2023 OrthoLite[®] Open Cell Foam Product Technology Sheets





OrthoLite[®] Foam Features & Benefits



Why OrthoLite[®] is the Undisputed Industry Leader

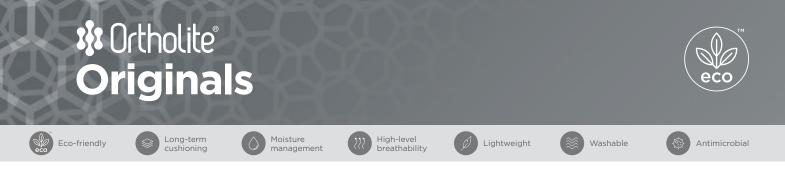
OrthoLite® is the leading manufacturer and supplier of OEM and open-cell foam insole technologies for the world's leading footwear brands. As a vertically integrated U.S. company with Higg certified facilities around the globe, we collaborate with our brand partners to create and produce custom insole formulations that deliver unrivaled comfort, performance and sustainability. Here's how OrthoLite* innovation continues to set the standard:





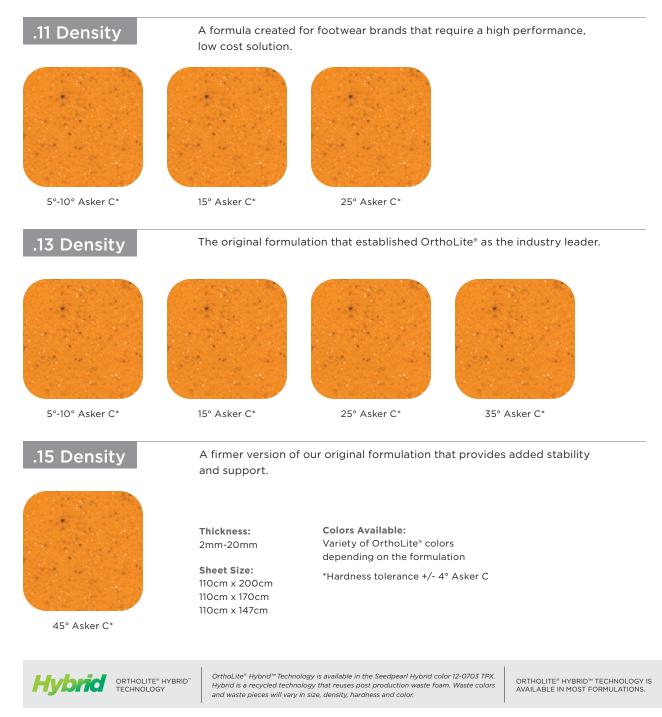


Not all OrthoLite* colors are available in all foam formulations. Certain colors may be subject to upcharge.



OrthoLite[®] Original formulations set the standard for comfort and performance.

From our earliest days, we've utilized recycled waste rubber ranging from 5% to 98% in every insole—leading the charge toward more sustainable products. OrthoLite® insoles can be customized to meet your exact specifications by combining formulations, densities, colors and mold designs, giving you a competitive advantage and unique comfort and performance story.



Eco Content Chart



Eco-friendly

Crtholite®



management

Moisture

Lightweight

Washable

Antimicrobial

Technology	Density	Hardness	Recycled Rubber	Hybrid*	Bio-Oil	Total Eco Content
🕸 Ortholite Originals	0.11, 0.13, 0.15D	Varies by density. See technology sheet.	5%	15%	0%	20%
₩ Ortholite° ¥25°	0.12D	20°C	5%	15%	0%	20%
\$ # Ortholite" ★35 [™]	0.145D	25°C	5%	15%	0%	20%
₿ Ortholite° ¥40"	0.16D	25°C, 35°C	5%	15%	0%	20%
₿ Ortholite° ¥55™	0.16D	25°C	5%	15%	0%	20%
₿ Ortholite° R&R™	0.16D	15°C	5%	15%	0%	20%
🗱 Ortholite Imperial	0.22D 0.30D (Plus)	25°C 25°C, 30°C, 40°C	5% 5%	15% 15%	0% 0%	20% 20%
🗱 Ortholite" Lazy"	0.15D	75°F	5%	15%	0%	20%
🗱 Ortholite" Ultra ï	0.085D	5-10°C, 15°C, 25°C	5%	15%	0%	20%
₿ Ortholite" EcoLT™	0.11D 0.13D	15°C, 25°C 25°C, 35°C	5% 5%	15% 15%	6% 6%	26% 26%
🗱 Ortholite° ECO	0.13D	15°C, 25°C, 35°C	5%	15%	12%	32%
\$ Crtholite" EcoX40"	0.185D	25°C	5%	15%	12%	32%
\$ Ortholite" Eco Plush"	0.15D	26°C	5%	15%	25%	45%
\$ Ortholite" HybridPlus-Recycled"	0.12D	25°C	7%	43%	0%	50%
\$ Ortholite" Hybrid Plus-Bio [™]	0.14D	24°C	7%	43%	7%	57%
\$ Ortholite" Ecol mpressions"	0.15D	70-80°F	5%	15%	50%	70%
% Ortholite® Recycled	0.19D-0.27D	29-43°C	98%**	0%	0%	98%

ORTHOLITE® ECO TECHNOLOGIES:

OrthoLite® Bio-Oil Formulations replace petroleum with oil made from castor beans—a non-food plant. With this single decision, you can up your eco content to reduce your brand's resource consumption and carbon footprint. *OrthoLite[®] Hybrid[™] is a proprietary formulation that uniquely blends 5% recycled rubber with 15% production waste foam offering uncompromised performance and less impact on the planet.

OrthoLite[®] Recycled[™] is a result of our expanding commitment to the creation of more sustainable technologies that close the loop on postproduction waste material and get us closer to the end goal of Zero Waste.

**Postproduction Waste Material

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St Ortholite® Hybrid™







Moisture management

High-level breathability



Antimicrobial

Hybrid Comfort & Performance Technology

OrthoLite® Hybrid™ is a proprietary formulation that can be used on its own or blended into other OrthoLite® formulations to upgrade the percentage of recycled content. The patented design* uniquely blends 5% recycled rubber and 15% production waste foam to achieve a minimum of 20% recycled-content-for uncompromised comfort and performance.

PRODUCT SUMMARY

We're always pushing our innovation further-in how our products perform, how they look, and how they are made. OrthoLite® Hybrid™ is a true game-changing technology, whether it's used on its own or combined with other formulations to up the recycled content. Combining 5% recycled rubber and 15% open-cell waste foam with virgin open-cell foam, it goes the distance and retains all the comfort and performance attributes OrthoLite® is known for and consumers expect using less petroleum and less energy, while adding less to landfills.

APPLICATION

Ideal for a wide range of applications, OrthoLite* Hybrid[™] provides cushioning and performance critical in insole, strobel and upper applications. The OrthoLite[®] Hybrid[™] formulation creates a cooler, drier environment inside the footwear, so consumers can feel and perform their best. It also supports your brand's sustainability goals-giving you a great opportunity to tell your consumers why you've chosen OrthoLite*.

