



BELLOFRAM
ELASTOMERS



BELLOFRAM SILICONES, INC.

A BELLOFRAM ELASTOMERS BRAND

8019 OHIO RIVER BLVD. | NEWELL, WV 26050 | 1-800-727-5646

www.belloframelastomers.com

BELLOFRAM Closed Cell Silicone Sponge Extrusion Products

- In-house die making capabilities for cords, rectangles, tubes, and complex geometries
- Wide compression deflection rating from soft to extra firm density
- Continuous operating temperature range of -80°F to +400°F
- Self-forming skin enhances water absorption resistance
- Certified supplier of BMS 1-23 and BMS 1-60 products
- Flame retardant versions available for extreme environments
- Fully certified NSF/ANSI 51 version for FDA compliance
- Available in practically any color



MATERIAL PROPERTIES FOR CLOSED CELL SILICONE SPONGE EXTRUDED PRODUCTS

COMPOUND	ASTM-D-1056 DESIGNATION	COMPRESSION DEFLECTION (PSI)	HEAT AGE, 22 HOURS AT +150°C	WATER ABSORPTION	COMPRESSION SET, 22 HOURS AT +100°C	LOW-TEMPERATURE FLEX, 5 HOURS AT -55°C
5104	ASTM-D-1056 2D1	2-5	Changes in Compression Deflection ±5%	10% MAX	35% MAX	PASS
5204	ASTM-D-1056 2D2	5-9			35% MAX	PASS
5304	ASTM-D-1056 2D3	9-13			35% MAX	PASS
5404	ASTM-D-1056 2D4	13-17			35% MAX	PASS
5504	ASTM-D-1056 2D5	17-25			35% MAX	PASS

MATERIAL PROPERTIES FOR FLAME RETARDANT SILICONE SPONGE EXTRUDED PRODUCTS

COMPOUND	ASTM-D-1056 DESIGNATION	COMPRESSION DEFLECTION (PSI)	HEAT AGE, 22 HOURS AT +150°C	WATER ABSORPTION	COMPRESSION SET, 22 HOURS AT +100°C	LOW-TEMPERATURE FLEX, 5 HOURS AT -55°C	MEETS BURN REQUIREMENTS OF UL 94 V-0
5109	ASTM-D-1056 2D1	2-5	Changes in Compression Deflection ±5%	10% MAX	35% MAX	PASS	YES
5209	ASTM-D-1056 2D2	5-9			35% MAX	PASS	YES
5309	ASTM-D-1056 2D3	9-13			35% MAX	PASS	YES
5409	ASTM-D-1056 2D4	13-17			35% MAX	PASS	YES
5509	ASTM-D-1056 2D5	17-25			35% MAX	PASS	YES

MATERIAL PROPERTIES FOR NSF/ANSI 51 CERTIFIED SILICONE SPONGE EXTRUDED PRODUCTS

COMPOUND	ASTM-D-1056 DESIGNATION	COMPRESSION DEFLECTION (PSI)	HEAT AGE, 22 HOURS AT +150°C	WATER ABSORPTION	COMPRESSION SET, 22 HOURS AT +100°C	LOW-TEMPERATURE FLEX, 5 HOURS AT -55°C	NSF/ANSI 51 CERTIFIED
5104-NSF	ASTM-D-1056 2D1	2-5	Changes in Compression Deflection ±5%	10% MAX	50% MAX	PASS	YES
5204-NSF	ASTM-D-1056 2D2	5-9			50% MAX	PASS	YES
5304-NSF	ASTM-D-1056 2D3	9-13			50% MAX	PASS	YES
5404-NSF	ASTM-D-1056 2D4	13-17			50% MAX	PASS	YES
5504-NSF	ASTM-D-1056 2D5	17-25			50% MAX	PASS	YES

BMS 1-60 CLOSED CELL SILICONE SPONGE

COMPOUND	GRADE DESIGNATION	COLOR	COMPRESSION DEFLECTION (PSI)	DENSITY lb/ft³ max	WATER ABSORPTION	COMPRESSION SET, 22 HOURS AT +212°F	ELONGATION %, MIN	FLAMMABILITY MAX	HIGH TEMPERATURE STABILITY, 70 HOURS AT +350°F
5129-BMS	GRADE A	Blue-Grey	2-6	37	15% MAX	35% MAX	100% MAX	15.0 seconds extinguish time 3.0 seconds drip extinguish time 4.0 inches max. burn length	No evidence of cracking, charring, surface tackiness, or other forms of degradation
5329-BMS	GRADE B	Blue-Grey	6-12	44	10% MAX				
5529-BMS	GRADE C	Blue-Grey	12-22	53	10% MAX				

