



Safety Guide for Selecting and Using Parker Aerospace Hose, Fittings and Related Accessories

Parker Publication No. 106-SG1

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WARNING: Failure or improper selection or improper use of hose, fittings, assemblies, or related accessories for in flight aerospace applications ("Products") can cause death, personal injury, and property damage. Possible consequences of failure or improper selection or improper use of these Products includes but are not limited to:

- Explosion or burning of the conveyed fluid.
- Loss of engine power.
- Loss of control of the aircraft.
- Total loss of the aircraft and its occupants.

Before selecting or using any of these Products, it is important that you read and follow the instructions below. Only hose from Parker's Stratoflex Products Division is approved for in flight aerospace applications, and no other Parker hose can be used for such in flight applications.

A. GENERAL INSTRUCTIONS

A.1 Scope: This safety guide supplements and is to be used with the attached generic Parker Hose and Fitting Safety Guide (Publication No 4400 B-1). This supplemental safety guide provides additional instructions for selecting and using (including assembling, installing, and maintaining) Parker Products for aerospace applications. For convenience, all Parker rubber and/or thermoplastic products commonly called "hose" or "tubing" are called "hose" in this safety guide. All assemblies made with hose are called "hose Assemblies." All Parker products for aerospace applications commonly called "fittings" or "couplings" are called "fittings." All related accessories (including crimping and swaging machines and tooling) are called "Related Accessories." This supplemental safety guide is also a supplement to and is to be used with, the specific Parker publications for the specific hose, fittings and Related Accessories that are being considered for use.

B. ON CONDITION INSPECTION OF PRODUCTS

B.1 When to Use on Condition Inspection: On condition inspection augments procedures for replacement of Products based upon service life established by the airworthiness certificate holder or government or industry standards. A constant on condition surveillance of Products shall be routine at all times of maintenance under SAE Aerospace Recommended Practice for Hose Assemblies (ARP 1658).

B.2 How to Use on Condition Inspection:

B.2.1 Inspect Identification Tag: Inspect the identification tag. If the tag is missing or illegible, replace the Product. If the assembly date on the tag shows an expired service life based upon service life established by the airworthiness certificate holder or based upon government or industry standards, replace the Product.

B.2.2 Visually Inspect the Product: Inspect the Product visually. If any of the following conditions or any other out of the ordinary condition is found, replace the Product. It is not possible to repair any of these conditions:

B.2.2.1 Abrasion: Surfaces worn away by friction.

B.2.2.2 Broken Clamps: Clamps that are broken, loose or damaged.

B.2.2.3 Broken Wires: A strand of wire, or multiple strands of wire, which are broken (only applicable to visible uncovered wire).

B.2.2.4 Chalking: A powdery surface indicating disintegration of material.

B.2.2.5 Checking: Short shallow cracks.

B.2.2.6 Corrosion: Discoloration of the hose cover or reinforcement or fitting.

B.2.2.7 Cover Blisters: Raised areas forming a void or space.

B.2.2.8 Cracking: Surface cracks.

B.2.2.9 Crazing: Numerous small surface cracks.

B.2.2.10 Heat Damage: Charring, chalking, hardening, discoloration, or cracking of the surface.

B.2.2.11 Kinking or Twisting or Collapse: A temporary or permanent distortion (usually caused by twisting or exceeding minimum bend radius).

B.2.2.12 Leaking: Any past or continued wetness or escape of the fluid.

B.2.2.13 Loose Cover: A cover that is partially separated from its adjacent surface.

B.2.2.14 Soaked Sleeve or Hose: A sleeve or hose that is wet from leaking or spilled fluid.

B.2.2.15 Tear: A sharp break.

B.2.2.16 Weathering: Surface deterioration caused by exposure to weather.

B.2.2.17 Wire Throw-Out: A broken end of a wire protruding from the surface of a braid (only applicable to visible uncovered wire).