Formulation Hybrid

MOQ Standard



Finished Goods: OrthoLite[®] Hybrid[™] is available exclusively as a finished molded or die-cut product. Not available in sheets.



All OrthoLite^{*} formulations utilize recycled rubber and/or production waste foam to support our end goal of Zero Waste.



MESHOL Completed testing and approved

Color Available:

*Patented Design:

U.S. Patent D941,568

Seedpearl Hybrid 12-0703 TPX

ORTHOLITE[®] HYBRID

OrthoLite® Hybrid™ Technology is available in the Seedpearl Hybrid color 12-0703 TPX. Hybrid is a recycled technology that reuses post production waste foam. Waste colors and waste pieces will vary in size, density, hardness and color.

1 Ortholite® HybridPlus-Recycled[™]

Moisture







Long-term

management

High-level breathability Lightweight

Washable

Antimicrobial

Closing the Loop on Waste

OrthoLite[®] HybridPlus-Recycled[™] is a result of our expanding commitment to the creation of more sustainable footwear technologies that close the loop on production waste material and get us all closer to the end goal of Zero Waste.

Through the creation of our dedicated in-house recycling facility, we continue to invest in the development of more sustainable solutions that optimize our supply chain from end to end by capturing and repurposing all waste material, the result is OrthoLite[®] Hybrid[™] and Recycled technologies.

PRODUCT SUMMARY

Responding to the increasing demand for more environmentally responsible products, OrthoLite® HybridPlus-Recycled[™] provides the unprecedented ability to elevate the eco-content of your insoles to 50%. Uniquely blending 7% recycled rubber powder and 43% recycled PU foam to achieve a total 50% recycled content-using less petroleum and less energy, while adding less to landfills. And it means all the comfort your consumers expect with the eco-friendly features they demand.

APPLICATION

Ideal for a wide range of applications, OrthoLite® HybridPlus-Recycled™ delivers sustainable comfort and performance critical in insole, strobel and upper applications. The OrthoLite® HybridPlus-Recycled[™] formulation creates a cooler, drier environment inside all categories of footwear, so consumers can feel and perform their best - while supporting your brand's sustainability goals.

Formulation		MOQ		Total	43% Productio	n Waste Foam
HybridPlus-Recy	cled	Standard	50%	Content	7% Recycled	Rubber
Density: 0.12g/cm ³ Hardness: 25° Asker C Thickness: 2mm-20mm Thickness tolerance +/- 0.3mm	OrthoL availab or die- Zero W All Ort utilize produc	ed Goods: ite* HybridPlus-Recycle ble exclusively as a finish cut product. Not availab Vaste Initiative: hoLite* formulations recycled rubber and/or ction waste foam to rt our end goal of Zero N	ed molded ble in sheets	Mint G	s Available: Green 95 TPX	A CALLER AND A

ORTHOLITE[®] HYBRID

OrthoLite[®] HybridPlus-Recycled[™] Technology is available in the Mint Green color 11-4805 TPX Hybrid is a recycled technology that reuses postproduction waste foam. Waste colors and waste pieces will vary in size, density, hardness and color.

1 Ortholite HybridPlus-Bio[™]





Long-term

management

High-level breathability Lightweight



Antimicrobial

Hybrid Technology Formulated with **Plant Based Bio-Oil**

OrthoLite® HybridPlus-Bio[™] expands on our range of eco formulations combining our Hybrid and Bio-oil formulations elevating the total eco content to 57% to further reduce the use of petroleum and get us all closer to the end goal of Zero Waste.

Moisture

Through the creation of our dedicated in-house labs and recycling facility, we continue to invest in the continued development of more sustainable solutions that optimize our supply chain from end to end by expanding the use of bio-based oils derived from castor and capturing and repurposing all of our production waste material, the result is OrthoLite® HybridPlus-Bio[™].

PRODUCT SUMMARY

Responding to the increasing demand for more environmentally responsible products, OrthoLite® HybridPlus-Bio™ provides the unprecedented ability to elevate the eco-content of your insoles to 57%. Uniquely blending 7% bio-oil derived from castor, 43% recycled production waste foam and 7% recycled rubber to achieve a total 57% eco-content that utilizes less petroleum and less energy, while adding less to landfills. And it means all the comfort your consumers expect-with the eco-friendly features they demand.

APPLICATION

Ideal for a wide range of applications, OrthoLite® HybridPlus-Bio™ delivers sustainable comfort and performance critical in insole, strobel and upper applications. The OrthoLite® HybridPlus-Bio[™] formulation creates a cooler, drier environment inside all categories of footwear, so consumers can feel and perform their best, while supporting your brand's sustainability goals.

The second section of				7% Bio-Oil	
Formulation	MOQ	57%	Total Eco	43% Production	n Wasi
HybridPlus-Bio	Standard		Content	7% Recycled F	Rubbe
Density: 0.14g/cm ³	Finished Goods: OrthoLite® HybridPlus-Bio [™] is a	available	Colors Mint G	Available: reen	a contraction
Hardness: 24° +/-4°	exclusively as a finished molde product. Not available in sheet		11-480	5 TPX	No.
Asker C	Zero Waste Initiative:	THOLL			
Thickness: 2mm-20mm Thickness tolerance +/- 0.3mm	All OrthoLite® formulations utilize recycled rubber and/or production waste foam to support our end goal of Zero \	Waste.	Intertek		

ORTHOLITE® HYBRID

OrthoLite® HybridPlus-Bio™ Technology is available in the Mint Green color 11-4805 TPX Hybrid is a recycled technology that reuses postproduction waste foam Waste colors and waste pieces will vary in size, density, hardness and color

St Ortholite® Recycled





Long-term

Moisture



High-level breathability



Antimicrobial

Closing the Loop on Waste

OrthoLite® Recycled[™] is a result of our expanding commitment to the creation of more sustainable technologies that close the loop on postproduction waste material and get us closer to the end goal of Zero Waste.

Through the creation of a new R&D center we have invested in the continued development of more sustainable solutions that optimize our supply chain from end to end by capturing and repurposing all waste material, the result is OrthoLite^{*} Hybrid and Recycled technologies.

PRODUCT SUMMARY

Responding to the increasing demand for more environmentally responsible products, OrthoLite® Recycled[™] provides our brand partners the unprecedented ability to increase the eco-content in their insoles with our recycled postproduction waste material making it easier than ever to achieve the highest eco-standards and sustainability goals.

APPLICATION

OrthoLite® Recycled[™] delivers the perfect fully recycled solution for eco-friendly support, stability and under foot comfort in either a single density or dual-layer option. In a dual-layer application where a firmer base is required with softer foam on top, OrthoLite® Recycled[™] delivers immediate step-in comfort while retaining all of the key attributes that OrthoLite[™] is known for. OrthoLite® Recycled[™] is also ideal for Strobel layers and upper applications.

