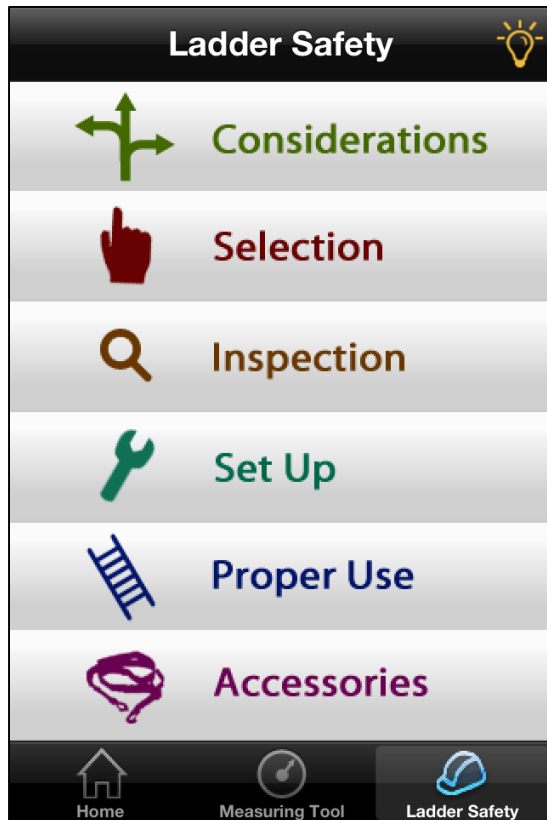


Ladder Safety App User's Manual (iOS)



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




Produced by DSFederal Inc.

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iOS App Installation

Instructions for loading the NIOSH Ladder Safety iOS App:*

- Go to the [Apple iTunes Market](http://www.itunes.com/appstore), <<http://www.itunes.com/appstore>>, on your iPhone, iPod Touch or iPad
- 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 iOS App

**iOS version 4 or higher is required for using the iOS App.*

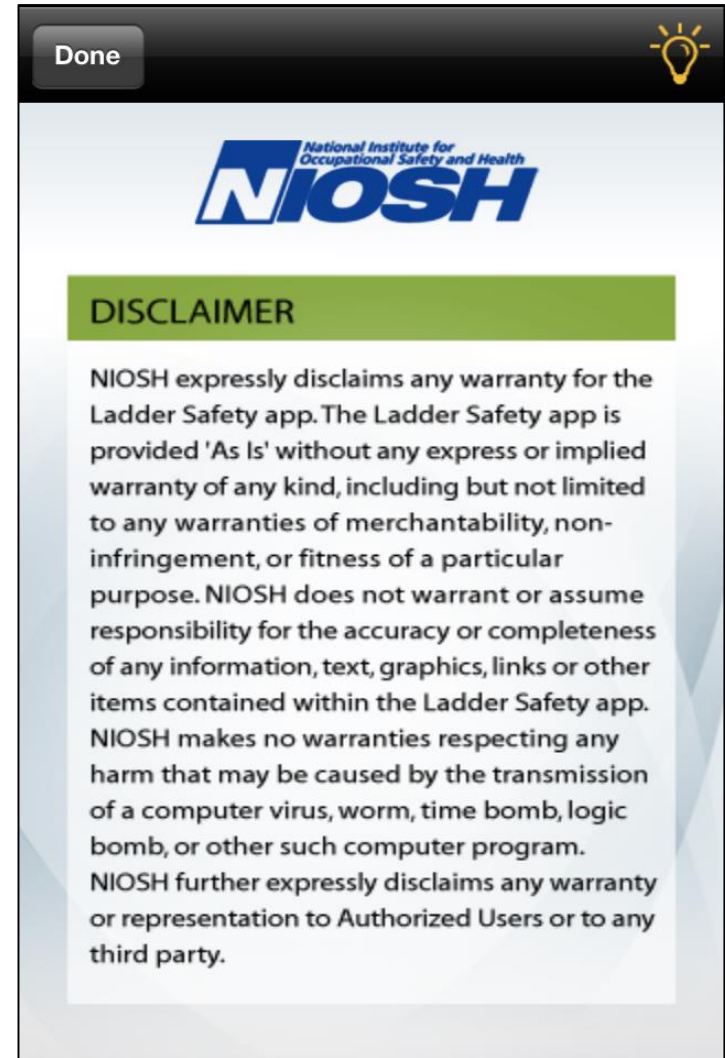
Home Screen: Ladder Application

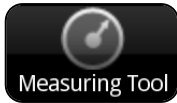


The light blub toggles between high-contrast mode and normal mode.

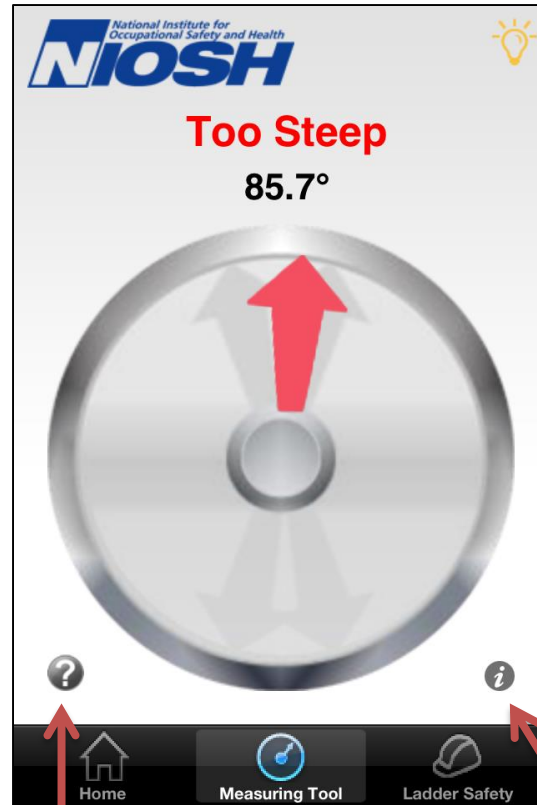
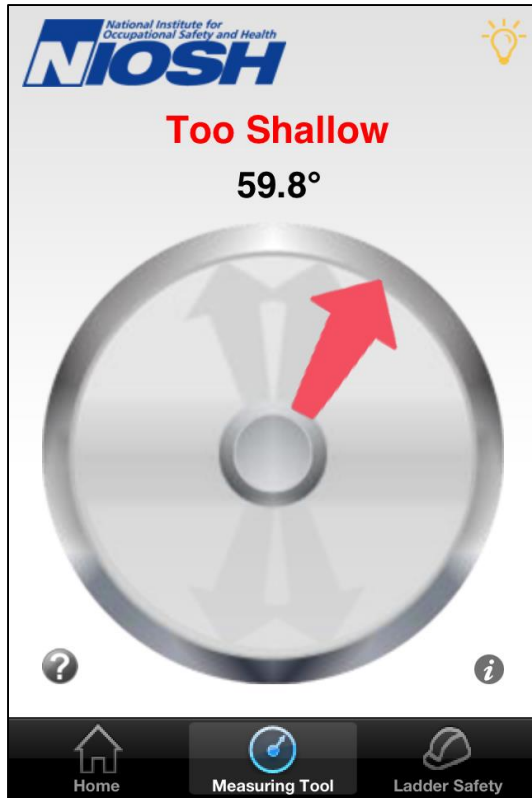
Refer to the [Accessibility Features](#) section for more information.

This button shows the disclaimer.

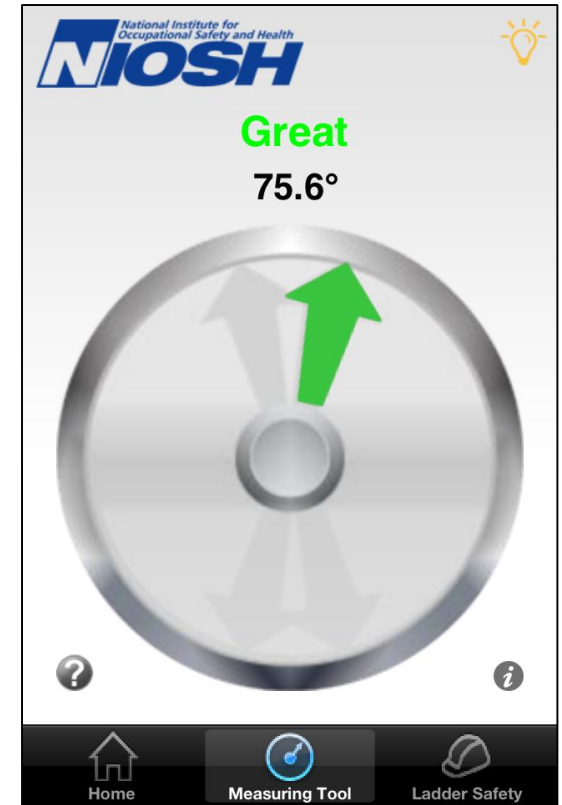




Measuring Tool



The help page will show after tapping this icon.



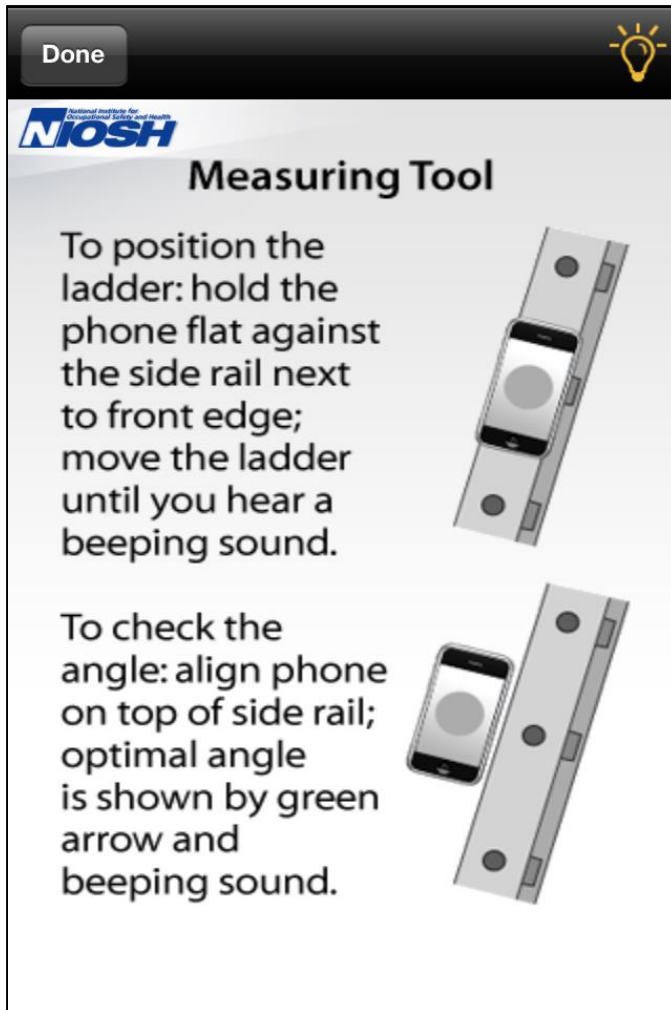
The home page will show after tapping this icon.


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

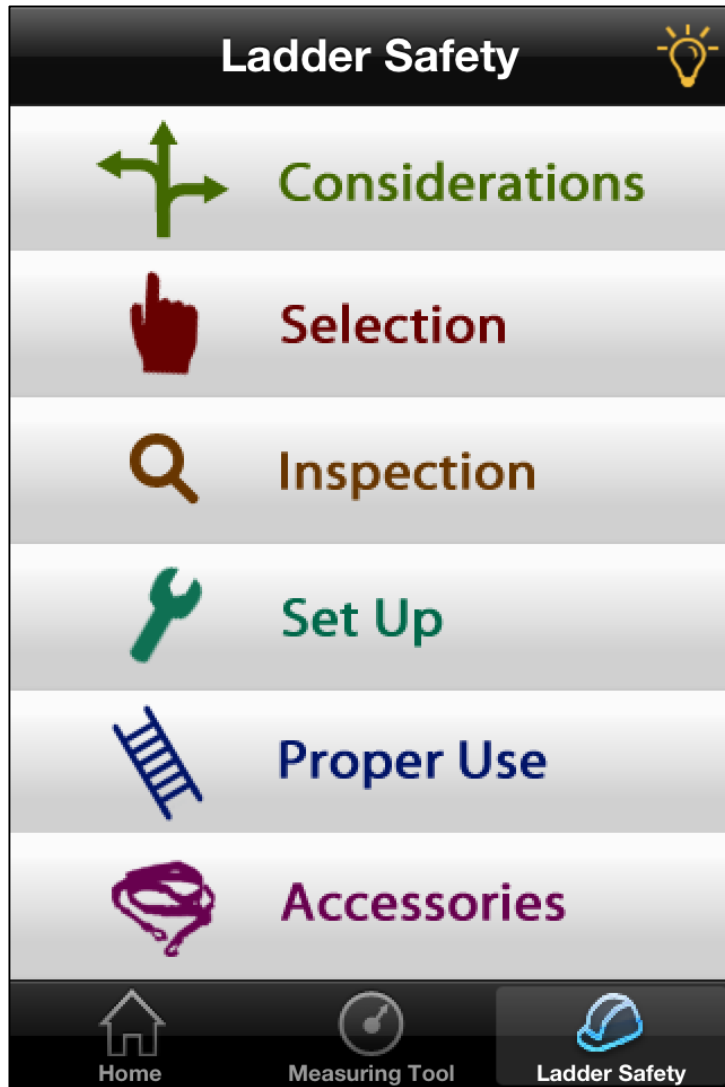
Help



The **Help** button  opens a diagram illustrating how to use the Measuring Tool device.



