

# *Imagine* boosting manufacturing productivity for reliable seals and gasketing

Silicone foams selection guide

**DOW**

®



# Why choose Dow Performance Silicones?

Dow Performance Silicones has been a global leader in silicone-based technology for more than 70 years. Headquartered in Michigan, USA, we maintain manufacturing sites, sales and customer service offices, and research and development labs in every major geographic market worldwide to ensure you receive fast, reliable support for your processing and application development needs.

## Unique product technology

To describe Dow Performance Silicones is to describe the history and evolution of silicone technology, which generated a legacy of innovative and reliable products under the Dow Corning label for more than seven decades. Today that legacy continues under the DOWSIL™ brand name, which encompasses more than 7,000 proven silicone products and services. Few companies offer a conformal coatings portfolio with comparable breadth and proven performance, and none match our history in silicone technology.

## Extensive know-how

Dow Performance Silicones multiplies the value of its products with deep in-house expertise as well as an extended network of industry resources.

## Collaborative culture

Dow Performance Silicones works closely with our customers to help reduce time, risk, and cost at every stage of your new product development.

## Stability

For over seven decades, Dow Performance Silicones has been a global leader, who invests in manufacturing and quality to help fuel customer innovation through a consistent supply of proven silicone products.

## Industries, applications and benefits

Dow's two-part, dispensable silicone foams offer a cost-effective alternative to preformed gaskets and foam tapes for applications in automotive, aviation, consumer and industrial devices, electronics, lighting, medical devices, and telecommunications.

Within these markets and others, Dow's high-performing silicone foams deliver outstanding benefits in applications such as:

- Environmental seals
- Dust and vapor seals
- Heat shields
- Vibration insulation
- EMI/RFI shielding
- Outdoor electrical gaskets
- Chip package and battery cushions
- High-intensity discharge lighting seals
- Timing belt covers and door modules
- Gas boiler gaskets

## Benefits of silicone foams from Dow

- Low compression set of dispensed seals translates into high serviceability
- Low modulus and force deflection behavior of cured foam seals delivers more flexible joint design
- Durable protection against harsh conditions, including wide operation temperatures, chemicals, UV, dust and moisture
- The ability to form in place, allowing fast and accurate processing, increased throughput, and the elimination of costly automated or manual placement processes
- A sustainable solution that minimizes waste during processing and requires no external blowing agents
- Compatibility with a broad range of two-component mixing and dispensing platforms

## Why silicone foams from Dow stand out

As global competition increases, manufacturers face greater demands for products that deliver long-lasting durability, greener solutions and lower costs.

### Performance features of silicone foams from Dow

DOWSIL™ and SILASTIC™ silicone foams offer reliable, cost-effective options to manufacturers who seek foamed-in-place gaskets that dispense and cure directly on parts. These integrated compression gaskets deliver long-lasting, flexible seals for a competitive edge.

Dow's portfolio of dispensed foams encompasses both room temperature and addition cure mechanisms that, with the application of heat, can deliver accelerated cure for faster cycle times and improved productivity. Dow's selection further offers a variety of flow rates and densities, providing greater control over foaming height relative to flat or inclined surfaces. They have a generally low compression set that enables them to recover their original shape after being compressed. Like other silicone-based elastomers, silicone foams maintain their resiliency over a broad temperature range.

### More efficient manufacturing

Typically dispensed directly on part surfaces with a robotic applicator, Dow's two-part silicone foams are designed for efficiency in processing. (See Figure 1.)



**Figure 1.** Robotic application of silicone foams speeds production and minimizes waste. These two-component silicone materials can be mixed either in static or dynamic mixers, though dynamic mixers are recommended to help ensure optimal density, cure and cell structure of the finished foam. Mixing produces a reaction that releases hydrogen gas as a foaming agent. The gasket expands in its liquid stage and cures to form a low-modulus, integrated compression seal. Seals are ready for handling as quickly as 10 minutes after application and can support full assembly within an hour at room temperature.





# Find the foam that fits your function

Dow offers you a range of silicone foam products, helping you find one that meets your application needs and helps reduce suppliers and costs. This product line includes a range of foam densities as well as flowable, reduced-flow and thixotropic foams, giving you greater control over foaming height relative to flat or inclined surfaces.

