

Rung-out by OSHA? Ladder and Roof Safety 1 & 2

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Working on rooftop sites presents workers with a variety of challenges; what type of fall protection is required, when should it be utilized, what regulations are relevant to the work I'm doing, do I have the right ladder and is it set up properly? This session is designed to review OSHA standards for ladder and roof safety, identifying roof and ladder hazards and mitigating the hazards.

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ANSI APPROVED LADDER ACCESSORIES

Ladder Accessories Covered

As noted in its scope, the [ANSI ASC A14.8-2020](#) standard is limited to ladder accessories that it specifically defines. These include:

Bottom End Accessories

- Ladder Feet
- Spurs and Spur Plates
- Ladder Levelers

Top End Accessories

- Cable (Strand) Hooks
- Roof/Ridge Hooks
- V-Rungs
- House Pad
- Pole Chain and Pole Strap
- Pole Lash
- Side Rail End Covers
- Stabilizers & Standoffs
- Step Through Rail Extensions (this is a new addition to the [ANSI ASC A14.8-2020](#) standard)

Miscellaneous Accessories

- Stabilizer Strap
- Step Bracket

For each of these, [ANSI ASC A14.8-2020](#) outlines relevant testing requirements. The standard also covers requirements for labeling and marking.

Ladder Safety Checklist

To prevent falls from ladders, make sure you have the following controls in place:

- Use only ladders that are in good condition and designed to handle the climbing job that needs to be done.
- Train employees on proper ladder use.
- Make proper ladder use a performance requirement for the job.
- Require employees to complete a ladder inspection before each use.



Criteria for Ladder Purchase and Care

- Check OSHA standards for the type of ladder you are using.
- Use only Underwriter's Laboratory approved ladders (will have the UL seal).
- Protect wood ladders with a clear sealer, such as varnish, shellac, linseed oil or wood preservative because paint can hide defects.

Ladder Usage

- Be sure step ladders are fully open and locked before climbing them.
- Place ladder on a flat, secure surface.
- Place ladder on a hard surface as it will sink into a soft surface.
- Place ladder on non-movable base.
- Lean ladder against a secure surface, not boxes or barrels.
- Do not place ladder in front of a door.
- Position base of ladder one foot away for every four feet of height to where it rests (1:4 ratio).
- Ladder rails should extend at least three feet above top landing.
- Check shoes to ensure they are free of grease or mud.
- Mount the ladder from the center, not from the side.
- Face ladder when ascending or descending, and hold on with both hands.
- Carry tools in pockets, in a bag attached to a belt, or raised and lowered by rope.
- Don't climb higher than the third rung from the top.
- Work facing the ladder.
- Do not overreach, always keep your torso between the ladder rails.
- When using ladder for high places, securely lash or fasten the ladder to prevent slipping.
- Avoid outdoor ladder use on windy days.
- Avoid aluminum ladders if work must be done around electrical wires or power lines.



NIOSH Ladder Safety App Download for Free

To prevent extension and step ladder-related fall injuries and deaths, download and use NIOSH's award-winning Ladder Safety app.



Stats:

500,000+ people are treated each year for ladder-related falls¹

300+ people die from ladder falls each year²

\$24 billion is the annual cost to the U.S. for work loss, medical, legal, liability, and pain and suffering expenses from falls¹

Sources:

¹ CPSC (US Consumer Product Safety Commission) [2014]. Unpublished data from the National Injury Information Clearinghouse (CPSC) using the CPSC's Injury Cost Model.

² CDC, National Center for Health Statistics [2017]. Multiple Cause of Death 1999-2015 on CDC WONDER Online Database. Accessed at <https://wonder.cdc.gov/mcd-icd10.html>.

Angle Measuring Tool



The **Measuring Tool** uses visual, sound, and vibration cues to set an extension ladder at the proper angle

Ladder Safety Tools



Decision offers tips to plan your job while considering time, materials, and tools required



Selection provides a procedure to select the proper size and type of ladder for the task



Inspection includes a checklist for ladder mechanical inspection



Set up provides instruction for ladder setup and installation



Proper Use presents rules for safe ladder use



Accessories describes a number of available extension ladder safety accessories

Get the app from:



To learn more about falls in the workplace visit:
www.cdc.gov/niosh/topics/falls/mobileapp.html



Harness Inspection Guidelines

Webbing

Grasp the webbing with your hands and bend the webbing, checking both sides. This creates surface tension making damaged fibers or cuts easier to see. Webbing damage may not show up through a sight (visual) inspection only – manual (touch) the harness is equally important.