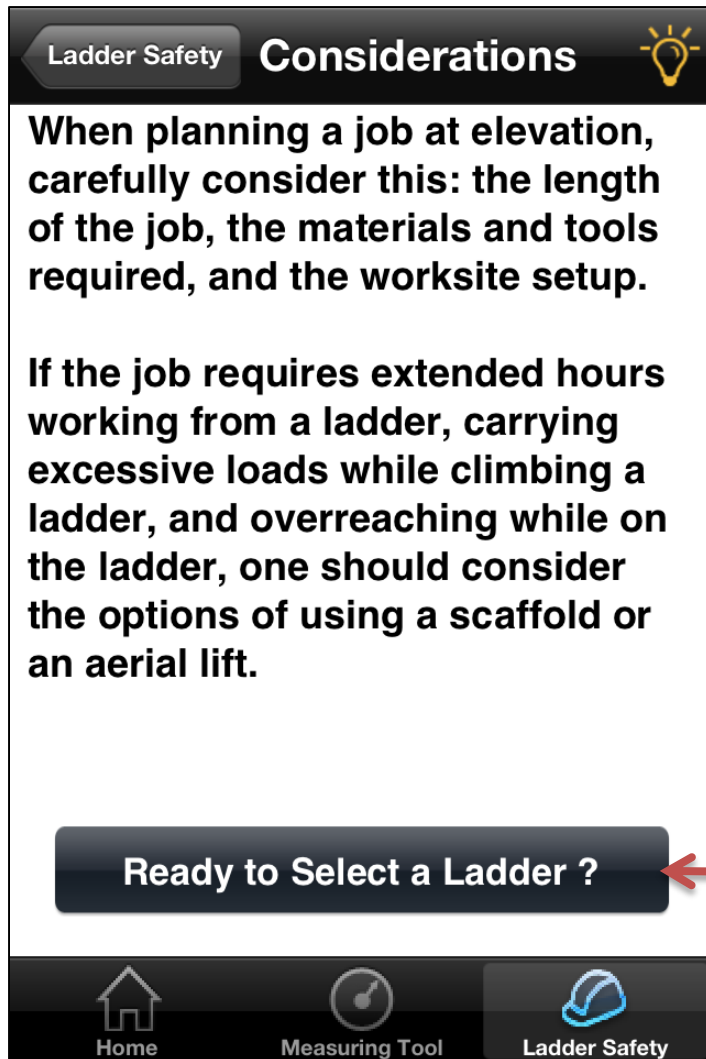
Ladder Safety



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

Ladder Safety Selection

How much do you weigh, including tools and materials? 150 lbs

Will you or the ladder be near exposed electrical conductors? YES NO

Show me the ladder i

Home Measuring Tool Ladder Safety

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.

Considerations Selection

How much do you weigh, including tools and materials? 150 lbs

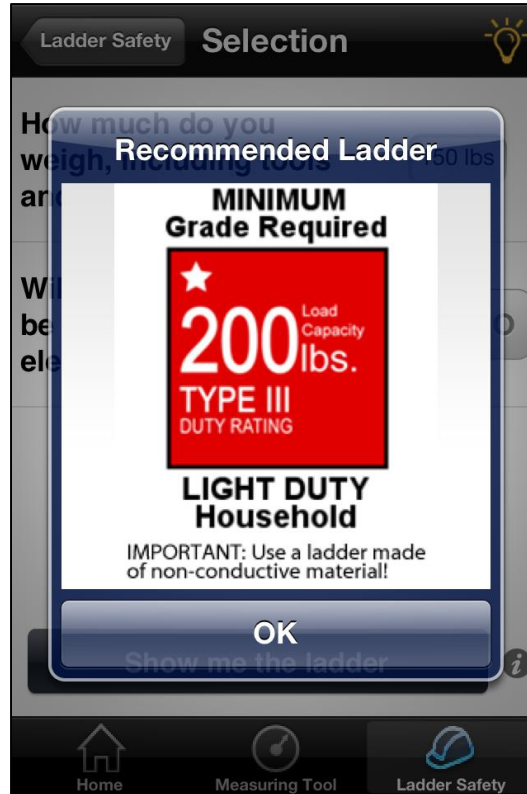
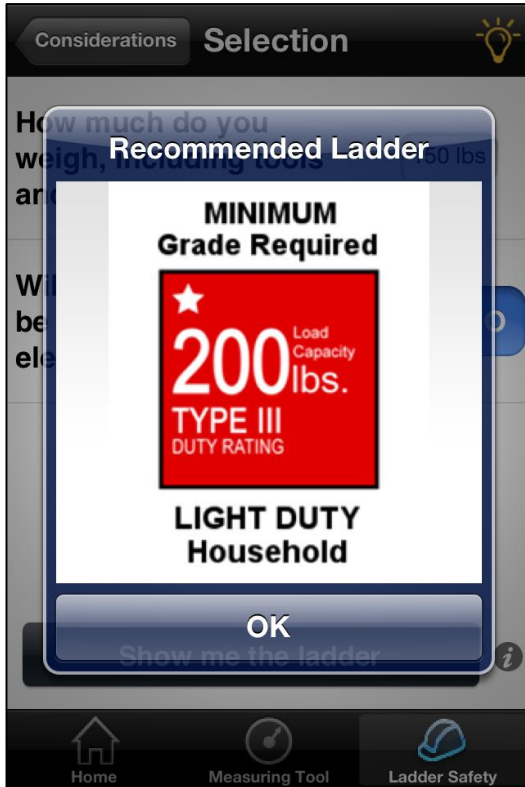
Will you or the ladder be near exposed electrical conductors? YES NO

Done

145 lbs
150 lbs
155 lbs
160 lbs

Screen 2: Selection

Show Me The Ladder




After tapping the **Show me the ladder** button, a pop up window with 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

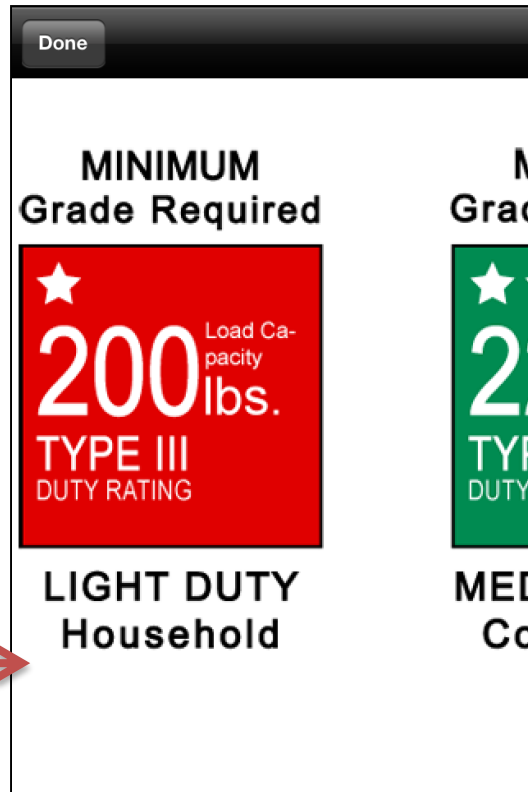
Ladder Safety **Selection** 

How much do you weigh, including tools and materials?

Will you or the ladder be near exposed electrical conductors? ☐ YES ☒ NO

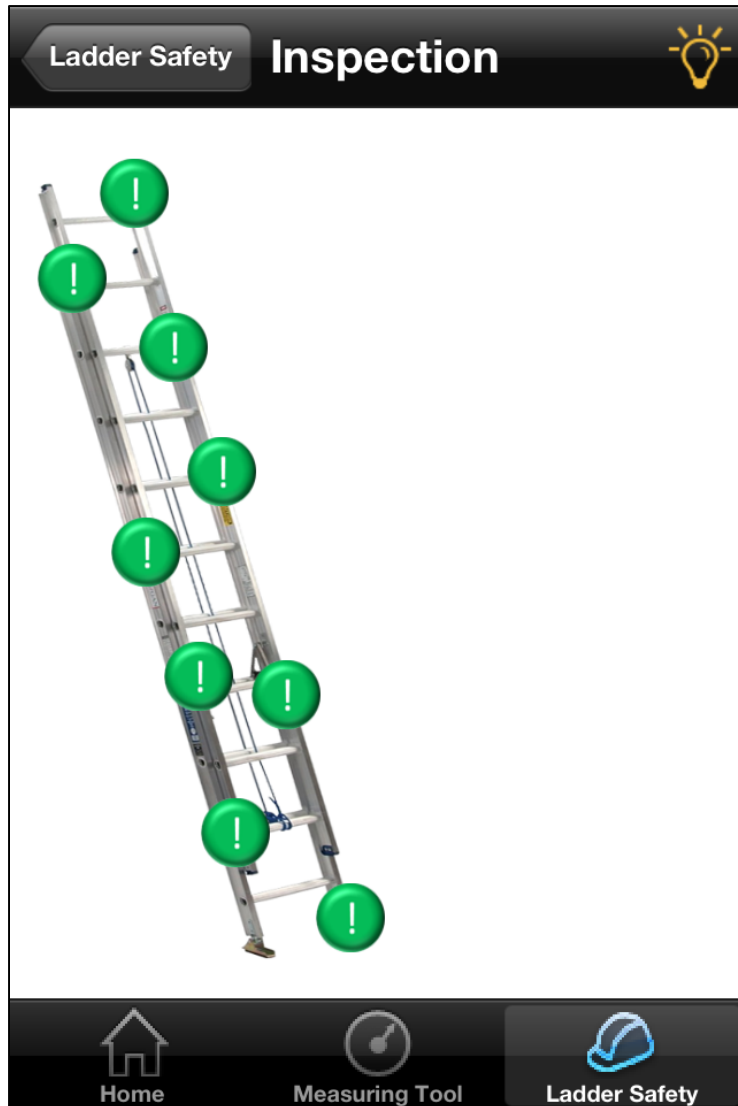
Show me the ladder 

 Home  Measuring Tool  Ladder Safety



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.

Screen 3: Inspection (cont'd)

Ladder Safety Inspection




End Caps




End caps should not be missing or damaged.

Home Measuring Tool Ladder Safety

Ladder Safety Inspection



Rungs & Step Connections




Look for:


- Bends
- Breaks
- Loose rungs
- Missing rungs

Home Measuring Tool Ladder Safety

Ladder Safety Inspection



Rope & Pulley




Look for:


- Fraying
- Tangles

Home Measuring Tool Ladder Safety

Ladder Safety Inspection



Labels




Are they:


- Missing?
- Not readable?

Home Measuring Tool Ladder Safety

Ladder Safety Inspection



Hardware




Look for:


- Loose hardware

Home Measuring Tool Ladder Safety

Ladder Safety Inspection



Surfaces




Are they:


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

Home Measuring Tool Ladder Safety

Ladder Safety Inspection



Rung Locks




Look for

- Broken rung locks


Rung locks should operate smoothly.

Home Measuring Tool Ladder Safety

Ladder Safety Inspection



Rails




Look for:


- Cracks
- Bends
- Splits
- Corrosion

Home Measuring Tool Ladder Safety

Ladder Safety Inspection



Feet



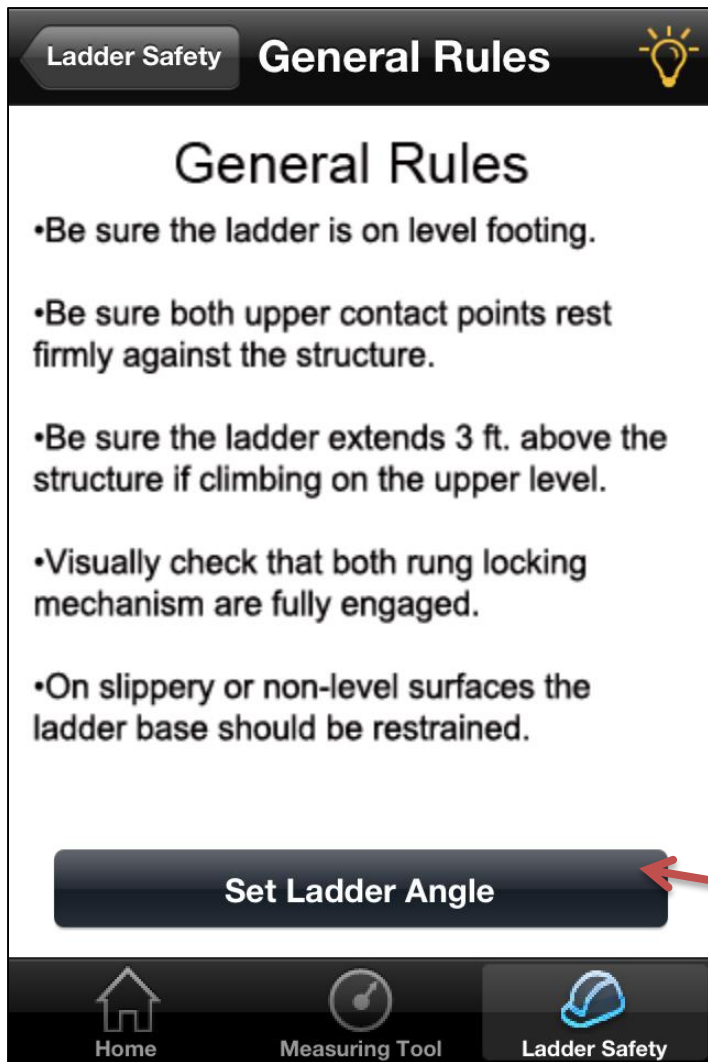
Look for:

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

Feet should rotate smoothly.

