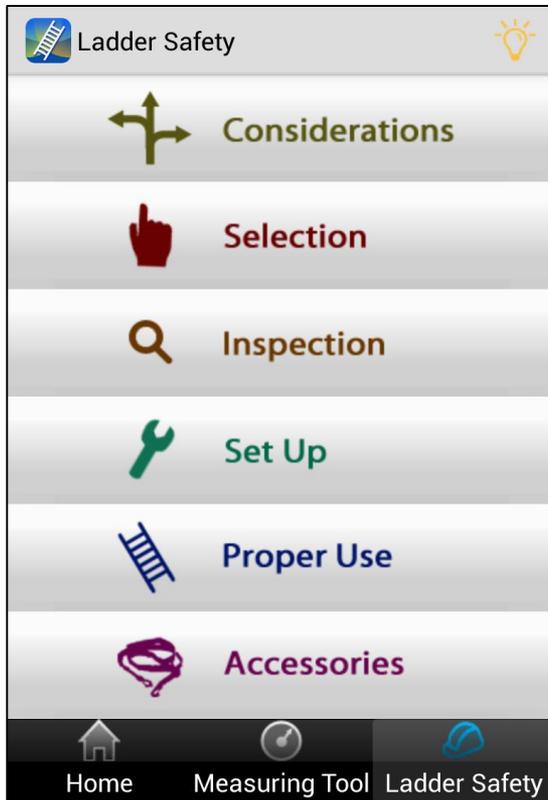


Ladder Safety App User's Manual (Android OS)



*National Institute for
Occupational Safety and
Health (NIOSH)*



DSFederal
CONNECTING THE DOTS
Produced by DSFederal Inc.

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Android App Installation

Instructions for loading the NIOSH Ladder Safety Android App:*

- Go to the [Google Play Store](http://play.google.com), <<http://play.google.com>>, on your Android phone
- Tap the Search icon (magnifying glass)
- Type 'Ladder Safety' in the search field
- Select the App by tapping the  Ladder Safety App icon
- Select INSTALL to download App to tablet or phone
- Once completely downloaded and installed, the App is ready to use
- Launch the Ladder Safety Android App

**Android version 2.2 or higher is required for using the Ladder Safety Android App.*

Home Screen: Ladder Application

Ladder Safety

National Institute for Occupational Safety and Health
NIOSH

This Ladder Safety application only covers straight/extension (non-self-supporting) portable ladders, and does not relate to safety of stepladders. The information in the application is based largely on the ANSI A14 Ladder Safety standards.

The application provides easy access to graphic aids, safety checklists, and reference information, to assist ladder users in making safe choices. The application can also be used with the phone as a tool to assist users in properly positioning a ladder at an optimal angle.

Warning! To ensure the accuracy of the angle measurement tool, please periodically check the app/phone system against a pre-verified vertical surface for a 90-degree reading. Immediately check the app/phone system if the phone has been dropped or exposed to any adverse condition.

To start, read the Disclaimer by tapping on the sign, and then select one of the icons at the bottom of the screen.

Home Measuring Tool Ladder Safety

The light blub toggles between high-contrast mode and normal mode.

Refer to the [Accessibility Features](#) section for more information.

This button shows the disclaimer.

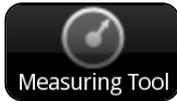
Disclaimer

National Institute for Occupational Safety and Health
NIOSH

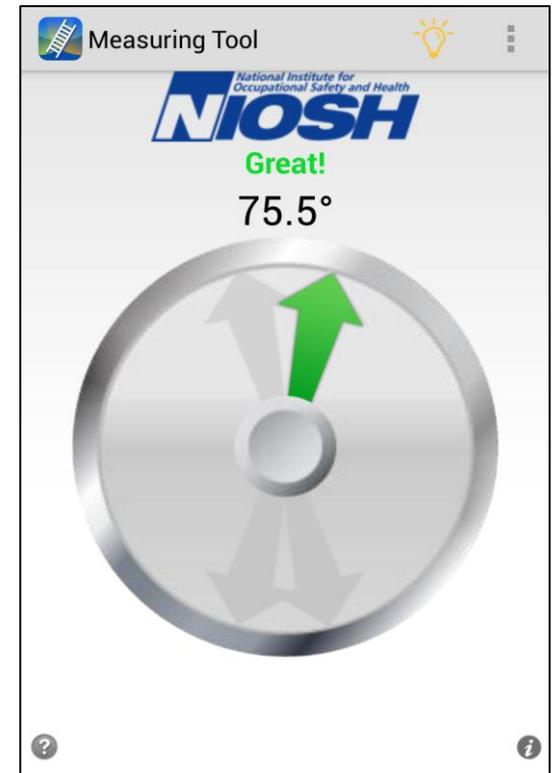
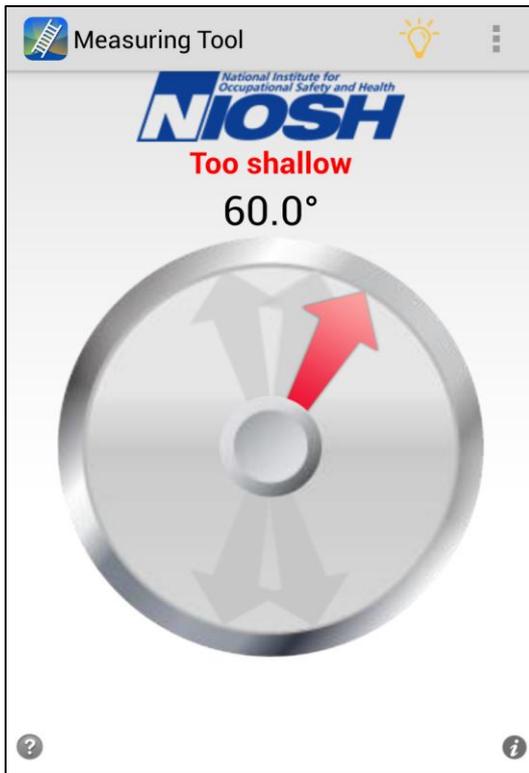
DISCLAIMER

NIOSH expressly disclaims any warranty for the Ladder Safety app. The Ladder Safety app is provided as is without any express or implied warranty of any kind, including but not limited to any warranties of merchantability, non-infringement, or fitness of a particular purpose. NIOSH does not warrant or assume responsibility for the accuracy or completeness of any information, text, graphics, links, or other items contained within the Ladder Safety app. NIOSH makes no warranties respecting any harm that may be caused by the transmission of a computer virus, worm, time bomb, logic bomb, or other such computer program. NIOSH further expressly disclaims any warranty or representation to Authorized Users or to any third party.

Home Measuring Tool Ladder Safety



Measuring Tool



The help page will show after tapping this icon.

The home page will show after tapping this icon.

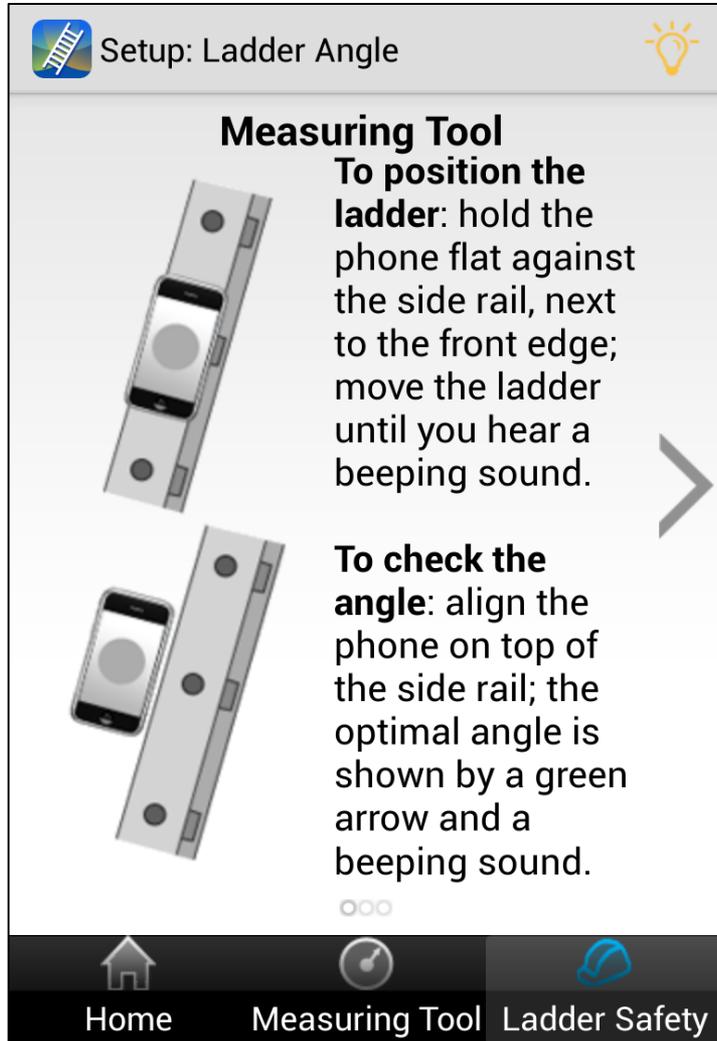
The user can press the  **Menu** button to display the navigation menus.

There will be a visual indication on the screen (red arrow) outside the range of ± 2 degrees from 75.5 degrees, indicating the ladder is not yet at the proper angle.

There will be an audible, constant tone along with a visual indication (green arrow) on the screen in the range of ± 2 degrees from 75.5 degrees indicating a “good” type of notice.

Measuring Tool

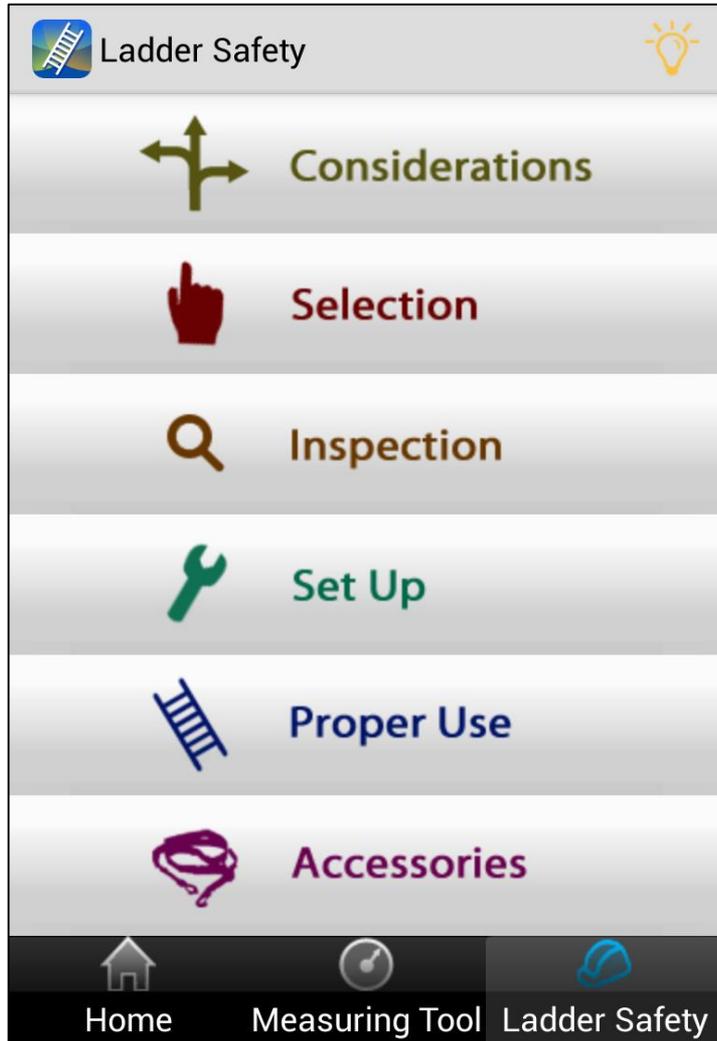
Help



The Measuring Tool **Help** button  opens the [Setup Ladder Angle – Measuring Tool](#) page.