BMS 1-23 CLOSED CELL SILICONE SPONGE

COMPOUND	COMPRESSION DEFLECTION (PSI)	WATER ABSORPTION	COMPRESSION SET, 22 HOURS AT +212°F	CORROSION	HEAT AGE, 72 HOURS AT +350°F	ELONGATION %, MIN
5304-BMS	6-14	10% MAX	35% MAX	No Effect	Shrinkage 5% MAX Disintegration None	150% MAX

BELLOFRAM Solid Silicone Extrusions

- Custom formulations and toolmaking capabilities for limitless shapes and hardnesses
- Continuous operating temperature range of -80°F to +400°F
- 30 to 80 durometer SHORE "A" compounds for complex sealing needs
- Resistant to compression set, high and low temperatures
- Fully certified NSF/ANSI 51 version for FDA compliance
- Some materials are formulated to withstand 500,000 flexes
- Available in practically any color



MATERIAL PROPERTIES OF BELLOFRAM HIGH TEAR AND FLEX RESISTANT SOLID SILICONE EXTRUDED PRODUCTS

SOLID SILICONE EXTRUDED PRODUCTS TO SPEC A-A-59588 CL3B, GR30, GR50					ASTM D395	HEAT AGE, 70 HOURS AT +200°C (ASTM D573)			ASTM D2137	ASTM D471	ASTM D813	ASTM D2632
COMPOUND	DUROMETER SHORE "A"	TENSILE STRENGTH MIN, PSI	ELONGATION %, MIN	TEAR RESISTANCE, PPI	COMPRESSION SET, 70 HOURS AT +100°C	HARDNESS CHANGE	TENSILE CHANGE	ELONGATION CHANGE	BRITTLE POINT, MIN °C (°F)	WATER IMMERSION, VOLUME CHANGE %	DeMATTIA FLEX, (1/2 INCH MAX CRACK GROWTH)	IMPACT RESILIENCE, MIN %
6305	30 ± 5	1000	500	150	25	± 5	-20%	-35%	-70 [-94]	+5	500,000 CYCLES	40
6505	30 ± 5	1200	500	150	20	± 10	-25%	-35%	-70 [-94]	+5	140,000 CYCLES	45

MATERIAL PROPERTIES OF BELLOFRAM SOLID SILICONE EXTRUDED PRODUCTS

COMPOUND	ASTM D2000-08 DESIGNATION	DUROMETER SHORE "A"	TENSILE (PSI)	HEAT AGE, 70 HOURS AT +225°C	OIL IMMERSION IRM 903, 70 HOURS AT +150°C	COMPRESSION SET, 22 HOURS AT +175°C
6304	ASTM D2000 M1GE305	30 ± 5	1175	Change in Tensile Strength, ± 30% Change in Elongation, -50% Change in Durometer, ± 15 pts	Volume Change, +63%	35%
6404	ASTM D2000 M1GE405	40 ± 5	1150		Volume Change, +61%	35%
6504	ASTM D2000 M1GE505	50 ± 5	930		Volume Change, +59%	35%
6604	ASTM D2000 M1GE605	60 ± 5	925		Volume Change, +46%	35%
6704	ASTM D2000 M1GE705	70 ± 5	820		Volume Change, +41%	35%
6804	ASTM D2000 M1GE805	80 ± 5	810		Volume Change, +35%	35%