Home Measuring Tool Ladder Safety

Screen 4: Setup

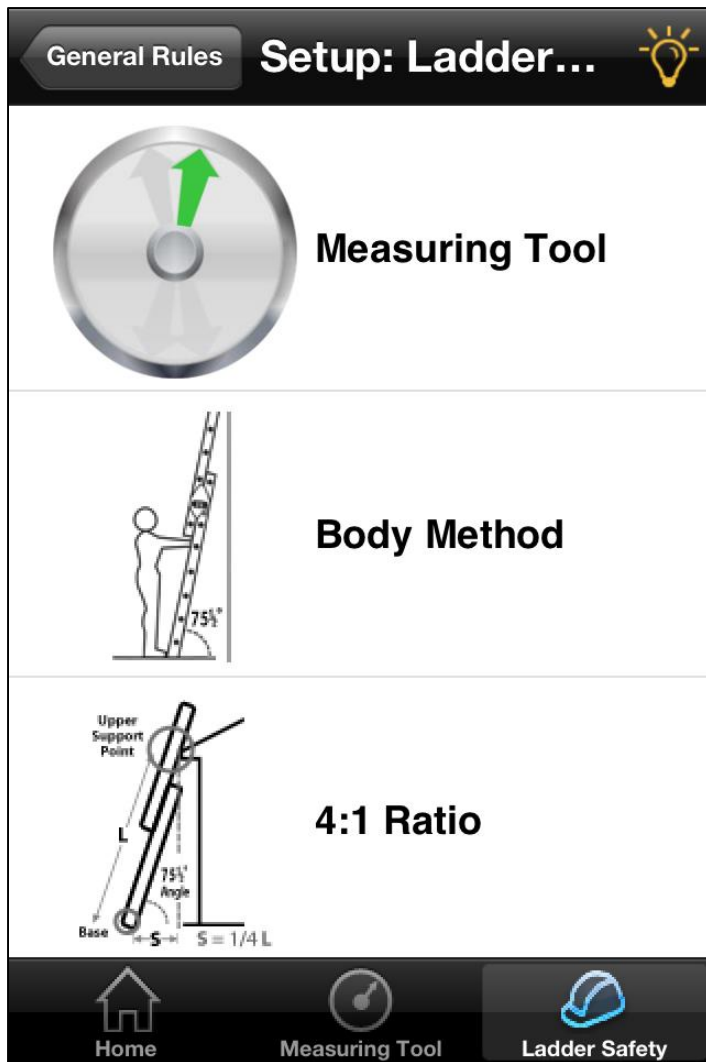


This screen provides tips for level footing, contact with the structure, and locking mechanisms.

- 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)




Setup: Ladder Angle More Tips 

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



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




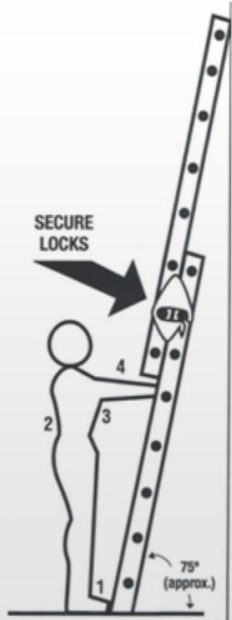
 Home  Measuring Tool  Ladder Safety

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.

Setup: Ladder Angle More Tips 



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

 Home  Measuring Tool  Ladder Safety

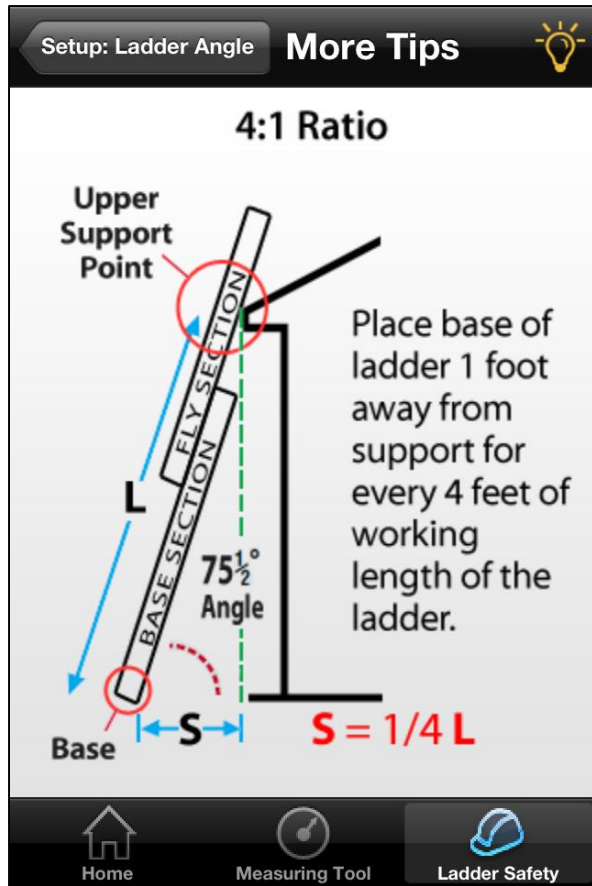
Body Method

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.

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.

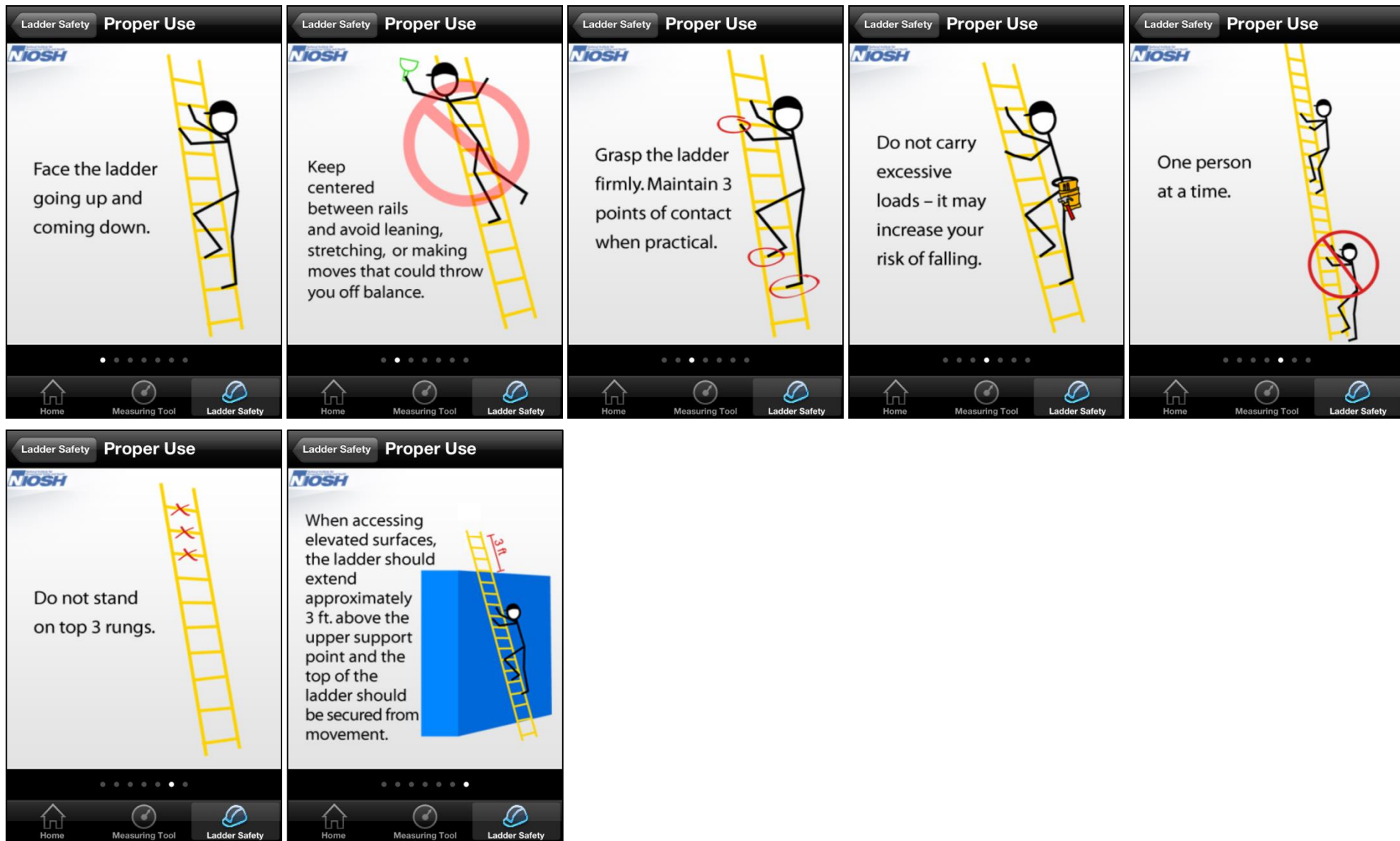
Screen 5: Proper Use



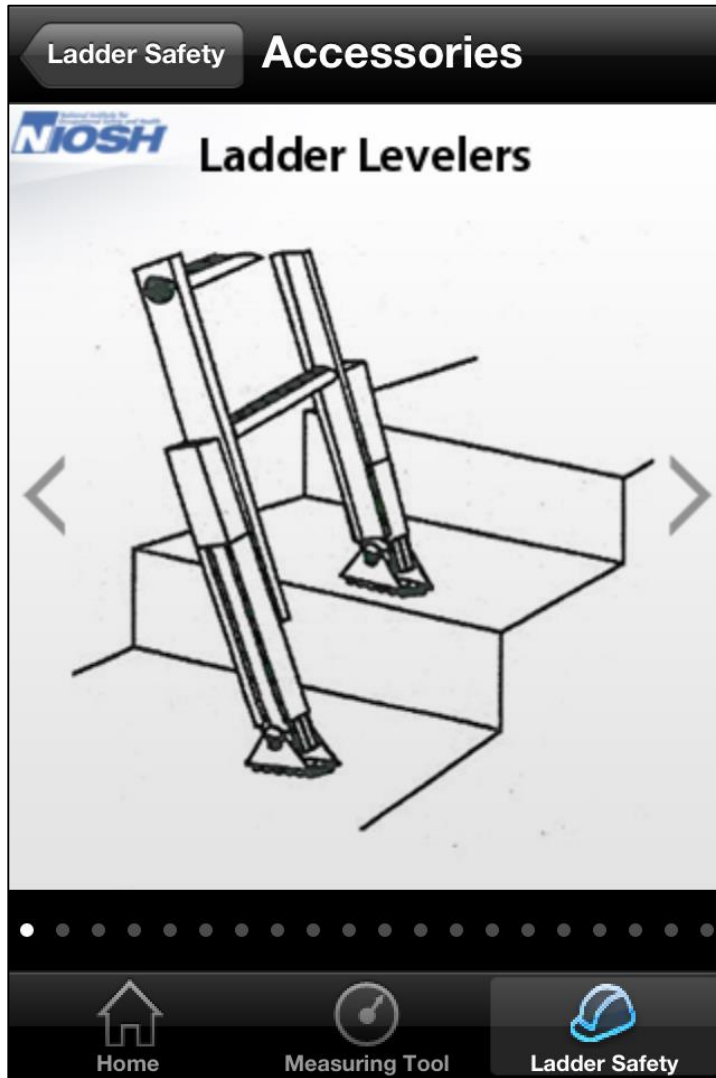
To view all of the images, swipe the page.

- 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)



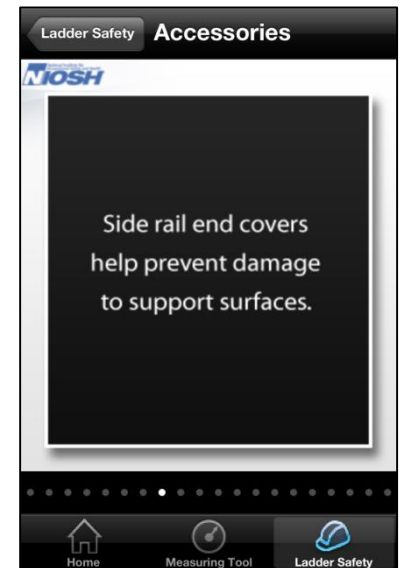
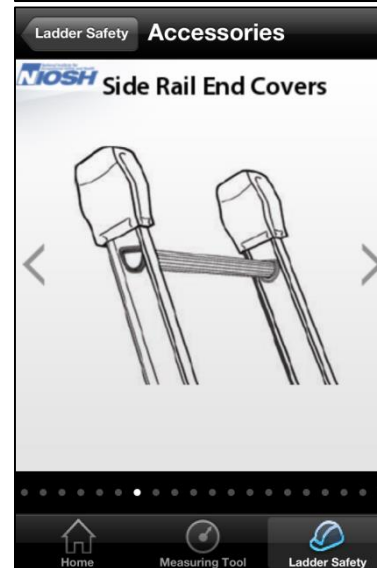
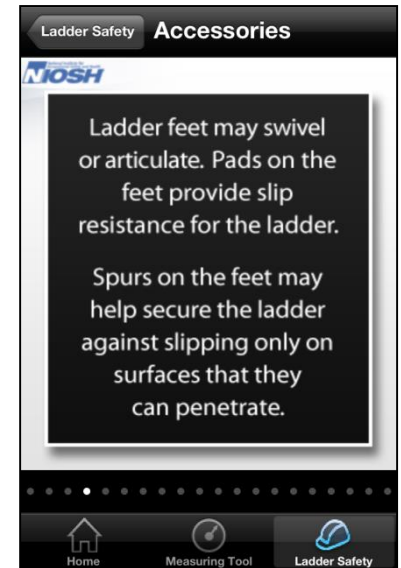
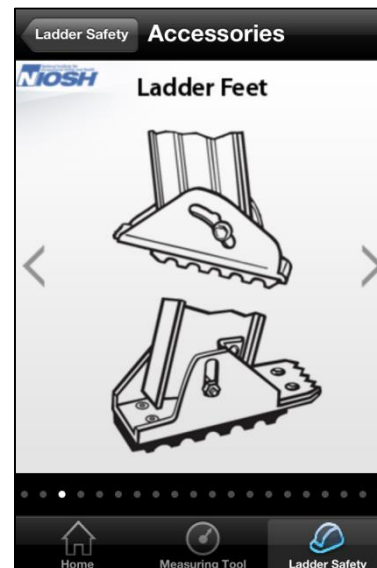
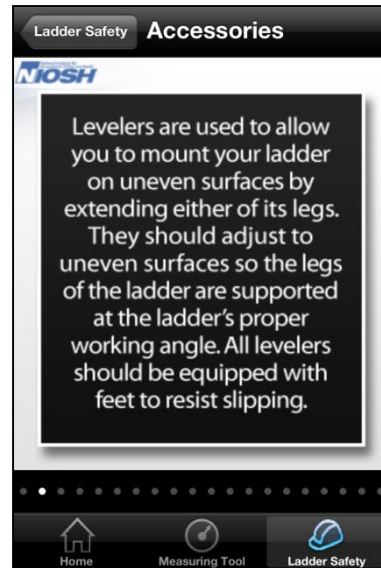
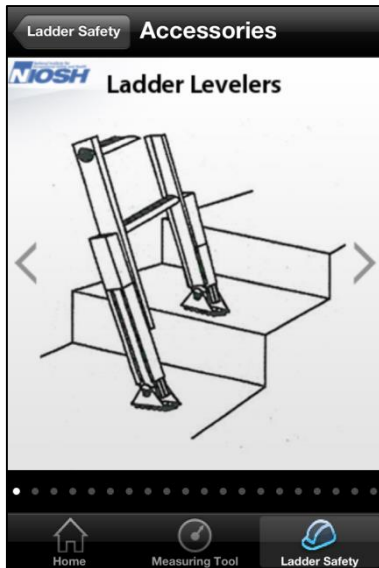
Screen 6: Accessories