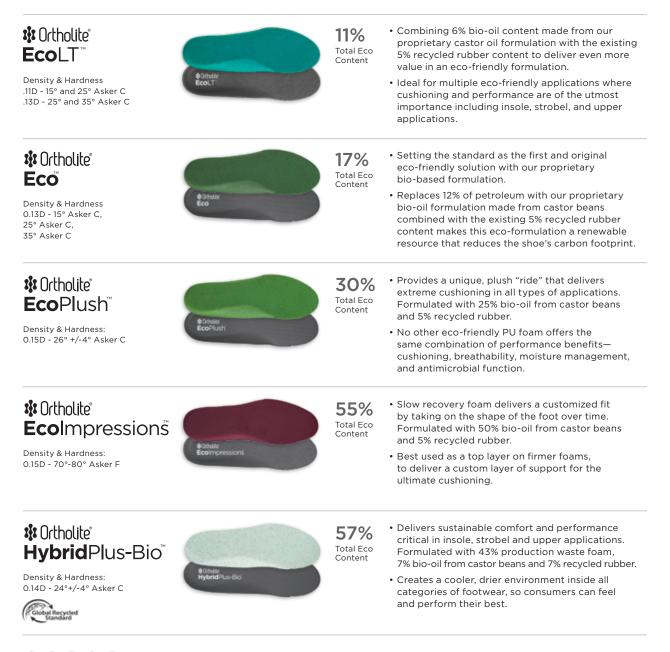
E a manufaction a			98% Postproduction Waste Material
Formulation Recycled	MOQ Standard	3% Total Eco Content	2% Water-based Binder
Density: 0.19-0.27g/cm ³ Hardness: 29°-43° Asker C Thickness: 2mm-20mm *Thickness tolerance +/- 0.3mm	 Finished Goods: OrthoLite® Recycled is available exclusively as a finished molded or die-cut product. Not available in sheets. Contact your OrthoLite® representative regarding molded specifications. Zero Waste Initiative: All OrthoLite® formulations utilize recycled rubber and/or production waste foam to support our end goal of Zero Waste. 	Colors Avai OrthoLite® (*Color will v to the use o postproduc material.	Iable: Colors* rary due f recycled tion waste
		Completed and approve	testing

% Ortholite



Eco-friendly Performance from Plant-based Bio-Oil

OrthoLite^{*} Bio-Oil formulations reduce the need for petroleum-derived ingredients by using an eco-friendly, proprietary castor oil and recycled rubber formulation. For over 20 years, OrthoLite^{*} has led the industry in the innovation, development and production of environmentally friendly insoles. Starting with our very first formulation, our open-cell technology has included 5% recycled shoe rubber, which has kept thousands of tons of waste material out of landfills. OrthoLite^{*} Bio-Oil formulations replace petroleum with oil made from castor beans—a non-food plant. With this single decision, you can up your eco content to reduce your brand's resource consumption and carbon footprint.





Strain Controlite® ECOLT™



Eco-friendly

Long-term



High-level breathability Lightweight



Antimicrobial

Eco Technology Formulated with Bio-Oil

OrthoLite[®] Eco LT[™] brings innovative eco-upgrades to our original .11D and .13D formulations, replacing a portion of the petroleum with plant-derived bio-oil.

PRODUCT SUMMARY

Responding to the growing demand for more eco-friendly products, OrthoLite* expands our industry-leading range of environmentally friendly products with the introduction of OrthoLite[®] Eco LT[™].

The exclusive formulation allows you to reduce your carbon footprint while expanding your range with more eco-friendly offerings. OrthoLite[®] Eco LT[™] combines 6% bio-oil content made from our proprietary castor oil formulation with 5% recycled rubber content-delivering an eco-friendly foam with uncompromised comfort and performance.

APPLICATION

OrthoLite[®] Eco LT[™] is ideal for a wide range of eco-friendly applications where cushioning and performance are critical-including insole, strobel and upper applications. True to all OrthoLite[®] foams, it provides a cooler, drier, healthier environment inside the shoe, with long-lasting cushioning.

Formulation Eco LT

Density: .11D

Hardness:

15° and 25° Asker C *Hardness tolerance +/-4° Asker C

Thickness:

2mm-20mm *Thickness tolerance +/- 0.3mm

Sheet Size: 110cm x 200cm 110cm x 170cm 110cm x 147cm

Density:

MOQ

Standard

.13D

Hardness: 25° and 35° Asker C *Hardness tolerance +/-4° Asker C

Thickness:

2mm-20mm *Thickness tolerance +/- 0.3mm

Sheet Size:

110cm x 200cm 110cm x 170cm 110cm x 147cm

Colors Available: OrthoLite[®] Colors Seedpearl Hybrid 12-0703 TPX

11% Total Eco Content

6% Bio-Oil

5% Recycled



utilize recycled rubber and/or production waste foam to support our end goal of Zero Waste.



OrthoLite® Hybrid™ Technology is available in the Seedpearl Hybrid color 12-0703 TPX. Hybrid is a recycled technology that reuses post production waste foam. Waste colors and waste pieces will vary in size, density, hardness and color.



Strain Ortholite® ECO



Long-term cushioning

management



Lightweight

Washable

Antimicrobial

סרופ

Eco Technology Formulated with 12% Bio-Oil

OrthoLite[®] Eco[™] expands on our popular Eco LT[™] formulation more than doubling the bio-oil content to further reduce the use of petroleum.

Moisture

PRODUCT SUMMARY

OrthoLite[®] Eco[™] is the next evolution of our industry-leading range of environmentally friendly products-with an exclusive formulation made with 12% bio-oil content. By replacing a portion of the petroleum with plant-derived bio-oil sourced from castor beans, we're able to help you reduce your carbon footprint while providing your customers with the legendary comfort and performance of OrthoLite[®].

APPLICATION

OrthoLite[®] Eco[™] can be used in any footwear application where a more eco-friendly comfort and performance solution is wanted. This formulation is ideal for insoles, strobel and upper applications.

			Andreas	
Formulation	MOQ	17% Total Eco Content	12% ^{Bio-Oil}	
Eco	Standard	Content	5% Recycled Rubber	
Density: 0.13g/cm ³	Colors Available: Fairway 18-6320 TPX			
Hardness: 15°+/-4° Asker C 25°+/-4° Asker C 35°+/-4° Asker C	Seedpearl Hybrid 12-0703 TPX			lito
Thickness: 2mm-20mm				tho
Sheet Size: 110cm x 200cm				
	Zero Waste Initiative: All OrthoLite [*] formulations utilize recycled rubber and/or production waste foam to support our end goal of Zero W	THOLLOW ZERO WASTE A T/T/ATI		

ORTHOLITE[®] HYBRID[®] TECHNOLOGY

OrthoLite® Hybrid™ Technology is available in the Seedpearl Hybrid color 12-0703 TPX. Hybrid is a recycled technology that reuses post production waste foam. Waste colors and waste pieces will vary in size, density, hardness and color.

