Innovation & Action

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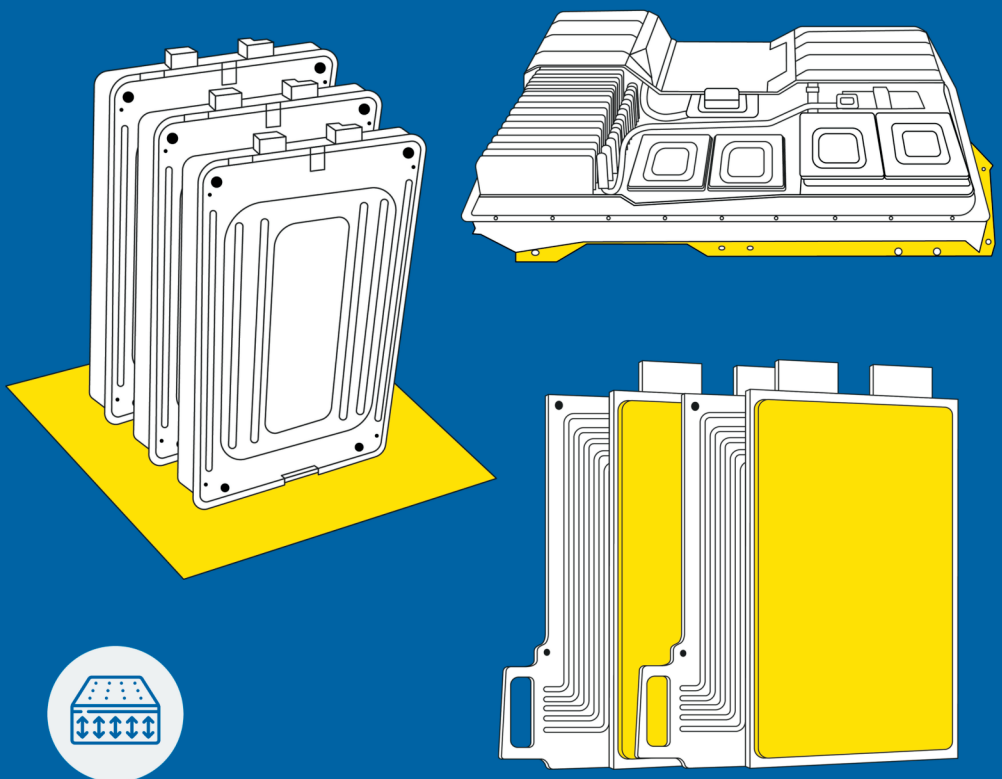
INOAC USA, Inc.
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REDUCED VIBRATION | VERY LOW COMPRESSION SET | FLAME RETARDANT | NON-SILICONE, HALOGEN-FREE | LOW ODOR

CELLDAMPER™

Versatile Polyurethane Foam

Celldamper is an extremely durable polyurethane elastomer that can be used in a wide range of applications in EV batteries, from compression to cell cushion and base support. It was specially engineered to reduce vibration oscillation, limit noise, and withstand harsh automotive environments. Celldamper is available in various thicknesses for easy manufacturing.



CELL CUSHION | COMPRESSION | VIBRATION CONTROL | BASE SUPPORT

Physical Properties	BF-150	BF-300	BF-400	BF-500	BF-700	Test Method
Density	150 kg/m³	300 kg/m³	400 kg/m³	500 kg/m³	700 kg/m³	JIS K7222
Permissible Contact Pressure	3.5 N/cm²	10 N/cm²	20 N/cm²	35 N/cm²	75 N/cm²	-
Static Spring Constant	65 N/mm	150 N/mm	500 N/mm	860 N/mm	2000 N/mm	JIS K6385
Dynamic Spring Constant	250 N/mm	650 N/mm	800 N/mm	1800 N/mm	3800 N/mm	JIS K6385
Tensile Strength	900 kPa	1200 kPa	1600 kPa	1900 kPa	2900 kPa	JIS K6400-5
Tensile Elongation	190%	230%	190%	190%	180%	JIS K6400-5
Tear Strength	40 N/cm	60 N/cm	80 N/cm	110 N/cm	180 N/cm	JIS K6400-5
Compression Set	3%	3%	3%	3%	3%	JIS K6400-4
Flame Retardant	Pass	Pass	Pass	Pass	Pass	FMVSS 302
Dimensions	500 x 1000 mm	500 x 1000 mm	500 x 1000 mm	500 x 1000 mm	500 x 1000 mm	-
Thickness	0.5 - 50 mm	1.5 - 50 mm	3.0 - 50 mm	3.0 – 50 mm	3.0 – 40 mm	-