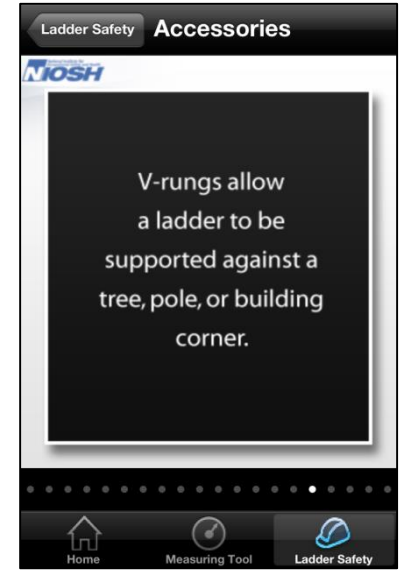
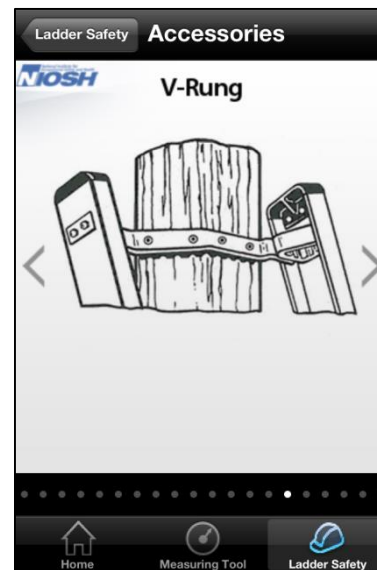
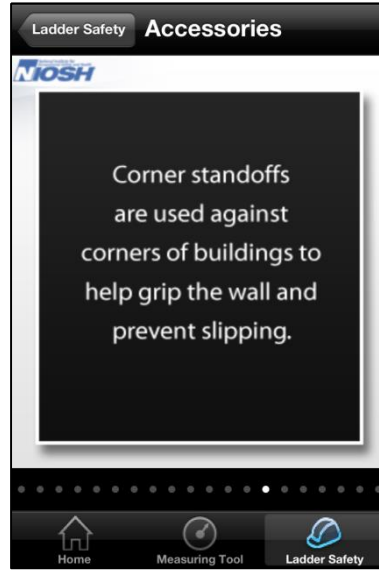
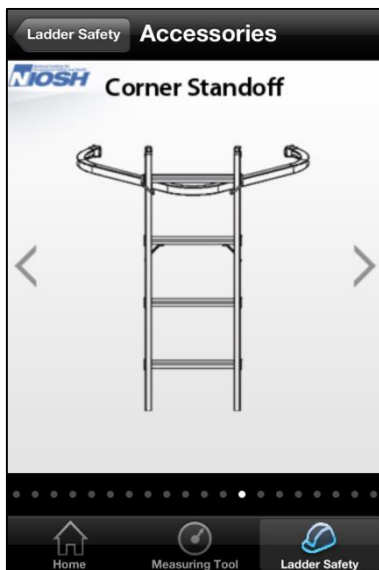
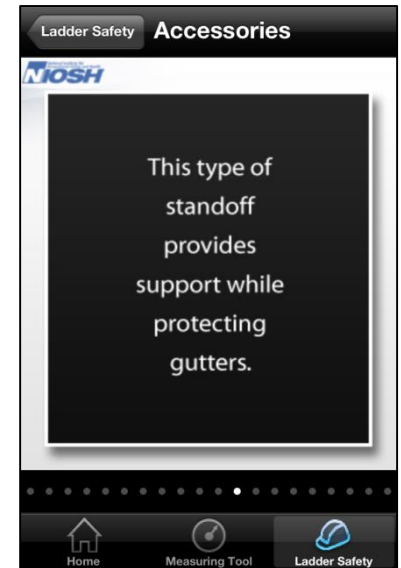
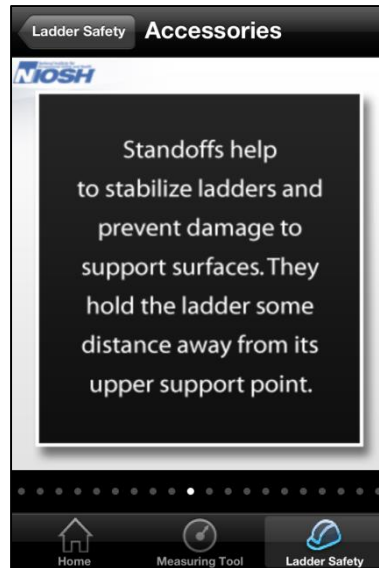
To view the following images and descriptions, swipe the page.

- 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

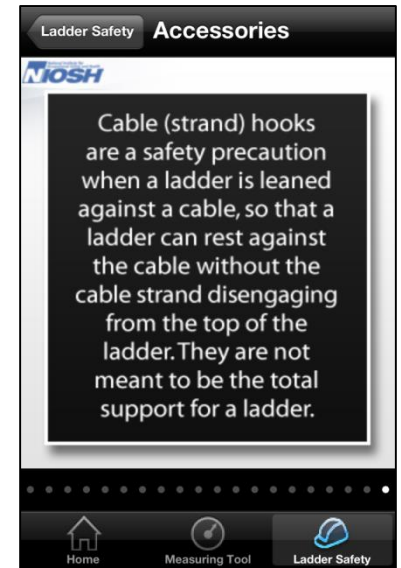
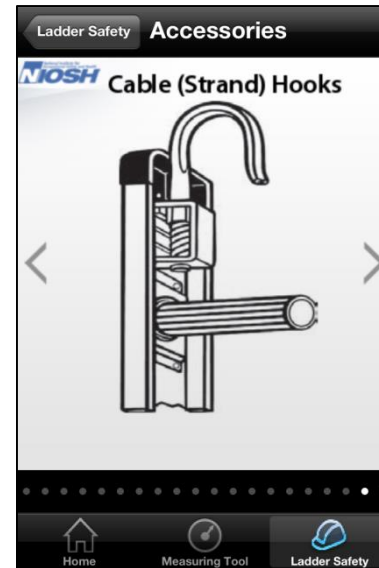
Screen 6: Accessories (cont'd)



Screen 6: Accessories (cont'd)



Screen 6: Accessories (cont'd)

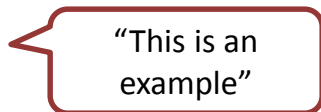


Accessibility Features

The Ladder Safety app features a high-contrast mode and is compatible with the accessibility features built into iOS devices.

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

** The speech bubbles, similar to the one below, will denote the VoiceOver responses.*



Home Screen: Ladder Application



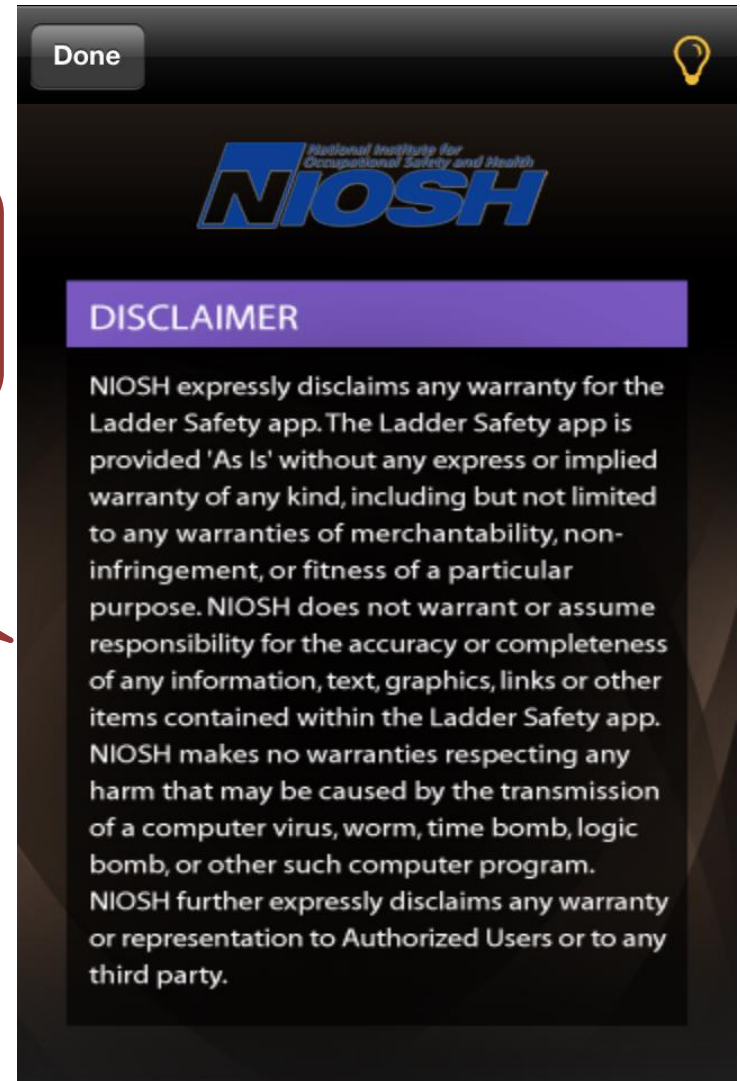
"High contrast"

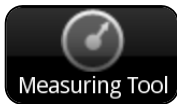
"NIOSH, National Institute for Occupational Safety and Health"

The text displayed on the screen

"Disclaimer"

The labels for the associated button

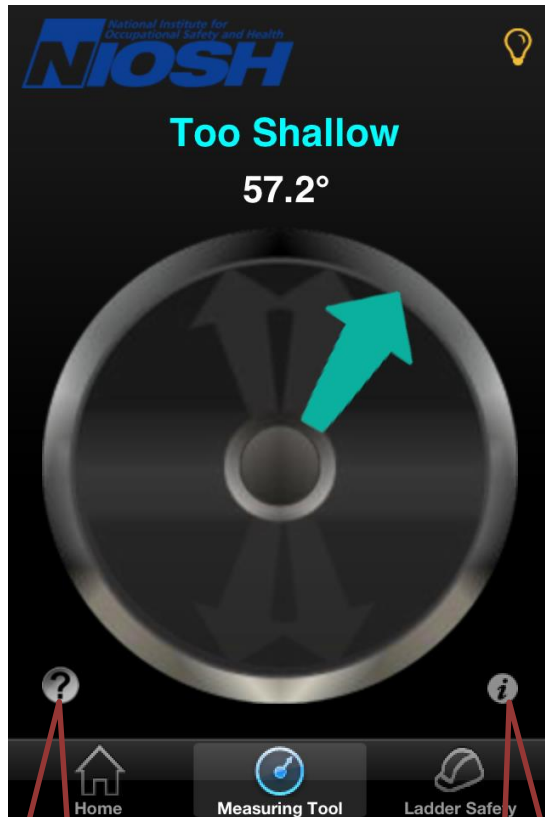




Measuring Tool

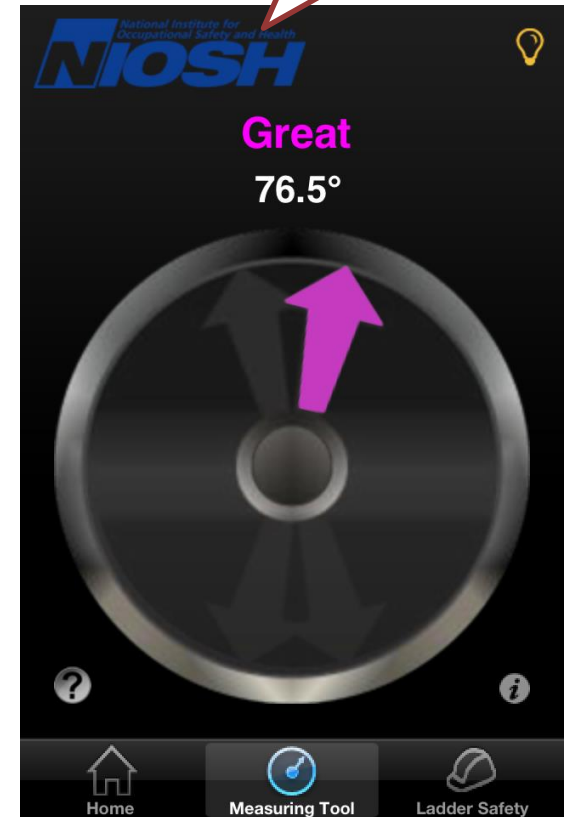
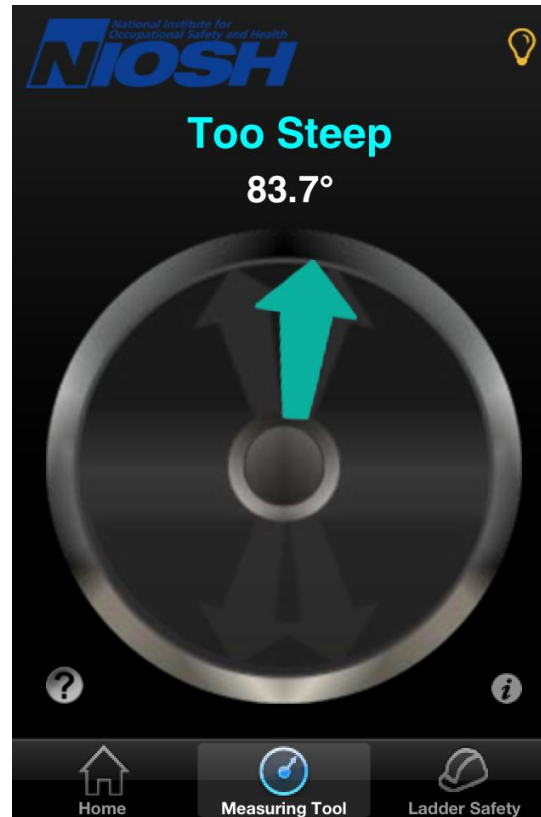
All text displayed will read aloud the associated text.