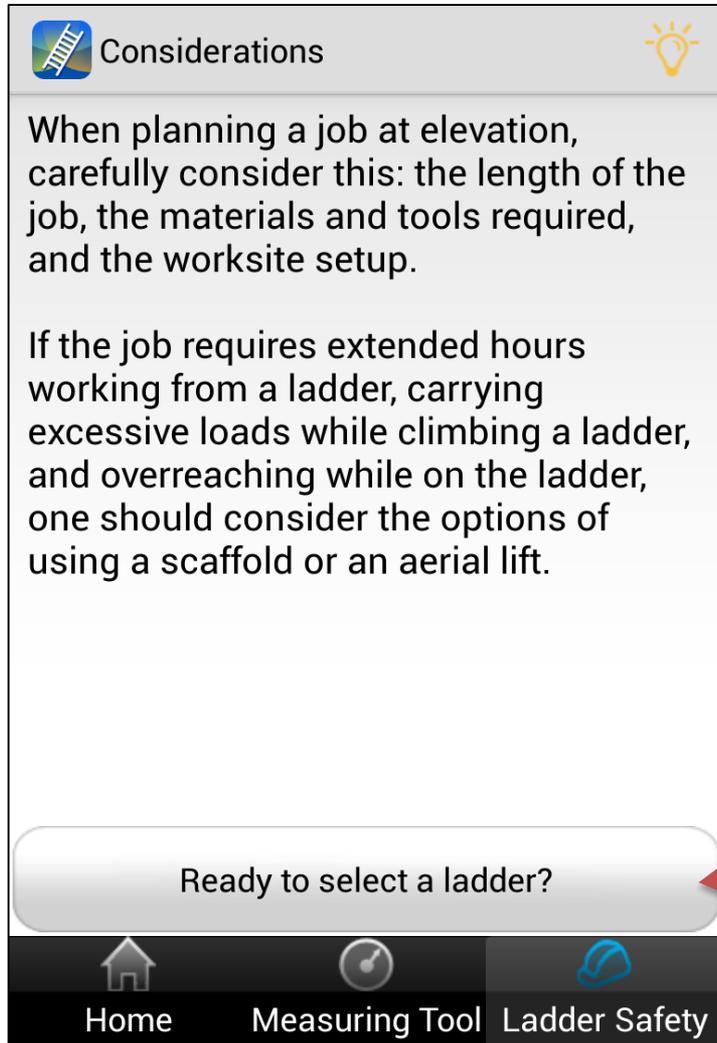
Ladder Safety



When the user taps the **Ladder Safety** button, a window will appear with options to go to the following screens:

- Screen 1: Considerations
- Screen 2: Selection
- Screen 3: Inspection
- Screen 4: Set Up
- Screen 5: Proper Use
- Screen 6: Accessories

Screen 1: Considerations



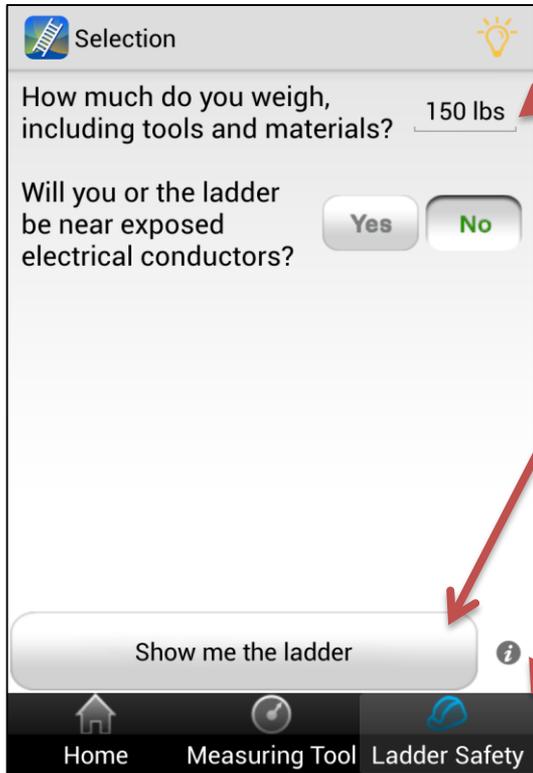
Considerations:

A series of suggestions will be presented:

- When planning a job at elevation, carefully consider:
 - The length of the job
 - The materials and tools required
 - The worksite setup
- Consider using a scaffold or an aerial lift if the job requires:
 - Extended hours working from a ladder
 - Carrying excessive loads while climbing a ladder
 - Overreaching while on the ladder

The Selection screen appears after tapping this button.

Screen 2: Selection



Questions

This button will open up a rolling graphics (like a slot machine) allowing the user to scroll through and select values for the weigh question.

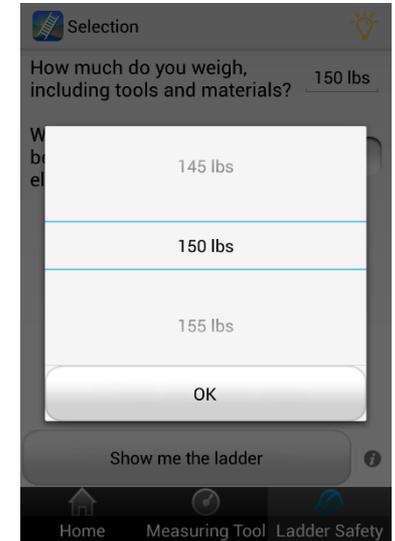
Response

Depending on the data entered, a ladder will be recommended when the user taps the **Show me the ladder** button.

- Light Duty Type III ≤ 200 lbs
- Medium Duty Type II ≤ 225 lbs
- Heavy Duty Industrial Type I ≤ 250 lbs
- Extra Heavy Duty Industrial Type IA ≤ 300 lbs
- Special Duty Rugged Professional Type IAA ≤ 375 lbs

Info

This button will open up a rolling window that shows the sample rating stickers.



Screen 2: Selection

Show Me The Ladder



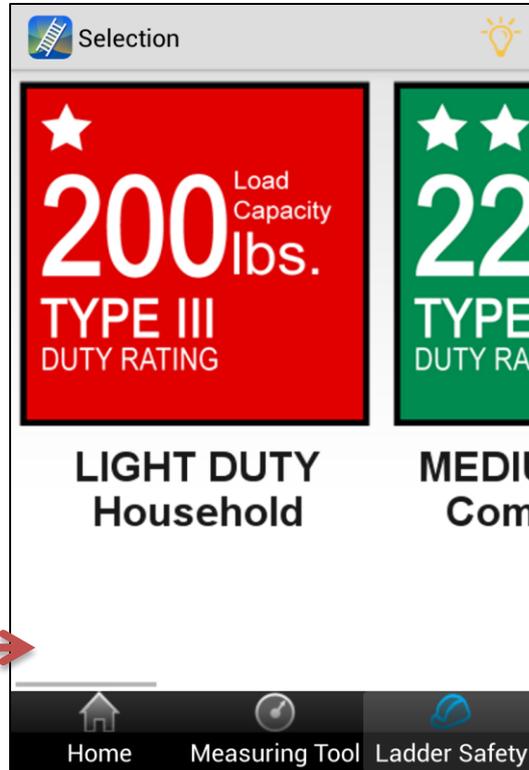
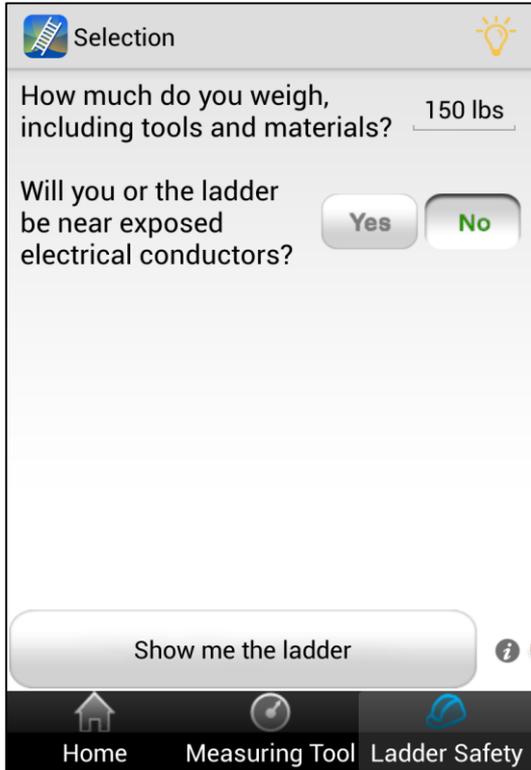
After tapping the **Show me the ladder** button, a written description of the ladder appears.

If an electrical hazard is present, the user will be advised to use a ladder made of non-conductive material.

The user may select new values and recalculate by tapping "Show me the ladder" again.

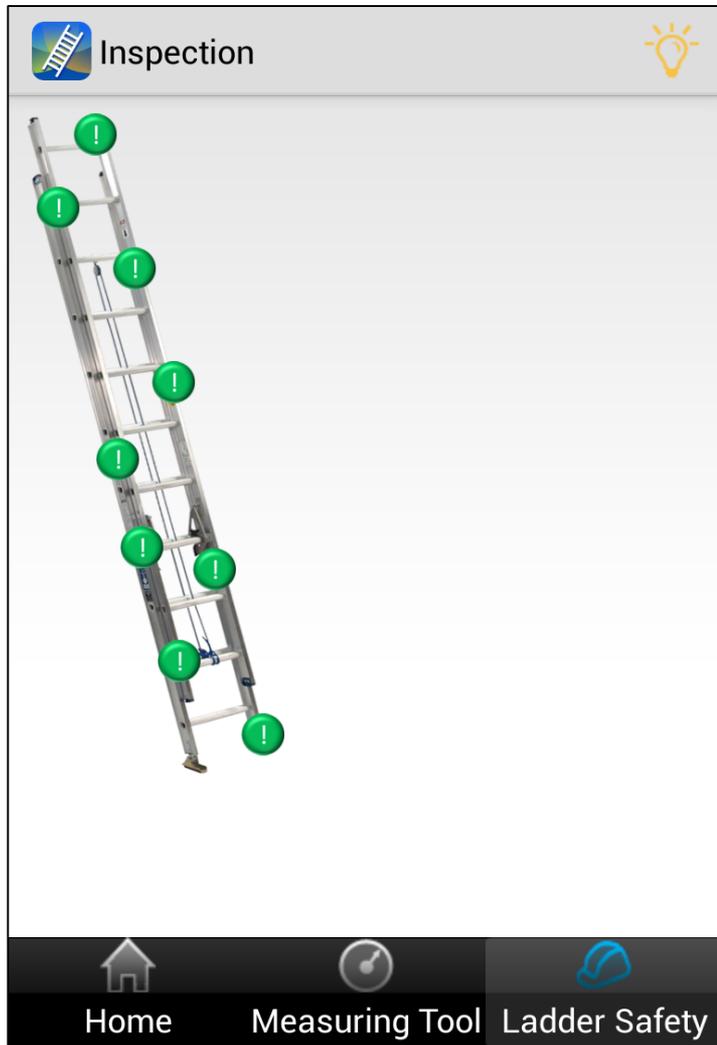
Screen 2: Selection

Sample Rating Stickers



The **Info** button opens a rolling window that shows sample rating stickers.

Screen 3: Inspection



Buttons

As the user rolls over each button, an enlarged image and a brief description of the types of damage to look for appears.

- End caps: missing or damaged
- Rungs and step connections: bends, breaks, loose rungs, or missing rungs
- Rope and Pulley: frayed or tangled
- Labels: missing or not readable
- Hardware: loose
- Rung Locks: broken and operates smoothly
- Surfaces: oily, greasy, rusty, or corroded
- Rails: cracks, bends, splits, or corroded
- Feet: missing, worn, or damaged shoes, missing slip-resistant pads, and operates smoothly

After each button is viewed, the color of the button will change. When the user attempts to leave this screen before viewing all of the areas, a message encouraging the user to view all remaining buttons will appear.

Screen 3: Inspection (cont'd)

Inspection



End Caps



End caps should not be missing or damaged.

Home Measuring Tool Ladder Safety

Inspection



Rungs & Step Connections



Look for:

- Bends
- Breaks
- Loose rungs
- Missing rungs

Home Measuring Tool Ladder Safety

Inspection



Rope & Pulley



Look for:

- Fraying
- Tangles

Home Measuring Tool Ladder Safety

Inspection



Labels



Are they:

- Missing?
- Not readable?

Home Measuring Tool Ladder Safety

Inspection



Hardware



Look for:

- Loose hardware

Home Measuring Tool Ladder Safety

Inspection



Surfaces



Are they:

- Oily?
- Greasy?
- Rusty?
- Corroded?

Home Measuring Tool Ladder Safety

Inspection



Rung Locks



Look for

- Broken rung locks

Rung locks should operate smoothly.