V Ortholite **Eco**Plush[™]



Long-term

management



Lightweight

Washable

Antimicrobial

Eco Technology Formulated with 25% Plant-based Bio-Oil

OrthoLite[®] Eco Plush[™] elevates the eco content of our original plant-based formulation to meet the need for more sustainable footwear solutions and deliver all the comfort and performance benefits of OrthoLite[®] PU foam technology.

Moisture

PRODUCT SUMMARY

OrthoLite^{*} Eco Plush[™] is the next evolution of our industry-leading range of environmentally friendly products-an exclusive formulation made with 25% plant-based bio-oil content. By replacing a portion of the petroleum with plant-derived bio-oil sourced from castor beans, we help to reduce our collective carbon footprint while continuing to deliver on our promise of more sustainable comfort and performance underfoot.

APPLICATION

OrthoLite[®] Eco Plush[™] delivers a plush ride and can be used in any footwear application where a more sustainable comfort and performance solution is wanted. This formulation is ideal for insoles, strobel and upper applications.

			Martin Contractor	
Formulation	MOQ	30% Total Eco Content	25% ^{Bio-Oil}	
Eco Plush	Standard		5% Recycled Rubber	
Density:	Colors Available:			
0.15g/cm ³	Online Lime 17-0145 TPX		San Charleston	E C
Hardness:	Seedpearl Hybrid 12-070	3 TPX	A State of the second	÷.
26°+/-4° Asker C				ु ज जू
Thickness:				ルード
2mm-20mm				20
Sheet Size:			a the second of	÷ 7
110cm x 170cm				L' L'
			Sugar States	
			Alter and the second	₩₩
	Zero Waste Initiative:	ATHOLIA ATHOLIA		
	All OrthoLite [®] formulations utilize recycled rubber and,			
	production waste foam to	HITLAT!	and the second se	
	support our end goal of Ze	ro Waste.		

ORTHOLITE® HYBRID

OrthoLite[®] Hybrid[™] Technology is available in the Seedpearl Hybrid color 12-0703 TPX. Hybrid is a recycled technology that reuses post production waste foam. Waste colors and waste pieces will vary in size, density, hardness and color.

1 Ortholite® **Eco**Impressions



Long-term cushioning

Moisture management



Lightweight



Antimicrobial

Top-Layer Eco-Foam that Molds to the Foot

OrthoLite[®] Eco Impressions[™] provides immediate step-in comfort and molds for a truly custom fit over time.

PRODUCT SUMMARY

OrthoLite® Eco Impressions™ makes an extremely comfortable first impression-and a lasting impression. Containing our highest percentage of bio-oil content, the exclusive formulation is specifically designed to mold to the shape of the foot over time for a truly custom fit.

APPLICATION

OrthoLite[®] Eco Impressions[™] is best used as a top layer on a firmer OrthoLite[®] base that cradles and supports for ultimate cushioning. The formulation is also ideal as lining foam-giving the whole shoe a custom-feeling fit.

MOQ

Standard



Top layer: OrthoLite[®] Eco Impressions for step-in comfort

Bottom layer: Firm foam layer for cradling support

Formulation Eco Impressions

Slow Recovery Return Rate: 10-20 Seconds

Density:

0.15g/cm3

Hardness: 70°-80° Asker F

Thickness: 2mm-12mm

Sheet Size: 110cm x 170cm **Finished Goods:** Available in sheets and die-cut.

Contact your OrthoLite* representative regarding molded specifications.

Zero Waste Initiative: All OrthoLite



utilize recycled rubber and/or production waste foam to support our end goal of Zero Waste.

Colors Available: Tawny Port 19-1725 TPX Seedpearl Hybrid 12-0703 TPX

55% Total Eco Content

50% Bio-Oil

5% Recycled Rubber

npression



OrthoLite® Hybrid™ Technology is available in the Seedpearl Hybrid color 12-0703 TPX. Hybrid is a recycled technology that reuses post production waste foam. Waste colors and waste pieces will vary in size, density, hardness and color.

si Ortholite® **Ultra**™



Long-term

Moisture management



Lightweight

Washable

Antimicrobial

Ultra-Lightweight Comfort & Performance Insole Technology

OrthoLite[®] Ultra[™] is designed to meet the ever-increasing demand for ultra-lightweight comfort in today's active lifestyle footwear.

PRODUCT SUMMARY

This revolutionary OrthoLite^{*} eco-formulation utilizes recycled rubber in a proprietary foam technology that achieves unprecedented lightness. OrthoLite^{*} Ultra^{**} was developed specifically to reduce weight without sacrificing the comfort and performance active consumers demand.

APPLICATION

Engineered to perform at optimal levels for kids and adults while on the field of play, at the gym or simply walking, OrthoLite[®] Ultra[™] is ideal for both active lifestyle and sport. The formulation provides long-term cushioning and a cooler, drier, healthier environment inside the shoe. Beyond insoles, OrthoLite[®] Ultra[™] can be used in strobel applications, quarter panel linings, tongues, heel pads and collar foam.

Formulation Ultra

Density:

0.085g/cm3

Hardness:

1°+/-4° Asker C 5-10°+/-4° Asker C 15°+/-4° Asker C 25°+/-4° Asker C

Thickness: 2mm-20mm

Sheet Size:

110cm x 147cm 110cm x 170cm 110cm x 200cm

Density:

Standard

MOQ

0.095g/cm³

33°+/-4° Asker C Thickness: 2mm-20mm

Sheet Size: 110cm x 147cm 110cm x 170cm

110cm x 200cm

Colors Available:

5% Total Eco Content

5% Recycled Rubber

Red 19-1764 TPX Green 16-5932 TPX Antique Bronze 17-1028 TPX Fossil 17-0909 TPX Lime Green 14-0452 TPX Burnt Sienna 17-1544 TPX Yellow 13-0858 TPX Lemon Chrome 13-0859 TPX Seedpearl Hybrid 12-0703 TPX

Zero Waste Initiative: All OrthoLite*

formulations utilize recycled rubber and/or production waste foam to support our end goal of Zero Waste.



OrthoLite® Hybrid™ Technology is available in the Seedpearl Hybrid color 12-0703 TPX. Hybrid is a recycled technology that reuses post production waste foam. Waste colors and waste pieces will vary in size, density, hardness and color.

St Ortholite® **X**Series





Long-term cushioning Moisture management



Lightweight

Washable

led

Antimicrobial

High-rebound Formulations with Customized Elasticity

OrthoLite[®] X Series is our range of performance formulations with the highest rebound, that let you dial in the perfect elasticity for your insole application.

PRODUCT SUMMARY

Responding to the growing demand for higher levels of rebound, OrthoLite* expands upon our game-changing options with customized elasticity offerings. The range allows you to pick the precise rebound for your needs—or create a Good/Better/Best offering for your consumers. It starts with OrthoLite[®] X40[™], that set the industry standard for high rebound performance with an elasticity rating over 40%. OrthoLite® X35™ and OrthoLite® X25[™] foams achieve elasticity ratings of 35 and 25 percent.

