



Available Materials

A reference list of materials Standard Washer & Mat, Inc. can and often uses.

Rubber

Neoprene: Neoprene (polychloroprene) is a synthetic rubber characterized by resistance to weathering, ozone, and moderate oils. It retains flexibility across a broad temperature range with balanced mechanical strength and resilience. The material demonstrates stable physical properties under prolonged environmental exposure.

Buna-N (Nitrile): Buna-N (nitrile rubber) exhibits strong resistance to oils, fuels, and petroleum-based fluids. It provides good abrasion resistance and tensile strength with consistent performance in hydrocarbon-rich environments. Mechanical stability is maintained across moderate temperature ranges.

Diaphragm sheet: Diaphragm sheet materials are reinforced elastomers designed for repeated flexing. Fabric reinforcement improves tensile strength, dimensional stability, and tear resistance. These materials retain structural integrity under cyclic stress and pressure variation.

Gum rubber (Natural rubber): Natural rubber provides high elasticity, resilience, and tensile strength. It demonstrates excellent rebound characteristics and dynamic performance. Resistance to oils and ozone is limited compared to synthetic elastomers.

Coated fabrics: Coated fabrics consist of textile substrates combined with elastomeric or polymer coatings. This construction delivers tensile strength from the fabric and surface sealing from the coating. The material system balances flexibility with enhanced surface durability.

EPDM / EPR: EPDM rubber is defined by strong resistance to ozone, UV exposure, and weathering. It maintains flexibility across a wide temperature range with good chemical resistance. Long-term environmental stability is a key characteristic.

Silicone: Silicone rubber maintains flexibility across an extremely wide temperature range. It resists weathering, ozone, and aging effects while preserving elastic properties. Thermal stability and long-term durability are defining attributes.



Fluorosilicone: Fluorosilicone combines the thermal stability of silicone with improved resistance to fuels and oils. It maintains flexibility while enhancing chemical resistance. The material retains performance under combined thermal and chemical stress.

Urethane: Urethane (polyurethane) offers high abrasion resistance and strong mechanical properties. It can be formulated across a wide hardness range with excellent load-bearing capability. Resistance to wear and mechanical deformation is a defining feature.

Viton (FKM): FKM (Viton) is a fluoroelastomer with high resistance to heat and aggressive chemicals. It maintains stability in the presence of fuels, solvents, and elevated temperatures. Chemical inertness and thermal resistance are key characteristics.

SBR / GRS: SBR is a general-purpose synthetic rubber with good abrasion resistance and mechanical durability. Resistance to oils and ozone is lower than that of specialty elastomers. The material provides consistent baseline performance properties.

Butyl: Butyl rubber exhibits extremely low permeability to air and moisture. It provides strong chemical resistance and effective damping properties. Dimensional stability is maintained under compression and sealing conditions.

Mil-Spec Materials: Materials produced in accordance with U.S. military specifications (MIL-SPEC) meet defined requirements for performance, composition, and quality. These standards ensure consistency, traceability, and controlled material properties. Compliance is verified through documented testing and certification.

Plastics

Nylon: Nylon is an engineering thermoplastic characterized by high strength, wear resistance, and low friction. It maintains good mechanical performance under load. Moisture absorption can influence dimensional stability.

Polypropylene: Polypropylene is a lightweight thermoplastic with strong chemical resistance and excellent fatigue resistance. It exhibits low moisture absorption and stable chemical behavior. Structural integrity is maintained under repeated flexing.

Acetal: Acetal (POM) is an engineering plastic known for high stiffness, low friction, and dimensional stability. It supports tight tolerances and consistent mechanical performance. Machinability and



structural precision are key attributes.

Kapton: Kapton is a polyimide film with exceptional thermal stability across a wide temperature range. It retains electrical insulation properties under extreme conditions. Dimensional stability remains consistent under thermal stress.

Lexan (Polycarbonate): Polycarbonate (Lexan) is a tough, impact-resistant plastic with high transparency. It resists fracture under mechanical stress while maintaining dimensional stability. Strength and clarity are defining characteristics.

Polyethylene: Polyethylene is a versatile thermoplastic with good chemical resistance and low moisture absorption. It is available in multiple density variants with differing mechanical properties. Stability across a range of environments is characteristic.

