HANNA RUBBER COMPANY

Specification Sheet

SAE J20 Rubber Hose - Superior Performance for Coolant Systems

Introduction

SAE J20 rubber hose is a well-established standard for reinforced and flexible hoses, primarily used in water and ethylene glycol-based engine coolant systems. This standard is recognized for ensuring hoses meet the stringent requirements necessary for reliable performance in automotive and industrial applications.

Key Features

- **High-Quality Materials:** SAE J20 hoses are crafted from top-grade elastomers, ensuring optimal performance in a variety of temperature ranges and conditions.
- **Temperature Range:** Designed to function efficiently in temperatures ranging from -40°F to 275°F (-40°C to 135°C), with special variants capable of operating at even more extreme temperatures.
- **Durability:** These hoses exhibit exceptional resistance to ozone, weathering, and aging, providing a long service life in the most demanding environments.
- **Flexibility:** SAE J20 hoses maintain flexibility across a wide temperature spectrum, facilitating easy installation and reducing the risk of damage during operation.
- **Pressure Rating:** These hoses can withstand high-pressure conditions, making them suitable for heavy-duty applications as outlined by specific hose types.
- **Variety of Sizes:** Available in various inner diameters and lengths to suit different applications, from small heater hoses to larger industrial hoses.

Types, Classes, and Suffixes

SAE J20 hoses are classified into different **Types** and **Classes** to specify their application, material composition, and performance characteristics. These classifications help in selecting the right hose for specific needs.

Types:

- **SAE 20R1:** Heavy-duty type for applications requiring higher pressure resistance, such as diesel-locomotive engines. Available in standard and heavy-wall thickness.
- **SAE 20R2:** Heavy-duty wire-embedded hose, designed to withstand high vacuum and forced curvature, making it ideal for demanding industrial environments.
- **SAE 20R3:** Heater hose intended for normal service in automotive coolant systems, offering reliable performance under standard conditions.
- **SAE 20R4:** Radiator hose for normal service, commonly used in automotive engines for coolant circulation. Optional wire reinforcement can be specified for applications requiring resistance to vacuum collapse.
- **SAE 20R5:** Convoluted, wire-supported hose designed for universal use in automotive coolant systems, featuring enhanced flexibility and resistance to collapse.

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Special Designators:

- **HT (High Temperature):** Hoses designed for environments above 125°C, ensuring reliable performance under high-temperature conditions.
- **EC (Electrochemical Resistant):** Hoses with enhanced resistance to electrochemical degradation, crucial for long-term reliability in coolant systems.
- **LT (Low Temperature):** Hoses capable of operating in environments down to -55°C, maintaining flexibility and performance in extreme cold.

Classes:

- **Class A:** High-temperature resistant, typically made from silicone, suitable for applications requiring durability in high heat.
- **Class B:** High oil resistant, made from NBR (Nitrile Butadiene Rubber), ideal for environments where exposure to oils and fuels is common.
- **Class C:** Medium oil resistant, using CR (Chloroprene Rubber), offering a balance between oil resistance and flexibility.
- **Class D-1:** Low oil resistant with improved service life, using EPDM (Ethylene Propylene Diene Monomer) for general automotive applications.
- **Class D-2:** Standard service low oil resistant, also using EPDM, designed for typical automotive coolant systems.
- **Class D-3:** Premium service, high-temperature resistant, low oil resistant, utilizing advanced EPDM for critical applications.
- **Class E:** Low oil resistant with fiber elastomer composite, providing enhanced mechanical stability and durability.

Applications

- **Automotive Industry:** Ideal for use in engine coolant systems, including radiator and heater hoses.
- **Industrial Applications:** Suitable for use in industrial cooling systems, HVAC, and machinery where high-performance hoses are required.
- **Agricultural Equipment:** SAE J20 hoses are also suitable for agricultural machinery, offering durability and reliability in harsh conditions.

Compliance and Standards

SAE J20 rubber hoses meet or exceed the rigorous standards set by the Society of Automotive Engineers (SAE), ensuring compatibility and reliability across a wide range of vehicles and industrial equipment.

Customization

These hoses can be customized to meet specific application needs, with options for various reinforcements including aramid & polyester, tube and cover materials including AEM, ACM, NBR, EPDM, Silicone, HNBR, ECH, FKM, Fluorosilicone and special designators (HT, EC, LT). Customization ensures that the hose you choose is perfectly suited to your operational requirements.

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