APPLICATION

The OrthoLite" X Series is ideal for footwear used in high-impact sports or minimalist footwear. Its high levels of cushioning in thinner layers of foam also make it a great fit for dress shoes.

		15 August
Formulations X25, X35, X40	MOQ Standard	5% Total Eco Content 5% Recycl
Ortholite°	Ortholite°	Ortholite°
X25™	X35™	X40™
Density:	Density:	Density:
0.12g/cm ³	0.145g/cm ³	0.16g/cm ³
Hardness:	Hardness:	Hardness:
20°+/-4° Asker C	25°+/-4° Asker C	25°+/-4° Asker C
Resilience %:	Resilience %:	35°+/-4° Asker C
≥25	≥35	Resilience %:
Thickness:	Thickness:	≥40
2mm-20mm	2mm-20mm	Thickness:
Sheet Size:	Sheet Size:	2mm-20mm
110cm x 200cm	110cm x 200cm	Sheet Size:
Color Available: Billiard 16-5427 TPX Seedpearl Hybrid 12-0703 TPX	Color Available: Fossil 17-0909 TPX Seedpearl Hybrid 12-0703 TPX	110cm x 170cm Colors Available: Red 19-1764TPX Billiard 16-5427 TPX Fossil 17-0909 TPX
Zero Waste Initiative:	THOLIS	Castlerock 18-0201 TPX

Castlerock 18-0201 TPX True Blue 19-4057 TPX Seedpearl Hybrid 12-0703 TPX



All OrthoLite* formulations utilize recycled

rubber and/or production waste foam to support our end goal of Zero Waste.

> OrthoLite[®] Hybrid[™] Technology is available in the Seedpearl Hybrid color 12-0703 TPX. Hybrid is a recycled technology that reuses post production waste foam. Waste colors and waste pieces will vary in size, density, hardness and color.





Another Pinnacle OrthoLite[®] Formulation for Maximum Rebound & Energy Return

OrthoLite^{*} raised the bar to new heights with the launch of X40[™] that set the industry standard for high-rebound comfort and performance. Now OrthoLite^{*} takes rebound to incredible new heights with even more rebound and energy return.

PRODUCT SUMMARY

With an unprecedented 55% resiliency, OrthoLite* X55[™] foam provides the ultimate wearing experience—with awe-inspiring step-in comfort and all-day energy return that sets a new standard in comfort and performance. The feeling is lively, with the immediate perception of energy, making it ideal for all footwear categories including casual and dress footwear. When used in athletic footwear, OrthoLite* X55[™] gives the feeling of propulsion during high-energy sports while providing superb stability and support. Simply by upgrading into X55[™], our brand partners can market products with the most energy return ever developed and experienced.

APPLICATION

OrthoLite^{*} X55[™] is engineered to enhance every wearing occasion including casual, dress, outdoor and athletic footwear. X55[™] resiliency and energy return help contribute to less foot fatigue and provides unrivaled stability, comfort and performance under all conditions from on the court, to out on the trails, or on the way to the office.

Formulation X55	MOQ Standard	5% ^{Total} Eco Content	5% Recycled Rubber
Density: 0.16g/cm ³	Sheet Size: 110cm x 147cm	Color Available: Red 19-1764 TPX	24-25
	110cm x 170cm	Seedpearl Hybrid	
Hardness:		12-0703 TPX	
25°+/-4° Asker C			
Resilience:			1990
≥55%			1988
Thickness:			12.2
2mm-20mm	Zero Waste		
	Initiative:		
	All OrthoLite		1
	formulations		
	utilize recycled rubber and/or production waste	MESHOL	
	foam to support our	Completed testing	
	end goal of Zero Waste.	and approved	

1 Ortholite



OrthoLite® Hybrid™ Technology is available in the Seedpearl Hybrid color 12-0703 TPX. Hybrid is a recycled technology that reuses post production waste foam. Waste colors and waste pieces will vary in size, density, hardness and color.

St Ortholite **Imperial**[™]



Long-term

management

Lightweight

Washable

Antimicrobial

High-density, Ultra-cushioning Foam with Superior Rebound

OrthoLite[®] Imperial[™] provides outstanding cushioning even in thin applications-making it the perfect choice for a wide range of uses.

Moisture

PRODUCT SUMMARY

OrthoLite[®] Imperial[™] foam brings ultra thin cushioning to new levels. Its .22 density offers high levels of cushioning and rebound in thin applications while maintaining all of the OrthoLite^{*} comfort and performance attributes of breathability, moisture management and antimicrobial functions.

APPLICATION

OrthoLite[®] Imperial[™] is ideal for low profile footwear and dress shoe applications requiring a lightweight, high density and very thin cushioning and support layer. This formulation works well for full insoles, strobel layers and heel pads.

Formulation Imperial

MOQ Standard



5% Recycled Rubber

Density:

0.22g/cm3

Hardness: 25°+/-4° Asker C

Thickness: 2mm-20mm

Sheet Size: 110cm x 100cm **Finished Goods:** Available in sheets and die-cut.

Contact your OrthoLite* representative regarding

molded specifications.

Zero Waste Initiative: ZERO

All OrthoLite® formulations utilize recycled rubber and/or production waste foam to support our end goal of Zero Waste.

Colors Available: Blue Grass 18-5128 TPX Seedpearl Hybrid 12-0703 TPX

ORTHOLITE[®] HYBRID[®] TECHNOLOGY

OrthoLite® Hybrid™ Technology is available in the Seedpearl Hybrid color 12-0703 TPX. Hybrid is a recycled technology that reuses post production waste foam. Waste colors and waste pieces will vary in size, density, hardness and color.

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Long-term cushioning



High-level breathability Washable

Antimicrobial

Optimal Rebound & Recovery Insole Technology That Supports Dynamic Movement

OrthoLite® R&R[™] delivers exceptional comfort and maximum recovery—with high energy-return to restore and rejuvenate feet.

PRODUCT SUMMARY

OrthoLite^{*} R&R^{**} (Rebound & Recovery) is a high-performance formulation that responds to dynamic movement with maximum energy-return that supports faster recovery. With softer properties and higher density, the unique feeling of OrthoLite^{*} R&R^{**} allows tired feet to recover with less stress.

APPLICATION

OrthoLite^{*} R&R^{**} provides a unique dual-layer feel in a single-density solution while also providing all day comfort and support. Delivering immediate step in comfort due to its softer feel and higher density that combine to create high energy return that allows tired feet to recover with less stress. In addition, OrthoLite^{*} R&R^{**} is a great performance technology that is versatile under all conditions from simply walking to dynamic athletic movements.

