

SAE AS 1933

ADOPTION NOTICE

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**AEROSPACE
STANDARD****AS 1933**Issued February 1985
Revised**AGE CONTROLS FOR HOSE CONTAINING AGE-SENSITIVE ELASTOMERIC MATERIAL****1. SCOPE:**

- 1.1 **Purpose:** This document establishes age limits for acceptance of hose and hose assemblies containing elastomeric materials for use in aircraft, space vehicles, missiles and component assemblies thereof at time of delivery to the contractor, procuring activity, or contracting officer. This document does not establish limitations on storage times for military activities nor operating life.

2. REFERENCE DOCUMENTS:

- 2.1 The issues of the following documents in effect on the date of invitation for bids form a part of this standard to the extent specified herein.

GOVERNMENTAL**MIL-STD-129 Marking for Shipment and Storage**

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procurement activity or as directed by the contracting officer.)

3. DEFINITIONS:

- 3.1 **Age-Control:** "Age-control is the designation of a specific maximum period of age after cure-date that will assure desired conformance characteristics of an elastomeric material. Age control is based on the premise that elastomers deteriorate upon exposure to ozone, oxygen, heat, sunlight, rain, and other similar environmental factors.
- 3.2 **Elastomer:** A material which possesses elastic properties similar to those of natural rubber in the vulcanized state. At room temperature an elastomer can be stretched repeatedly to at least twice its original length and will, upon release of stress, return to its approximate original length.

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- 3.3 Rubber: A material that is capable of recovering from large deformations quickly and forcibly in the vulcanized state. Originally applicable to a natural substance taken in liquid form from trees, the term now includes synthetic rubber of many types and is synonymous with elastomer.
- 3.4 Age Sensitive: "Age sensitive" is that characteristic of an elastomer which makes it subject to deterioration by oxygen, ozone, sunlight, heat, rain, and similar factors experienced in the normal environmental exposure subsequent to vulcanization.
- 3.5 Vulcanization: A complex reaction wherein the polymeric elastomer combines with additives, usually at an elevated temperature, to effect a change in state from an easily formed plasticity to a form with characteristic resilience and strength. The process is also referred to as curing or cross-linking.
- 3.6 Cure-date: "Cure-date" is the date the compounded, uncured elastomer is vulcanized to produce an elastomeric product.
- 3.7 Hose: A flexible conduit of circular cross section, usually consisting of an inner tube, reinforcement, and an outer cover. The inner tube and outer cover, if used, as well as intermediate layers may be of elastomeric materials subject to age sensitivity.
- 3.8 Bulk Hose: Hose without couplings or fittings.
- 3.9 Hose Assembly: A length of hose with a coupling attached to one or each end.
- 3.10 Hose Assembly Date: The date the hose end fittings are applied to the hose to form a hose assembly.
- 3.11 Uninstalled: Hose assemblies offered for acceptance against procurement contracts.
- 3.12 Installed: Hose assemblies joined to other parts to form assemblies or components offered for acceptance against procurement contracts.
- 3.13 Acceptance: Acceptance is the act of an authorized representative of the Government by which the Government assumes for itself, or as the agent of another, ownership of existing and identified supplies tendered, or approves specific services rendered, as partial or complete performance of the contract on the part of the contractor.
- 3.14 Contractor: A contractor is an individual, partnership, company, corporation, or association having a contract with a procuring activity for the design, development, design and manufacture, manufacture, maintenance, modification or supply of items under the terms of the contract.
- 3.15 Procuring Activity: A procuring activity is an organization or agency within or acting for the Government, including prime or lower tier contractors.

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- 3.16 Contracting Officer: The contracting officer is a legally responsible individual acting for a procurement activity.
- 3.17 Time of Delivery: "Time of delivery" is defined as the date of acceptance by the procurement activity. Date of acceptance is to be clearly defined by contract or negotiated agreement.
- 3.18 Acceptance Date: The acceptance date is the specific date (day, month, and year) that the acceptance is defined in 3.12 occurs.

4. GENERAL REQUIREMENTS:

- 4.1 Usage: This standard shall be applicable to contractors supplying aircraft and missiles, aircraft and missile engines, and aircraft and missile components to the Government, and to subcontractors of and vendors to such contractors. Procurement activities will use the age limitations and marking requirements established herein when initiating procurement documents.

5. DETAIL REQUIREMENTS:

- 5.1 Age Limitations: The age limitations for hose and hose assemblies shall be shown in CHART I. Hose and hose assemblies controlled by this standard shall be rejected when the cure-date cannot be determined.
- 5.2 Cure and Assembly Date Marking: The cure date shall be marked on the hose in accordance with the provisions of the hose specification. Cure-date and assembly date shall be indicated by quarter of year and year. The year shall be divided into quarters as follows:

1st quarter - January, February, March
2nd quarter - April, May, June
3rd quarter - July, August, September
4th quarter - October, November, December

Hose and hose assemblies manufactured or assembled during any given quarter will not be considered one quarter old until the end of the succeeding quarter.

- 5.2.1 Examples: A product cured during January, February, or March of any year will not be considered one quarter old until July 1 of that same year. A product cured during October, November, or December of any year will not be considered one quarter old until April 1 of the following year.
- 5.2.2 Age control shall be based on the cure-date. Cure-date shall be marked on containers in accordance with MIL-STD-129, indicating the applicable quarter of year digit, the letter "Q", and terminated with the last two digits of the applicable year. Hose cured in June of 1982 would be cure-date marked "2 Q 82".