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There's always a solution in steel.

Ladder Safety: One Rung at a Time



Brent Sedlacek
Director Product Management
Ladders at Werner Co.



Agenda



- **Creating a Culture of Safety**
 - “Work Like You Would Walk Traffic Side”
 - The “Human Condition” and “Crossover”
- **Ladder Safety**
 - ANSI / OSHA
 - Selection
 - Inspection Process
 - Use
 - Alternate Products
 - Fixed Ladders: OSHA 1910 Update
- **Online Resources**



The “Human Condition” and “Crossover”



Ladder Safety




2017


Most-cited OSHA violations, fiscal year 2017

1	FALL PROTECTION – GENERAL REQUIREMENTS (1926.501) 6,887 VIOLATIONS	
2	HAZARD COMMUNICATION (1910.1200) 4,652 VIOLATIONS	
3	SCAFFOLDING (1926.451) 3,697 VIOLATIONS	
4	RESPIRATORY PROTECTION (1910.134) 3,381 VIOLATIONS	
5	LOCKOUT/TAGOUT (1910.147) 3,131 VIOLATIONS	
6	LADDERS (1926.1053) 2,567 VIOLATIONS	
7	POWERED INDUSTRIAL TRUCKS (1910.178) 2,349 VIOLATIONS	
8	MACHINE GUARDING (1910.212) 2,109 VIOLATIONS	
9	FALL PROTECTION – TRAINING REQUIREMENTS (1926.503) 1,724 VIOLATIONS	
10	ELECTRICAL – WIRING METHODS (1910.305) 1,530 VIOLATIONS	

Source: OSHA
 The federal government's fiscal year ran from Oct. 1, 2016, to Sept. 30, 2017.


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Ladder Safety - OSHA Violations





LADDERS
 STANDARD: 1926.1053
 TOTAL VIOLATIONS: 2,567
 FISCAL YEAR 2016
 RANKING: 7
 (2,625 VIOLATIONS)

TOP 5 SECTIONS CITED:

1. 1926.1053(b)(1) When portable ladders are used for access to an upper landing surface, the ladder side rails shall extend at least 3 feet above the upper landing surface to which the ladder is used to gain access; or, when such an extension is not possible because of the ladder's length, then the ladder shall be secured at its top to a rigid support that will not deflect, and a grasping device, such as a grabrail, shall be provided to assist employees in mounting and dismounting the ladder. – 450
2. 1926.1053(b)(4) Ladders shall be used only for the purpose for which they were designed. – 333
3. 1926.1053(b)(13) The top or top step of a step ladder should not be used as a step. – 219
4. 1926.1053(b)(16) Portable ladders with structural defects shall either be immediately marked in a manner that readily identifies them as defective, or be tagged with "Do Not Use" or similar language, and shall be withdrawn from service until repaired. – 108
5. 1926.1053(b)(6) Ladders shall be used only on stable and level surfaces unless secured to prevent accidental displacement. – 79


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Creating a Culture of Safety



Home and work should be perceived the same...

**“Work like you would
WALK TRAFFIC SIDE!”**



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Creating a Culture of Safety



You offer yourself to protect a loved one when you
walk traffic side!



We need to protect our Employees!



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The “Human Condition”



“That single moment in time when a worker makes the conscious, critical decision, to forecast the future through one’s actions.”



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The “Human Condition”



The “Crossover”

This user is very conscious of his decision...



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The “Human Condition”



*As Business leaders, we own
driving a culture of safety*



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OSHA & ANSI

Defining Product Usage



OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION CODE

All Type II, I, IA and IAA fiberglass, aluminum and wood ladders, ladder jacks and extension planks meet or exceed code. OSHA CODE applies to ladders used in the workplace. Werner Co. recommends Type II or heavier duty rated ladders for these applications.