Formulation R&R	MOQ Standard	5% Total Eco Content	5% Recycled Rubber

Density: 0.16g/cm3

Hardness: 15°+/-4° Asker C

Thickness: 2mm-20mm

Sheet Size: 110cm x 170cm Colors Available: Castlerock 18-0201 TPX Seedpearl Hybrid 12-0703 TPX

Zero Waste Initiative:

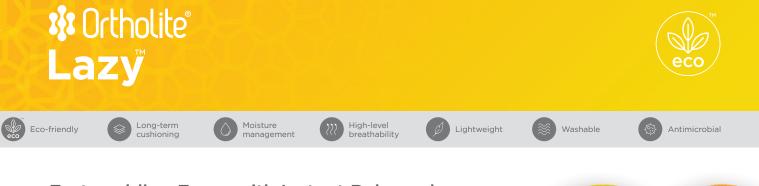
All OrthoLite^{*} formulations utilize recycled rubber and/or production waste foam to support our end goal of Zero Waste.



ortholite® Hybrid TECHNOLOGY

OrthoLite® Hybrid™ Technology is available in the Seedpearl Hybrid color 12-0703 TPX. Hybrid is a recycled technology that reuses post production waste foam. Waste colors and waste pieces will vary in size, density, hardness and color.





Fast-molding Foam with Instant Rebound

OrthoLite^{*} Lazy[™] gives a custom fit—quickly molding to the shape of the foot and then instantly rebounding when the foot is removed.

PRODUCT SUMMARY

OrthoLite^{*} Lazy^{**} foam conforms to the foot to create a comfortable, custom fit—and rapidly rebounds to its original shape when the shoe is taken off. It gives the feeling of newness and plush, supportive comfort every time the shoe is put on.

APPLICATION

OrthoLite^{*} Lazy[™] formulation is best used as a top layer on a firmer OrthoLite^{*} base layer. As the bottom layer cradles and supports, the OrthoLite^{*} Lazy[™] top layer creates maximum cushioning and comfort.



Top layer: OrthoLite[®] Eco Impressions[®] for step-in comfort

MOQ

Standard

Bottom layer: Firm foam layer for cradling support

Formulation Lazy

Slow Recovery Return Rate: 3-5 Seconds

Density: 0.15g/cm³

Hardness: 75° Asker F

Thickness: 2mm-12mm

Sheet Size: 110cm x 170cm

Finished Goods: Available in sheets

and die-cut. Contact your OrthoLite^{*} representative regarding molded specifications.





utilize recycled rubber and/or production waste foam to support our end goal of Zero Waste. **Colors Available:** Yellow 13-0858 TPX

5% Total Eco Content

Seedpearl Hybrid 12-0703 TPX

% Urtholite Lazy



OrthoLite® Hybrid™ Technology is available in the Seedpearl Hybrid color 12-0703 TPX. Hybrid is a recycled technology that reuses post production waste foam. Waste colors and waste pieces will vary in size, density, hardness and color.

X-Sorb



Long-term

Moisture management

High-level breathability D Lightweight

🛞 Washable

Antimicrobial

Ultra-high Density, Impact-absorbing Foam for Superior Comfort & Protection

OrthoLite^{*} X-Sorb[™] is the highest density, lowest rebound foam ever engineered by OrthoLite^{*}—providing outstanding shock-dampening and energy absorption. The formulation is ideal for a wide range of applications across footwear, sports and safety equipment where unequaled comfort, performance, stability and mobility are critical.

PRODUCT SUMMARY

With its extraordinarily low resiliency and high density, OrthoLite^{*} X-Sorb^{**} foam deadens impact forces before they're transferred to the body. Low elongation and ultra-high tensile strength allow it to stretch and rebound—enhancing range of motion while maintaining all the signature OrthoLite^{*} attributes. With OrthoLite^{*} X-Sorb^{**}, footwear can deliver superior confidence and under-foot protection, and sports equipment can enhance safety and reduce fatigue without adding bulk.

APPLICATION

OrthoLite* X-Sorb[™] is perfect for any situation that requires exceptional comfort and protection from impact and vibration. In footwear, it can be used in both single- and dual-layer applications—with a softer foam on top to deliver immediate step-in comfort. For safety and sports equipment, its tensile strength and minimal weight provide protection while reducing fatigue and enhancing performance—while allowing for full range of motion.

			CONTRACTOR AND A DESCRIPTION OF A DESCRIPTION
Formulation X-Sorb	MOQ Standard	5% Total Eco Content	5% Recycled Rubber
Density: 0.18D Hardness:	Sheet Size: 110cm x 170cm 110cm x 147cm	Colors Available: Grey 17-1501 TPX Seedpearl Hybrid 12-0703	трх
15°+/-4° Asker C	Finished Goods:		and the second
Compression Set: ≤5%	Available in sheets and die-cut.		
Resilience %: ≤8%	Contact your OrthoLite [®] representative regarding molded specifications.	Zero Waste	
Thickness: 3mm-20mm		All OrthoLite formulations utilize recycle rubber and/or production waste foam to support our	

Crtholite



OrthoLite® Hybrid™ Technology is available in the Seedpearl Hybrid color 12-0703 TPX. Hybrid is a recycled technology that reuses post production waste foam. Waste colors and waste pieces will vary in size, density, hardness and color.

ORTHOLITE[®] HYBRID[™] TECHNOLOGY IS AVAILABLE IN MOST FORMULATIONS.

end goal of Zero Waste.







The World's First Mechanically Bonded ESD Insole Technology with Unsurpassed Protection, Performance and Comfort

OrthoLite® ESD Shield® with FiberFusion™ technology is a patented* top-cover system that requires no adhesives and mechanically bonds ESD conductive copper fibers into the OrthoLite® X35™ foam base-layer utilizing our proprietary process. This breakthrough technology delivers the world's best performing ESD insole protection from heel-to-toe that doesn't degrade over time while providing the highest level of ESD protection, comfort, and performance.

PRODUCT SUMMARY

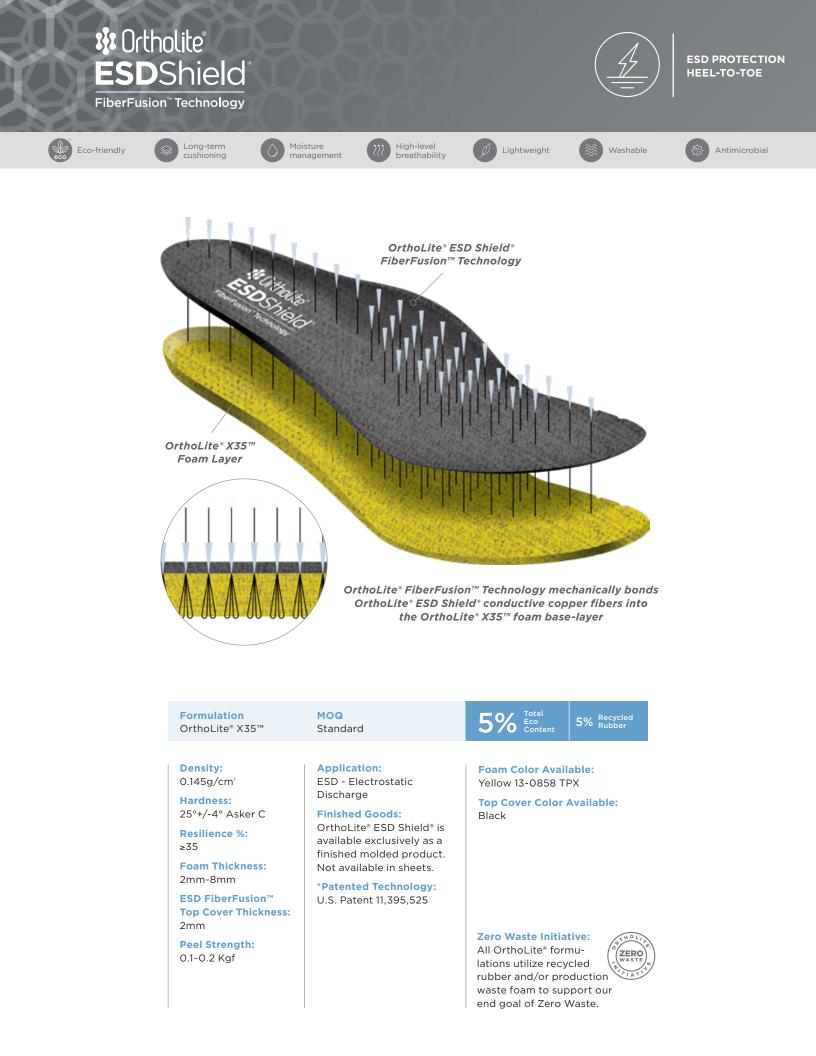
OrthoLite® ESD Shield® is the result of our pursuit to advance ESD insole technology while delivering the most comfortable, best performing insoles on the market.