"NIOSH, National Institute for Occupational Health and Safety"



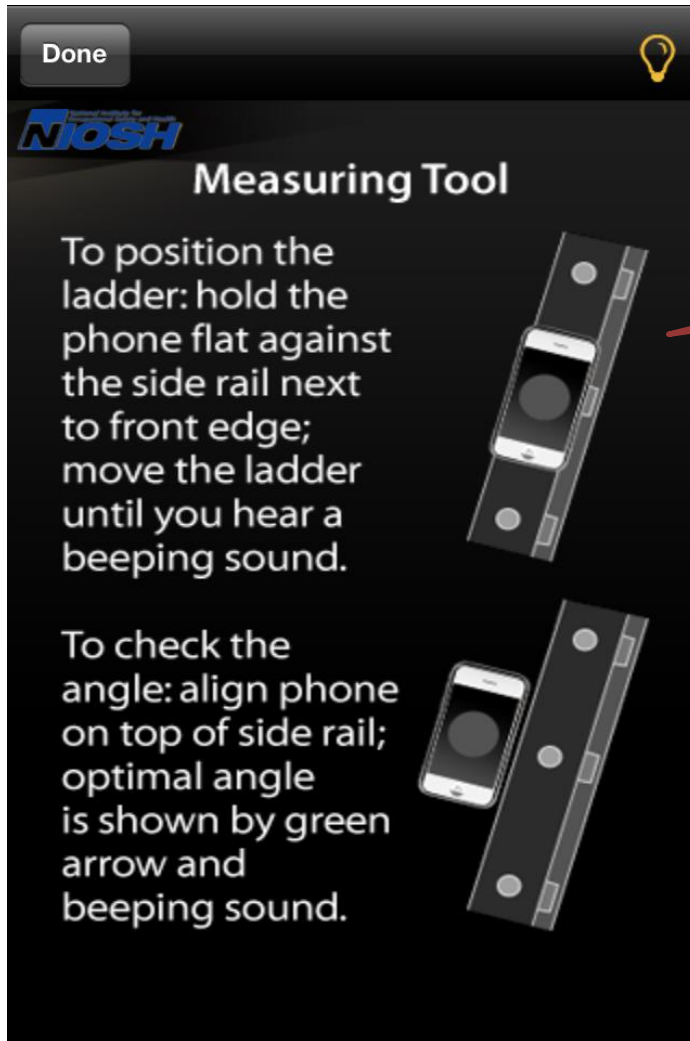
"Help"

"Home"



Measuring Tool

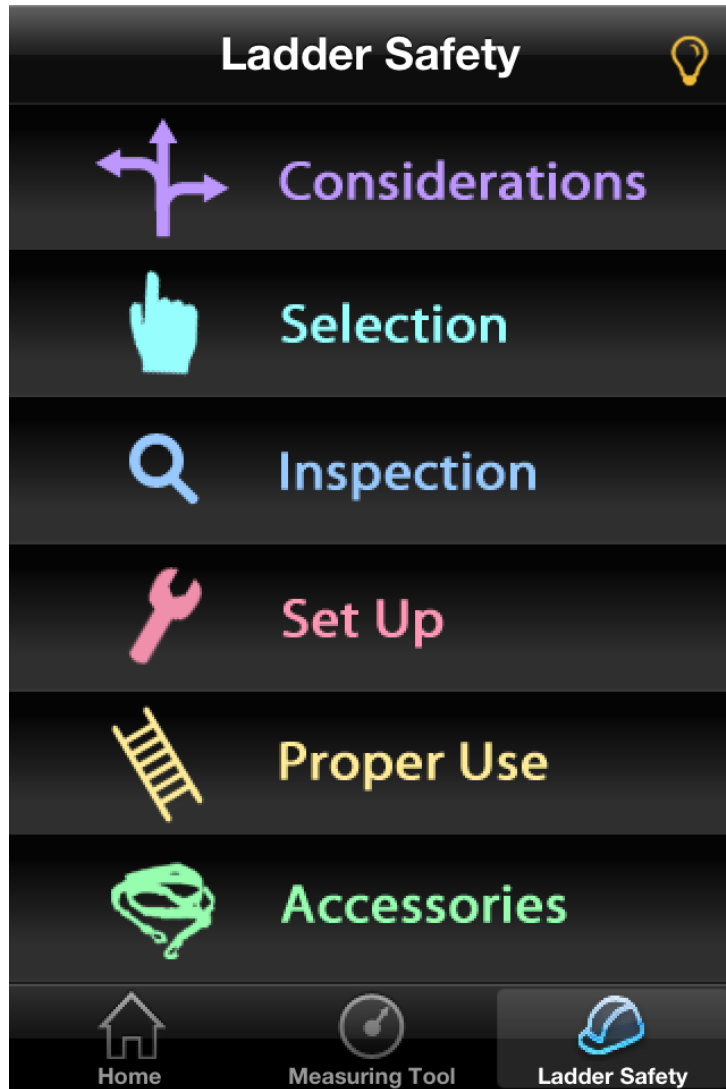
Help



The text display as displayed.



Ladder Safety



"Considerations"

"Selection"

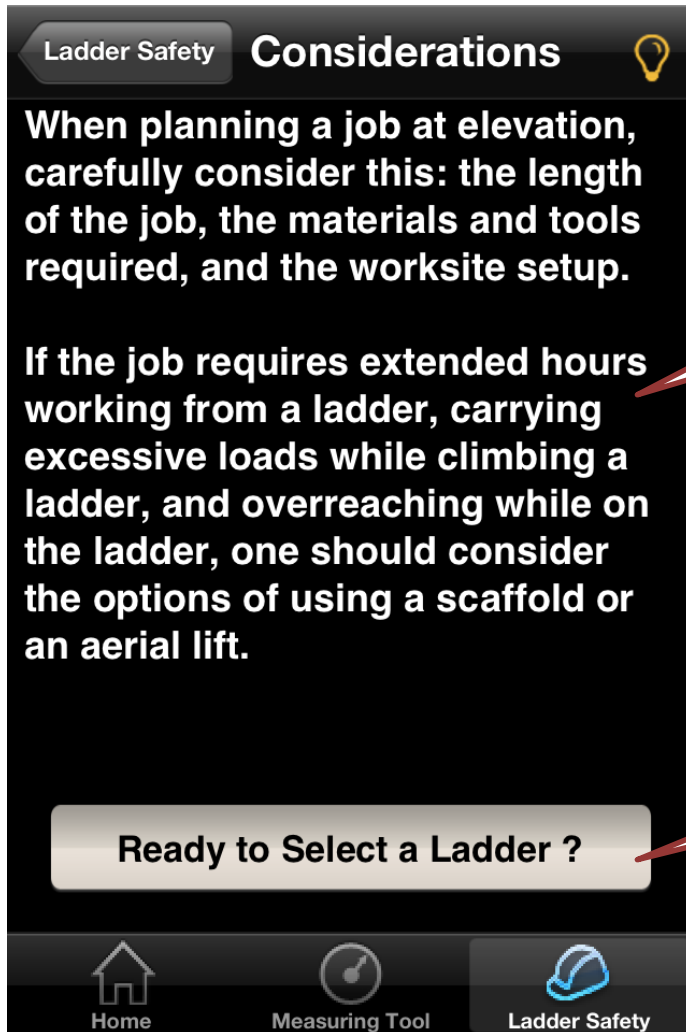
"Inspection"

"Set Up"

"Proper Use"

"Accessories"

Screen 1: Considerations



The text as it appears on the screen.

"Ready to select a ladder"

Screen 2: Selection

Considerations Selection

How much do you weigh, including tools and materials? 150 lbs

Will you or the ladder be near exposed electrical conductors? YES NO

Show me the ladder

Home Measuring Tool Ladder Safety

The question as shown on the screen

The question as shown on the screen

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

"No"

"Yes"

"Info"

Considerations Selection

How much do you weigh, including tools and materials? 150 lbs

Will you or the ladder be near exposed electrical conductors? YES NO

Done

145 lbs

150 lbs

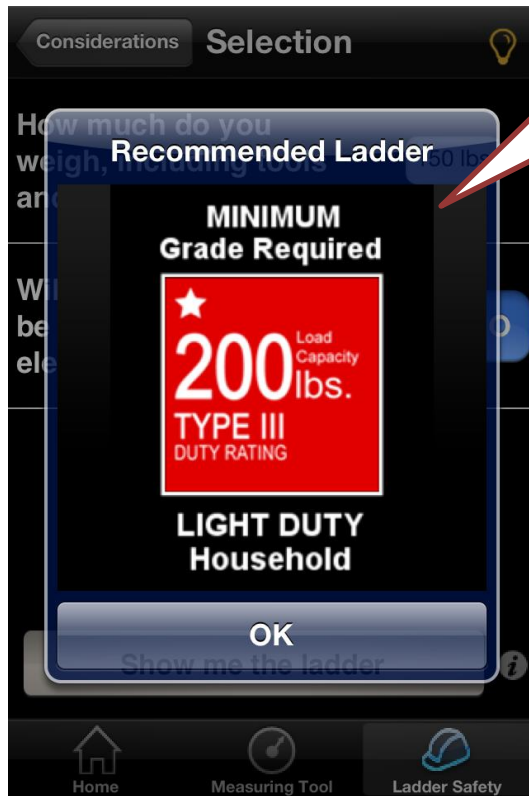
155 lbs

160 lbs

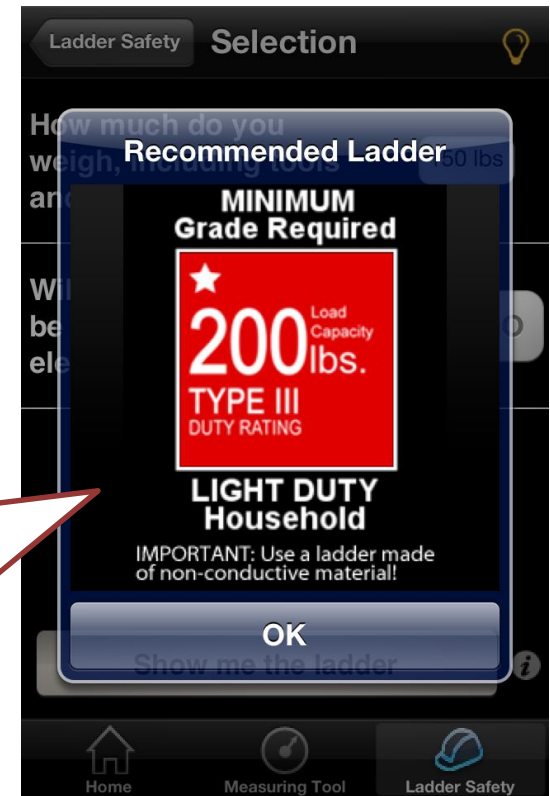
The weight displayed (e.g., "150 pounds")

Screen 2: Selection

Show Me The Ladder



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

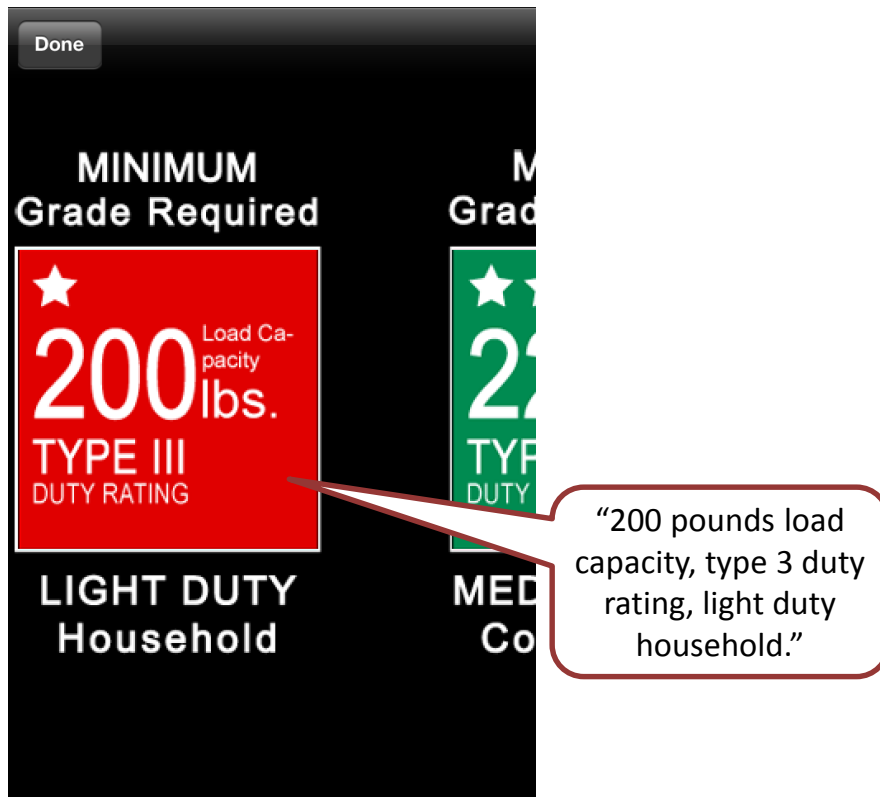


"Recommended ladder, minimum grade required, 200 pounds load capacity, type 3 duty rating, light duty household. Important, use a ladder made of non-conductive material."