MATERIAL PROPERTIES OF BELLOFRAM SOLID SILICONE EXTRUDED PRODUCTS

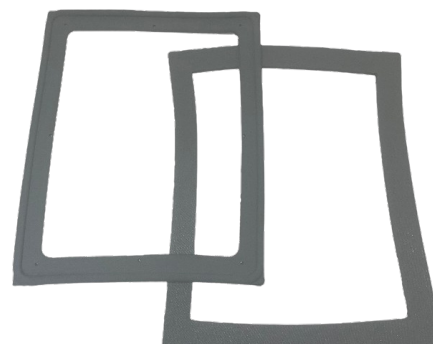
COMPOUND	ASTM D2000-08 DESIGNATION	DUROMETER SHORE "A"	TENSILE (PSI)	HEAT AGE, 70 HOURS AT +225°C	OIL IMMERSION IRM 903, 70 HOURS AT +150°C	COMPRESSION SET, 22 HOURS AT +175°C	MEETS BURN REQUIREMENTS OF UL 94 V-0
6309	ASTM D2000 M1GE305	30 ± 5	725	Change in Tensile Strength, ± 30% Change in Elongation, -50% Change in Durometer, ± 15 pts	Volume Change, +80%	50% MAX	PASS
6409	ASTM D2000 M1GE405	40 ± 5				50% MAX	PASS
6509	ASTM D2000 M1GE505	50 ± 5				50% MAX	PASS
6609	ASTM D2000 M1GE605	60 ± 5				50% MAX	PASS
6709	ASTM D2000 M1GE705	70 ± 5				50% MAX	PASS
6809	ASTM D2000 M1GE805	80 ± 5				50% MAX	PASS

MATERIAL PROPERTIES OF BELLOFRAM SOLID SILICONE EXTRUDED PRODUCTS

COMPOUND	ASTM D2000-08 DESIGNATION	DUROMETER SHORE "A"	TENSILE (PSI)	HEAT AGE, 70 HOURS AT +225°C	OIL IMMERSION IRM 903, 70 HOURS AT +150°C	COMPRESSION SET, 22 HOURS AT +175°C	NSF/ANSI 51 CERTIFIED
6304-NSF	ASTM D2000 M1GE305	30 ± 5	1175	Change in Tensile Strength, ± 30% Change in Elongation, -50% Change in Durometer, ± 15 pts	Volume Change, +63%	35%	YES
6404-NSF	ASTM D2000 M1GE405	40 ± 5	1150		Volume Change, +61%	35%	YES
6504-NSF	ASTM D2000 M1GE505	50 ± 5	930		Volume Change, +59%	35%	YES
6604-NSF	ASTM D2000 M1GE605	60 ± 5	925		Volume Change, +46%	35%	YES
6704-NSF	ASTM D2000 M1GE705	70 ± 5	820		Volume Change, +41%	35%	YES
6804-NSF	ASTM D2000 M1GE805	80 ± 5	810		Volume Change, +35%	35%	YES

BELLOFRAM Closed Cell Silicone Sponge Molded Products

- Capable of molding in a variety of shapes and sizes
- Wide compression deflection rating from soft to extra firm density
- Continuous operating temperature range of -80°F to +400°F
- Self-forming skin enhances water absorption resistance and protects from contaminants
- Certified supplier of BMS 1-23 and BMS 1-60 products
- Flame retardant versions available for extreme environments
- Fully certified NSF/ANSI 51 version for FDA compliance
- Available in practically any color



MATERIAL PROPERTIES FOR CLOSED CELL SILICONE SPONGE MOLDED PRODUCTS

COMPOUND	ASTM-D-1056 DESIGNATION	COMPRESSION DEFLECTION (PSI)	HEAT AGE, 22 HOURS AT +150°C	WATER ABSORPTION	COMPRESSION SET, 22 HOURS AT +100°C	LOW-TEMPERATURE FLEX, 5 HOURS AT -55°C
7104	ASTM-D-1056 2D1	2-5	Changes in Compression Deflection ±5%	10% MAX	35% MAX	PASS
7204	ASTM-D-1056 2D2	5-9			35% MAX	PASS
7304	ASTM-D-1056 2D3	9-13			35% MAX	PASS
7404	ASTM-D-1056 2D4	13-17			35% MAX	PASS
7504	ASTM-D-1056 2D5	17-25			35% MAX	PASS