Home Measuring Tool Ladder Safety

Inspection



Rails



Look for:

- Cracks
- Bends
- Splits
- Corrosion

Home Measuring Tool Ladder Safety

Inspection



Feet



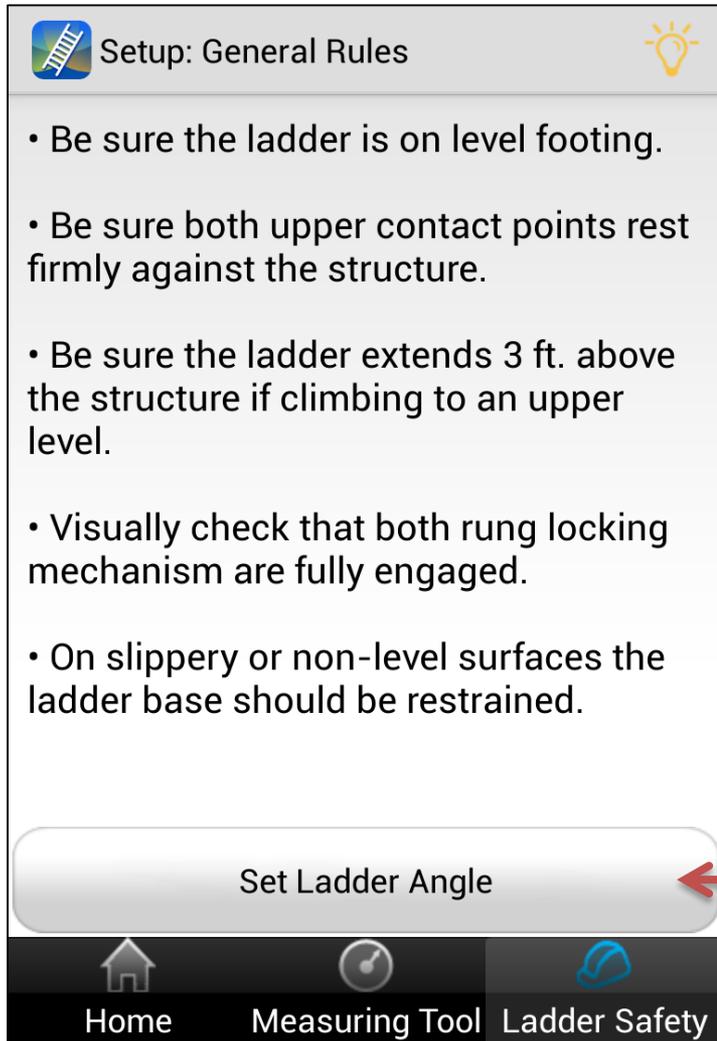
Look for:

- Missing, worn, or damaged shoes
- Missing slip-resistant

Feet should rotate smoothly.

Home Measuring Tool Ladder Safety

Screen 4: Setup

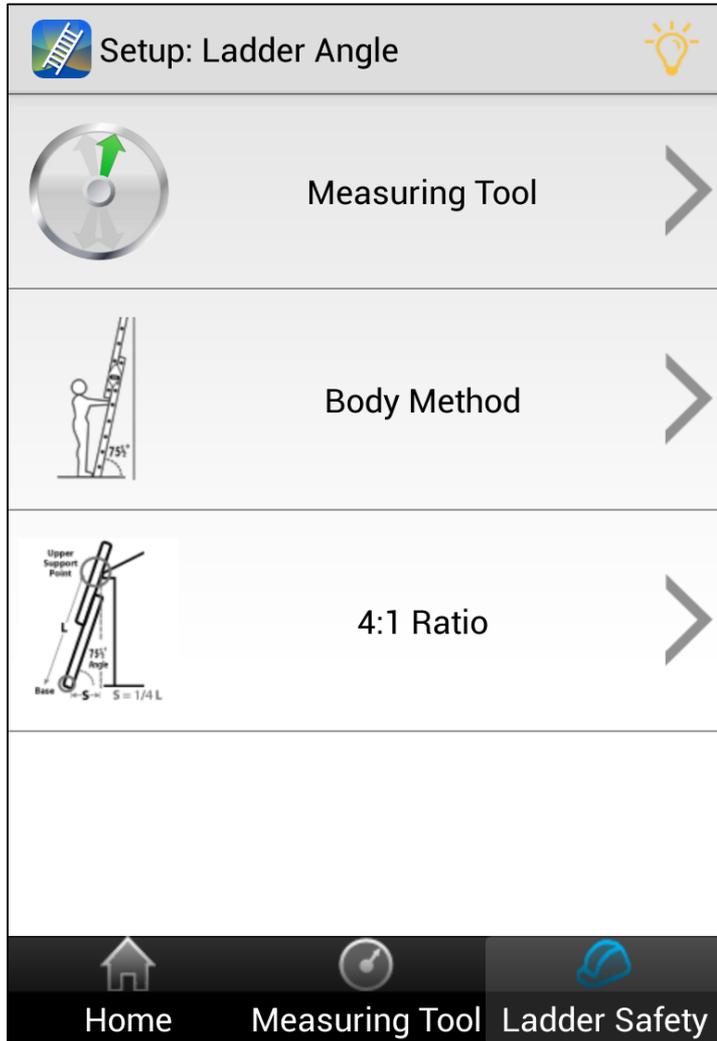


This screen provides tips for level footing, contact with the structure, and locking mechanisms.

- Be sure the ladder is on level footing
- Be sure both upper contact points rest firmly against the structure
- Be sure the ladder extends 3 ft. above the structure if climbing to an upper level
- Visually check that both rung locking mechanism are fully engaged
- On slippery or non-level surfaces the ladder base should be restrained

To find out how to setup the ladder properly, tap the **Set Ladder Angle** button.

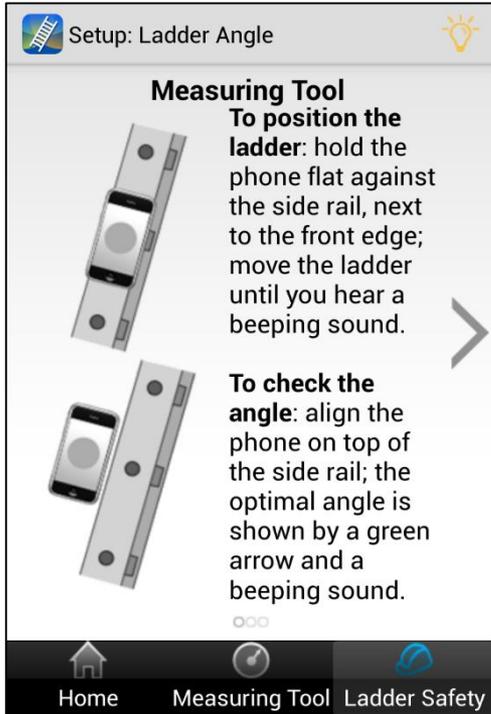
Screen 4: Setup (cont'd)



This screen provides three methods for proper ladder setup. To find out more, tap the following buttons:

- Measuring Tool
- Body Method
- 4:1 ratio

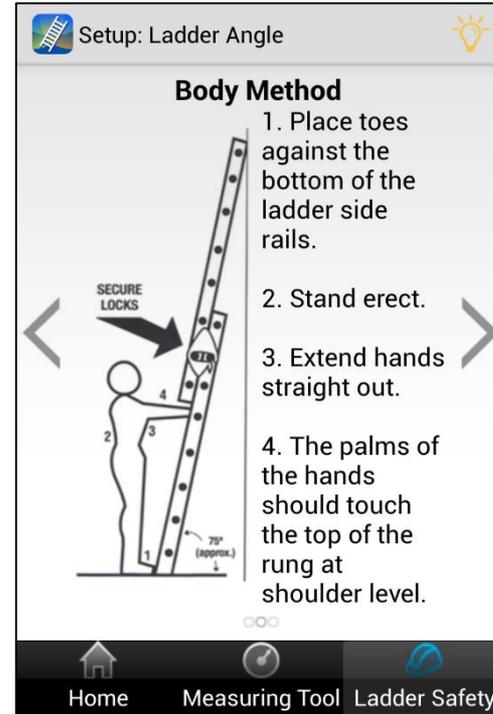
Screen 4: Setup (cont'd)



Measuring Tool

After touching the Measuring Tool icon, a large image appears with the instructions displayed on the right.

Instructions: *To position the ladder: hold the phone flat against the side rail, next to the front edge; move the ladder until you hear a beeping sound. To check the angle: align the phone on top of the side rail; the optimal angle is shown by a green arrow and a beeping sound.*



Body Method

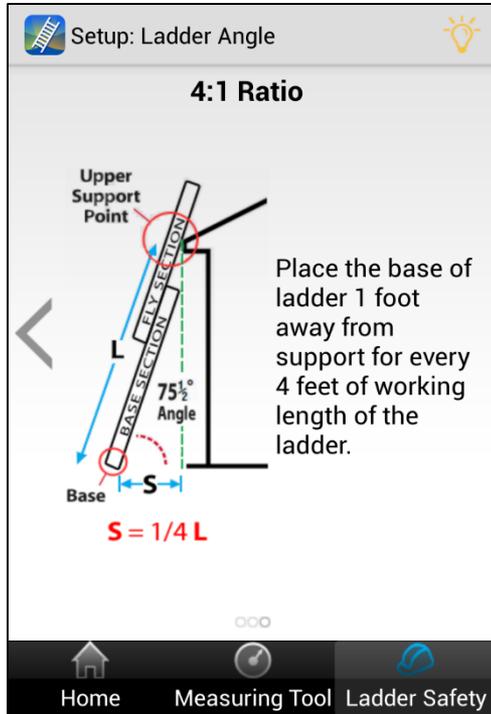
After touching the Body Method icon, a large image appears with the instructions displayed on the right.

Instructions:

1. Place toes against the bottom of the ladder side rails.
2. Stand erect.
3. Extend hands straight out.
4. The palms of the hands should touch the top of the rung at shoulder level.

The user can also swipe through each method.

Screen 4: Setup (cont'd)



4:1 Ratio

After touching the 4:1 Ratio icon, a large image appears with the instructions displayed on the right.

Instructions: Place base of ladder 1 foot away from support for every 4 feet of working length of the ladder.

The user can swipe through each method.

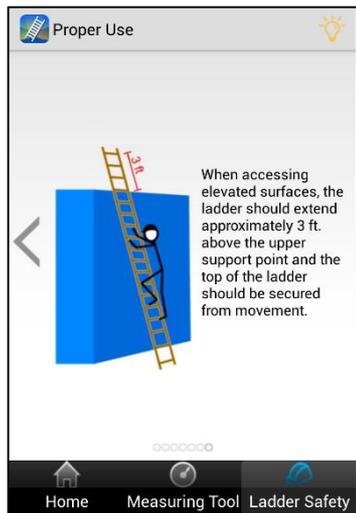
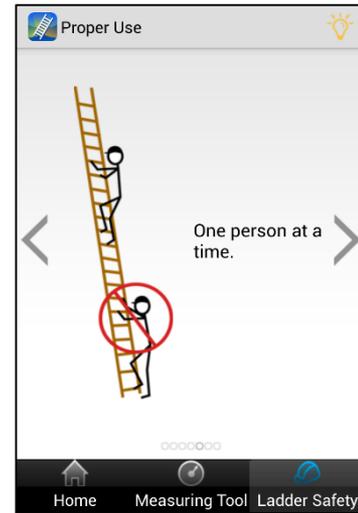
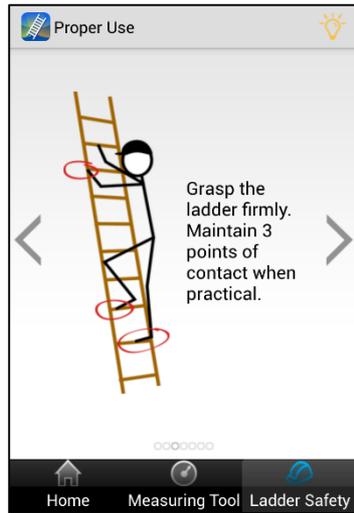
Screen 5: Proper Use



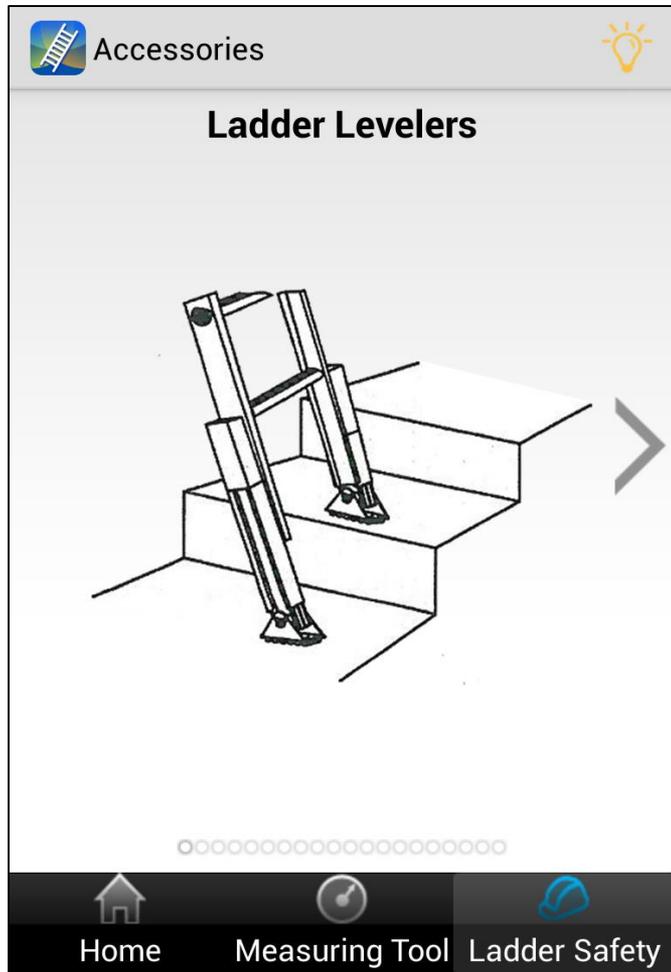
To view all of the images, swipe the page.

