

Technical Bulletin



Silicone Rubber Rollers

United Silicone's rubber rollers are the ideal choice for peripheral hot stamping of cylindrical shapes and roll-on decorating of large flat or curved surfaces. The rubber conforms readily to surface variations in molded plastic parts, ensuring smooth application of hot stamping foils and multi-color heat transfers. Silicone rubber rollers are used in a variety of applications including banding, laminating, printing and decorating. Carefully engineered and crafted, our rollers are specifically matched to your application.



Benefits

- Excellent Silicone-to-Metal Bond
- Thermally Conductive
- Heat Tolerant to 600°F
- Various Formations
- Resistant to Compression Stress
- FDA-Grade & 3A Certified
- Seamless Finish
- Expedited Lead Times

Common Applications

- Heat Transfer & Hot Stamping
- Extruded Product
- Heat Sealing
- Edge Banding
- Cylindrical Shapes
- Packaging
- Laminating
- Feed & Guide Rollers
- Linerless Labels

Roller Specifications

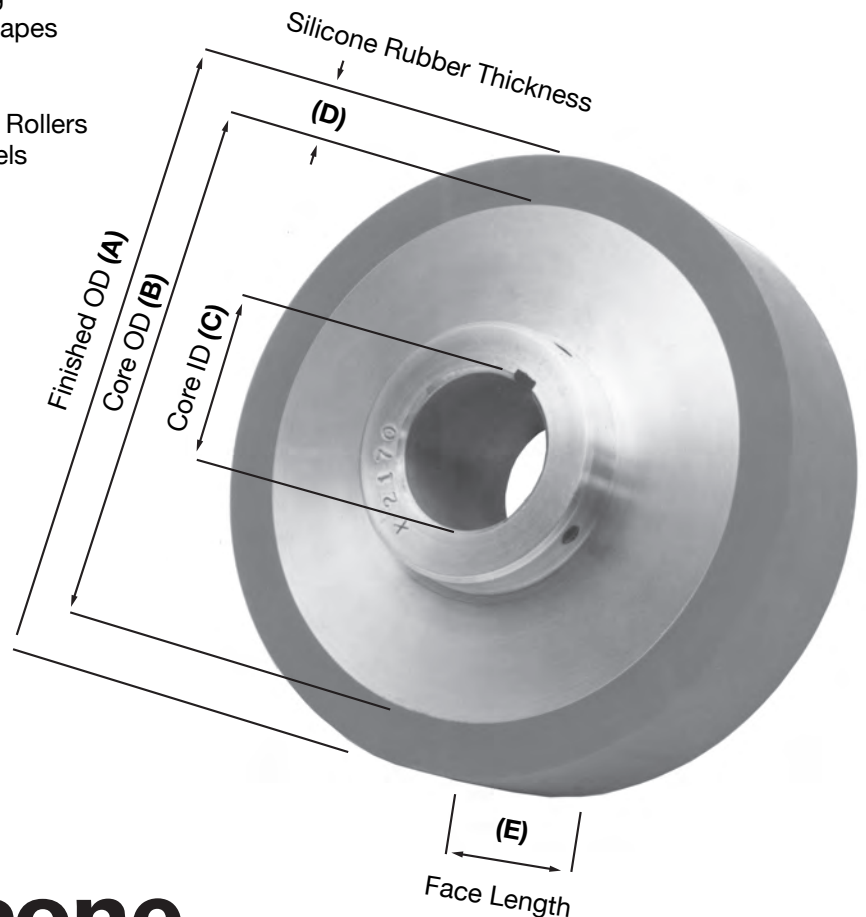
- 40-90 Durometer (Shore A)
- Flat, Contoured, or Stepped
- Face Lengths up to 120"
- Finished OD to 15"
- **Outside Diameter (A)**
- **Rubber Thickness (D)**
- **Face Length (E)**

Metal Core

- Material
- Aluminum, standard
- Steel
- Core Outside Diameter (B)**
- Core Inside Diameter (C)**

Hardness- Measured using a

- 60 & 70 durometer, standard
- 40 - 90 durometer available



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
Metal Dies • Custom Tooling • Silicone Rubber Sheets, Dies and Rollers
Contract Manufacturing • R & D • Custom Engineering & Design

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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
3A (red) Class I	60	1354	423	6	500	1.17

Durometer - The hardness of a material as measured on the Shore A scale. (90 durometer = hardest)

Tensile Strength - The pulling stress just before the material breaks into two pieces. (1080psi = strongest)

Elongation - The fractional increase in length of a material, stressed in tension, just before it breaks into two pieces. (585% = most elastic)

Compression Set - The measure of material resiliency after being subjected to compression and heat. (10% = most resilient)

Heat Resistance - Ability of a material to remain bonded to metal during exposure to extreme temperature. (600°F at bond surface = most resistant)

Specific Gravity - The density of a material divided by that of water. (2.11 = best thermal conductivity)

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
High Strength	Vertical and peripheral packaging applications requiring heat resistance and surface durability.
FDA-3A	3A Sanitary Class I test specifications

United Silicone offers a complete line of Hot Stamp/Heat Transfer Equipment & Supplies.

Silicone Rubber & Metal Dies

- Flat
- Contoured
- Photo Engraved
- Machine Engraved

Silicone Rubber Sheets:

- Heat Sealing
- Heat Transfer
- Automated Applications
- Hot Stamp Tipping

Tooling:

- Precision Part Holding Fixtures
- Magnetic Mounting Systems
- Complete Machine Shop Capabilities

Equipment:

- Standard Machines
- Automated Systems

