



Guidelines for the inspection, packaging and storage of products, assemblies and components made from vulcanized natural rubber.

Scope

These instructions are a general guide for the storage and inspection of rubber-to-metal-bonded components, and moulded rubber components, prior to being put into circulation. The information below relates to components manufactured from vulcanised natural rubber. The information contained within this document is for guidance only, and users are recommended to familiarise themselves with ISO 2230-2002 (Rubber Products – Guidelines for Storage).

General Information

Users should consider that rubber components may change their physical properties if stored under unfavourable conditions or with improper care; This may include becoming unusable due to excessive change in stiffness, permanent deformation, bonding defects, and structural changes to the rubber. These changes can be caused by Ultra Violet (UV), Ozone, Temperature, Light, Humidity, contaminants such as solvents and cleaning agents, or by storing under stress.

If care is taken to properly store and treat rubber parts they can remain nearly unchanged in their properties for a long period of time (many years).

It should be noted that Rubber-to-metal bonded parts are designed to be used in either compression and/or Shear. Applying tensile forces should be avoided.

Service Life

The service life of a rubber component is heavily dependent on the application in which it is being used, the design of the product and also the stress/strain levels applied to the rubber. In addition, external factors such as contaminants and/or exposure to UV/Ozone can negatively affect the life of the product. Where components have been in storage for several years it is recommended that components are tested and evaluated to confirm that no significant change in mechanical properties have occurred. Once products are installed and in operation, they are generally maintenance-free, however the customer should have sufficient service inspection intervals to identify any deterioration or loss of properties, for example loss of stiffness or deterioration of the rubber and/or rubber to metal bond.

As a general guide it is recommended that a visual check of the components should be conducted at 6 months after the installation date and thereafter once a year. (although this period may need to be reduced for critical components or where service life is expected to be relatively short).



Important

During the service life of the equipment, if bonding defects occur between the rubber and metal interface, or where swelling, softening/hardening of the rubber is found, or where surface cracks in the rubber section appear, it is recommended that the customer contact AV Industrial Products Ltd to discuss whether the product requires replacement.

It should be noted that a white wax layer may sometimes occur on the surface of the rubber during storage and/or installation. This is quite normal and consists of an anti-aging and ozone wax which is added to the rubber formulation to help protect against ozone. These waxes slowly leach to the surface of the rubber to form a protective barrier, and can sometimes be mistaken for cracks in the rubber section

Replacement

It may be necessary to replace rubber mountings during the service life of the equipment. If the following are identified during servicing/inspection, customers are advised to consult with one of our qualified rubber engineers;

- Significant Settlement or Creep of the rubber
- Cracks on the rubber surface
- Swollen Rubber
- Deterioration of the Rubber to metal bond.
- Mechanical damage

Cleaning

Where cleaning (wash down) of vehicles or machinery is required, the customer should take careful consideration of the cleaning agents being used, if they will come into contact with the rubber component. Ideally customer should use cleaning agents with a neutral PH value. Cleaning agents containing certain solvents (e.g. petrol) should never be used. Customers are advised to contact AV Industrial Products for guidance.

It is suggested that rubber components are rinsed with water after cleaning. The use of sharp-edged objects such as wire brushes or emery cloth should be avoided.

Storage of Rubber components

The storage of rubber and/or rubber to metal bonded components should be made according to ISO 2230-2002. The storage room should be cool, dry, relatively dust free, and ventilated. The temperature in the storage room should ideally be between -10°C and +20°C. A higher temperature of up to 30°C may be permissible but only for a short time. Exposure to direct sunlight should be avoided. The components should be protected against constant air supply to protect the rubber against Ozone. In addition, rubber should not be stored close to electrical devices which may emit ozone. Rubber products made of Neoprene (chloroprene) rubber should possibly not be stored at temperatures lower than +10°C. This is due to the high crystalline nature of the rubber material. Rubber products should not be stored in humid conditions.

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All information is for guidance only. Customers are advised to contact us to discuss their specific application and to ascertain the suitability of a product and/or material for their application.



It is important that rubber components are stored without stress on the rubber, meaning they should not be stored with tension, compression or any other deformation of the rubber. Stress can cause permanent set and the development of cracks.

Rubber products should not be stored directly with copper or manganese metals, as these can cause damage to the rubber structure. Rubber products should be protected by packaging them or by covering them with a layer of paper or polyethylene.