- Face ladder going up and coming down
- Keep centered between rails and avoid leaning, stretching, or making moves that could throw you off balance
- Grasp the ladder firmly. Maintain 3-point contact when practical
- Do not carry excessive loads – it may increase your risk of falling
- One person at a time
- Don't stand on top 3 rungs
- When accessing elevated surfaces, the ladder should extend approximately 3 ft. above the upper support point and the top of the ladder should be secured from movement

Screen 5: Proper Use (cont'd)



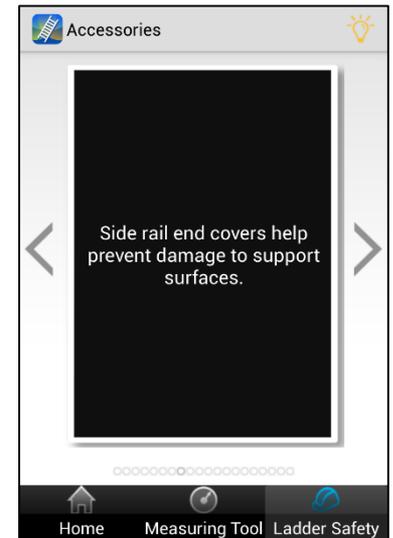
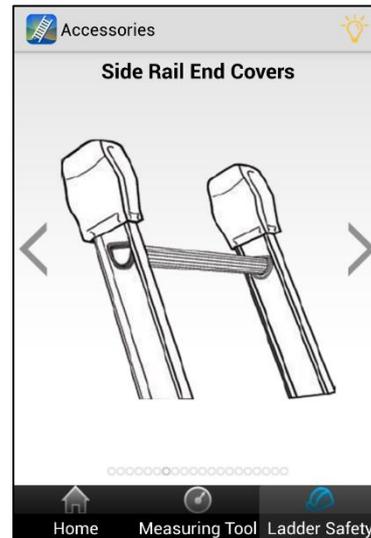
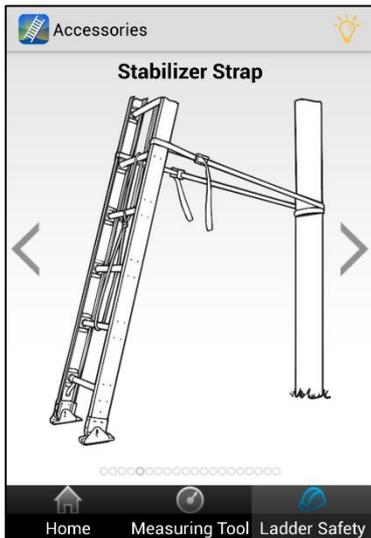
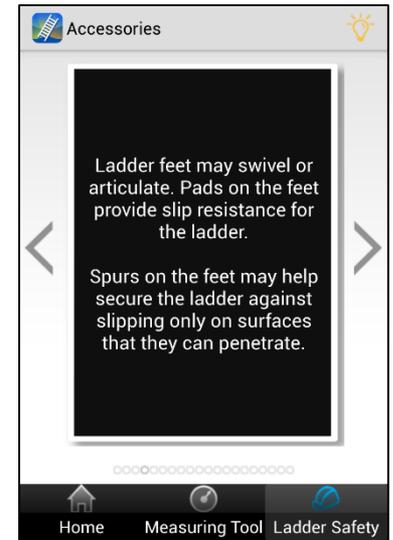
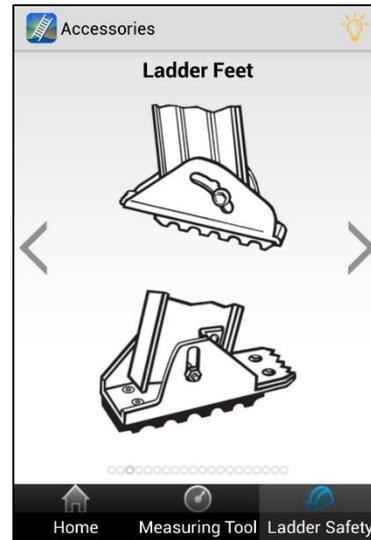
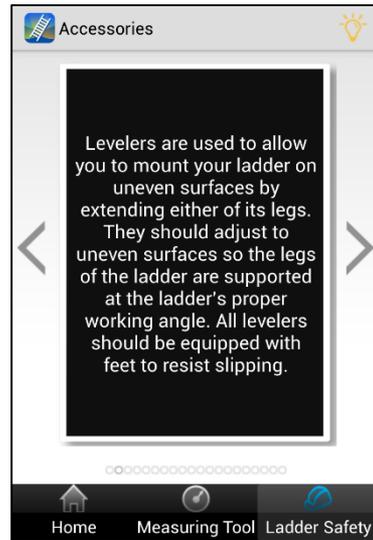
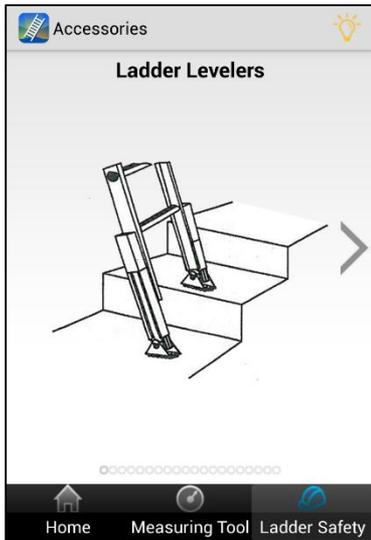
Screen 6: Accessories



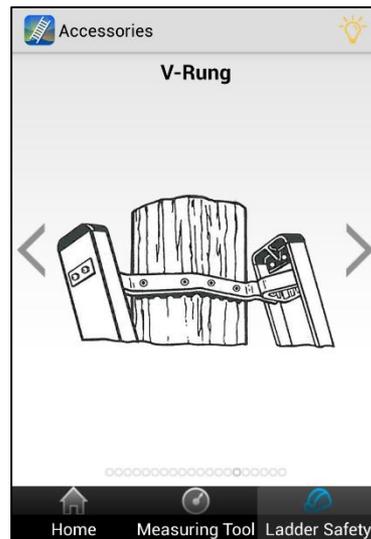
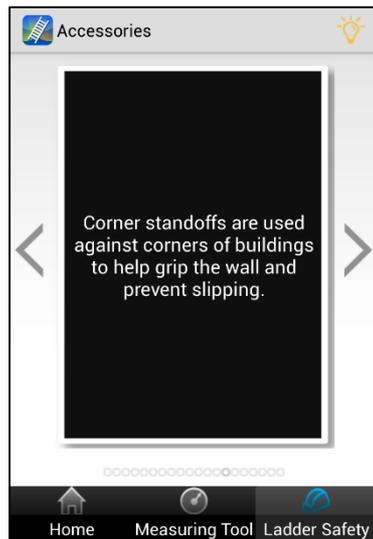
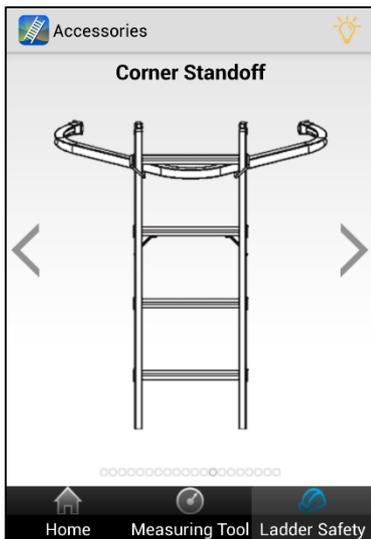
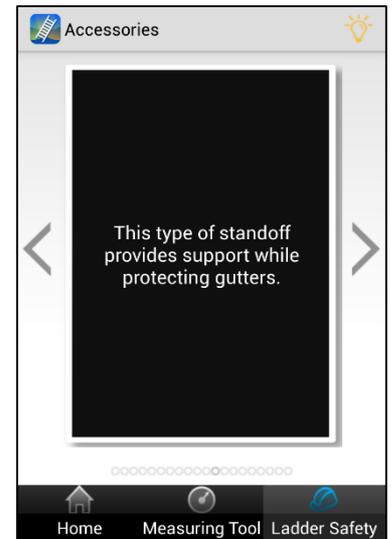
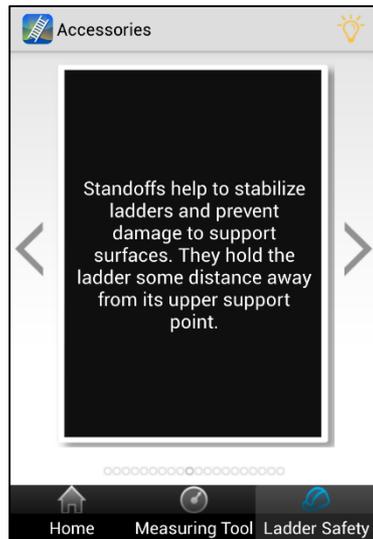
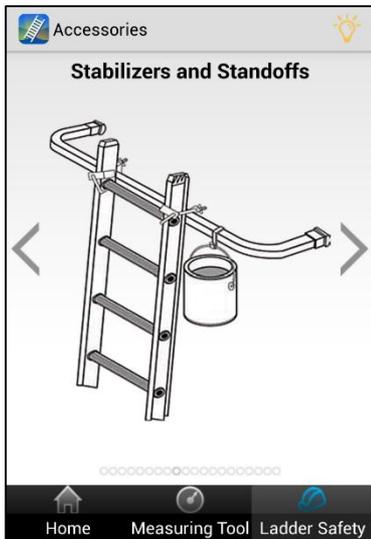
To view the following images and descriptions, swipe the page.

- Ladder levelers
- Ladder feet, spurs, and spur plates
- Stabilizer straps
- Side rail end covers
- Standoffs
- Gutter protectors
- Corner standoff
- V-rungs
- Pole chain and pole lashes
- Cable (strand) hooks

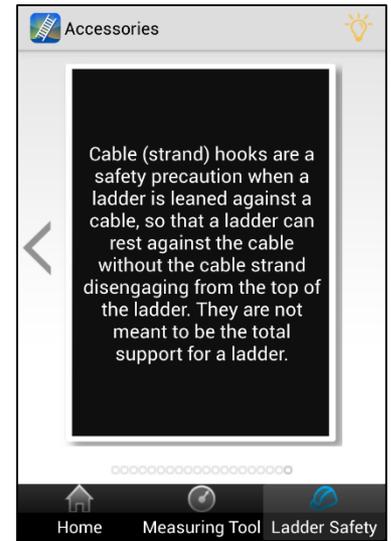
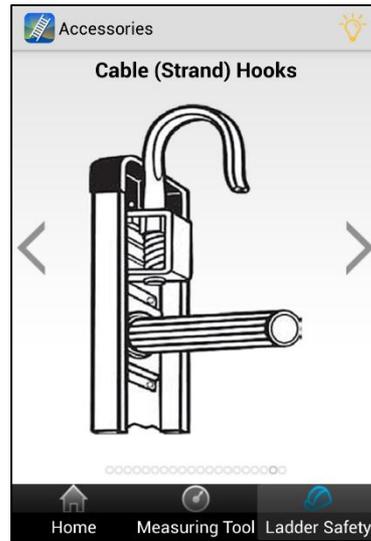
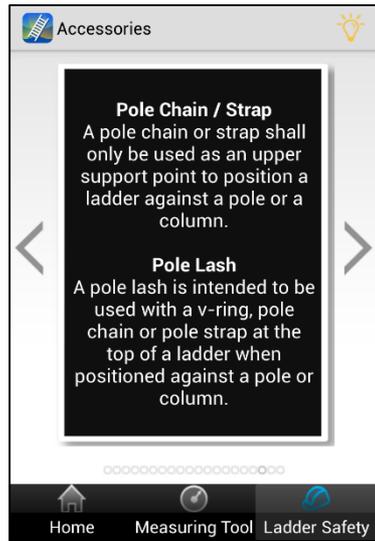
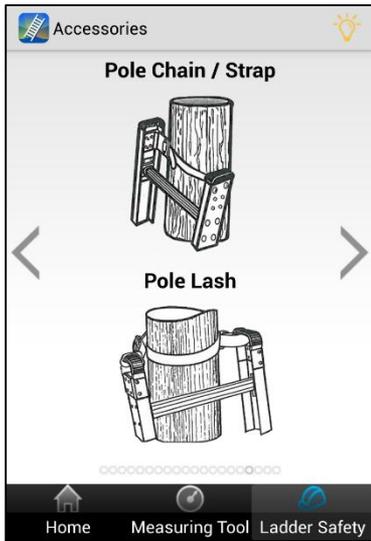
Screen 6: Accessories (cont'd)



Screen 6: Accessories (cont'd)



Screen 6: Accessories (cont'd)