Visual and Touch Inspection

✓ Pass

✘ Fail Criteria

- ✘ Cuts, nicks or tears
- ✘ Broken fibers/cracks
- ✘ Overall deterioration
- ✘ Modifications by user
- ✘ Fraying/Abrasions

✘✓ Discoloration of material

Dependant on cause of discoloration

✘ Hard or shiny spots

Indicates heat damage

✘ Webbing thickness uneven

Indicates possible fall

✓ Mildew

Clean harness

✘ Missing Straps

✘ Undue Stretching

Indicates possible fall

✘ Burnt, charred or melted fibers

Indicates heat damage

✘✓ Material marked w/permanent marker

Check w/manufacturer

✘ Excessive hardness or brittleness

Indicates heat or uv damage

Stitching

Visual and Touch Inspection

✘ Pulled stitches

✘ Stitching that is missing

✘ Hard or shiny spots

Indicates heat damage

✘ Cut stitches

✘✓ Discoloration of stitching

Dependant on cause of discoloration

Hardware

Visual and Touch Inspection

✘ Distortion (twists, bends)

✘ Rough or sharp edges

✘ Rust or corrosion

✘ Cracks or breaks

✘ Broken/distorted grommets

✘ Modification by users (ie additional holes)

✘ Tongue buckle should overlap the buckle frame and move freely back and forth in their socket

✘ Roller of tongue buckle should turn freely on frame

✘ Bars must be straight

✘ All springs must be in working condition

Harness Inspection – Guidelines

Tagging System

Every harness must have a legible tag identifying the harness, model, date of manufacture, name of manufacturer, limitations and warnings.

- ✘ Check tag for date of manufacture and remove from service if past adopted service life policy
- ✘ If tagging system is missing or not legible remove harness from service.

Cleaning and Storage

Wipe off all surface dirt with a sponge dampened in plain water. Squeeze the sponge dry. Dip the sponge in a mild solution of water and mild detergent. Work up a thick lather, with a vigorous back and forth motion. Then wipe dry with a clean cloth.

Hang freely to dry, but away from excessive heat, steam or long periods of sunlight.

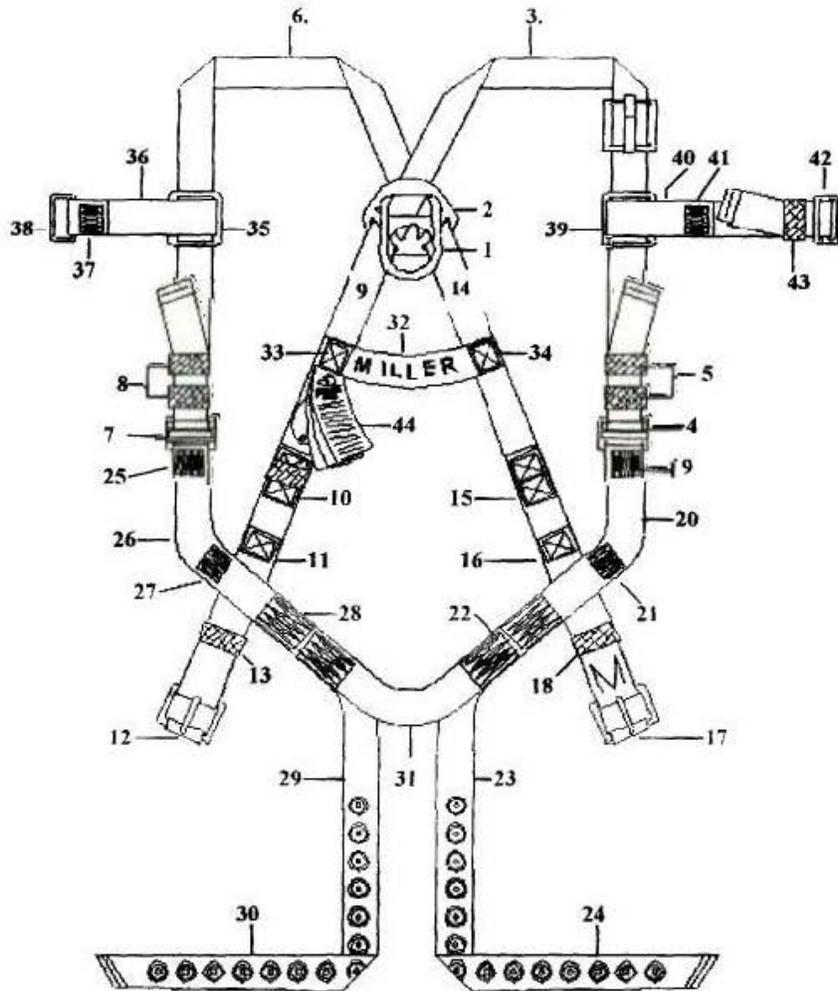
Storage areas should be clean, dry and free of exposure to fumes, heat, direct ultra violet light, sunlight and corrosive elements.

