PHYSICAL PROPERTIES OF RUBBER

FROM MOLDED DIMENSIONS

- Seals
- Grommets
- Diaphragms
- Bushings
- Boots
- U-Cups
- Rollers
- Gaskets
- Isolation Mounts
- Impellers

Molded Dimensions manufactures a critical rubber to metal bonded part for our assembly. Their bonding techniques and process controls ensure for an unquestionable bond.
Quality Engineer
safety equipment manufacturer

Molded Dimensions' proposal to combine multiple molded rubber components into one component led to a labor reduction and also decreased our quality defects.
Buyer
filtration systems

We rely on MDI's experience of more than 50 years for our rubber molding projects.
Buyer
pump manufacturer

bsi.
ISO 9001
FM.589712

Engineered Elastomer Solutions

... to help you win!

Visit us on the web... www.moldeddimensions.com

COMPARATIVE PHYSICAL PROPERTIES OF RUBBER

Each of these different polymers may be compounded to produce specific physical properties that are engineered to meet your service requirements. Contact our sales department to discuss your product or application. We will be happy to assist you in choosing the most suitable compound to meet your requirements.

TYPE	NATURAL RUBBER	STYRENE BUTADIENE	BUTYL	NITRILE	NEOPRENE	SILICONE	FLUORO-CARBON	HYDRIN	EPDM	PENTATHANE
ASTM Designation	NR	SBR	IIR	NBR	CR	VMQ	FKM	CO, ECO	EPM, EPDM	AU, EU
PHYSICAL PROPERTIES										
Specific Gravity	0.92-0.93	0.94	0.92	0.98	1.23-1.25	1.1-1.6	1.4-1.95	1.27-1.49	0.86	1.02-1.20
Thermal Conductivity Btu/ft/hr/sq ft/F	0.082	0.143	0.053	0.143	0.11	0.13	0.06-1.3	-	0.15	0.09-0.10
Coef of Thermal Exp (cubical), 10^-5 per F Gum	37	37	32	39	34	45	-	-	32	-
MECHANICAL PROPERTIES										
Hardness, Durometer	30A-90A	30A-90A	30A-95A	30A-95A	30A-95A	20A-90A	55A-95A	30A-95A	30A-90A	10A-80D
Tensile Strength 1000 psi	3.5-4.5	2.5-3.0	2.0	1.0-3.5	0.5-3.5	1.5	2.0	2-3	0.5-3.5	.08-8.0
Modulus (100%), psi	150-3000	300-1500	50-500	100-1500	100-3000	-	200-2000	150-2000	100-3000	25-5000
Elongation, %	500-700	450-500	300-800	400-600	100-800	100-800	150-450	320-350	100-700	250-800
Compression Set, Method B, %	10-30	5-30	25	5-20	20-60	10	20-25	20	20-60	0.7-45
Resilience (ASTM 945) %	80	20-90	30	-	50-80	30-60	40-70	50-80	40-75	5-75
Rebound (Bashore)	-	10-60	-	-	50-80	-	40-70	50-80	40-75	20-65
Hysteresis Resistance	Excellent	Fair-Good	-	-	Very Good	Fair-Good	Good	Good	Good	Fair-Good
Flex Cracking Resistance	Excellent	Good	-	Fair-Good	Very Good	Fair-Excel.	Good	Very Good	Very Good	Excellent
Tear Resistance	Excellent	Fair	Good	Good	Good	Fair	Fair-Very Good	Very Good	Fair-Good	Outstanding
Abrasion Resistance	Excellent	Excellent	Good	Excellent	Excellent	Poor	Good	Fair-Good	Good-Excel.	Outstanding
Impact Resistance	Excellent	Excellent	Good	Good	Excellent	Poor-Good	Good	Good	Very Good	Excel.-Outstanding
ELECTRICAL PROPERTIES										
Volume Resistivity, ohm-cm	-	5.0-8.4 x 10^8	2.0 x 10^16	3.5 x 10^10	2.0x 10^13	1 x 10^14-1 x 10^16	2 x 10^13	-	2 x 10^16-1 x 10^17	0.3 x 10^10 – 4.7 x 10^13
Dielectric Strength, v/mil	400-600	600-800	600-900	250	400-600	400-700	500	-	500-1000	330-700
THERMAL PROPERTIES										
Service Temperature, F										
Min for Continuous Use	-70	-65	-50	-65	-60	-178	-40	-50	-70	-65
Max for Continuous Use	250	225	300	250	225	600	550	275	350	200
Heat Aging at 212F	B-C	B	A	B	B-A	A	A	B-A	B-A	B
ENVIRONMENTAL RESISTANCE										
Ozone	Poor	Poor	Excellent	Poor	Very Good	Excellent	Outstanding	Excellent	Outstanding	Excellent
Oxidation	Good	Good	Excellent	Fair-Good	Very Good	Excellent	Outstanding	Excellent	Excellent	Excellent
Weathering	Fair	Fair	Excellent	Good	Very Good	Excellent	Excellent	Excellent	Outstanding	Good
Water	Excellent	Excellent	Excellent	Excellent	Good	Excellent	Good	Good	Excellent	Good-Excel.
Radiation	Fair-Good	Good	Poor	Fair-Good	Good	Fair-Good	Fair-Good	Poor	Good	Good-Excel.

For additional technical information, visit us on the web... www.moldeddimensions.com

Molded Dimensions

701 Sunset Road - P.O. Box 364 - Port Washington, Wisconsin 53074-0364 - Ph. 262-284-9455 - Fax 262-284-0696