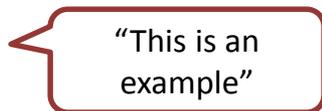


Accessibility Features

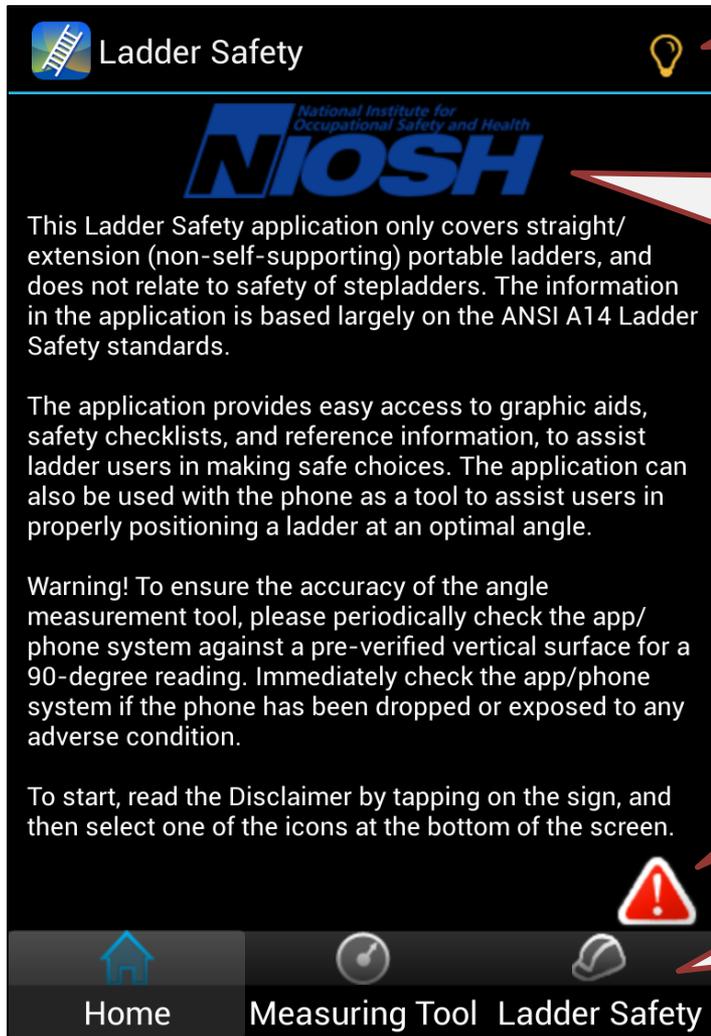
The Ladder Safety app features a high-contrast mode and is compatible with TalkBack, Explore by Touch, and similar Accessibility Services.

Please refer to your device manual for instructions to enable the Accessibility Services.

** The speech bubbles, similar to the one below, will denote the TalkBack and Explore by Touch responses.*



Home Screen: Ladder Application



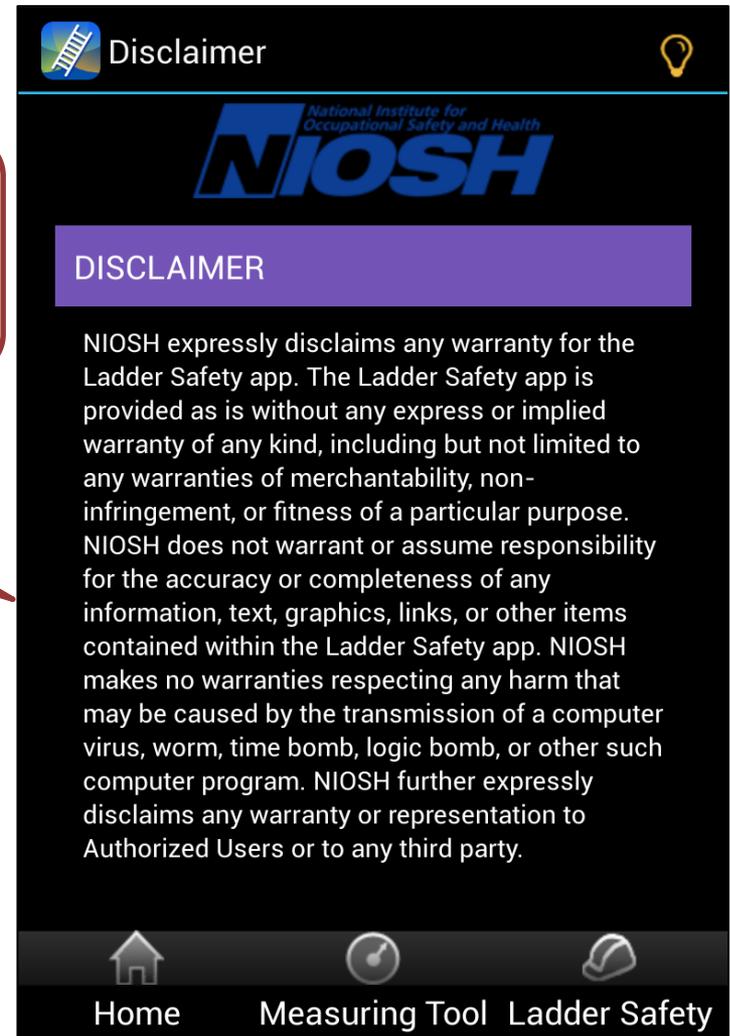
"High contrast"

"NIOSH, National Institute for Occupational Safety and Health"

The text displayed on the screen

"Disclaimer"

The labels for the associated button



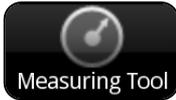
DISCLAIMER

NIOSH expressly disclaims any warranty for the Ladder Safety app. The Ladder Safety app is provided as is without any express or implied warranty of any kind, including but not limited to any warranties of merchantability, non-infringement, or fitness of a particular purpose. NIOSH does not warrant or assume responsibility for the accuracy or completeness of any information, text, graphics, links, or other items contained within the Ladder Safety app. NIOSH makes no warranties respecting any harm that may be caused by the transmission of a computer virus, worm, time bomb, logic bomb, or other such computer program. NIOSH further expressly disclaims any warranty or representation to Authorized Users or to any third party.

Home

Measuring Tool

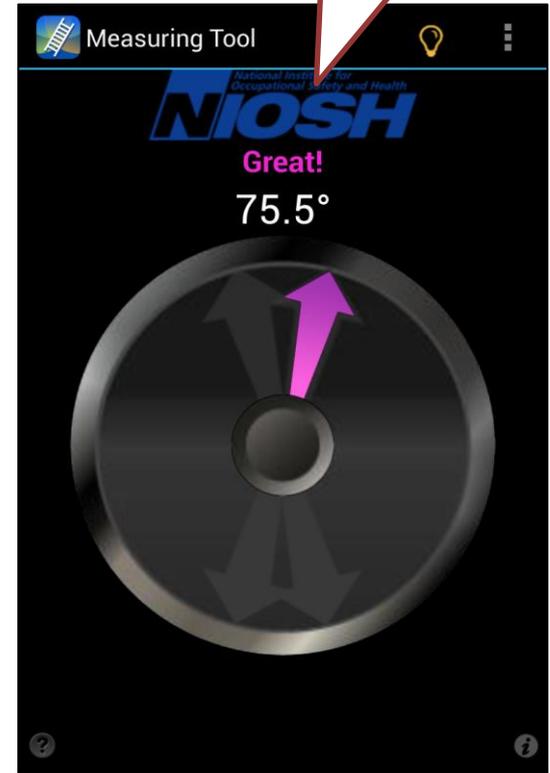
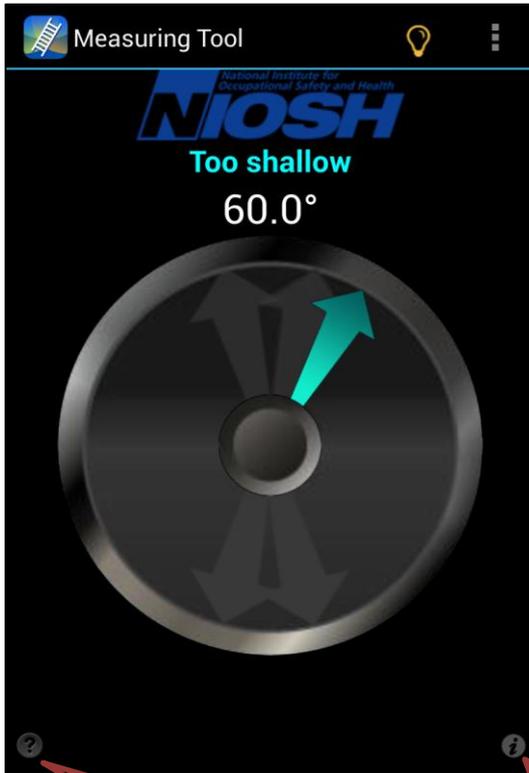
Ladder Safety



Measuring Tool

All text displayed will read aloud the associated text.

“NIOSH, National Institute for Occupational Health and Safety



“Help”

“Home”

Measuring Tool

Help

Setup: Ladder Angle

Measuring Tool

To position the ladder: hold the phone flat against the side rail, next to the front edge; move the ladder until you hear a beeping sound.

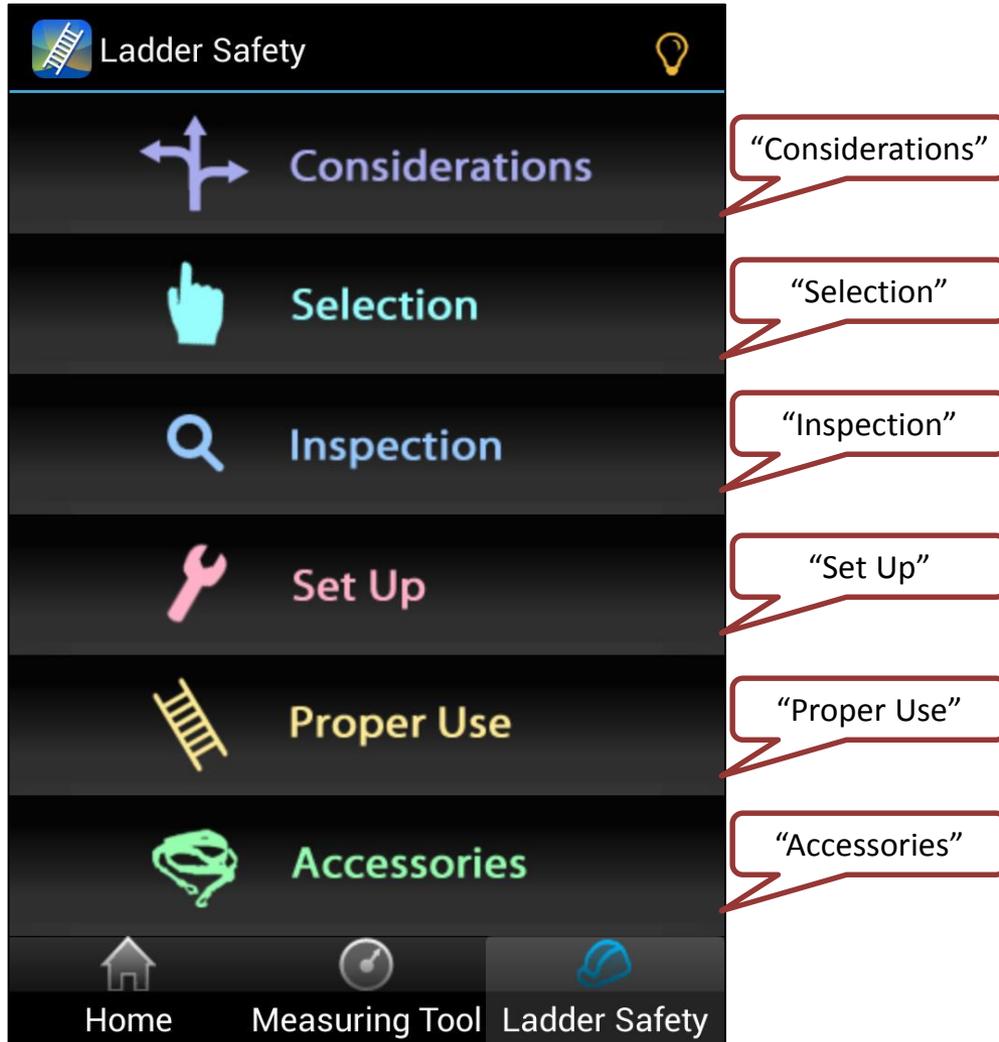
To check the angle: align the phone on top of the side rail; the optimal angle is shown by a green arrow and a beeping sound.

Home Measuring Tool Ladder Safety

The text display as displayed.