Note: Do not store harnesses next to batteries, chemical attack can occur if battery leaks.

INSPECTION CHECKLIST - HARNESS

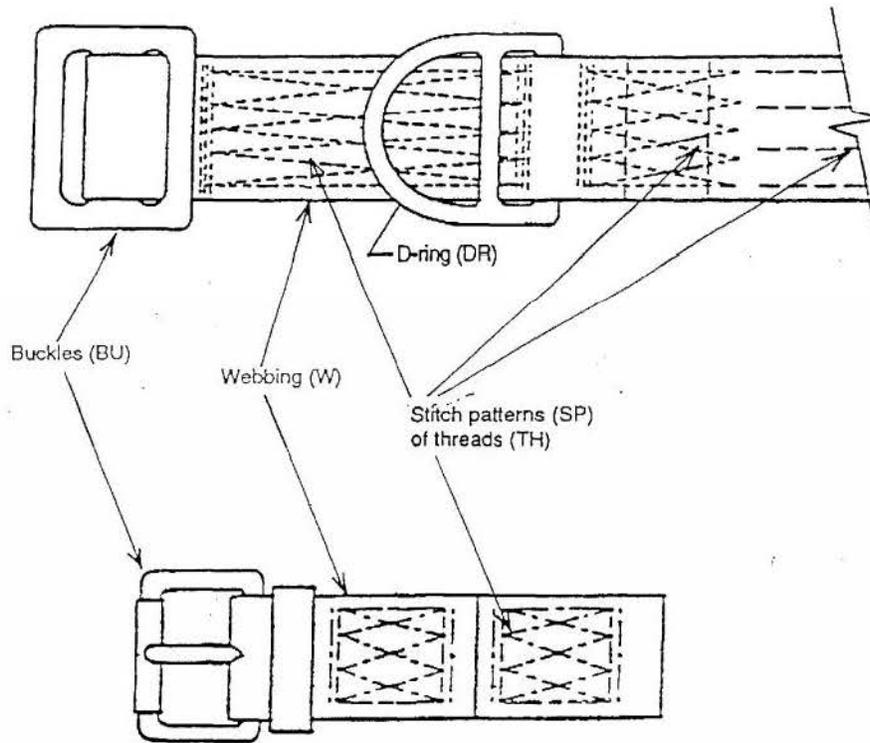
ITEM DESCRIPTION

- 1. X ✓ Dee Ring
- 2. X ✓ Dee Pad
- 3. X ✓ Nylon Webbing
- 4. X ✓ Spring Loaded Friction Buckles
- 5. X ✓ Elastic Keepers (2)
- 6. X ✓ Nylon Webbing
- 7. X ✓ Spring Loaded Friction Buckles
- 8. X ✓ Elastic Keepers (2)
- 9. X ✓ Nylon Webbing
- 10. X ✓ Stitching
- 11. X ✓ Stitching
- 12. X ✓ Tongue Buckle
- 13. X ✓ Elastic Keeper (1)
- 14. X ✓ Nylon Webbing
- 15. X ✓ Stitching
- 16. X ✓ Stitching
- 17. X ✓ Tongue Buckle
- 18. X ✓ Elastic Keeper (1)
- 19. X ✓ Stitching
- 20. X ✓ Nylon Webbing
- 21. X ✓ Stitching
- 22. X ✓ Stitching
- 23. X ✓ Nylon Webbing
- 24. X ✓ Grommets
- 25. X ✓ Stitching
- 26. X ✓ Nylon Webbing
- 27. X ✓ Stitching
- 28. X ✓ Stitching
- 29. X ✓ Nylon Webbing
- 30. X ✓ Grommets
- 31. X ✓ Sub-Pelvic Strap
- 32. X ✓ Back Strap
- 33. X ✓ Stitching - Back Strap
- 34. X ✓ Stitching - Back Strap
- 35. X ✓ Chest Strap Pad
- 36. X ✓ Nylon Webbing
- 37. X ✓ Stitching
- 38. X ✓ Mating Link
- 39. X ✓ Chest Strap Pad
- 40. X ✓ Nylon Webbing
- 41. X ✓ Stitching
- 42. X ✓ 3 Bar Mating Buckle
- 43. X ✓ Elastic Keeper (1)
- 44. X ✓ Tagging/Label System



CRITERIA X = FAIL
✓ = PASS

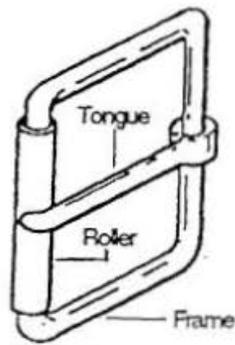
SERIAL # _____	DATE OF MANUF _____
INSPECTOR _____	DATE OF INSPECTION _____
INSPECTOR SIGNATURE _____	
X FAIL: <input type="checkbox"/> Initial _____	✓ PASS: <input type="checkbox"/> Initial _____
REMOVE FROM SERVICE	RETURN TO SERVICE



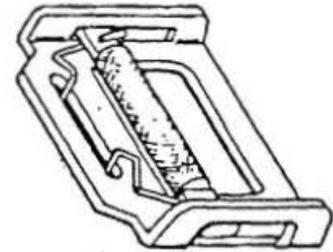