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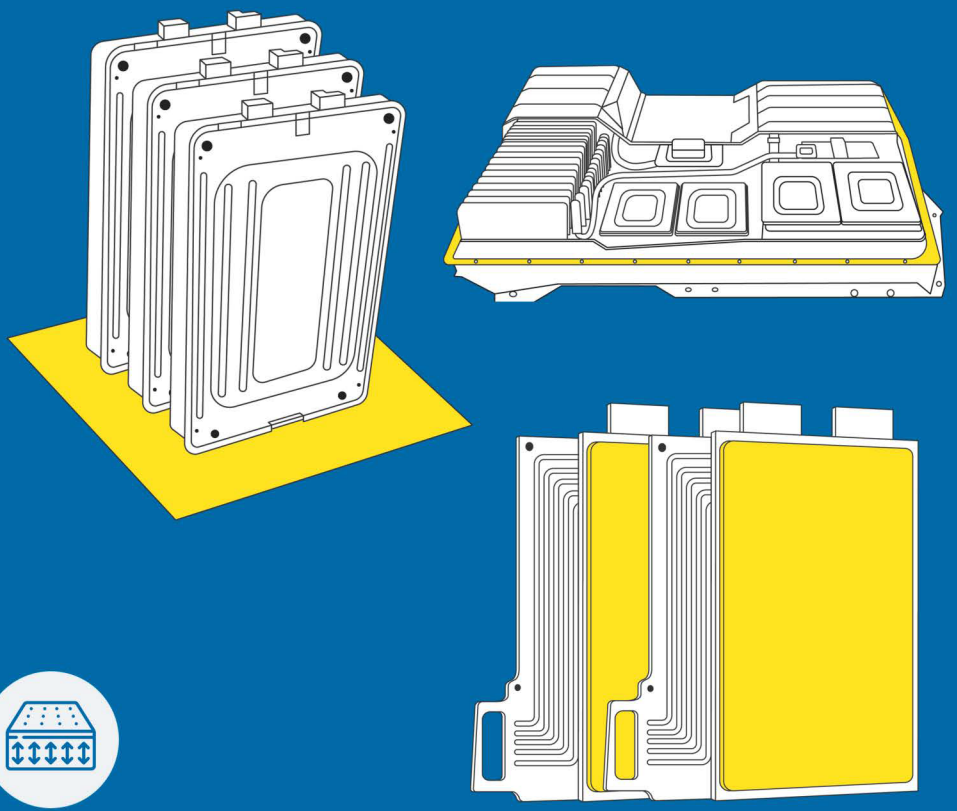
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VERY LOW COMPRESSION SET | HIGH-SEALING PERFORMANCE | IMPACT ABSORPTION & DIMENSIONAL STABILITY | NON-SILICONE, HALOGEN-FREE | FLAME RETARDANT

SlimFlex

High-Performance Microcellular Urethane Foam

SlimFlex is a polyurethane foam featuring a unique cell structure with high levels of density, uniformity, and fine porosity to enable excellent long-term use. It features low distortion characteristics, even at high temperatures. **SlimFlex** allows for easy manufacturing because it die-cuts concisely and is available in a broad range of grades and with adhesives.



CELL CUSHION | COMPRESSION | SEALING | BASE SUPPORT

Physical Properties	RX-32	TR-24	TR-32	ATR-24PR	ATR-32PR	Test Method
Density	320 kg/m³	240 kg/m³	320 kg/m³	240 kg/m³	320 kg/m³	JIS K6401
Tensile Strength	0.50 mPa	0.29 mPa	0.41 mPa	0.28 mPa	0.42 mPa	JIS 6251
Tensile Elongation	72%	86%	87%	95%	85%	JIS K6251
Tear Strength	1.8 N/mm	1.1 N/mm	1.70 N/mm	1.0 N/mm	1.4 N/mm	JIS K6252
25% Compression Load Deflection	0.06 mPa	0.03 mPa	0.07 mPa	0.060 mPa	0.100 mPa	JIS K6254
Compression Set	2.5%	3.9%	4.0%	6.0%	6.0%	JIS K6401
Flame Retardant	Pass	Pass	Pass	Pass	Pass	FMVSS 302
Dimensions	Roll size varies	Roll size varies	Roll size varies	Roll size varies	Roll size varies	-
Thickness	2.0 - 8.0 mm	2.0 – 10.0 mm	1.0 - 5.0 mm	2.0 – 5.0 mm	1.0 – 5.0 mm	-

