

# Technical Bulletin



## Heat Seal and Packaging Solutions

Silicone Rubber offers complete coverage of surface imperfections ensuring consistent, reliable seals leading to higher yields and reduced scrap. Compliance materials are specifically formulated for the temperature and pressure requirements of heat sealing and packaging applications. United Silicone's "Total Tooling" approach provides disposable heads molded to match part configurations eliminating costly machining. Quick-change mounting systems allow for easy changeovers without disrupting production efficiencies.



### Product Availability

- Bar Sealers
- Magnetic Mounting Blocks
- Platens and Anvils
- Rollers
- Seal Heads
- Silicone Sheets
- Teflon®-Silicone Seal Bars

### Silicone Rubber Advantages

- Excellent Silicone-to-Metal Bond
- Thermally Conductive
- Heat Tolerant to 600°F
- Various Formulations
- Resistant to Compression Stress
- 40-90 Durometer (Shore A)
- FDA-Grade Materials

### Common Applications

- Bag Sealing
- Blister Packaging
- Edge Banding
- Heat Sealing
- Heat Transfer & Hot Stamping
- Laminating
- Linerless Labels
- Packaging

United Silicone offers a complete line of Heat Seal Tooling and Supplies.

### Seal Heads

- Silicone and Metal Available
- Various Reliefs .035" & .065" Standard
- Custom Molded
- Repeatable from Head-to-Head

### Silicone Rubber Sheets

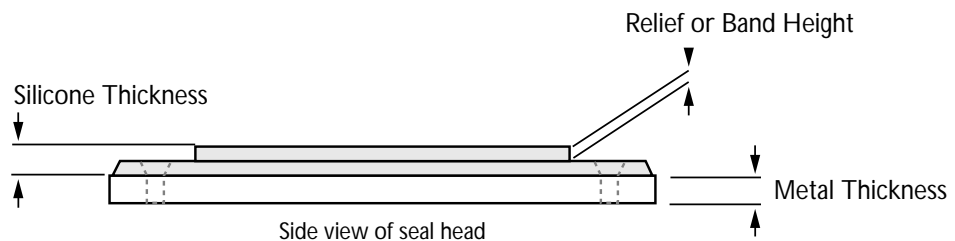
- Standard Sizes 12" x 24"  
12" x 36"  
24" x 24"  
24" x 36"
- Precision Ground for Flatness
- Smooth or Textured Surface
- Bonded or Unbonded Available
- Various Aluminum Thickness (1/32" - 1")

### Rollers

- Various Silicone Formulations
- Flat, Contoured, or Stepped
- Face Lengths up to 120"
- Finished OD to 15"

### Tooling

- Part Holding Fixtures
- Quick-Change Mounting Systems
- Complete Machine Shop Capabilities



**ITW** United Silicone

DESIGNERS AND MANUFACTURERS OF HOT STAMP AND HEAT TRANSFER DECORATING SYSTEMS AND SUPPLIES

Vertical, Roll-on and Peripheral Machines

Automated Systems • Close Tolerance Machines • In-Mold Feed Systems  
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**Properties of Silicone Rubber Formulations**

Formulation	Duro (Shore A)	Tensile Strength (PSI)	Elongation (%)	Compression Set (%)	Heat Resistance	Specific Gravity
Supersil (red)	90	800	95	13.8	500	1.77
	80	880	125	8.2	500	1.73
	70	830	250	9.7	500	1.59
	60	835	360	9.5	500	1.49
	50	910	490	9.8	500	1.38
	40	1010	660	10.1	500	1.20
Ultrasil (red)	90	1110	60	30	600	1.75
	80	1100	125	24	600	1.72
	70	1030	185	20	600	1.60
	60	1050	270	18	600	1.45
	50	940	365	17	600	1.35
	40	890	535	15	600	1.11
Thermosil (brown)	90	1075	100	14	600	2.10
	80	1050	120	12	600	2.09
	70	1030	175	7	600	1.80
	60	980	215	6	600	1.63
FDA (red)	70	870	188	10	500	1.58

\*Properties listed are typical and subject to change

**Durometer** - The hardness of a material as measured on the Shore A scale.

**Tensile Strength** - The pulling stress just before the material breaks into two pieces.

**Elongation** - The fractional increase in length of a material, stressed in tension, just before it breaks into two pieces.

**Compression Set** - The measure of material resiliency after being subjected to compression and heat.

**Heat Resistance** - Ability of a material to remain bonded to metal during exposure to extreme temperature.

**Specific Gravity** - The density of a material divided by that of water.

Supersil	Conventional vertical and peripheral operations requiring moderate heat and cycle times – typically manually fed
Ultrasil	Demanding vertical and peripheral operations requiring high temperatures and/or high pressures – usually manually fed
Thermosil	Semi-automatic and fully automated sealing applications requiring very stable high temperatures and rapid heat recovery
High Strength	Vertical and peripheral packaging applications requiring heat resistance and surface durability.
FDA	Seal applications requiring approved FDA specification #21CFC177.2600 for indirect food packaging