	Product	Color (mixed)	Recommended cure	Special features	Viscosity, mPas	Snap time, sec	Tack-free time, min	Density, kg/m <sup>3</sup>
Silicone foams	<b>DOWSIL™ 3-6548 Silicone RTV Foam</b>	Black	Formulated for room-temperature cure; can be accelerated with oven cure	Medium density; fire-resistant properties; noncorrosive; reversion resistant; fast, room-temperature cure	A: 4,000-6,000 B: 5,000-7,500	60-120	N/A	220-320
	<b>DOWSIL™ 3-8209 Silicone Foam</b>	Dark gray	Formulated for room-temperature cure; can be accelerated with oven cure	Medium hardness (Shore 00); medium-density flowable liquid	A: 14,000 B: 15,000	220	7	250
	<b>SILASTIC™ 8257 Silicone Foam</b>	Black	Formulated for room-temperature cure; can be accelerated with oven cure	Low hardness (Shore 00); low density; available in black	A: 20,000 B: 12,000	240	8	150
	<b>SILASTIC™ 8257 Silicone Foam</b>	White	Formulated for room-temperature cure; can be accelerated with oven cure	Low hardness (Shore 00); low density; available in white	A: 21,000 B: 12,000	230	8	140
	<b>DOWSIL™ 3-8219 RF Silicone Foam</b>	Gray	Formulated for room-temperature cure; can be accelerated with oven cure	Medium hardness (Shore 00); medium to high density; reduced flow aids application to inclined surfaces	A: 21,000 B: 40,000	200	6	300
	<b>DOWSIL™ 3-8259 RF Dark Gray Silicone Foam</b>	Dark gray	Formulated for room-temperature cure; can be accelerated with oven cure	Medium hardness (Shore 00); available in dark gray; high density; reduced flow aids application to inclined surfaces	A: 64,000 B: 62,000	200	6	330
	<b>DOWSIL™ 3-8259 RF Silicone Foam</b>	Gray	Formulated for room-temperature cure; can be accelerated with oven cure	Medium hardness (Shore 00); available in gray; high density; reduced flow aids application to inclined surfaces	A: 68,000 B: 63,000	200	7	330
	<b>DOWSIL™ 3-8235 Silicone Foam</b>	White	Formulated for room-temperature cure; can be accelerated with oven cure	Low to medium hardness (Shore 00); low density; can be pigmented	A: 77,000 B: 91,000	202	N/A	208
	<b>SILASTIC™ 3-8186 Thixotropic Foam</b>	Black	Formulated for oven cure	Low to medium hardness (Shore 00); low density; thixotropic foam aids in application to inclined surfaces	A: 135,000 B: 125,000	210	N/A	225

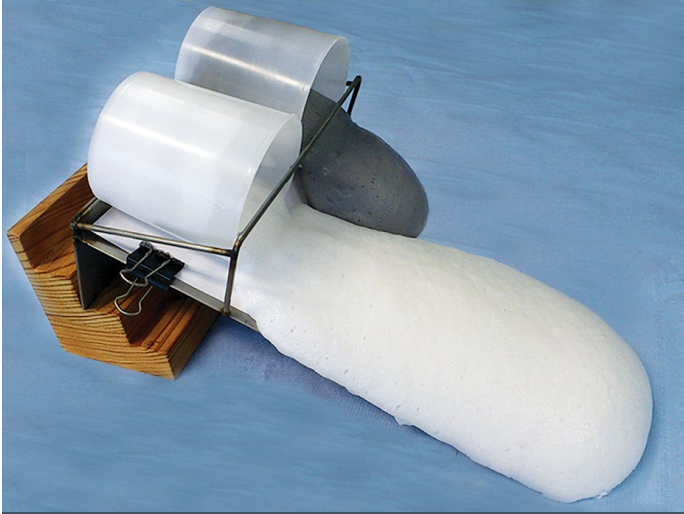
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N/A – Not available.