MATERIAL PROPERTIES FOR FLAME RETARDANT SILICONE SPONGE EXTRUDED PRODUCTS

COMPOUND	ASTM-D-1056 DESIGNATION	COMPRESSION DEFLECTION (PSI)	HEAT AGE, 22 HOURS AT +150°C	WATER ABSORPTION	COMPRESSION SET, 22 HOURS AT +100°C	LOW-TEMPERATURE FLEX, 5 HOURS AT -55°C	MEETS BURN REQUIREMENTS OF UL 94 V-0
7109	ASTM-D-1056 2D1	2-5	Changes in Compression Deflection ±5%	10% MAX	35% MAX	PASS	YES
7209	ASTM-D-1056 2D2	5-9			35% MAX	PASS	YES
7309	ASTM-D-1056 2D3	9-13			35% MAX	PASS	YES
7409	ASTM-D-1056 2D4	13-17			35% MAX	PASS	YES
7509	ASTM-D-1056 2D5	17-25			35% MAX	PASS	YES

MATERIAL PROPERTIES FOR NSF/ANSI 51 CERTIFIED SILICONE SPONGE MOLDED PRODUCTS

COMPOUND	ASTM-D-1056 DESIGNATION	COMPRESSION DEFLECTION (PSI)	HEAT AGE, 22 HOURS AT +150°C	WATER ABSORPTION	COMPRESSION SET, 22 HOURS AT +100°C	LOW-TEMPERATURE FLEX, 5 HOURS AT -55°C	NSF/ANSI 51 CERTIFIED
7104-NSF	ASTM-D-1056 2D1	2-5	Changes in Compression Deflection ±5%	10% MAX	50% MAX	PASS	YES
7204-NSF	ASTM-D-1056 2D2	5-9			50% MAX	PASS	YES
7304-NSF	ASTM-D-1056 2D3	9-13			50% MAX	PASS	YES
7404-NSF	ASTM-D-1056 2D4	13-17			50% MAX	PASS	YES
7504-NSF	ASTM-D-1056 2D5	17-25			50% MAX	PASS	YES

BMS 1-60 CLOSED CELL SILICONE SPONGE

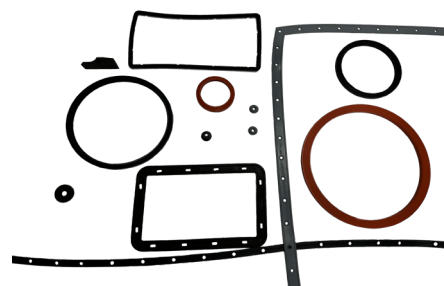
COMPOUND	GRADE DESIGNATION	COLOR	COMPRESSION DEFLECTION (PSI)	DENSITY lb/ft³max	WATER ABSORPTION	COMPRESSION SET, 22 HOURS AT +212°F	ELONGATION %, MIN	FLAMMABILITY MAX	HIGH TEMPERATURE STABILITY, 70 HOURS AT + 350°F
7129-BMS	GRADE A	Blue-Grey	2-6	37	15% MAX	35% MAX	100% MAX	15.0 seconds extinguish time 3.0 seconds drip extinguish time 4.0 inches max. burn length	No evidence of cracking, charring, surface tackiness, or other forms of degradation
7329-BMS	GRADE B	Blue-Grey	6-12	44	10% MAX				
7529-BMS	GRADE C	Blue-Grey	12-22	53	10% MAX				

BMS 1-23 CLOSED CELL SILICONE SPONGE

COMPOUND	COMPRESSION DEFLECTION (PSI)	WATER ABSORPTION	COMPRESSION SET, 22 HOURS AT +212°F	CORROSION	HEAT AGE, 72 HOURS AT +350°F	ELONGATION %, MIN
7304-BMS	6-14	10% MAX	35% MAX	No Effect	Shrinkage 5% MAX Disintegration None	150% MAX

BELLOFRAM Solid Silicone Molded Products

- Capable of molding in a variety of shapes and sizes
- Custom formulations for ASTM, SAE, MIL-STD, and other military and industrial specifications
- Continuous operating temperature range of -80°F to +400°F
- 30 to 80 durometer SHORE "A" compounds for complex sealing needs
- Resistant to compression set, tears, and high and low temperatures
- Fully certified NSF/ANSI 51 version for FDA compliance
- Available in practically any color