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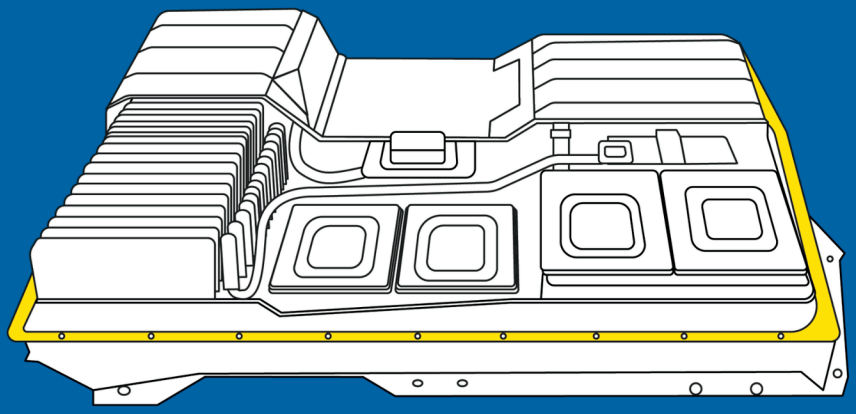
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VERY LOW COMPRESSION SET | EXCELLENT HOT/COLD RESISTANCE | SUPERIOR WEATHER RESISTANCE | FLAME RETARDANT | WATER & RUST SEALANT

NANNEX™

High-Expansion Silicone Foam

NANNEX silicone foam has a special semi-closed cell structure that makes it ideal for sealing gaskets and other components in EV batteries. NANNEX offers low combustibility and is extremely resistant to hot and cold temperatures, which are necessary traits for automotive applications. It is available in different grades to maximize design possibilities.





CELL CUSHION



SEALING

Physical Properties	TL-3503	Test Method
Density	260 kg/m³	-
Tensile Strength	0.32 mPa	-
Tensile Elongation	70%	-
25% Compression Load Deflection	0.036 mPa	-
Compression Set	6.0%	-
Flame Retardant	yes	UL 94 V-0
Dimensions	500 x 10 m	-
Thickness	1.0 – 6.0 mm	-

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SUPERIOR TEAR STRENGTH | LOW THERMAL CONDUCTIVITY | WEATHER RESISTANT | LOW WATER ABSORPTION | FLAME RETARDANT | SHOCK ABSORPTION

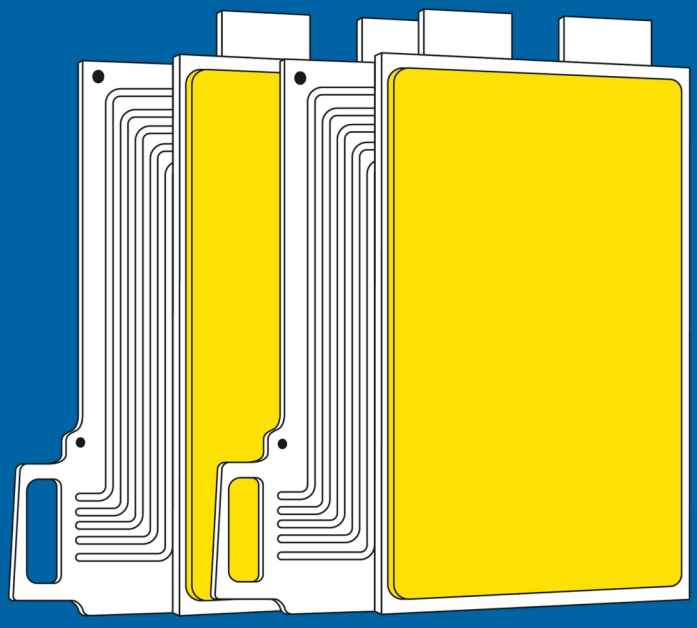
GOMSPOR™

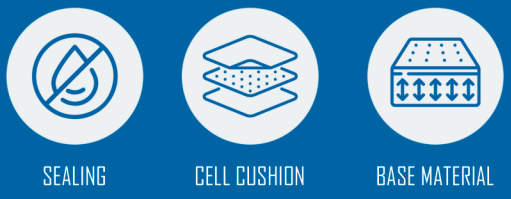
Durable EPDM Rubber & Silicone Sponge

GOMSPOR is an Ethylene Propylene Diene Monomer (EPDM) rubber with a closed cell structure and the material has exceptional elastic properties, even at low temperatures. Halogen-free GOMSPOR EPDM is also lightweight but maintains high durability.