# Find the foam that fits your function

	Product	Flowability, cm	Hardness, Shore 00	Applications					Certifications
				Potting/ encapsulation	Fire-resistant penetration seals	Compressible seals/gaskets	NVH	Mechanical damping material	
Silicone foams	<b>DOWSIL™ 3-6548 Silicone RTV Foam</b>	Flowable	N/A	✓	✓				UL System No. F-B-1004; File XHEZ – Through-Penetration Firestop Systems
	<b>DOWSIL™ 3-8209 Silicone Foam</b>	Flowable	45			✓	✓		Product testing for specific certifications available upon request
	<b>SILASTIC™ 8257 Silicone Foam</b>	Flowable	25			✓	✓	✓	Product testing for specific certifications available upon request
	<b>SILASTIC™ 8257 Silicone Foam</b>	Flowable	25			✓	✓	✓	Product testing for specific certifications available upon request
	<b>DOWSIL™ 3-8219 RF Silicone Foam</b>	17	45			✓	✓		Product testing for specific certifications available upon request
	<b>DOWSIL™ 3-8259 RF Dark Gray Silicone Foam</b>	16	50			✓	✓		UL 157 – Standard for Gaskets and Seals; UL 50E – Enclosures for Electrical Equipment, Environmental Considerations
	<b>DOWSIL™ 3-8259 RF Silicone Foam</b>	15	50			✓	✓		UL 157 – Standard for Gaskets and Seals; UL 50E – Enclosures for Electrical Equipment, Environmental Considerations
	<b>DOWSIL™ 3-8235 Silicone Foam</b>	N/A	35			✓	✓		FDA 21 CFR 177.2600 – Rubber Articles Intended for Repeated Use; FDA 21 CFR 177.1210 – Closures with Sealing Gaskets for Food Containers; UL 94 V-1 – Standard for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances
	<b>SILASTIC™ 3-8186 Thixotropic Foam</b>	N/A	35			✓	✓		FDA 21 CFR 177.2600 – Rubber Articles Intended for Repeated Use; FDA 21 CFR 177.1210 – Closures with Sealing Gaskets for Food Containers; UL 157 – Standard for Gaskets and Seals; UL 50E – Enclosures for Electrical Equipment, Environmental Considerations

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N/A – Not available.

## Performance attributes



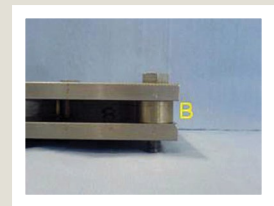
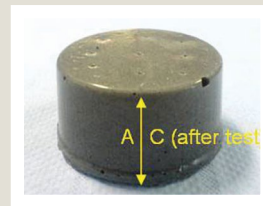
Visible difference between flowable and reduced-flow foams.