Defining Design & Testing Specifications



AMERICAN NATIONAL STANDARDS INSTITUTE

PRODUCT LINES MEET OR EXCEED ANSI CODE

Fiberglass Ladders	A14.5
Aluminum Ladders	A14.2
Ladder Jacks	A10.8
Extension Planks	A10.8
Scaffolding	A10.8
Stages	A10.8
Work Platforms	A10.8
Attic Ladders	A14.9

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Labeling

Identification Labels

Stepladder I.D. Label



Orange Label
For Type IA
Extra Heavy Duty

Extension Ladder I.D. Label



Gold Label
For Type IAA
Special Duty

STAR PERFORMANCE

LOAD CAPACITY

DUTY RATING

LADDER SIZE

MAXIMUM REACH

HIGHEST STANDING LEVEL
 is the maximum safe working height
 • Stepladders: 2nd step down from the top
 • Extension ladders: 4th rung down from the top

MODEL (ID) NUMBER

UPC CODE

Warning & Instruction Labels

Safety Instructions for Step & Extension Ladders

Safety instruction labels contain information regarding the inspection, setup and use, and care and storage of ladders.



Step & Extension Ladder Safety Instructions

Extension Ladder Setup

This label provides safety instructions to properly set-up an extension ladder and check that it is at a 75-1/2° angle



Extension Ladder Set-Up Label

All labels need to be present and legible

1926.1053(b)(16) Portable ladders with structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps, broken or split rails, corroded components, or other faulty or defective components, shall either be immediately marked in a manner that readily identifies them as defective, or be tagged with "Do Not Use" or similar language, and shall be withdrawn from service until repaired.

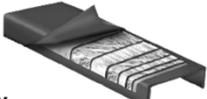
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Choosing the Right Ladder Material



FIBERGLASS

For working around electricity
Non-conductive side rails



Strong seven layer construction

- High impact durability
- Heavier weight
- Generally higher price



ALUMINUM

Not for use around electricity
Lightweight



- Lightweight
- Generally lower price
- Electrically conductive
- Not allowed on 'most' industrial sites




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Choosing the Right Ladder Rating



- Five 5 ANSI ratings (All manufacturers)
- Duty ratings based on weight load capacity

Type III	Type II	Type I	Type IA	Type IAA
200 lbs.	225 lbs.	250 lbs.	300 lbs.	375 lbs.

- Weight of the person **plus** the weight of materials

APPROXIMATE MATERIAL WEIGHTS	
Bundle of shingles	70 lbs.
5 gallon roof coating	70 lbs.
5 gallons paint	60 lbs.
Tool box with tools	35 lbs.
Portable sprayer	20 lbs.
Ceiling fan	30 lbs.
3 x 4 window	80 lbs.
Garage door opener	40 lbs.
Basketball hoop	60 lbs.
Sheet of plywood	80 lbs.
(3) 4 x 4s	80 lbs.

- Exceeding load capacity may cause ladder to collapse
- Werner uses a color and star Performance System to simplify proper weight capacity selection


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Choosing the Right Ladder Style & Size



- What is the Application?
- Free Standing or Supported? Stepladder, Extension, Specialty
- Focus on Reach Height
 - Standing Height
 - Person's height + 12" reach
- Choosing the correct size
 - ANSI Rating: Length of the rail(s)
 - Maximum standing height is lower less than ladder size
 - Usable length on extensions is shorter than Rated size

STEPLADDERS	
Ladder Height	Maximum Reach
4'	8'
6'	10'
7'	11'
8'	12'
10'	14'
12'	16'
14'	18'
16'	20'

EXTENSION LADDERS		
Ladder Height	Maximum Reach	Height To Gutter or Top Support Point††
16'	15'	9' max.
20'	19'	9' to 13'
24'	23'	13' to 17'
28'	27'	17' to 21'
32'	31'	21' to 25'
36'	34'	25' to 28'
40'	37'	28' to 31'

†† Support points for extension ladders reflect section overlap, ladder angle, or 3' extension above roof line.