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.”

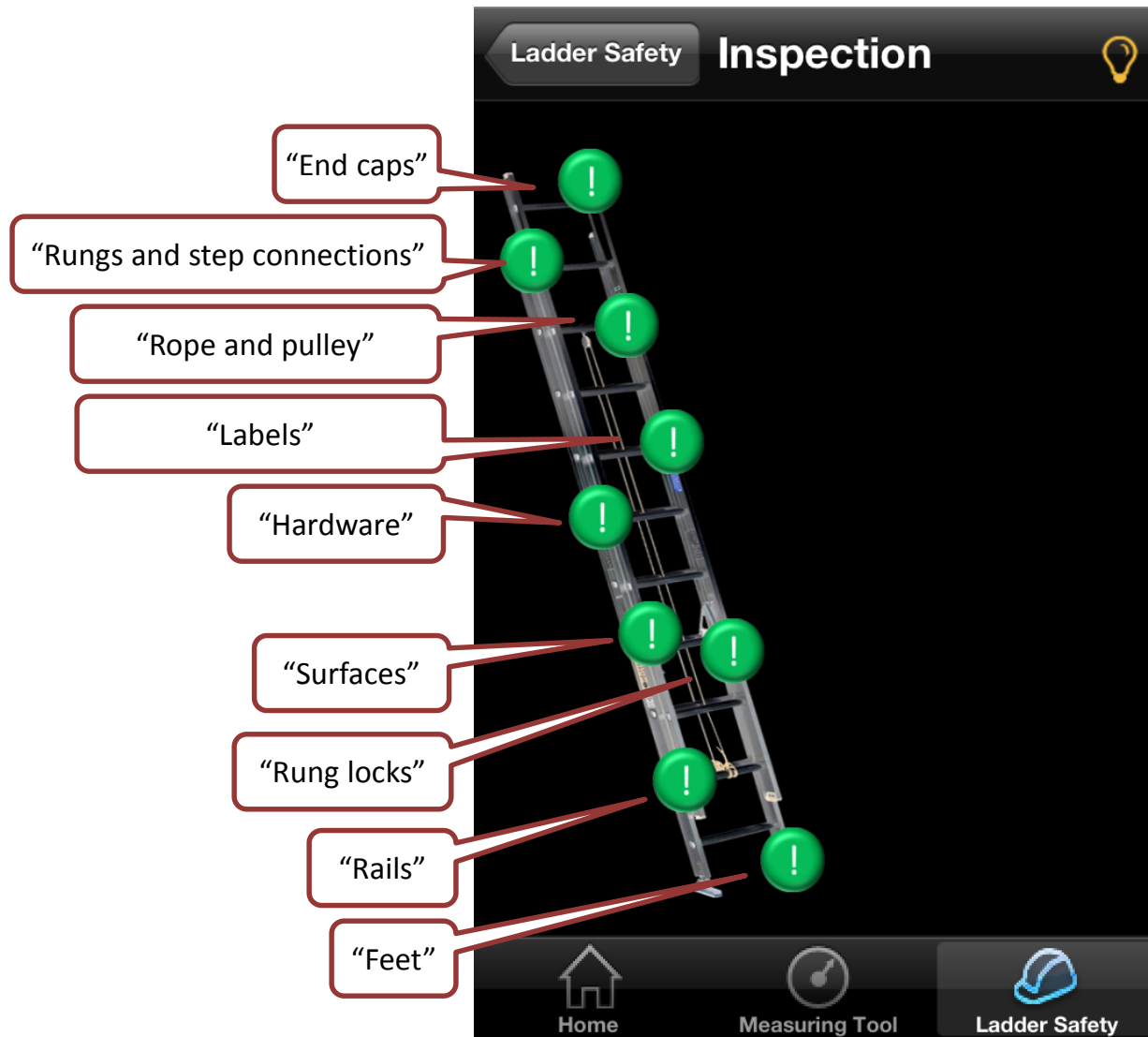
Type 2: “225 pounds load capacity, type 2 duty rating, medium duty household.”

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

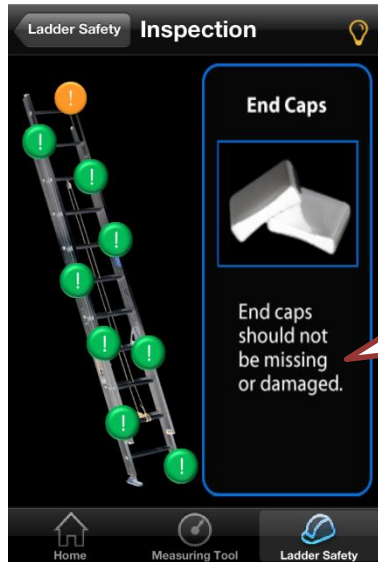
Type 1A: “300 pounds load capacity, type 1A duty rating, extra heavy duty industrial.”

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

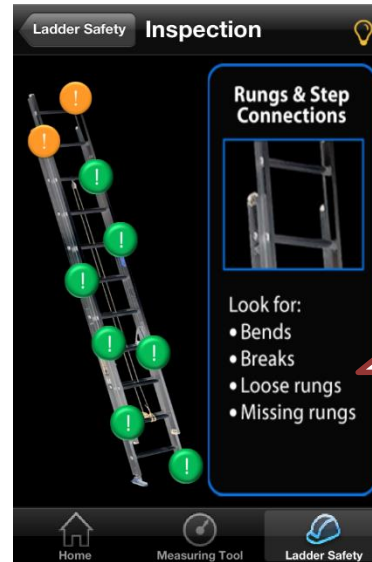
Screen 3: Inspection



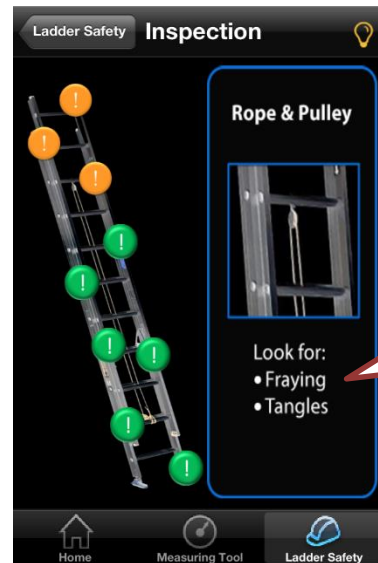
Screen 3: Inspection (cont'd)



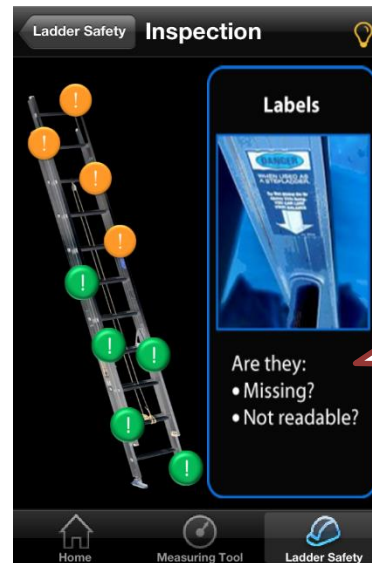
“End caps should not be missing or damaged”



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

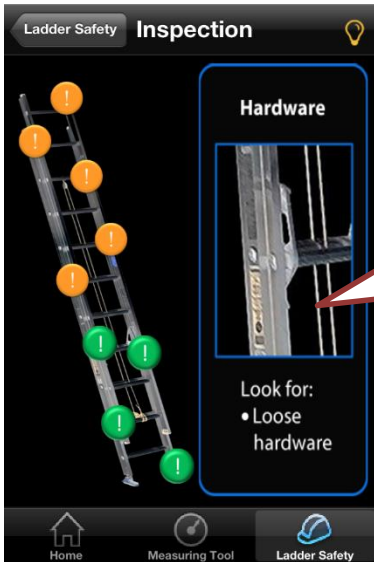


“Look for fraying and tangles on the rope and pulley”

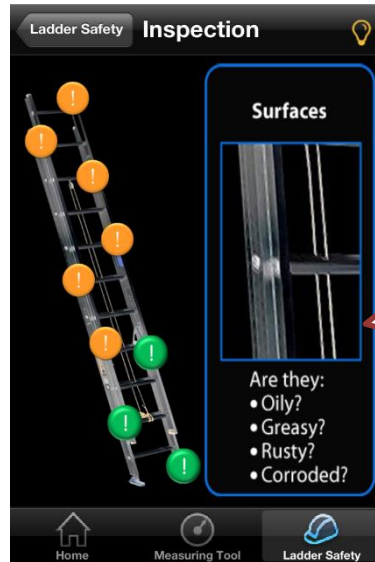


“Are labels missing or not readable?”

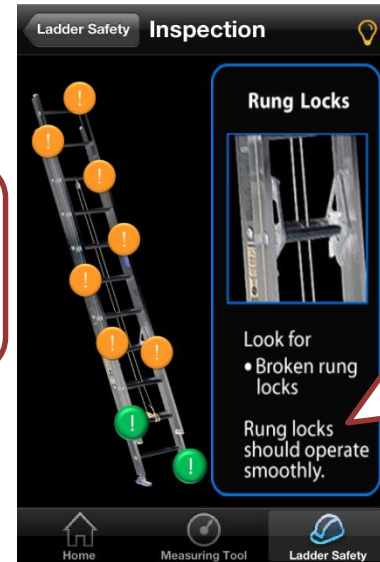
Screen 3: Inspection (cont'd)



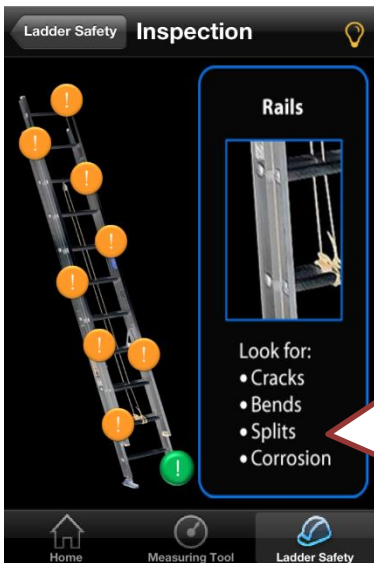
“Look for loose hardware”



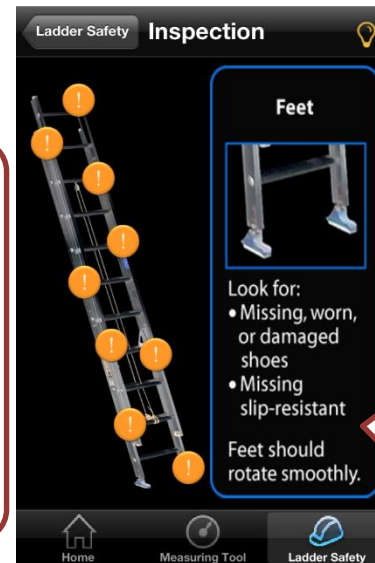
“Are the surfaces oily, greasy, rusty, or corroded?”