$$\text{Compression set (\%)} = \frac{(A-C)}{(A-B)} \times 100$$

A = Sample height before storage

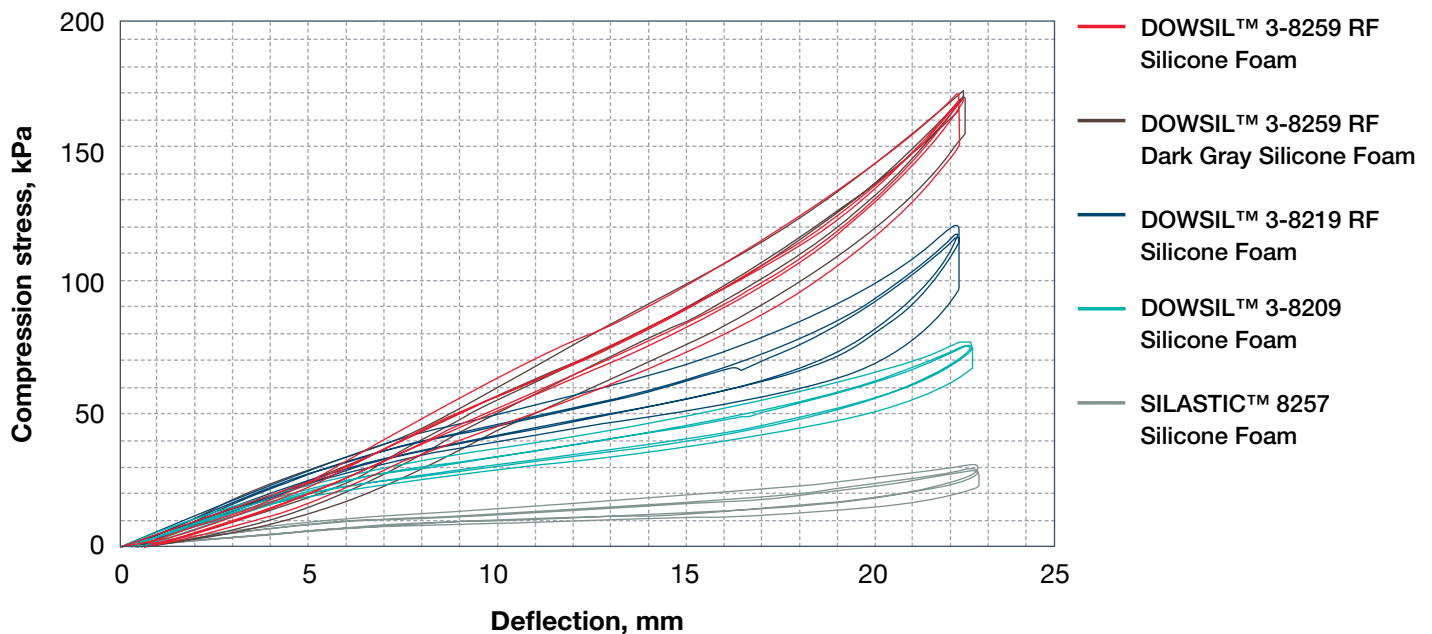
B = Sample height under compression

C = Sample height after storage

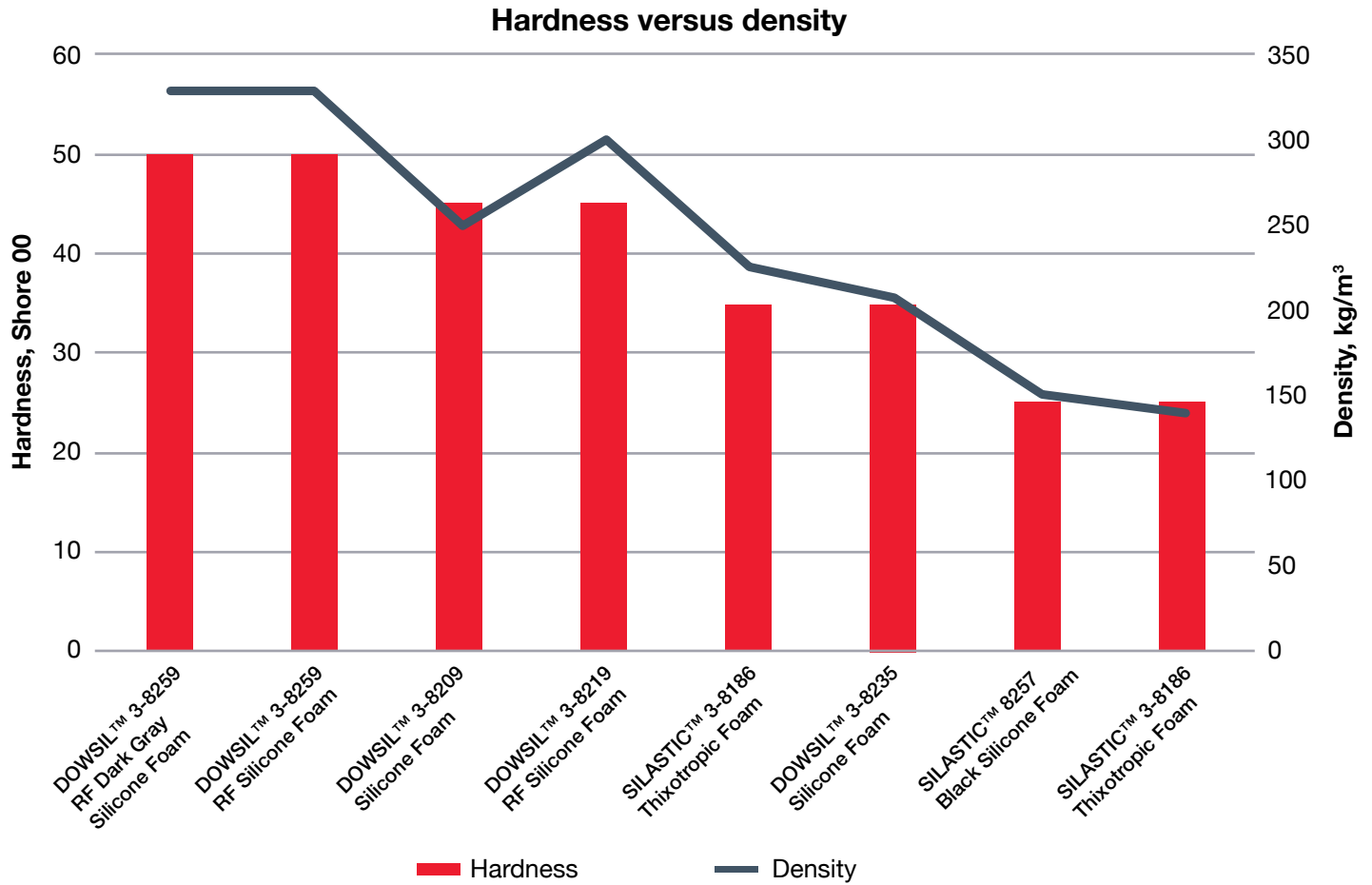


Compression set/compress stress relaxation test apparatus.