Ladder Safety - Inspection Form



Ladder Inspection Form



Company Name: _____
 Ladder Reference Number: _____ Dept. _____
 Inspector: _____ Dept. _____

<p><input type="checkbox"/> STEPLADDER Size: _____ ft.</p> <p><input type="checkbox"/> Fiberglass <input type="checkbox"/> Aluminum <input type="checkbox"/> Wood</p> <p>Circle Area of Damage: 6206</p> <p>Steps: Loose, cracked, bent, or missing <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>Rails: Cracked, bent, split or frayed rail shields <input type="checkbox"/></p> <p>Labels: Missing or not readable <input type="checkbox"/></p> <p>Pull Shift: Loose, bent, missing, or broken <input type="checkbox"/></p> <p>Top: Cracked, loose, or missing <input type="checkbox"/></p> <p>Spreader: Loose, bent, or broken <input type="checkbox"/></p> <p>Platform: Cracked or bent <input type="checkbox"/></p> <p>General: Rust, corrosion, or loose <input type="checkbox"/></p> <p>Other: Missing, shoes, or rivets <input type="checkbox"/></p> <p>ACTIONS: <input type="checkbox"/> Ladder tagged as damaged and removed from use <input type="checkbox"/> Ladder is in good condition</p>	<p><input type="checkbox"/> PODIUM Size: _____ ft.</p> <p><input type="checkbox"/> Fiberglass <input type="checkbox"/> Aluminum <input type="checkbox"/> Wood</p> <p>Circle Area of Damage: R9204</p> <p>Steps: Loose, cracked, bent, or missing <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>Rails: Cracked, bent, split or frayed rail shields <input type="checkbox"/></p> <p>Labels: Missing or not readable <input type="checkbox"/></p> <p>Top: Cracked, loose, or missing <input type="checkbox"/></p> <p>Spreader: Loose, bent, or broken <input type="checkbox"/></p> <p>Platform: Cracked or bent <input type="checkbox"/></p> <p>General: Rust, corrosion, or loose <input type="checkbox"/></p> <p>Other: Missing, shoes, or rivets <input type="checkbox"/></p> <p>ACTIONS: <input type="checkbox"/> Ladder tagged as damaged and removed from use <input type="checkbox"/> Ladder is in good condition</p>	<p><input type="checkbox"/> EXTENSION LADDER Size: _____ ft.</p> <p><input type="checkbox"/> Fiberglass <input type="checkbox"/> Aluminum</p> <p>Circle Area of Damage: 88204</p> <p>Flange: Loose, cracked, bent, or missing <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>Rails: Cracked, bent, split, or frayed <input type="checkbox"/></p> <p>Labels: Missing or not readable <input type="checkbox"/></p> <p>Rungs / Ladders: Loose, bent, missing, or broken <input type="checkbox"/></p> <p>Shoes: Worn, broken, or missing <input type="checkbox"/></p> <p>Hoops / Pulley: Loose, bent, or broken <input type="checkbox"/></p> <p>General: Rust, corrosion, or loose <input type="checkbox"/></p> <p>Other: Missing rivets <input type="checkbox"/></p> <p>ACTIONS: <input type="checkbox"/> Ladder tagged as damaged and removed from use <input type="checkbox"/> Ladder is in good condition</p>
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Ladder Inspection Form, Continued



SPECIALTY LADDER Model Number: _____

Fiberglass
 Aluminum
 Wood

Mark all that apply

Steps / Flange: Loose, cracked, bent, or missing YES NO

Rails: Cracked, bent, split, or frayed

Labels: Missing or not readable

Hardware: Missing, loose, or broken

Fasteners: Rust, corrosion, loose, or missing

Top: Cracked, loose, or missing

Spreader: Loose, bent, or broken

Outriggers: Missing, rust, corrosion, or loose for scaffolding

General: Rust, corrosion, or loose

Hinges: Loose, bent, or missing

Locks: Loose, bent, broken, or missing

Working Front / Rear: Loose, bent, broken, or missing

Rails: Rust, corrosion, loose, or missing

Shoes: Worn, broken, or missing

Platform: Missing or loose

Spreader / Hoop: Rust, corrosion, or loose

Casters: Rust, corrosion, or loose for scaffolding

Other: Missing rivets

ACTIONS:
 Ladder tagged as damaged and removed from use
 Ladder is in good condition