Ladder Safety

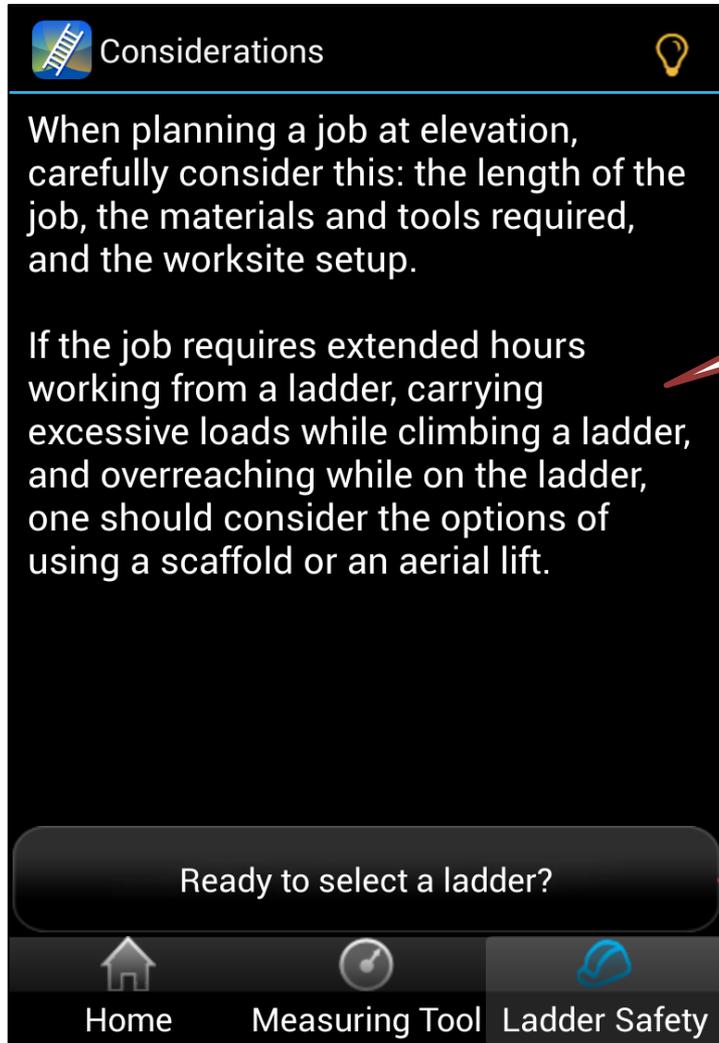


The screenshot shows a mobile application interface for "Ladder Safety". At the top, there is a header with a ladder icon, the text "Ladder Safety", and a lightbulb icon. Below the header is a list of six menu items, each with a distinct icon and a corresponding callout box:

- Considerations**: Represented by a purple icon of a three-way fork. Callout: "Considerations"
- Selection**: Represented by a cyan icon of a hand pointing. Callout: "Selection"
- Inspection**: Represented by a blue magnifying glass icon. Callout: "Inspection"
- Set Up**: Represented by a pink wrench icon. Callout: "Set Up"
- Proper Use**: Represented by a yellow ladder icon. Callout: "Proper Use"
- Accessories**: Represented by a green icon of a safety harness. Callout: "Accessories"

At the bottom of the screen is a navigation bar with three tabs: "Home" (with a house icon), "Measuring Tool" (with a dial icon), and "Ladder Safety" (with a blue hard hat icon).

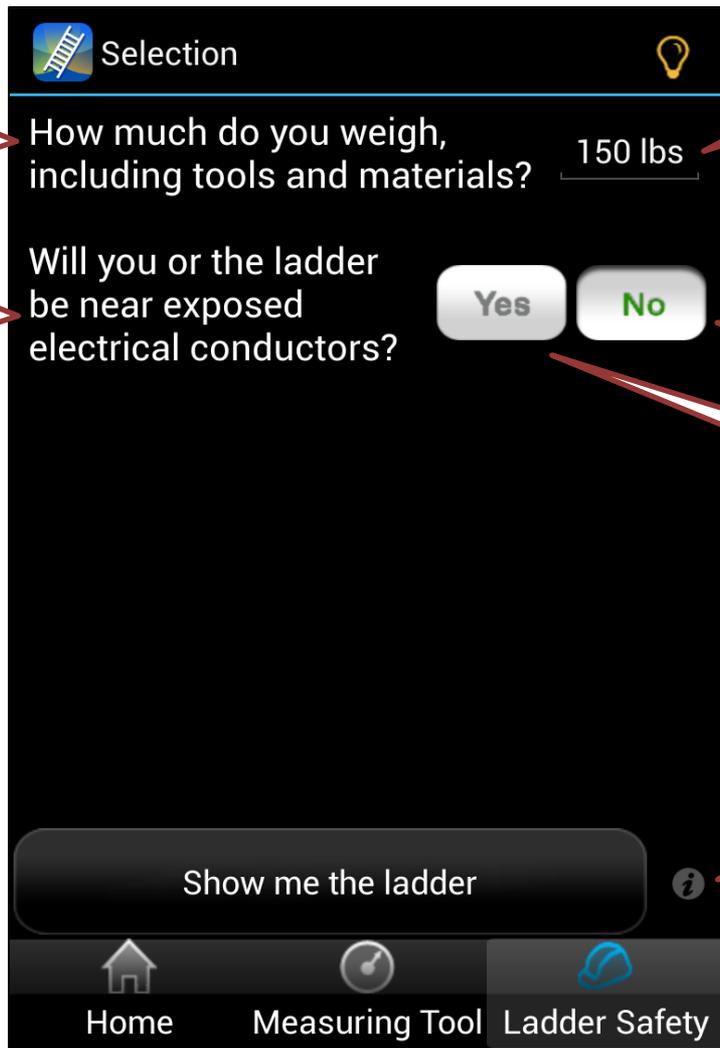
Screen 1: Considerations



The text as it appears on the screen.

“Ready to select a ladder”

Screen 2: Selection



The question as shown on the screen

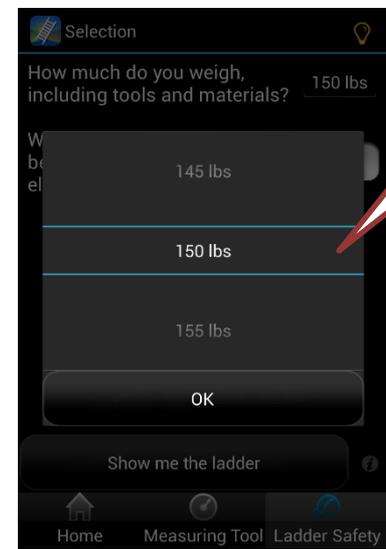
The question as shown on the screen

The weight displayed (e.g., "150 pounds")

"No"

"Yes"

"Info"



The weight displayed (e.g., "150 pounds")

Screen 2: Selection

Show Me The Ladder



“Recommended ladder, minimum grade required, 200 pounds load capacity, type 3 duty rating, light duty household.”



“Recommended ladder, minimum grade required, 200 pounds load capacity, type 3 duty rating, light duty household. Important, use a ladder made of non-conductive material.”

A similar text is read aloud for the Type II, Type I, Type IA, and Type IAA stickers

Screen 2: Selection

Sample Rating Stickers



Below is the transcript for all rating stickers.

Type 3: “200 pounds load capacity, type 3 duty rating, light duty household.”

Type 2: “225 pounds load capacity, type 2 duty rating, medium duty household.”

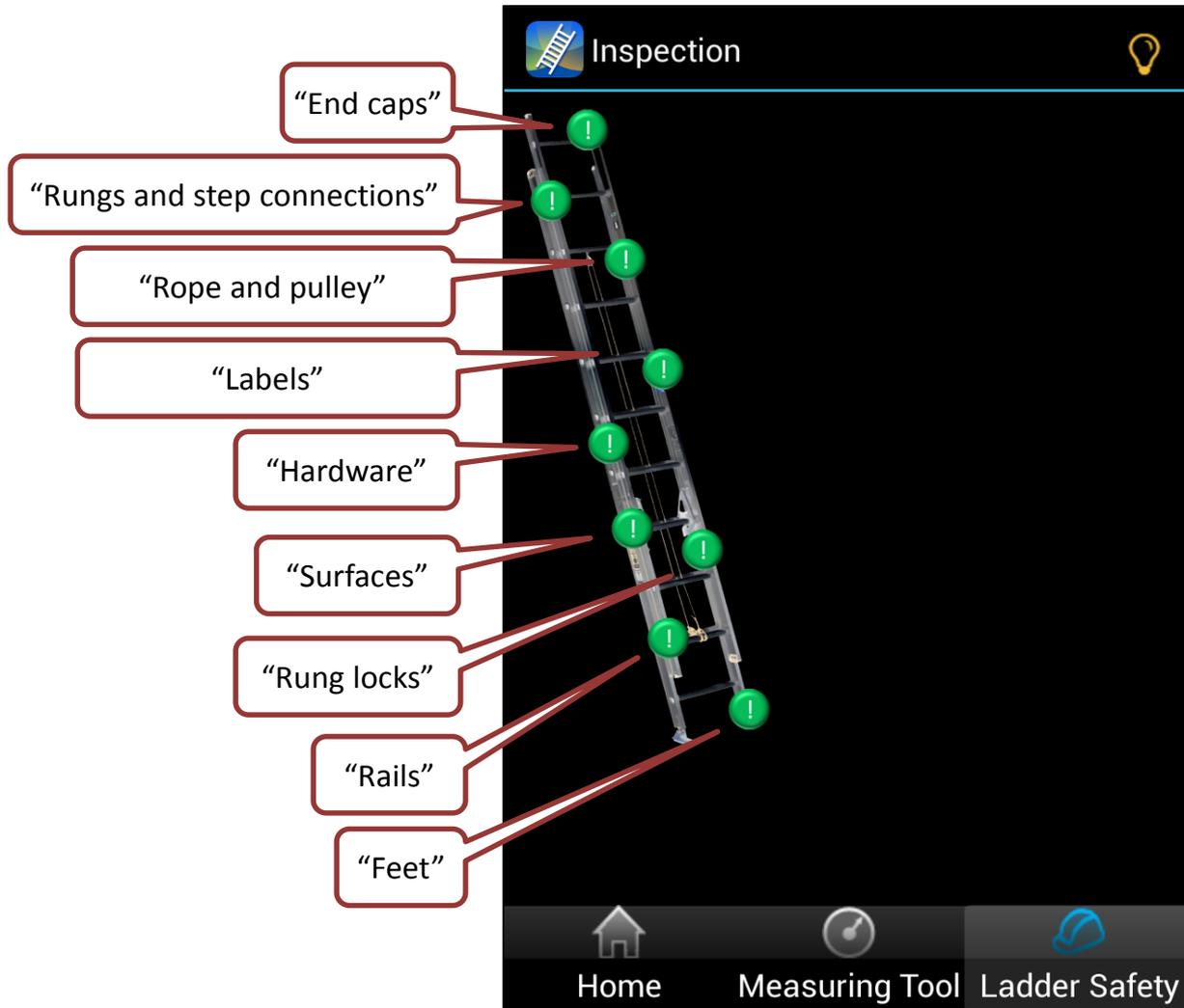
Type 1: “250 pounds load capacity, type 1 duty rating, heavy duty industrial.”

Type 1A: “300 pounds load capacity, type 1A duty rating, extra heavy duty industrial.”

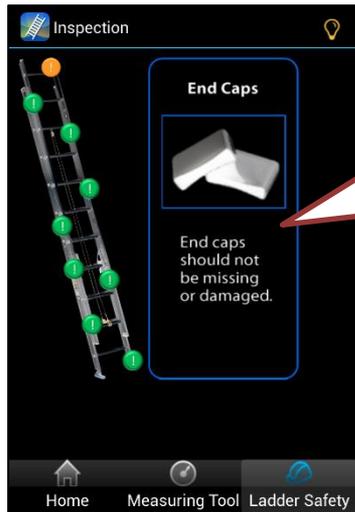
Type 1AA: “375 pounds load capacity, type 1AA duty rating, special duty industrial.”

“200 pounds load capacity, type 3 duty rating, light duty household.”

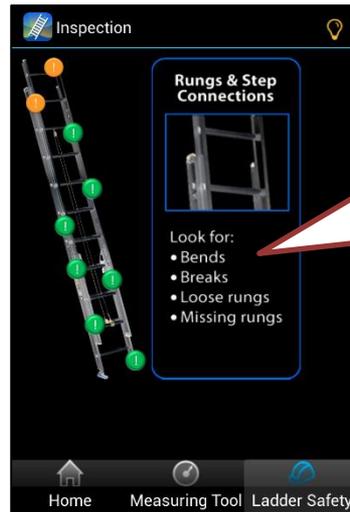
Screen 3: Inspection



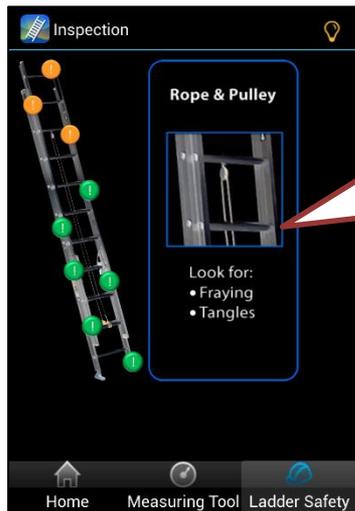
Screen 3: Inspection (cont'd)



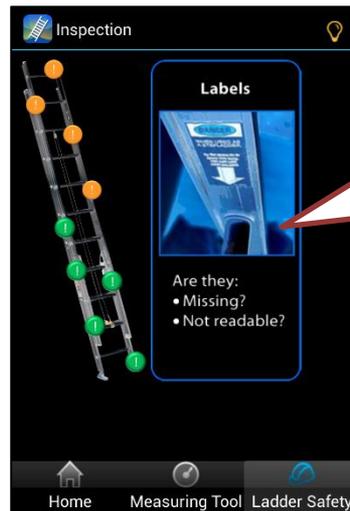
“End caps should not be missing or damaged”



“Look for bends, breaks, loose rungs, and missing rungs on the rungs and step connections”

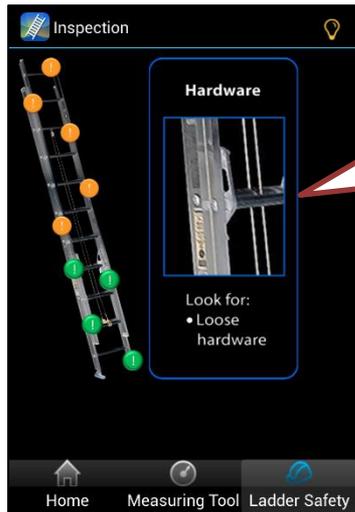


“Look for fraying and tangles on the rope and pulley”

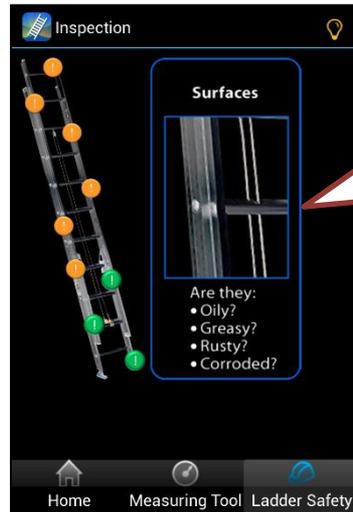


“Are labels missing or not readable?”