Examples of Some Typical
Thread (TH) and Stitch Patterns (SP) in Webbing (W)



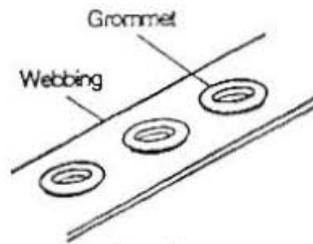
D-ring,



Buckle, tongue



Adjuster, webbing
(Also a buckle)



Grommets in webbing

Example of Some Typical
Connector (Hardware) Components and Elements

Lanyard Inspection

Shock Absorbing Lanyard (Manyard Style) Inspection – Guidelines

Webbing

Grasp the webbing with your hands and bend the webbing, checking both sides. This creates surface tension making damaged fibers or cuts easier to see. Webbing damage may not show up through a sight (visual) inspection only – manual (touch) the lanyard is equally important. **Pay attention to the wrinkled portion of the lanyard.**

Visual and Touch Inspection

✓ Pass

✗ Fail Criteria

✗ Cuts, nicks or tears

✗ Broken fibers/cracks

✗ Overall deterioration

✗ Modifications by user

✗ Fraying/Abrasions

✗ ✓ Discoloration of material

Dependant on cause of discoloration

✗ Hard or shiny spots

Indicates heat damage

✗ Change in core size

Indicates possible fall

✓ Mildew

Clean lanyard

✗ Missing or popped flag

Indicates possible fall

✗ Undue Stretching

Indicates possible fall

✗ Burnt, charred or melted fibers

Indicates heat damage

✗ ✓ Material marked w/permanent marker

Check w/manufacturer

✗ Excessive hardness or brittleness

Indicates heat or uv damage

✗ Knots in lanyard

Stitching

Visual and Touch Inspection

✗ Pulled stitches

✗ Stitching that is missing

✗ Hard or shiny spots

Indicates heat damage

✗ Cut stitches

✗ ✓ Discoloration of stitching

Dependant on cause of discoloration