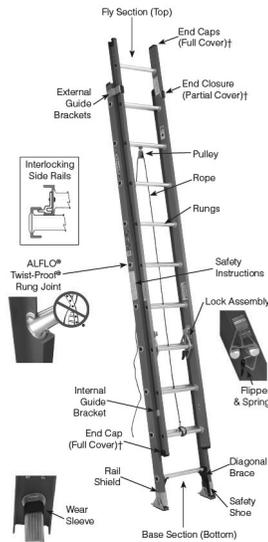


Stepladder Components



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Extension Ladder Components



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Ladder Safety - Inspection Process



Always inspect the ladder before use

Walk it Down

Top: Cracked, loose, or missing

Rails: Cracked, bent, split or frayed rail shields

Steps: Loose, cracked, bent, or missing

Spreader: Loose, bent, or broken

Labels: Missing or not readable

General: Rust, corrosion, or loose

Base: Bracing, shoes, rivets

<https://www.youtube.com/watch?v=02leuzPKakE>



Ladder Safety - Inspection Process



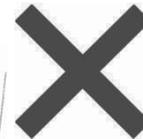
What should you do after an inspection?

- Tag and remove from service any defective ladders
- Clean fiberglass ladders
- Replace worn or frayed ropes on extension ladders
- Lubricate pulleys on extension ladders regularly
- Destroy ladders that cannot be repaired by a person authorized by the manufacturer
- Re-seal fiberglass



What should you NOT do after an inspection?

- Do not make temporary or makeshift repairs
- Do not try to straighten or use bent or bowed ladders



Access & Egress



Portable ladders must extend 3' above upper landing surface



'Truck & Trailer ladders'

- All 'Claim' ANSI/OSHA compliance. None appear compliant
- Verify compliance & work practices
- No 'standards' on rub rail rating
- Attachment to stake pockets
- Werner does not endorse these product

1926.1053(b)(1) When portable ladders are used for access to an upper landing surface, the ladder side rails shall extend at least 3 feet above the upper landing surface...

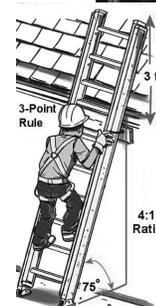


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Ladder Usage



- Avoid set up in doorways or pedestrian pathways
- Face the ladder when ascending/descending
- Use at least one hand to grasp the ladder when ascending/descending (1926.1053b21)
- Don't Over-Reach! – Keep belt between rails
- Do not Walk or Jump ladders
- Stepladders
 - Do not stand on a Stepladder top or the top step
 - Do not stand, sit or straddle a Stepladder top
- Extension Ladders
 - Do not stand on an Extension ladder's top 3 rungs
 - Proper set up angle- 4:1 Ratio
 - Access & Egress requires 3' overlap to roofline



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Ladder Accessories



- Common Accessories
 - Levelers
 - Stabilizers
 - Gates
 - Hooks
- Ladder Manufacturers TEST accessories to ANSI A14.8
 - Factory Installed
 - User Installed
- Refer to ladder manufacturer's recommendation
- 3rd party accessories likely not endorsed by the ladder company
 - Talk to the ladder manufacturer
 - Have your safety committee review



Evolution of Climbing Products



**Dual Purpose
2-IN-1 Ladder**



LEANSAFE™



PODIUM



JobBucket



JobCaddy

**Lock-In
Accessories**



Tripod Stepladder



**Compact
Stepladder**



OSHA Walking Working Surfaces Update
Fixed Ladder: Ladder Safety Systems

SAFETY TRAINING

Attaching users to the ladder via Harnesses

Vertical Cable Lifeline

- **Retrofit or new installations**
- **Individual Components**
 - Top Bracket
 - Bottom Bracket
 - Intermediate Bracket
 - Cable Cut to length
 - Cable grab