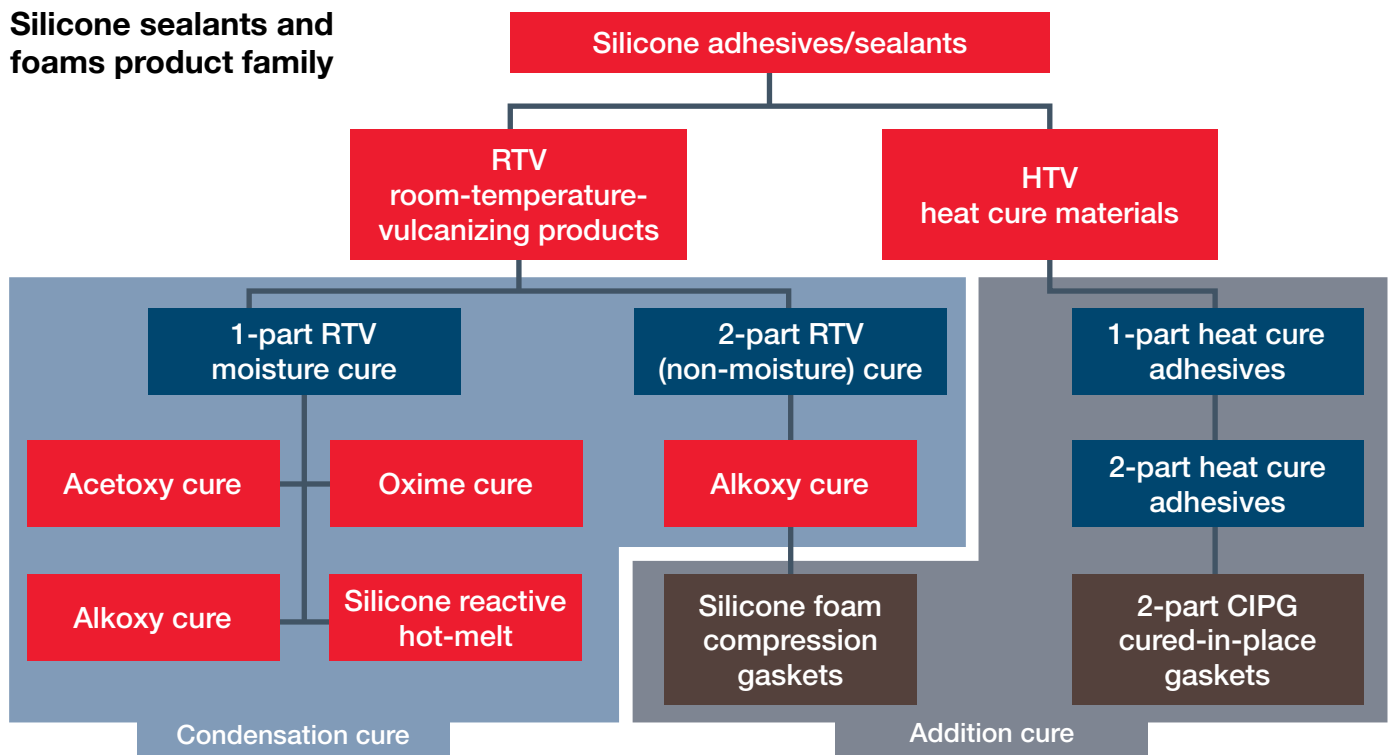
### Compression stress deflection



Stress deflection profiles of a range of DOWSIL™ and SILASTIC™ silicone foams.



### Silicone sealants and foams product family



## Learn more

We bring more than just an industry-leading portfolio of advanced silicone-based materials. As your dedicated innovation leader, we bring proven process and application expertise, a network of technical experts, a reliable global supply base, and world-class customer service.

To find out how we can support your applications, visit [dow.com/electronics](https://www.dow.com/electronics).



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Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

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