

# F-20

## Silicone Foam Rubber

**Saint-Gobain® Norseal® F-20** is a medium density closed-cell silicone foam rubber product designed to deliver environmentally stable, flame-retardant performance for gasketing, insulation and dampening applications. **Norseal F-20** offers excellent compression set resistance and is often the product of choice in aircraft, aerospace, mass transit, military and electronic applications with extremely stringent smoke, flame and toxicity requirements. F-20 offers excellent resistance to environmental conditions, making it an excellent choice for both indoor and outdoor sealing and gasketing applications.

**Norseal F-20** is specially designed to provide the following features:

- Meets key industry standards: FAR 25.853, Bombardier SMP 800-C, NFPA 130, UL V0
- Recognized to UL 50E gasket and seals for electrical enclosures
- Non-toxic, low smoke generation and low flame spread
- Smooth surface on both sides for excellent sealing against air, dust, light and moisture
- Excellent compression set resistance
- Excellent resistance to ultraviolet light, ozone and extreme temperature ranges
- Meets requirements of FDA extractables 21.CFR177.2600 for food contact
- Closed-cell foam meets AMS 3195
- Non-corrosive for use with metals and in hostile environments
- Available as a pressure-sensitive adhesive tape under the **Norseal** Silicone SNS 520AF product line

## Available Sizes

Standard thickness: .031, .063, .125, .188, .25, .375 and .50 in. (0.8, 1.6, 3.2, 4.8, 6.4, 9.6 and 12.7 mm)

Master roll size: 36 in. (914 mm) width. Length varies with thickness.

Special thickness and roll sizes also available.



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## APPLICATIONS

- Trains
- Medical equipment
- Aerospace
- Street lamps



**Norseal F-20 - Properties**

Performance tests are run using standard test procedures. The values presented are typical values and should not be used for specification purposes.

Property	Unit of Measure	Value	Test Method
<b>Physical</b>			
Colors	-	Gray	-
Tensile Strength	psi (kPa)	30 (207)	ASTM D412
Elongation at Break	%	60	ASTM D412
Density	lb.ft <sup>3</sup> (kg/m <sup>3</sup> )	20 (320)	ASTM D3574
Compression Deflection	psi (kPa)	10 (70)	ASTM D1056
Compression Set (50% for 22 hrs. at 212°F)	%	<5	ASTM D1056 "D"
Surface Description	-	Smooth both sides	-
<b>Flammability</b>			
Flame Resistance (UL)	-	Pass	UL 94 V-0
Flame Resistance (FAR)	-	Pass	FAR 25.853 (12s & 60s)
Flame Spread Index	L <sub>1</sub>	<15	ASTM E162
Smoke Density	D <sub>2</sub>	1.5 minutes < 20 4.0 minutes < 50	ASTM E662
Toxic Gas Emissions Rating	-	Pass	SMP-800C
Flame Propagation	-	Pass	ASTM C1166
<b>Environmental</b>			
Stain Resistance	-	Pass	ASTM D925 - 06e2, Method A
Ozone Effect Rating	-	No cracking	ASTM D1171-99 (2007), Method A
UV Resistance	Visual	No degradation	SAE J1960
Water Absorption	%	<1	ASTM D471 / D1056
Temperature Range	F° (°C)	-60 to + 400 (-51 to +204)	-
FDA Extractables	-	Pass	21 CFR 177.2600 (food contact)
Gasket and Seals for Electronic Enclosures	-	Pass	UL 50E
<b>Electrical and Thermal</b>			
Dielectric Strength	volts/mil (VPM)	80	ASTM D149
Dielectric Constant	-	3.5	ASTM 150
Dissipative Factor	-	0.03	ASTM 150
Dry Arc Resistance	Seconds	127	ASTM D495
Volume Resistivity	ohms-cm	3.39 x 10 <sup>14</sup>	ASTM 257
Thermal Conductivity	W/m°K	0.074	ASTM C518
Thermal Insulation (R-value)	ft. <sup>2</sup> • h • F°/Btu • in	1.94	ASTM C518
Low Temperature Embrittlement	F° (°C)	-148 (-100)	DMA

**Important Instructions**

Because **Saint-Gobain** cannot anticipate or control every potential application, we strongly recommend testing of this product under individual application conditions prior to commercial use.

**Shelf Life**

10 years after the date of sale when stored in original packaging at temperatures up to 70°F (21°C) and 50% relative humidity.

**IMPORTANT:** It is the user's responsibility to ensure the suitability and safety of Saint-Gobain Performance Plastics products for all intended uses and that the materials to be used comply with all applicable regulatory requirements. Saint-Gobain Performance Plastics assumes no responsibility for any product failures that occur due to misuse of the materials it provides arising out of the design, fabrication or application of the products into which the materials are incorporated.

**WARRANTY:** For a period of 6 months, Saint-Gobain Performance Plastics warrants this product(s) to be free from defects in manufacturing. The only obligation under any applicable product warranty will be to replace any portion proving defective, or at our option, to refund the purchase price thereof. SAINT-GOBAIN PERFORMANCE PLASTICS DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

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