UHMW Polyethylene: UHMW polyethylene provides very high impact strength and excellent abrasion resistance. It also exhibits a very low coefficient of friction. Resistance to wear and surface degradation is a primary characteristic.

Teflon (PTFE): PTFE (Teflon) exhibits an extremely low coefficient of friction and outstanding chemical resistance. It remains chemically inert across a wide temperature range. Non-reactivity and surface stability define the material.

Glass-filled PTFE: Glass-filled PTFE enhances the strength and wear resistance of standard PTFE. It maintains low friction while improving rigidity and dimensional stability. Mechanical performance under load is improved relative to unfilled PTFE.

Nylatron: Nylatron is a modified nylon material with improved wear resistance and load-bearing capability. It offers enhanced dimensional stability compared to standard nylon. Structural performance is optimized for mechanical systems.

PVC: PVC is a durable thermoplastic with strong chemical resistance and formulation flexibility. It can be produced in rigid or flexible forms. Stability and adaptability across varied conditions are key characteristics.

Mylar (BoPET / PET film): Mylar is a polyester film with high tensile strength, dimensional stability, and electrical insulation properties. It maintains structural integrity under stress. Thin-film consistency and durability are defining attributes.

Phenolic: Phenolic materials are thermoset composites with high mechanical strength and heat



resistance. They exhibit strong dimensional stability and electrical insulation properties. Resistance to thermal and mechanical stress is characteristic.

Acetate: Acetate is a transparent thermoplastic with good optical clarity and moderate strength. It is easily formed and processed. Dimensional consistency is maintained under standard conditions.

Vinyl: Vinyl materials provide flexibility, durability, and chemical resistance. Formulation variability allows a wide range of mechanical properties. General-purpose stability is characteristic.

Polyester: Polyester materials offer good strength, chemical resistance, and dimensional stability.

They are commonly produced as films or fibers. Structural consistency across varied environments is characteristic.

Foams, Fiber, Films & Specialty

Silicone Sponge: Silicone sponge is a cellular elastomer characterized by compressibility and resilience. It maintains performance across wide temperature ranges. Recovery after compression and thermal stability are defining properties.

Closed & open cell foam / sponge: Foam materials are defined by open or closed cell structures. Closed cell forms resist moisture penetration, while open cell forms provide greater compressibility. Density and cushioning characteristics vary with structure.

Cork-Rubber: Cork-rubber combines cork granules with elastomers to provide compressibility and resilience. It maintains structural stability under compression. The material balances flexibility with dimensional support.

Various fiber materials: Fiber materials include cellulose-based, aramid, and synthetic compositions with varied properties. They provide combinations of strength, thermal resistance, and structural stability depending on formulation. Material performance is defined by composition and processing.

Coated papers: Coated papers are paper substrates treated with polymer or elastomer layers to enhance durability. Surface treatments improve resistance and stability. Structural integrity and handling characteristics are improved relative to untreated paper.

Aluminum foils: Aluminum foil provides strong barrier properties against moisture, gases, and light. It is lightweight, formable, and corrosion-resistant. Barrier performance and stability are defining characteristics.



Copper foils: Copper foil provides excellent electrical conductivity and electromagnetic shielding capability. It is formable with consistent thickness and structural integrity. Conductivity and shielding performance are key properties.

Nomex: Nomex is an aramid material characterized by strong heat and flame resistance. It maintains structural integrity at elevated temperatures. Electrical insulation and thermal stability are defining attributes.

Fishpaper (Vulcanized fibre): Vulcanized fibre (fishpaper) is a dense cellulose-based material with high mechanical strength and electrical insulation properties. It is durable and wear-resistant. Structural integrity and insulating performance are key characteristics.

EMI & RFI Gaskets: EMI/RFI gasket materials consist of conductive or coated compositions designed to provide electromagnetic shielding. They maintain consistent electrical conductivity and shielding effectiveness. Material performance is defined by conductivity and compression characteristics.

Poron: Poron is a microcellular urethane foam with uniform cell structure and consistent thickness. It resists compression set and maintains long-term resilience. Energy absorption and recovery characteristics are defining properties.

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