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

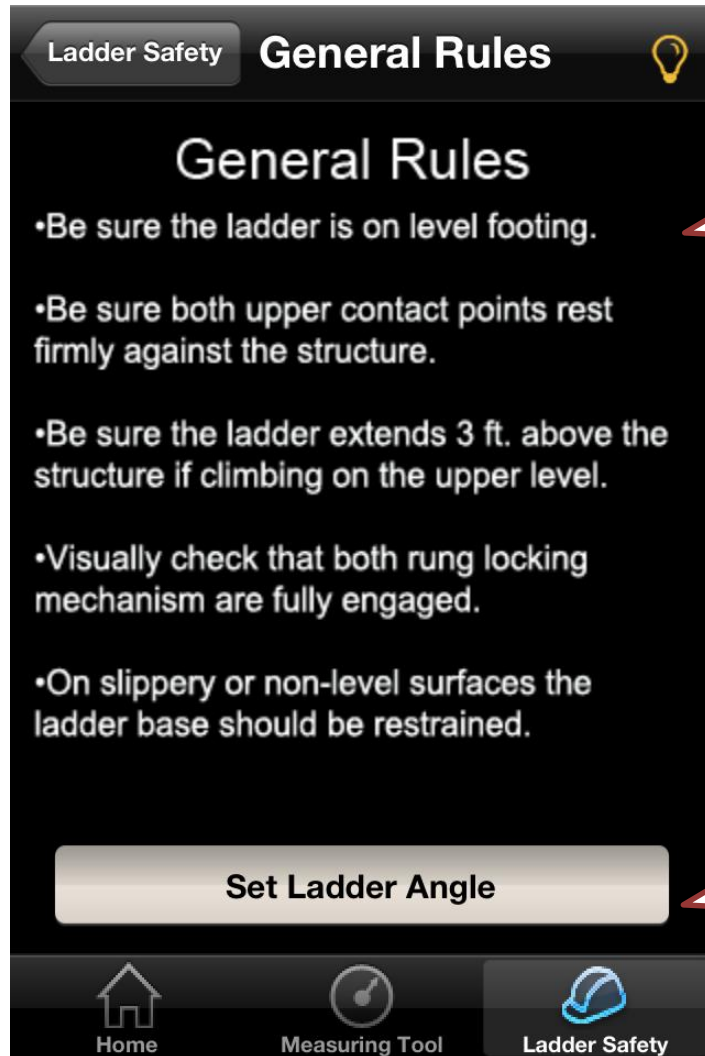


“Look for cracks, bends, splits, and corrosion on the rails”



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

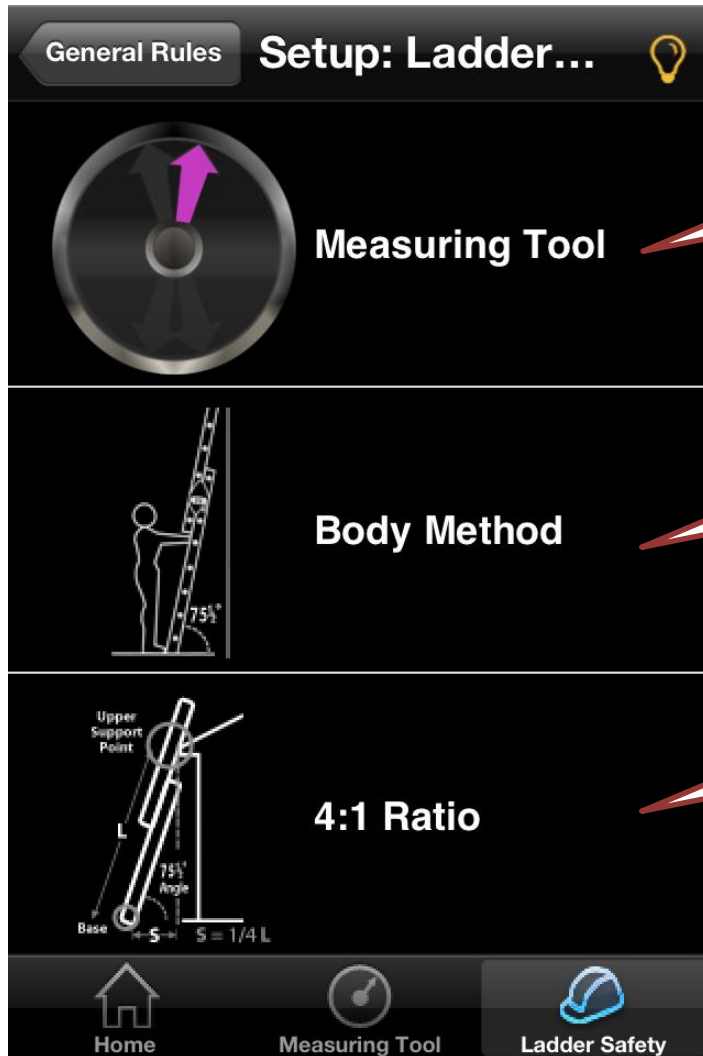
Screen 4: Setup



The tips as shown on the screen

"Set ladder angle"

Screen 4: Setup (cont'd)

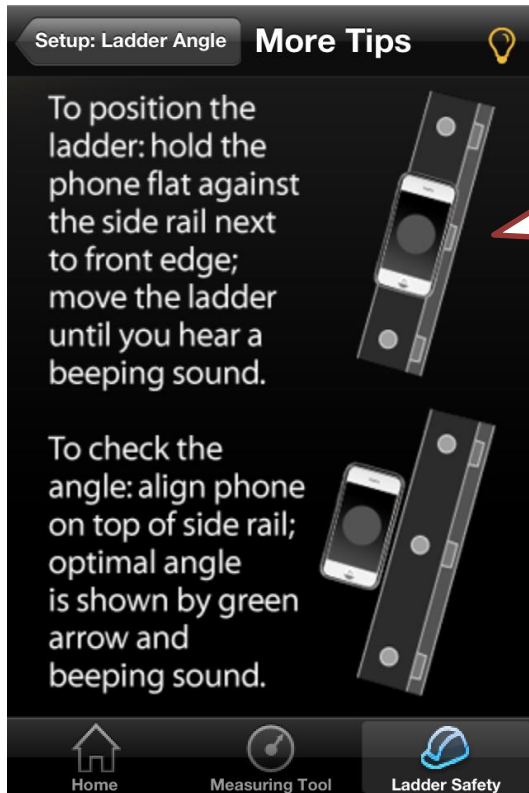


"How to use the measuring tool"

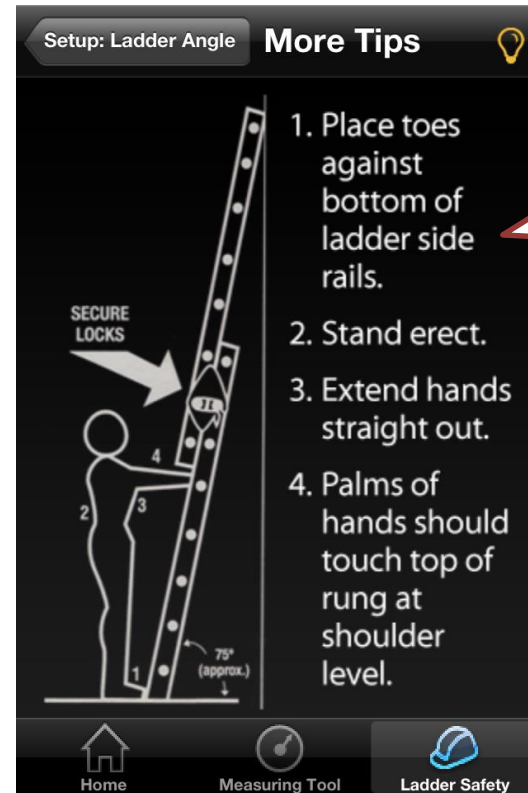
"How to use the body method"

"How to use the four to one ratio"

Screen 4: Setup (cont'd)

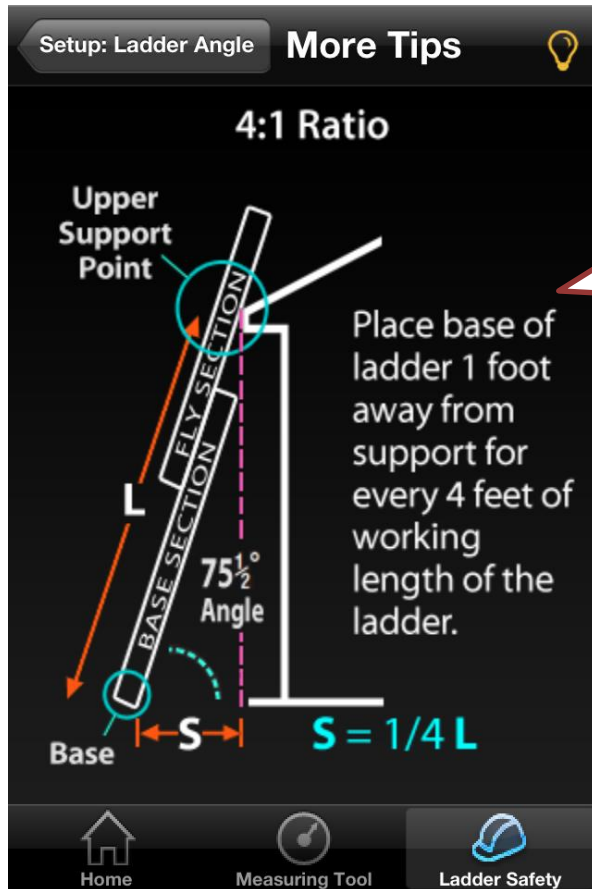


The instructions as it appears on the screen.



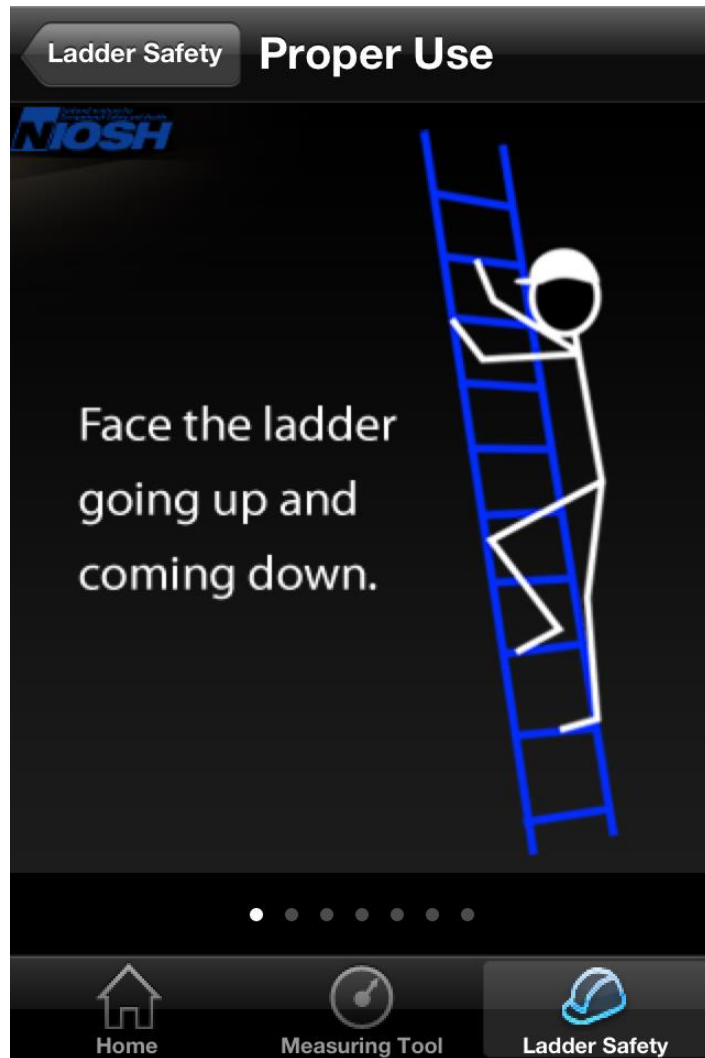
The instructions as it appears on the screen.

Screen 4: Setup (cont'd)



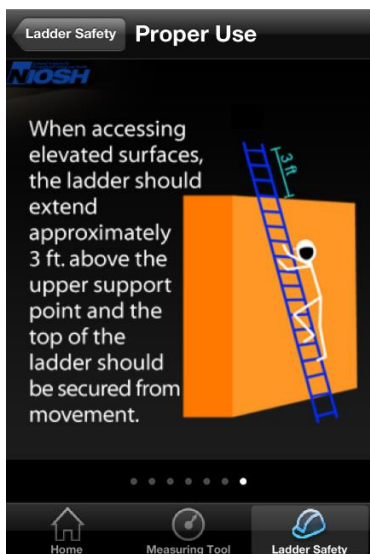
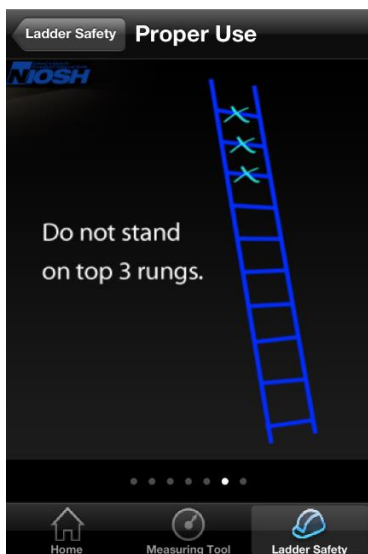
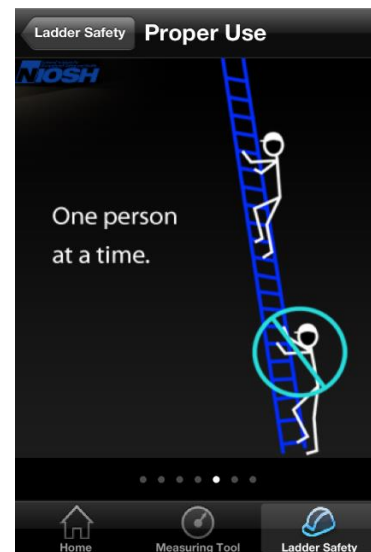
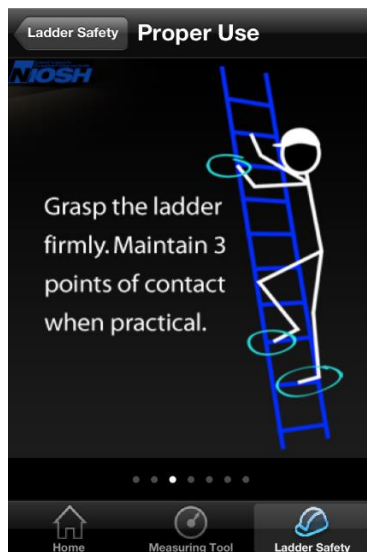
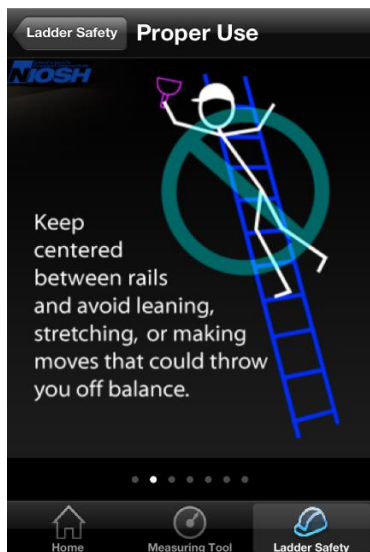
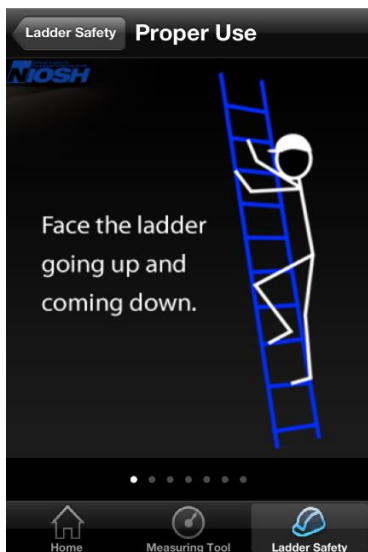
*The instructions
as it appears on
the screen.*