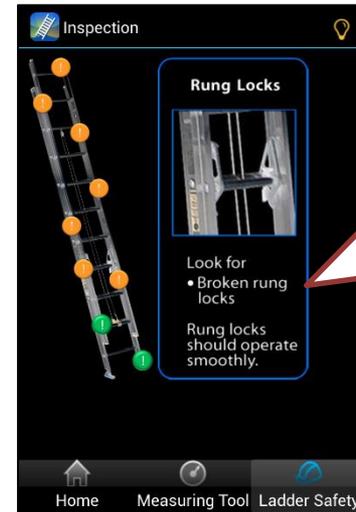
Screen 3: Inspection (cont'd)



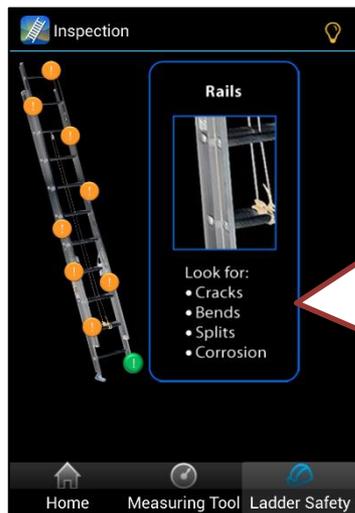
“Look for loose hardware”



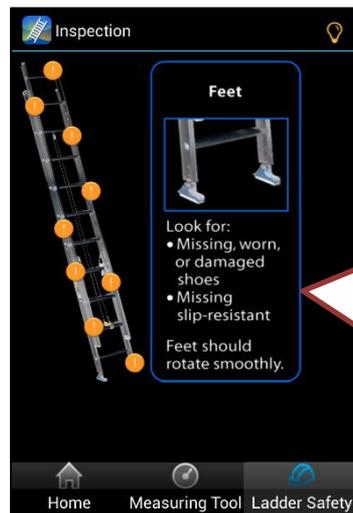
“Are the surfaces oily, greasy, rusty, or corroded?”



“Look for broken rung locks. Rung locks should operate smoothly.”



“Look for cracks, bends, splits, and corrosion on the rails”



“Look for missing, worn, or damaged shoes on the feet. Look for missing slip-resistant on the feet. The feet should rotate smoothly”

Screen 4: Setup

Setup: General Rules

- Be sure the ladder is on level footing.
- Be sure both upper contact points rest firmly against the structure.
- Be sure the ladder extends 3 ft. above the structure if climbing to an upper level.
- Visually check that both rung locking mechanism are fully engaged.
- On slippery or non-level surfaces the ladder base should be restrained.

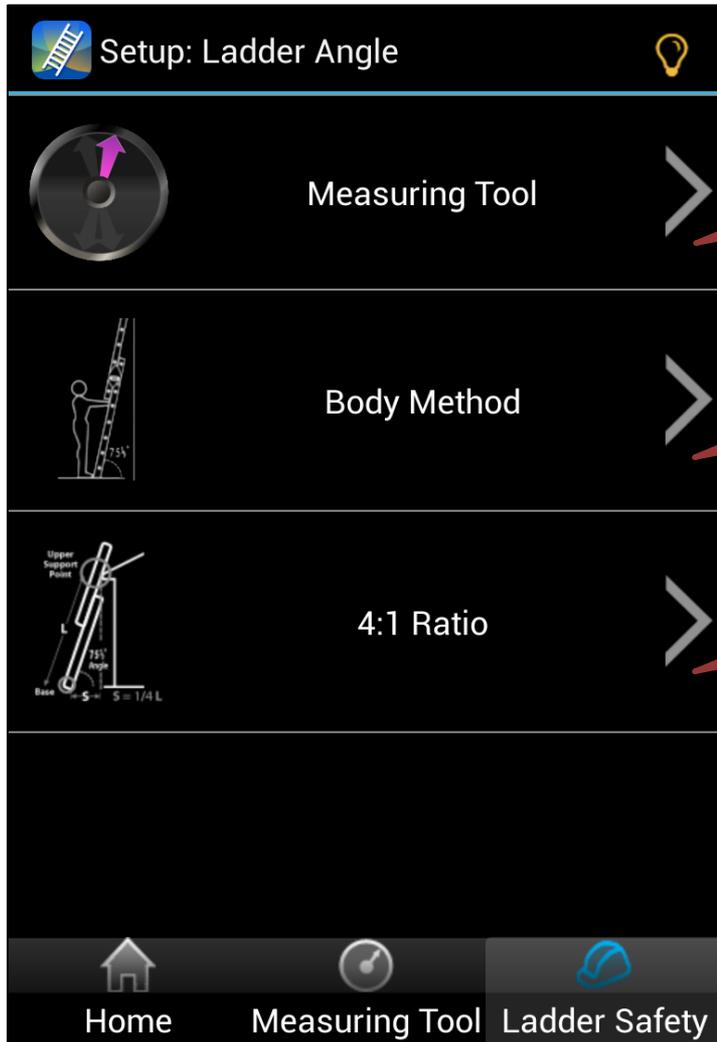
Set Ladder Angle

Home Measuring Tool Ladder Safety

The tips as shown on the screen

“Set ladder angle”

Screen 4: Setup (cont'd)

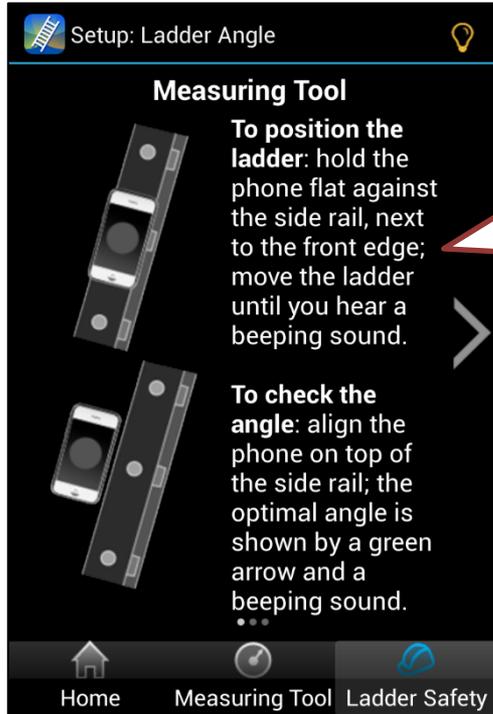


“How to use the measuring tool”

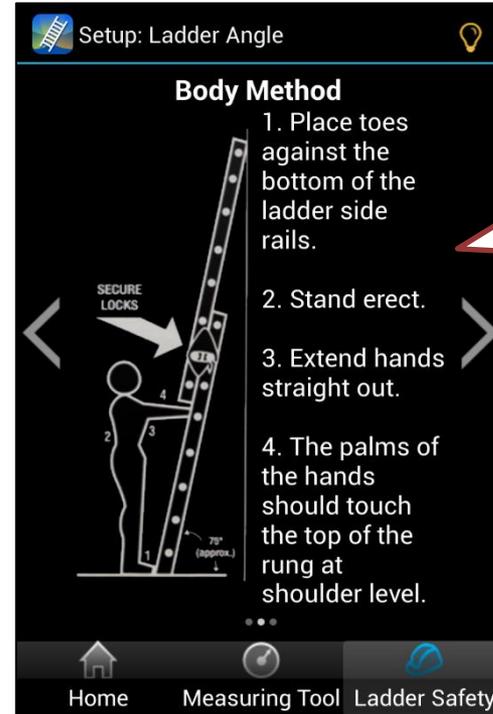
“How to use the body method”

“How to use the four to one ratio”

Screen 4: Setup (cont'd)

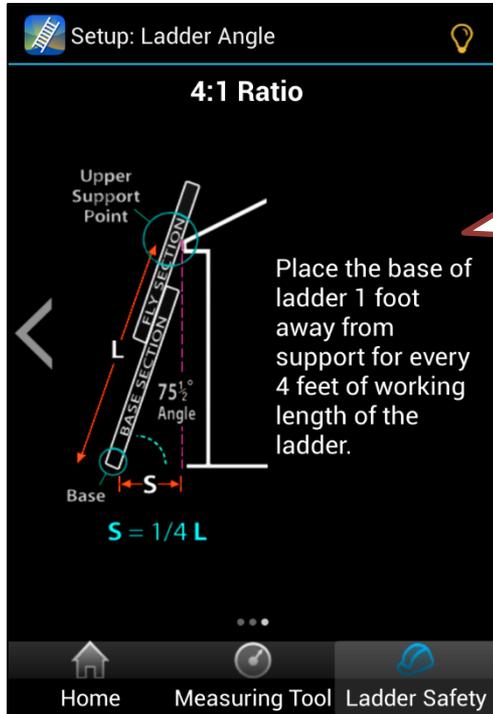


The instructions as it appears on the screen.



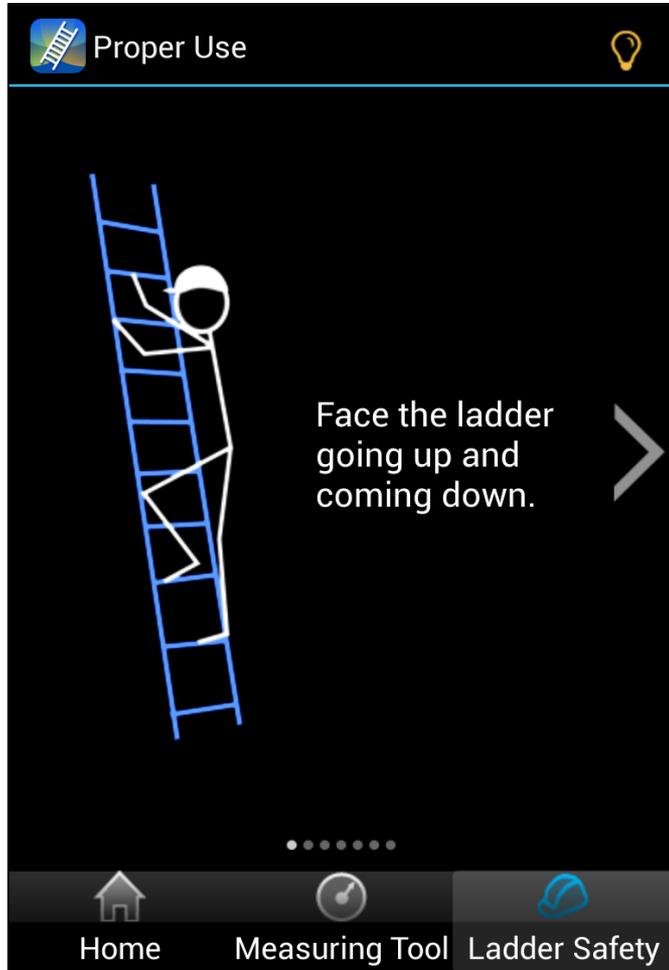
The instructions as it appears on the screen.