- OrthoLite® ESD Shield® elevates ESD effectiveness through the combination of conductive fiber technology and FiberFusion™ technology which stitches the fibers into OrthoLite® foam using thousands of elliptical needles for a permanent mechanical bond.
- Outperforming conventional ESD insole technologies, OrthoLite[®] FiberFusion[™] technology's mechanical bond provides tens of thousands of ESD contact points from heel-to-toe while enhancing the innate comfort of OrthoLite[®] foam.
- The adhesive-free solution doesn't detract from the breathability, moisture-wicking or eco-friendly attributes of OrthoLite® foam making it the most comfortable, most effective ESD solution on the market.

APPLICATION

OrthoLite® ESD Shield® technology is available in molded insoles and provides full heel-to-toe ESD coverage that doesn't degrade over time, lose its effectiveness, or compress—making it an ideal choice for premium tier work and service footwear.

Molded insole with patented OrthoLite® ESD Shield® with FiberFusion™ Technology



Strain Technology

Eco-friendly



Washable

Antimicrobial

OrthoLite[®] ESD Shield[®] Performance Testing

Long-term cushioning

Moisture

management

ESD RESISTANCE TESTING CONDUCTED BY INTERTEK:

- Testing is for conductive footwear based on the ISO 20345/20344 standard for electrical resistance for ESD footwear that shall not be greater than 100 MΩ, OrthoLite[®] ESD Shield[®] measures in at less than 0.01 MΩ—a *1000x difference* in ESD performance.
- Resistance is measured in accordance with ISO Standard 20344 - 2011 Electrical Resistance Testing.
- The SATRA TM240 2001 protocol and machine are utilized to conduct testing.

INTERTEK TESTING AND CERTIFICATION

- Martindale Test for Abrasion (ISO 17704) Results – Pass
- Die Migration Test ISO 015-X12) Results – Pass

HEELUXE LABS TESTING

• In-house Lab Wear Testing - Pass

IN-HOUSE ESD TESTING

• OrthoLite facilities are equipped to conduct the SATRA TM240 Testing protocol in-house.









Lightweight

INTERTEK TEST FORMAT OrthoLite® ESD Shield® with FiberFusion™ Technology

Condition	Sample Result	
	1	0.01MΩ
	2	0.01ΜΩ
DRY	3	0.01ΜΩ
DRI	4	0.01ΜΩ
	5	0.01ΜΩ
	6	0.01ΜΩ
WET	1	0.01ΜΩ
	2	0.01ΜΩ
	3	0.01MΩ
	4	0.01MΩ
	5	0.01MΩ
	6	0.01MΩ

Intertek conductivity testing was conducted utilizing the SATRA TM240 machine that complies with the international standard of EN ISO 20344.

High-level breathability



OrthoLite[®] ESD Shield[®] Foam Performance Testing

PEEL STRENGTH

OrthoLite® ESD Shield® utilizes a mechanical bond that requires NO GLUE, a more sustainable way to bond our OrthoLite® ESD Shield® topcover and OrthoLite® X35° foam underfoot.



FIBERFUSION™ PEEL STRENGTH TESTING

Peel strength is 0.1~0.2 Kgf under both wet and dry testing conditions. Peel strength conducted in-house at OrthoLite Vietnam.



1 Ortholite® **O**-Therm[™]



Eco-friendly

Long-term



High-level breathability

THERMAL PROTECTION UNDERFOOT



Lightweight

Washable

Antimicrobial

The World's First and only Aerogel-infused Open-cell PU Foam, the Ultimate Cold and Hot Weather Footwear Solution

OrthoLite® O-Therm[™] insole technology creates a thermal barrier that elevates and reduces footwear temperature regulation to an unprecedented level, infusing open-cell PU foam with a proprietary aerogel creating the lightest, most advanced version of the world's most insulative material delivering unmatched thermal insulation and all-day comfort in cold and hot weather conditions underfoot.

PRODUCT SUMMARY

The proprietary aerogel in OrthoLite® O-Therm™ traps micro-pockets of air without the need for loft and won't lose its effectiveness when compressed under foot. Unlike other aerogel solutions, OrthoLite® O-Therm[™] requires no special handling and or encapsulation—truly a world's first!

OrthoLite® O-Therm™ is the superior thermal barrier that is measurably more effective at blocking cold and heat underfoot than conventional insole technologies. Third party lab tests conducted by Vartest labs for cold and heat blocking performance, confirm the benefits of OrthoLite® O-Therm[™] and its ability to deliver underfoot protection at extreme cold temperatures of -108°F or excessive heat at 140°F. Like all other OrthoLite® insoles technologies, O-Therm delivers on our promise of maximum breathability, performance, and unrivaled comfort. With the remarkable innovation of OrthoLite® O-Therm™, consumers can stay out longer, perform better and go farther in cold and hot weather conditions.

APPLICATION

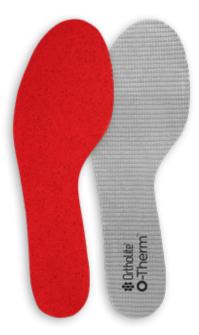
OrthoLite® O-Therm™ is the optimal underfoot thermal barrier, with a thickness range from 2mm-20mm, you can dial in the level of cold or heat block performance based on the thickness of the foam you select. OrthoLite® O-Therm[™] can also be combined with a wide range of OrthoLite® top-layer foams to create a custom insole solution tailored to a broad range of footwear categories.

Available in molded and die-cut applications, OrthoLite® O-Therm™ is also an ideal thermal barrier solution for footwear linings and Strobel layersbringing unsurpassed cold block and heat block technology without adding bulk or weight.