MATERIAL PROPERTIES OF BELLOFRAM HIGH TEAR AND FLEX RESISTANT SOLID SILICONE MOLDED PRODUCTS

SOLID SILICONE MOLDED PRODUCTS TO SPEC A-A-59588 CL3B, GR30, GR50					ASTM D395	HEAT AGE, 70 HOURS AT +200°C (ASTM D573)			ASTM D2137	ASTM D471	ASTM D813	ASTM D2632
COMPOUND	DUROMETER SHORE "A"	TENSILE STRENGTH MIN, PSI	ELONGATION %, MIN	TEAR RESISTANCE, PPI	COMPRESSION SET, 70 HOURS AT +100°C	HARDNESS CHANGE	TENSILE CHANGE	ELONGATION CHANGE	BRITTLE POINT, MIN °C (°F)	WATER IMMERSION, VOLUME CHANGE %	DeMATTIA FLEX, (1/2 INCH MAX CRACK GROWTH)	IMPACT RESILIENCE, MIN %
8305	30 ± 5	1000	500	150	25	± 5	-20%	-35%	-70 (-94)	+5	500,000 CYCLES	40
8505	30 ± 5	1200	500	150	20	± 10	-25%	-35%	-70 (-94)	+5	140,000 CYCLES	45

MATERIAL PROPERTIES OF BELLOFRAM SOLID SILICONE MOLDED PRODUCTS

COMPOUND	ASTM D2000-08 DESIGNATION	DUROMETER SHORE "A"	TENSILE (PSI)	HEAT AGE, 70 HOURS AT +225°C	OIL IMMERSION IRM 903, 70 HOURS AT +150°C	COMPRESSION SET, 22 HOURS AT +175°C
8304	ASTM D2000 M1GE305	30 ± 5	1175	Change in Tensile Strength, ± 30% Change in Elongation, -50% Change in Durometer, ± 15 pts	Volume Change, +80%	30%
8404	ASTM D2000 M1GE405	40 ± 5	1150		Volume Change, +62%	30%
8504	ASTM D2000 M1GE505	50 ± 5	930		Volume Change, +49%	30%
8604	ASTM D2000 M1GE605	60 ± 5	925		Volume Change, +47%	30%
8704	ASTM D2000 M1GE705	70 ± 5	820		Volume Change, +38%	30%
8804	ASTM D2000 M1GE805	80 ± 5	810		Volume Change, +30%	30%

MATERIAL PROPERTIES OF BELLOFRAM FLAME RETARDANT SOLID SILICONE MOLDED PRODUCTS

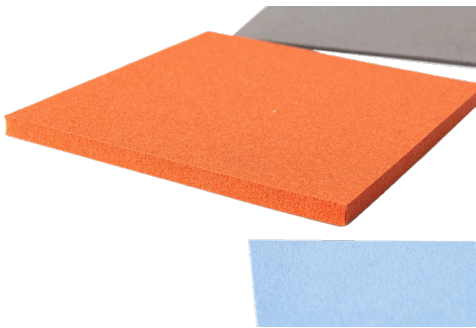
COMPOUND	ASTM D2000-08 DESIGNATION	DUROMETER SHORE "A"	TENSILE (PSI)	HEAT AGE, 70 HOURS AT +225°C	OIL IMMERSION IRM 903, 70 HOURS AT 150°C	COMPRESSION SET, 22 HOURS AT +175°C	MEETS BURN REQUIREMENTS OF UL 94 V-0
8309	ASTM D2000 M1GE305	30 ± 5	1175	Change in Tensile Strength, ± 30% Change in Elongation, -50% Change in Durometer, ± 15 pts	Volume Change, +64%	30%	PASS
8409	ASTM D2000 M1GE405	40 ± 5	1150		Volume Change, +62%	30%	PASS
8509	ASTM D2000 M1GE505	50 ± 5	930		Volume Change, +49%	30%	PASS
8609	ASTM D2000 M1GE605	60 ± 5	925		Volume Change, +47%	30%	PASS
8709	ASTM D2000 M1GE705	70 ± 5	820		Volume Change, +38%	30%	PASS
8809	ASTM D2000 M1GE805	80 ± 5	810		Volume Change, +30%	30%	PASS

