

ADMIN-4-2 Hose Assembly Inspection Guidance

Hose Assembly Inspection (Guidance)
(convoluted, elastomeric, or braided)

RECORD OF REVISIONS

Rev	Date	Description	POC	RM
0	9/17/2014	Initial issue.	Ari Ben Swartz, <i>ES-EPD</i>	Larry Goen, <i>ES-DO</i>

Contact the Standards POC for upkeep, interpretation, and variance issues.

Chapter 17	<u>Pressure Safety POC and Committee</u>
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This document is online at <http://engstandards.lanl.gov>

Reference: RMA Hose Handbook IP-2 [1987] and National Propane Gas Association Flyers 114-91 & 134-81

All hoses should be visually, externally inspected prior to each use and thoroughly inspected prior to 12 months. All hose should be hydrostatically tested to 1.5 times Maximum Operating Pressure for 3 to 5 minutes every 12 months to verify the hose assembly’s integrity. Hose prior to inspection must be cleaned, depressurized, and laid straight.

Inspection tasks

1. Look for cuts, gouges or worn spots in the hose cover that expose reinforcement braid.	5. Should the spring system protrude through the end fitting, the spring system is not working and the assembly has been damaged.
2. Inspect for soft spots, bulges in cover, sections of crushed flat areas or kinked sections.	6. Check the coupling for worn threads, loose clamps or bands, worn gaskets or seal rings, worn or broken handles cam arms and pins.
3. Carefully examine the first 18” of hose adjacent to both end couplings for damage such as kinks, soft spots, and bulges, cover cracks, permanent deformation, alignment, variations from the original form.	7. Shake the assembly by hand. No component should rattle.
4. Check couplings for any slippage between the ferrule or hose and fitting body. Identify any indication of coupling motion.	8. Inspect the hose cover for blisters and corrosion

If any of the above conditions are found, take hose out of service (tag or lock) and replace.

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General Instructions for Hose Hydrostatic Testing

An inspection and hydrostatic test should be performed prior to each 30 hours of service or six months, whichever is sooner. The assembly must be clean prior to test.

A visual inspection as described previously should be completed.

Basic Instructions:

1. Lay the assembly straight.
2. Fill the assembly with water.
3. Raise one end and run water through to purge the assembly of air.
4. Cap and pressurize the assembly to 1.5 times Maximum Operating Pressure.
5. Maintain pressure for 10 minutes.
6. Any indication of leakage is cause for failure.
7. Drain and flush with alcohol to remove traces of water.
8. Allow drying if alcohol is not compatible with product.

Safety Warning:

Before conducting any pressure test on hose, provisions must be made to ensure the safety of personnel performing the test and to prevent any damage to property. Only trained personnel using proper tools and procedures should conduct pressure tests.

1. Air or other compressed gasses should not be used for pressure test.
2. All air should be removed from the hose prior to test by bleeding the air through an outlet valve at the raised end of the hose.
3. Test only one hose at a time.
4. Restrain the hose being pressurized. Crushing the hose should be avoided. Place firmly anchored steel bars or straps on each side and supported above the hose at about 10-ft intervals to limit whipping should a failure occur. It is normal, and you should allow for, the hose to move due to the pressurization.
5. A failure may occur that ejects one or both fittings. Retaining walls or sandbags should limit this motion.
6. Personnel must be protected or removed from the test area. Hose whip or an ejected fitting could cause injury during a failure.

Proper Hose Storage

1. Hose assemblies are made of material resistant to aggressive chemical attack consistent with the intended application. There is no shelf life. The product does not age. An accumulation of microbes has been observed due to thermal cycling in humid environments. This accumulation has proved very difficult to remove. Store hose assemblies in a clean, dry place where temperature cycles infrequently through a range no greater than -30 to 125 °F. The outer cover becomes stiff at cold extremes and may crack when flexed. Warm before flexing.
2. Avoid physical damage during storage by storing in a straight rigid tube or in a gentle coil that spirals in a radius larger than the minimum bend radius. Never stack material that will crush the hose.
3. Protect the assemblies from boring insects and gnawing rodents.
4. Good housekeeping that prevents exposure to process or foreign solids and fluids will reduce the required cleaning when the hose goes into service.