OrthoLite® O-Therm™ Molded Insole

Top Cover Fabric





Formulation OrthoLite® O-Therm™	MOQ Standard	5% Total Eco Content 5% Recycled Rubber
Density: 0.11g/cm³	Application: Cold and Heat Block	Color Available: Lava Red PMS 1795
Hardness: 25°+/-4° Asker C	Finished Goods: Available in molded	
OrthoLite* O-Therm™ thickness: 2mm-20mm	and die-cut.	
Sheet Size: 110cm × 200cm		
		Zero Waste Initiative: All OrthoLite® formulations utilize recycled rubber and/or production waste foam to support our end goal of Zero Waste.

OrthoLite® O-Therm™ Die-cut Insole



management



Antimicrobial

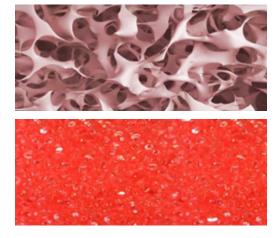
OrthoLite[®] O-Therm[®] **Aerogel Thermal Foam** Performance

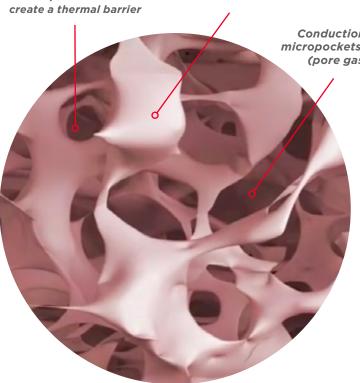
Aerogel is embedded in the polymer reducing its thermal conductivity, and by so increasing the thermal resistance of the matrix creating an optimal thermal barrier from cold and heat.

Nano pores inside a multi-porous structure Conduction through the foam matrix

Washable







KEY ATTRIBUTES OF AEROGEL



THERMAL INSULATION

- Nano pores inside a multiporous structure creates a thermal barrier
- Thermal conductivity: 17 to 22 mW/m.K



LIGHTNESS

- Lightest man made material. Only weighs 3x the weight of air.
- Air porosity is more than 90%!
- Low density enhances the performance of the shoe with airy comfort.



HYDROPHOBICITY

- Super hydrophobic. Repels water and moisture.
- Contact angle of more than 160°C
- Moisture is moved away from the foot to provide a drier, healthier shoe environment

Virtholite® **O**-Therm[™]



Eco-friendly





High-level



Moisture management



Lightweight

Washable

Antimicrobial

TESTING PROTOCOL

OrthoLite® worked with renowned third party thermal test laboratory, Vartest Laboratories, to quantify the thermal performance of OrthoLite® O-Therm™ aerogel insoles under extreme cold and heat conditions.

Testing was performed on 3 insole thicknesses: 2mm, 4mm and 6mm. Each insole had a CK mesh top cloth. Results were reported over 10 minutes. The tests were performed with components layered from top to bottom as follows:

- 10psi of force to simulate a person standing on the insoles
- · Silicone disc on top of insole used as human skin surrogate
- Thermocouple/thermometer
- Insole
- Thermocouple/thermometer
- · Cold testing: dry ice base temperature is -108.4°F (-78°C)
- Heat testing: The hot plate base temperature is 140°F (60°C)

COLD TESTING

The protocol for cold testing used dry ice to establish a base temperature of -108.4°F (-78°C).

HEAT TESTING

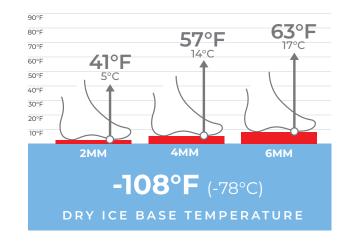
The protocol for heat testing used a hot plate to establish a base temperature of 140°F (60°C).



Testing conducted at Vartest Laboratories

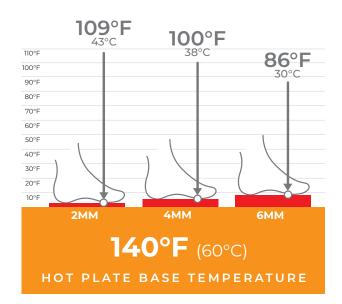
Cold Blocking Results

With a baseline temperature of -108°F underfoot, third party lab tests show that increasing the thickness of OrthoLite® O-Therm™ underfoot measurably increases the level of thermal resistance/temperature specifically in the area measured underfoot. The chart below demonstrates those changes applying a thickness range of 2-6mm of OrthoLite[®] O-Therm[™].



Heat Blocking Results

With a baseline temperature of 140°F underfoot, third party lab tests show that increasing the thickness of OrthoLite® O-Therm™ underfoot measurably increases the level of thermal resistance/temperature specifically in the area measured underfoot. The chart below demonstrates those changes applying a thickness range of 2-6mm of OrthoLite[®] O-Therm[™].



St Ortholite® **3D**Skive[™]





Long-term

management

High-level breathability Lightweight

Washable

Antimicrobial

Visible Technology with Step-in Comfort

Moisture

OrthoLite[®] 3D Skive[™] is a proprietary cutting technology providing a new level of comfort and performance.

PRODUCT SUMMARY

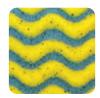
OrthoLite[®] 3D Skive[™] features an exclusive comfort and performance design with unique cutting geometries that amplify breathability and cushioning. The design is available in a range of

textures-wave, egg crate and pebble pathwith 3mm peaks and valleys creating instant step-in comfort and massage-like feel while maintaining their shape over time.

OrthoLite[®] 3D Skive[™] Heel combines wave and egg-crate cutting geometry to amplify heel cushioning. The embedded two-layer oval design uses exclusive OrthoLite[®] 3D Skive[™] foam technology to create instant step-in comfort. This visible technology is an excellent selling feature, drawing consumers to the product.

APPLICATION

OrthoLite® 3D Skive™ is the perfect solution for all day comfort—best used in a comfort, casual or dress application to provide soft underfoot stimulation. Consumers will love the underfoot feel, while enjoying a cooler, drier, healthier environment inside the shoe.



Wave:

This textured cushioning technology delivers massaging comfort. Available in both singleand dual-density.

Egg Crate:

The textured cushioning creates the sensation of walking on air. Available in both single- and dual-density.

Pebble Path:

The organic pebble pattern based in reflexology stimulates and relaxes the foot. Available in single-density.

Thickness: 5mm-7mm

Sheet Size: 33cm x 110cm

Formulations:

Due to our proprietary cutting technology, OrthoLite[®] 3D Skive[™] is available with most all of our formulations with the exception of OrthoLite[®] Lazy[™], OrthoLite[®] Impressions[™], and OrthoLite[®] Imperial[™].

Colors Available: OrthoLite[®] Colors

Zero Waste Initiative:



utilize recycled rubber and/or production waste foam to support our end goal of Zero Waste.

ivë Pebble Path

MESHOL Completed testing and approved

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