Fixed Rail system

- **Center Rail mounted**
- **Side Rail Mounted**
- **Individual Components**
 - Rail (galvanized & stainless)
 - Mounting brackets (stainless)
 - Rail Grab
 - Permanent
 - Removable

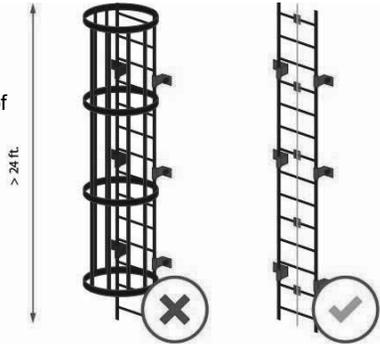





OSHA Walking Working Surfaces Update
Fixed Ladders: November 19, 2018

SAFETY TRAINING

- **Fixed Ladders with Ladder Safety Systems or Personal Fall Arrest Systems (PFAS) (§1910.28(b)(9))**
 - Equip ladders with Ladder Safety system or Personal Fall Arrest System (PFAS)
 - Prohibits the use of cages & wells as a means of fall protection
 - Ladder sections over 24' in length
- **Installation of New fixed ladders**
 - Ladders installed on/after November 19, 2018
 - Must include a Ladder Safety System (PFAS)
 - Includes Replacement of existing ladder
- **Retrofit of Existing fixed ladders**
 - Ladder installed before November 19, 2018
 - Retrofit with a Ladder Safety System by November 18, 2036



Fixed ladders over 24 feet tall need to be equipped with fall protection, like a vertical lifeline system. The use of cages and wells on fixed ladders is prohibited by the final rule.

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OSHA 1910

Ladder Safety Systems Defined



- Capable of withstanding without failure a drop test consisting of an 18-inch drop of a 500-pound weight
- Permit the employee using the device to ascend or descend without continually having to hold, push or pull any part of the device, leaving both hands free for climbing;
- Activate within 2 feet after a fall occurs, and limit the descending velocity of an employee to 7 feet/sec. or less
- Connection between the carrier or lifeline and the point of attachment to the body belt or harness shall not exceed 9 inches in length
- Mounting of ladder safety devices for fixed ladders shall conform to the following:
 - Rigid carriers shall be attached at each end of the carrier, with intermediate mountings, as necessary, spaced along the entire length of the carrier, to provide the strength necessary to stop employees' falls
 - Flexible carriers shall be attached at each end of the carrier. When the system is exposed to wind, cable guides for flexible carriers shall be installed at a minimum spacing of 25 feet (7.6 m) and maximum spacing of 40 feet (12.2 m) along the entire length of the carrier, to prevent wind damage to the system.
- The design and installation of mountings and cable guides shall not reduce the design strength of the ladder

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=10839



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Online Resources



■ Werner Safety Training Module (English, Spanish, French)

- <https://www.wernerco.com/us/en/support/safety-training>
- <https://go.bluevolt.com/Werner/s#!/categorydetail/22132>
- <https://www.youtube.com/watch?v=3TVRMfnUWhI>

■ Werner Stepladder & Extension Ladder Inspection Video

- <https://www.youtube.com/watch?v=02leuzPKakE>

■ American Ladder Institute

- <http://www.americanladderinstitute.org>

■ OSHA

➤ 1910 Industry

https://www.osha.gov/pls/oshaweb/owasrch.search_form?p_doc_type=STANDARDS&p_toc_level=1&p_keyvalue=1910

➤ 1926 Construction

https://www.osha.gov/pls/oshaweb/owasrch.search_form?p_doc_type=STANDARDS&p_toc_level=1&p_keyvalue=1926



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Question time

There's always a solution in steel.



There's always a solution in steel.

Thank You

Please give us your feedback!
Survey at conclusion of webinar.