GOMSPOR also offers a silicone series for higher mechanical strength requirements. This is a great material for battery base and sealing applications.

INOAC's GOMSPOR is a highly versatile material and provides many options for installation.





Physical Properties	E-4088	E-4348	TT-4106 (Si)	Test Method
Density	0.10 g/cm³	0.15 g/cm³	0.28 g/cm³	JIS K6767
Tensile Strength	0.40 mPa	0.31 mPa	0.71 mPa	JIS K6767
Tensile Elongation	210%	135%	170%	JIS K6767
Hardness	5 type C	20 type C	12 type C	Asker-C
25% Compression Load Deflection	31.5 kPa	47.3 kPa	46.0 kPa	ASTM D1056
Flame Retardant	n/a	Pass (UL 94 V-0)	Pass (UL 94 HBF)	UL 94 V-0 UL 94 HBF
Dimensions	33 x 1000 x 1300 mm 30 x 1000 x 2000 mm	1000 x 1000 mm	500 x 1000 mm	-
Thickness	1.0 – 30.0 mm	1.0 – 28.0 mm	1.5 – 25.0 mm	-

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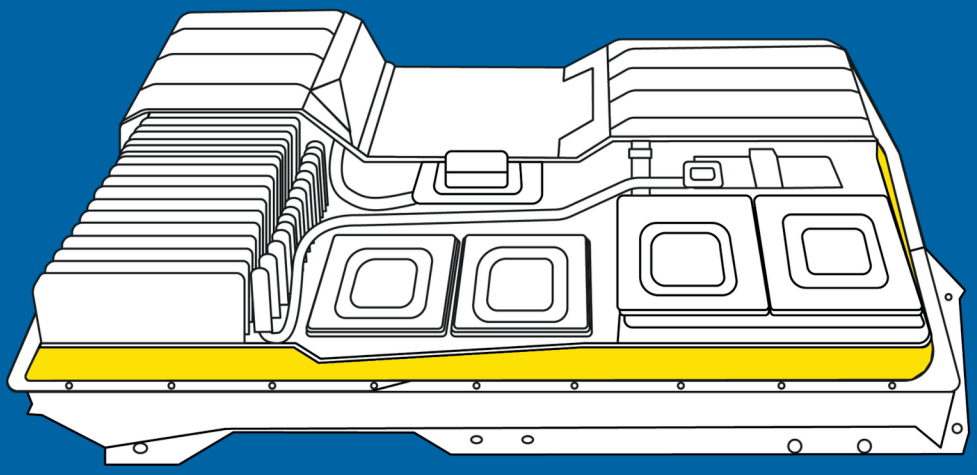
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DURABLE | EXCELLENT THERMAL RESISTANCE | SOFT GEL SHEET | FLAME RETARDANT | SILICONE OR ACRYLIC MATERIAL OPTIONS

TRANSCOOL™

Silicone Rubber for Heat Transfer

Transcool was designed for heat transfer applications, with INOAC grades including both silicone rubber and acrylic types. Transcool is soft and has high thermal conductivity, enabling it to transfer heat efficiently at the interface.





THERMAL INTERFACE

Physical Properties	GX3 - Silicone	GNS - Acrylic	Test Method
Thermal Conductivity	3.0 W/mk	2.7 W/mk	-
Hardness	22 type C	28 type C	Asker-C
Volume Resistivity	10^8 MΩcm	10^3 MΩcm	-
Breakdown Voltage	11 KV/mm	7 KV/mm	-
Flame Retardant	Pass	Under 1.5mm = V2 Over 2mm = V0	UL 94 V-0
Dimensions	500 x 500 mm	500 x 500 mm	-
Thickness	1.0 – 6.0 mm	1.0 – 3.0 mm	-