Screen 5: Proper Use

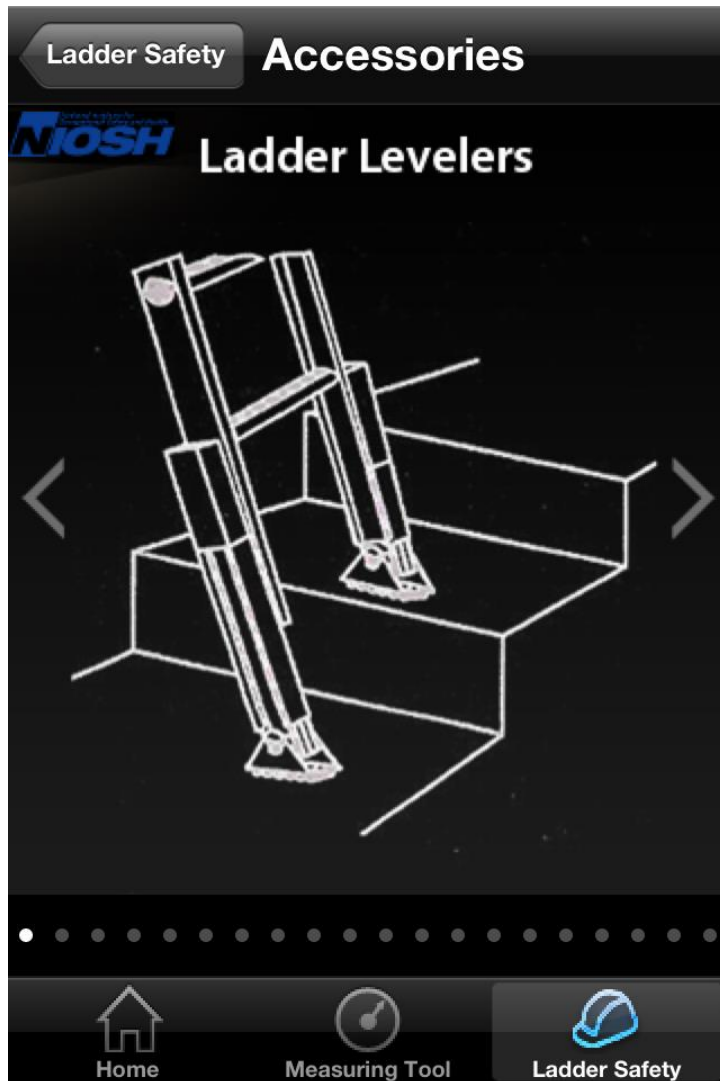


For all Proper Use screens, the instructions read aloud is the same as the text.

Screen 5: Proper Use (cont'd)



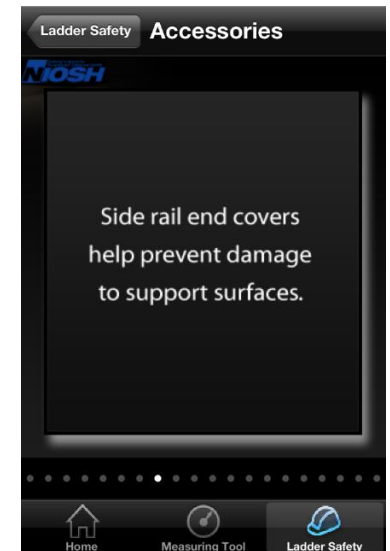
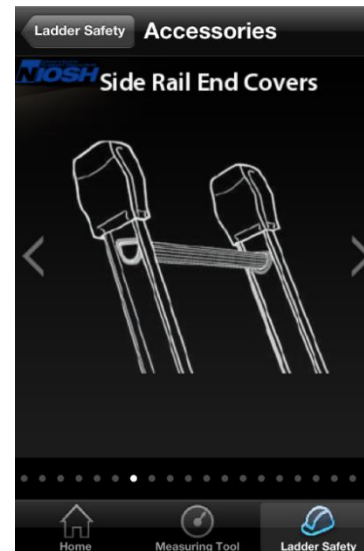
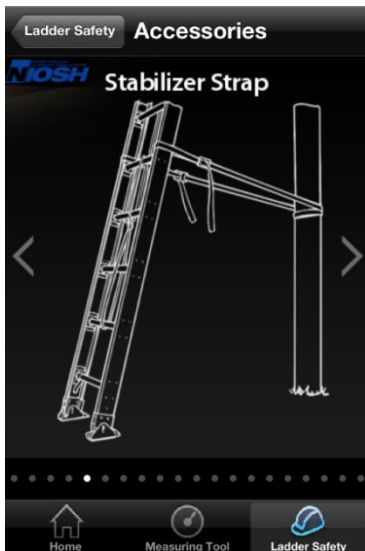
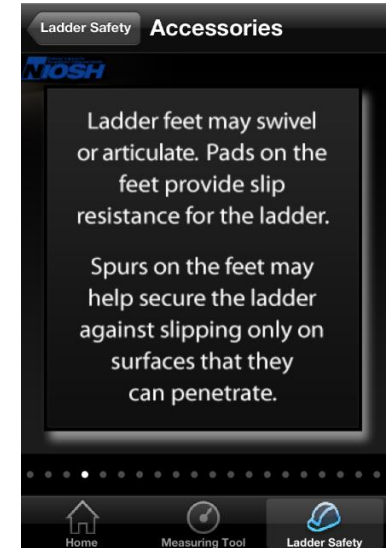
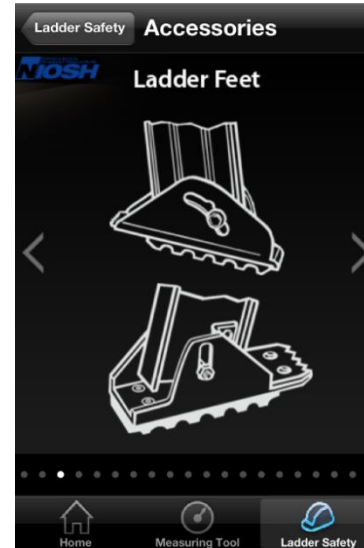
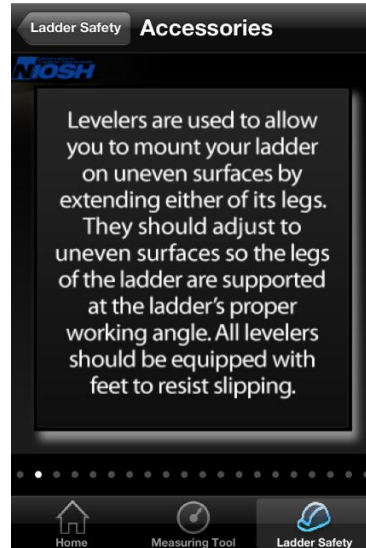
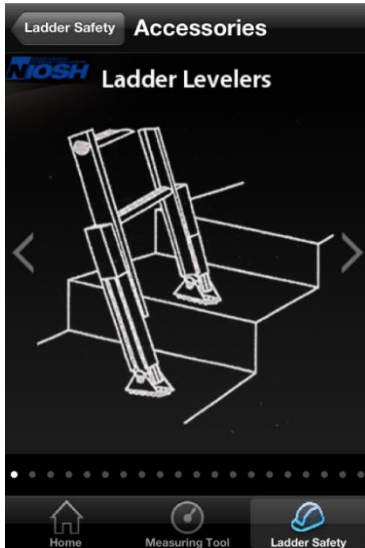
Screen 6: Accessories



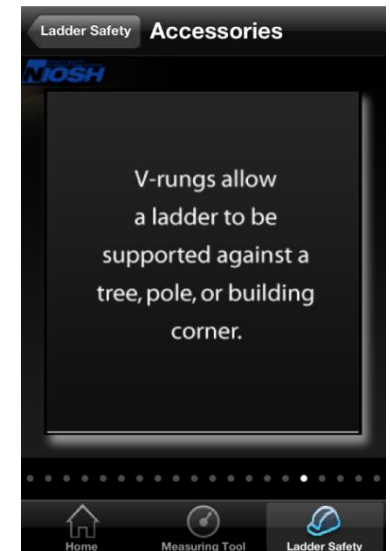
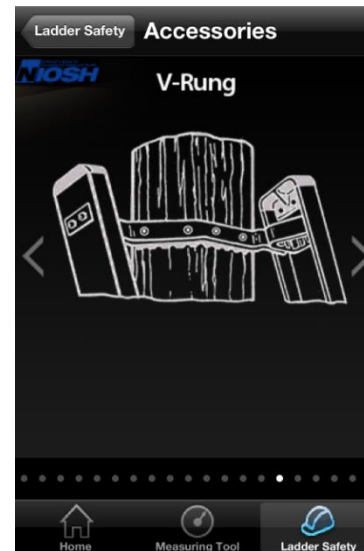
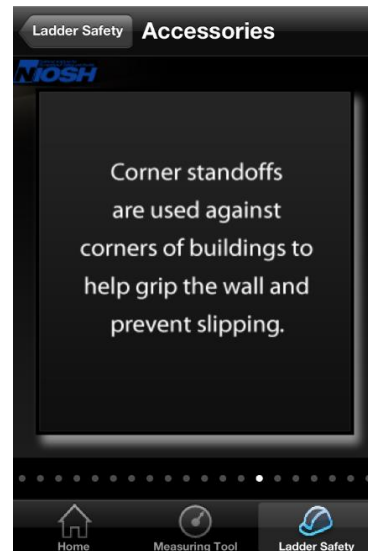
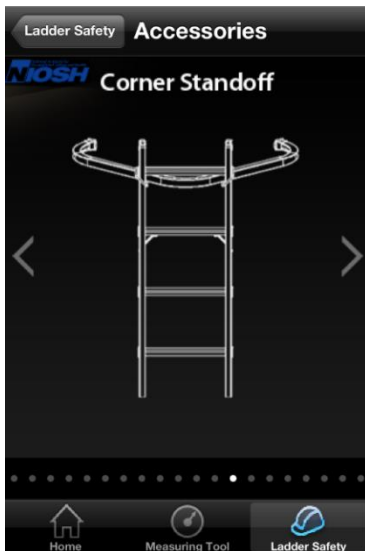
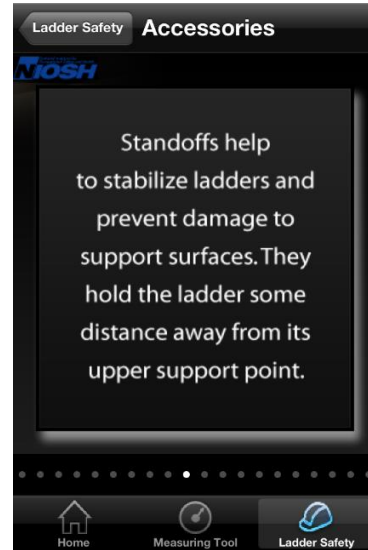
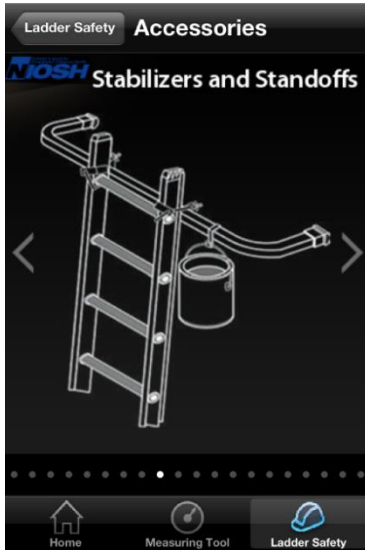
For all accessories images, the text read aloud will be the same as the caption.

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

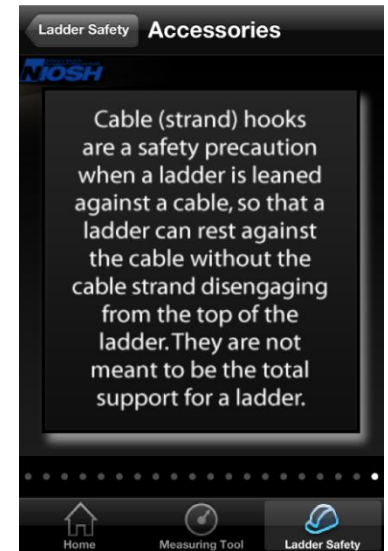
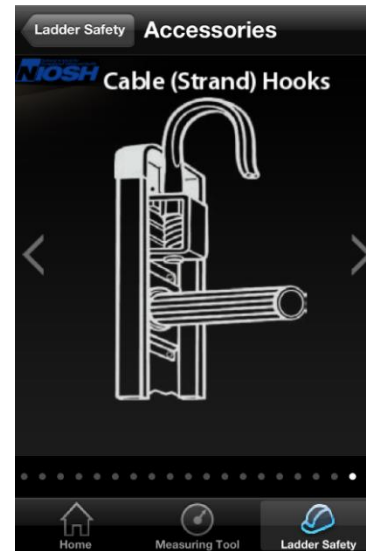
Screen 6: Accessories (cont'd)



Screen 6: Accessories (cont'd)



Screen 6: Accessories (cont'd)



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