

CARE, MAINTENANCE AND STORAGE OF HOSES

Hoses are subject to a limited service life and the user must be aware of the signs of impending failure, especially if the operating conditions involve high working pressure and/or hazardous materials are transported.

Security advice

If the manufacturer's recommended procedures for care, maintenance and storage of the respective hose are not followed, the hose may not function properly. This could result in damage to property or serious physical injury. This could result in damage to property or serious physical injury.

General instructions for the correct storage of hoses are described below. Improper storage can significantly reduce the life of hose products.

Proper handling of hoses

Improper handling of the hoses, such as squeezing, tearing, pulling or loading with non-permissible media must be avoided.

Avoid pulling a hose over sharp or abrasive surfaces unless it has been specially designed for this purpose.

Hoses may only be used up to their prescribed maximum operating pressure. Any change in operating pressure should be made gradually so that the hoses are not subjected to pressure surges. Hoses must not be kinked or run over unless otherwise specified in the data sheets.

When handling large hoses, reels or drums should be used if possible. For heavy suction and pressure hoses, e.g. when loading and unloading oil, appropriate slings, carrying belts and the like should be used for support.

General examinations

An inspection and hydrostatic test must be carried out at regular intervals to check whether the hose is still suitable for further use. A visual inspection of the hose for loose covers, kinks, dents or soft spots must be carried out to detect broken or displaced inserts. The couplings or fittings must be carefully examined for signs of detachment from the hose and replaced immediately if necessary.

Deadlines for inspection

The safe working condition of hose assemblies requiring testing must be checked by a competent person:

- Before the first start-up (ready for use), obtain hose assemblies: quality checks on random samples)
- At regular intervals after the first commissioning (each individual hose line)
(Inspection period e.g. for thermoplastic and elastomeric hose lines at least 1x per year, steam hoses 1/2 year.
Higher loads require shorter test intervals, e.g. in case of increased mechanical, dynamic or chemical stress).
- After a repair (each individual hose line).

Scope of testing

Type and scope of the test (e.g. pressure test, visual inspection, testing of the electrical conductivity etc.) regulate e.g. the "competent persons" according to the industrial safety regulations or T002 (ZH1/134). The result must be documented.

Storage

The storage of rubber hose products can be influenced by Temperature, humidity, ozone, sunlight, oil, solvents, corrosive liquids and vapours, insects, rodents and radioactive material.

Proper storage of the hoses depends mainly on their size (diameter and length), the quantity to be stored and the packaging used.

Hoses must not be stacked or superimposed in such a way that the weight of the stack causes deformation of the hoses at the bottom.

Since rubber hoses vary greatly in dimension, weight and length, no generally applicable recommendations can be given in this respect. A thin-walled hose can withstand less stress than a thick-walled hose or a hose with a steel wire helix. Hoses that are shipped as reels must be stored horizontally.

If possible, store hose products in their original packaging, especially if such packaging is wooden or cardboard boxes. This packaging also protects against sunlight.

The following are general instructions for the correct storage of hoses according to standard DIN 7716:1982 "Rubber and rubber products: Requirements for storage, cleaning and maintenance" paragraph 3. Improper storage can considerably reduce the service life of hose products.

Storage room

The storage room should be cool, dry, low-dust and moderately ventilated. Storage in the open air without protection from the weather is not permitted.

Temperature

Rubber products should not be stored below -10°C and above $+15^{\circ}\text{C}$, with the upper limit being exceeded up to $+25^{\circ}\text{C}$. Temperatures even higher are only permitted for a short period of time.

Heating

In heated storage rooms, the rubber and rubber products shall be shielded from the heat source. The distance between the heat source and stored goods must be at least one metre.

Humidity

Storage in damp storage rooms should be avoided. Care must be taken that no condensation occurs. A relative air humidity below 65% is most favourable.

Lighting

The products should be protected from light, in particular from direct sunlight and from strong artificial light with a high ultraviolet content. For this reason, the windows of storage rooms should be painted red or orange (never blue). Lighting with normal incandescent lamps is preferable.

Ozone

Since ozone is particularly harmful, storage rooms must not contain any ozone-generating equipment, such as electric motors or other devices that can generate sparks or other electrical discharges. Combustion gases and vapours which can lead to ozone formation through photochemical processes should be removed. Finally, rubber articles should be stored according to the "first-in, first-out" principle, because even under the best conditions an unusually long storage period can lead to a deterioration of the physical properties of certain rubber products.

Cleaning

The hose assembly shall be cleaned and rinsed after use and before each test. When cleaning with steam or with chemical additives, the resistance of the hose line components must be taken into account (Caution: the use of steam lances is not permitted).