B.2.3 Proof Pressure Test the Product: If the Product is removed for servicing or inspection, pressure test the Product at two times the rated pressure shown on the identification tag. Return the Product to service only if it passes both the proof pressure test and the visual inspection.

C. PRODUCT LIFE LIMITS

C.1 Shelf-Life Limits: Aerospace hose that does not have fittings assembled ("bulk hose") can be used only if it is stored under prescribed storage conditions and it is within mandatory shelf-life limits.

C.1.1 Prescribed Storage Conditions: Aerospace hose must be stored in a clean, dry dark area where the temperature never exceeds 125 degrees Fahrenheit. The hose must not be exposed to sunlight and must not be near operating electric motors or electric generators. The hose must not be coiled to less than its minimum bend radius and must not be kinked or twisted or otherwise distorted. The ends of the hose must be capped.

C.1.2 Mandatory Shelf-Life Limits: The hose cure date for rubber hose is shown on the lay line of the hose. The silicone fire sleeve cure date for silicone fire sleeves and for Polytetrafluoroethylene (PTFE) hose with silicone fire sleeve is shown on the lay line or on the identification tag. SAE Aerospace Standard 1933 states that bulk rubber hose should not be placed in service after 32 quarters (8 years) from its cure date. MIL-DTL Specification states that Chlorinated Polyethylene (CPE) base hose should not be placed in service after 48 quarters (12 years) from its cure date. DOD MIL-HDBK-695D states that PTFE hose with silicone fire sleeve should not be placed in service after 20 years from its indicated fire sleeve cure date.

C.2 Service Life Limits:

C.2.1 In Service Date: The Product assembly date is indicated on the identification tag, and this date is assumed to be the in-service date unless written records prove a different in-service date.

C.2.2 Airworthiness Certificate Holder Service Life Limits: If the airworthiness certificate holder has established a service life limit for the Product, the Product must not be used after the service life limit is reached.

C.2.3 Government Standard Service Life Limits: If the airworthiness certificate holder has not established a service life limit for the Product, then the following government or industry standard service life limits may be applicable. Replace all products before they reach applicable service life limits.

C.2.3.1 Rubber Hose in Engine Compartment or in Fire Zone: FAA document AC20-7A states that rubber hose used on aircraft in the engine compartment or fire zone should not be used after 5 years following the in-service date indicated in section C.2.1 above.

- C.2.3.2 Rubber Hose in Other Applications:** USAF Technical Order 42E1-1-1 states that rubber hose used on aircraft outside of the engine compartment or fire zone should not be used after 10 years following the in-service date indicated in section C.2.1 above. This recommended life limit is reduced to 7 years for aircraft routinely flown or stored in or near ocean air conditions by a now obsolete US Navy publication NAVAIR 01-1A-20.
- C.2.4 All Hose:** If actual service experience or visual inspection indicates hose replacement is required after a certain time period is reached for any specific hose application, replace all hose in all such applications on all aircraft in no more than one half of such time period. Also, contact Parker's Stratoflex Products Division and the airworthiness certificate holder to advise them of this.
- D. FAA TSOA Compliance:** Satisfactory compliance with the conditions and tests required for TSO approval indicates the hose assembly has met the minimum performance standards specified in the particular TSO. It is the responsibility of those desiring to install this hose assembly on an aircraft or engine to determine that the installation will not cause the hose assembly to be subjected to conditions in excess of those for which it has been approved. The hose assembly may only be installed in a manner acceptable to, or approved by, the FAA.

This Supplemental Safety Guide please review the following:

Parker Safety Guide for Selecting and Using Hose, Tubing, Fittings, Connectors, Conductors, Valves, and Related Accessories. Parker Publication No. 4400-B.1 (November 2024)



WARNING: This product can expose you to chemicals including Chromium, Cadmium, Lead, Antimony trioxide, Nickel, Cobalt, Formaldehyde, Beryllium, Naphthalene, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.