MATERIAL PROPERTIES OF BELLOFRAM NSF/ANSI 51 CERTIFIED SOLID SILICONE MOLDED PRODUCTS

COMPOUND	ASTM D2000-08 DESIGNATION	DUROMETER SHORE "A"	TENSILE (PSI)	HEAT AGE, 70 HOURS AT +225°C	OIL IMMERSION IRM 903, 70 HOURS AT +150°C	COMPRESSION SET, 22 HOURS AT +175°C	NSF/ANSI 51 CERTIFIED
8304-NSF	ASTM D2000 M1GE305	30 ± 5	1175	Change in Tensile Strength, ± 30% Change in Elongation, -50% Change in Durometer, ± 15 pts	Volume Change, +64%	30%	YES
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8504-NSF	ASTM D2000 M1GE505	50 ± 5	930		Volume Change, +49%	30%	YES
8604-NSF	ASTM D2000 M1GE605	60 ± 5	925		Volume Change, +47%	30%	YES
8704-NSF	ASTM D2000 M1GE705	70 ± 5	820		Volume Change, +38%	30%	YES
8804-NSF	ASTM D2000 M1GE805	80 ± 5	810		Volume Change, +30%	30%	YES

BELLOFOAM™ Closed Cell Silicone Sponge Sheets

- Lightest high-consistency closed cell silicone rubber sheeting material on the market
- Truly closed cells eliminate wicking, as determined by ASTM-D-1056 water absorption test
- Continuous operating temperature range of -80°F to +400°F
- Excellent recovery after compression
- Available in various thicknesses, or buns can be skived into sheets
- Suitable for demanding physical, temperature, and chemical environments (UV and weather resistant, flame retardant versions available)
- Available in practically any color



BELLOFOAM™ CLOSED CELL SILICONE SPONGE SHEETING							
BELLOFOAM™ MATERIAL TYPE	COLOR	COMPRESSION DEFLECTION (PSI) ASTM-D-1056	DENSITY (lb/ft³) ASTM-D-1056	WATER ABSORPTION ASTM-D-1056	FLAMMABILITY FMVSS302	TEMPERATURE RANGE (°F)	MATERIAL SPECIFICATIONS
7604	ALL	0-5	12 MAX	10% MAX	PASS	-80° to +400°	ASTM-D-1056 2D0 ASTM-D-1056 2D1
7704	ALL	5-9	20 MAX	10% MAX	PASS	-80° to +400°	ASTM-D-1056 2D2
7804	ALL	9-13	30 MAX	10% MAX	PASS	-80° to +400°	ASTM-D-1056 2D3
7629	Grey	0-5	12 MAX	10% MAX	PASS	-80° to +400°	ASTM-D-1056 2D0 2D1 UL 94 V-0

BELLOFOAM™ CLOSED CELL FLUOROSILICONE (FVM) SPONGE SHEETING							
BELLOFOAM™ MATERIAL TYPE	COLOR	CLASS DESIGNATION AMS-3323	COMPRESSION DEFLECTION (PSI) ASTM-D-1056	DENSITY (lb/ft³) ASTM-D-1056	FLUID RESISTANCE ASTM-D-471 (FUEL B)	TEMPERATURE RANGE (°F)	MATERIAL SPECIFICATIONS
7748	Light Blue	CLASS 1	2-9	43 MAX	WEIGHT CHANGE MAXIMUM 0-50%	-80° to +400°	AMS3323 SAE AMS3323

BELLOFRAM ELASTOMERS

THE NAME THAT MATTERS



Bellofram Elastomers brings together two legendary names, Bellofram Diaphragm and Bellofram Silicones.

Bellofram Diaphragm invented the original rolling diaphragm in 1950 and has continued to lead in the manufacture of frictionless and leak-proof rolling seals that handle pressures, temperatures, and stroke lengths over an extremely wide range. Bellofram Silicones is an industry supplier of closed cell silicone sponge and the **ONLY** source for closed cell silicone sponge sheets skived from buns. It offers bulk extrusion footage, bulk sheet products, and small to medium runs.

Although products from both divisions serve different applications, there is considerable market overlap. Bellofram Elastomers was created to give customers a single point of entry to the world of elastomer options available with the Bellofram name.

All products from Bellofram Elastomers share the benefits of precision manufacturing, custom material formulations, and unmatched institutional knowledge of applications. Order with confidence that you will receive an exacting solution with industry-leading expertise.



Bellofram
DIAPHRAGM DIVISION



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