-2.6:1979; 100mm/min	23°C, 50% RH	0.74
Flexural Stress at 10% Strain	MPa	DTS052*; 100mm/min	23°C, 50% RH	0.06

Dynamic Performance

Property	Unit	Test Method	Test Condition	Value
10J Impact Peak Transmitted Force	kN	EN 1621:1 2.5kg	23°C, 50% RH	3.1
20J Impact Peak Transmitted Force	kN	EN 1621:1 2.5kg	23°C, 50% RH	7.8
30J Impact Peak Transmitted Force	kN	EN 1621:1 5kg	23°C, 50% RH	15.7
50J Impact Peak Transmitted Force	kN	EN 1621:1 5kg	23°C, 50% RH	31.8
4.2J Footwear Deceleration	g	SATRA TM142/ ASTM F1614-99 (2006)	23°C, 50% RH	16.9
4.2J Footwear Energy Return	%	ASTM F1614-99 (2006)	23°C, 50% RH	14.9

Environmental Properties

Property	Unit	Test Method	Test Condition	Value
Water Absorption, Weight Gain	%	DTS028**; 168hrs	23°C	8
Bio-based Content, Total Organic Carbon	%	ISO-16620-2:2019 Method C (AMS) TOC	-	55
PFAS Content (TOF)	ppm	ASTM D7359:2018 - 10 ppm detection limit	Not Detected	Not Detected
Organotin Content	ppm	CEN ISO/TS 16179: 2012 - GC-MS	Not Detected	Not Detected

* 17.5mm radius semi circular striker deflects sample sitting on supports with span length of 50mm at a rate of 100mm/min. The Flexural Stress (Mpa) at 10% Flexure Strain is calculated.
** Samples submerged in water maintained at 23C for 168hrs. After submersion, excess surface water removed with dry cloth. Samples weighed before and after testing and a percentage difference is calculated