Screen 4: Setup (cont'd)



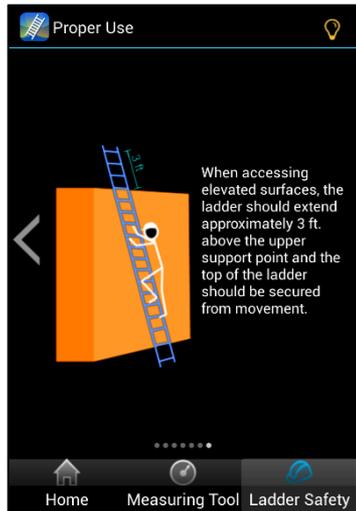
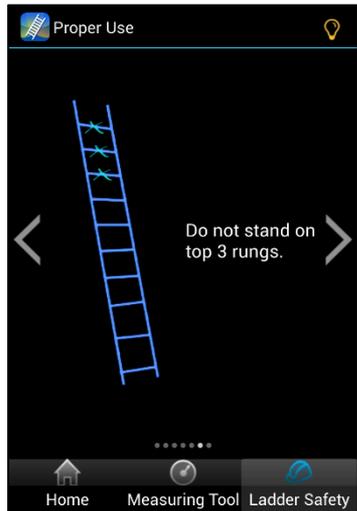
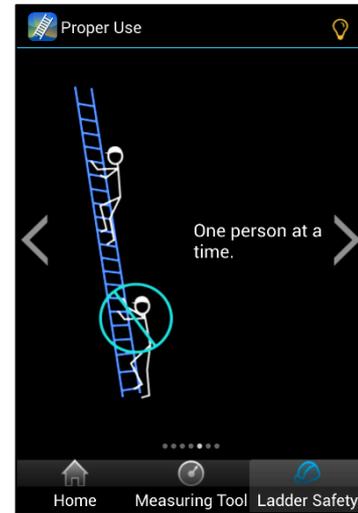
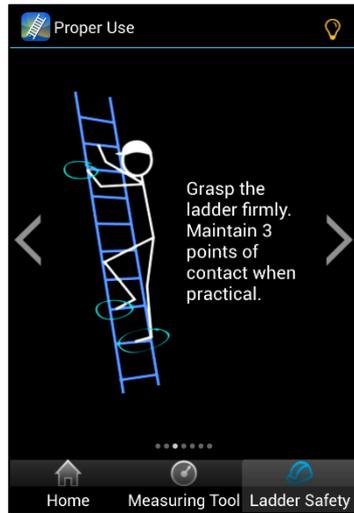
The instructions as it appears on the screen.

Screen 5: Proper Use

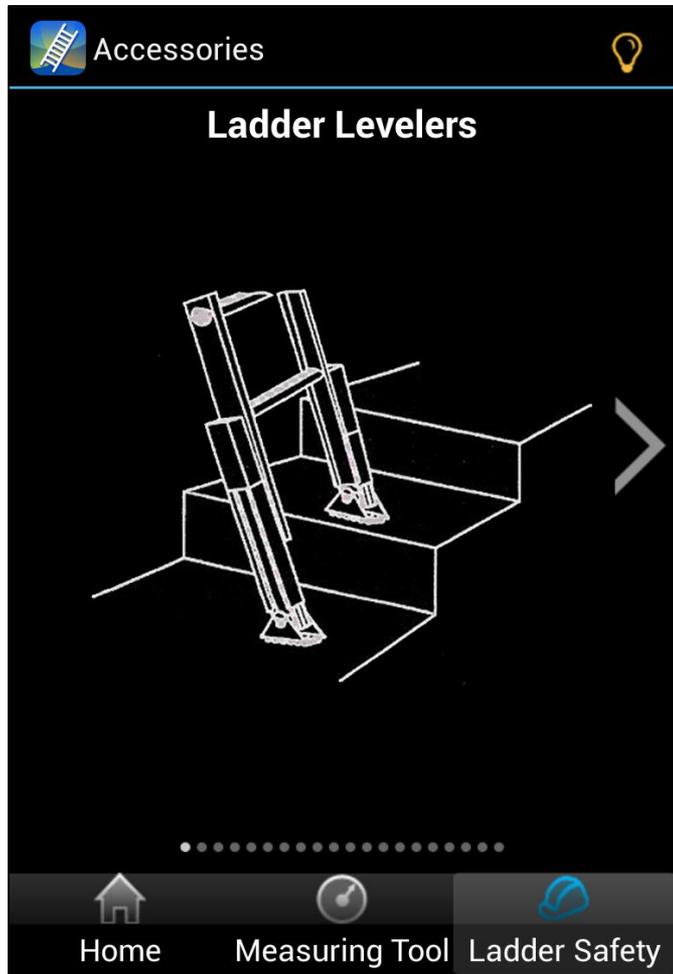


For all Proper Use screens, the instructions read aloud is the same as the text.

Screen 5: Proper Use (cont'd)



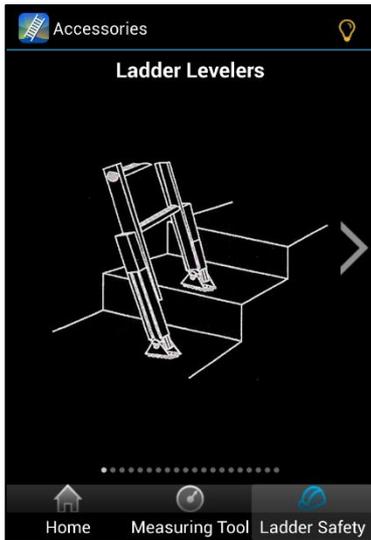
Screen 6: Accessories



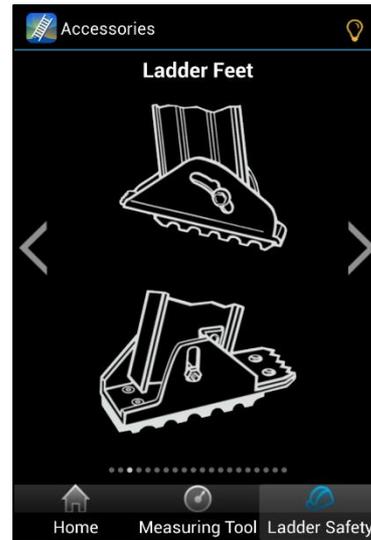
For all accessories images, the text read aloud will be the same as the caption.

For every accessories description, the text read aloud will be the same as the text that is on the screen.

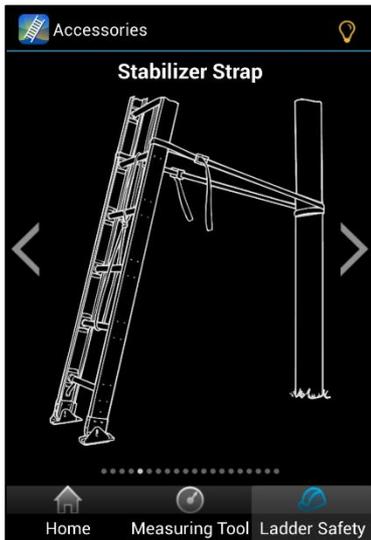
Screen 6: Accessories (cont'd)



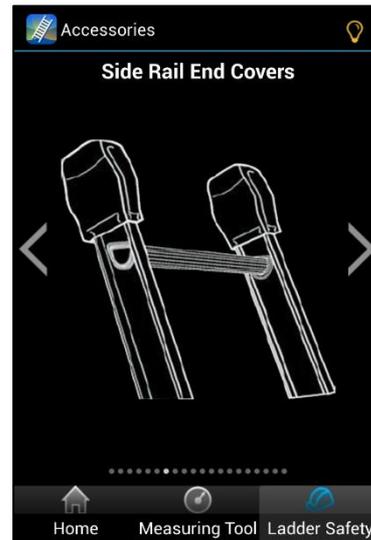
Levelers are used to allow you to mount your ladder on uneven surfaces by extending either of its legs. They should adjust to uneven surfaces so the legs of the ladder are supported at the ladder's proper working angle. All levelers should be equipped with feet to resist slipping.



Ladder feet may swivel or articulate. Pads on the feet provide slip resistance for the ladder. Spurs on the feet may help secure the ladder against slipping only on surfaces that they can penetrate.

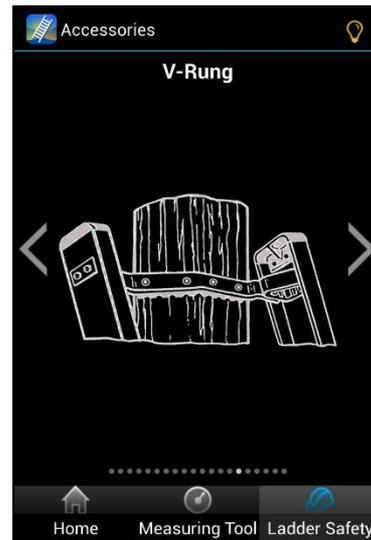
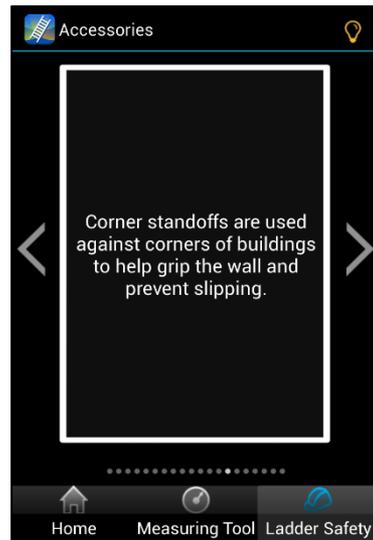
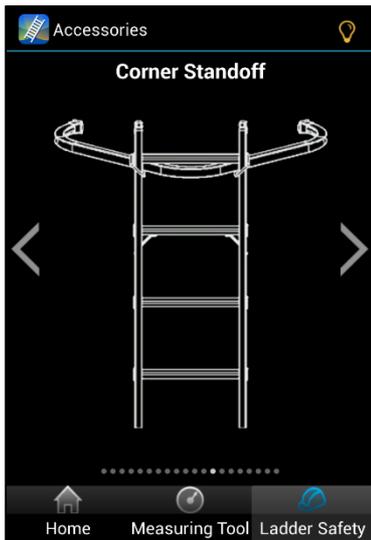
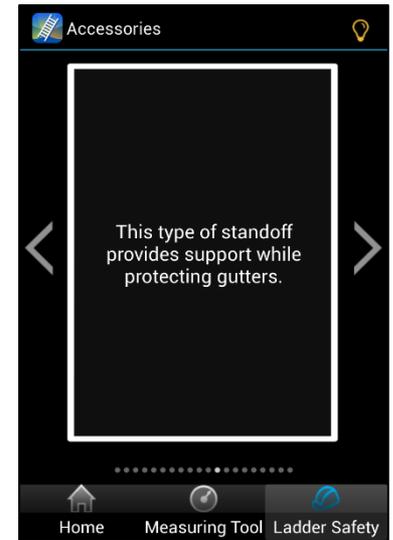
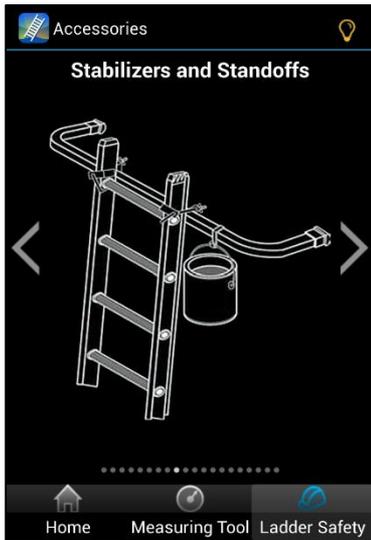


A stabilizer strap is used to help prevent ladder slide-out. It should be positioned so you can reach it from the ground.

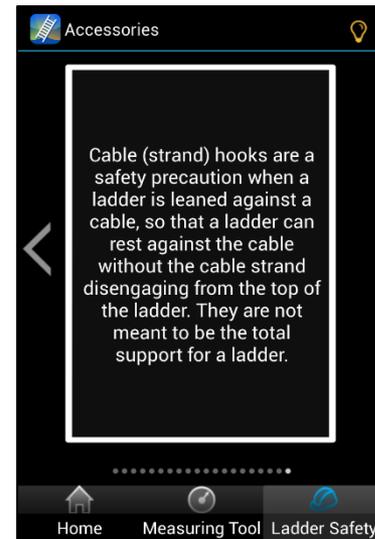
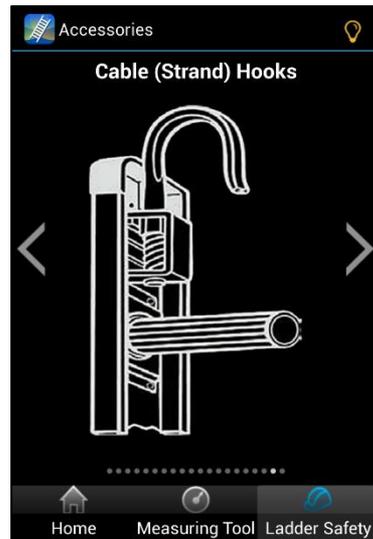
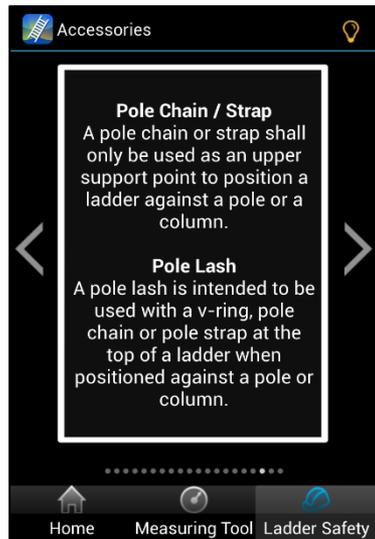


Side rail end covers help prevent damage to support surfaces.

Screen 6: Accessories (cont'd)



Screen 6: Accessories (cont'd)



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