



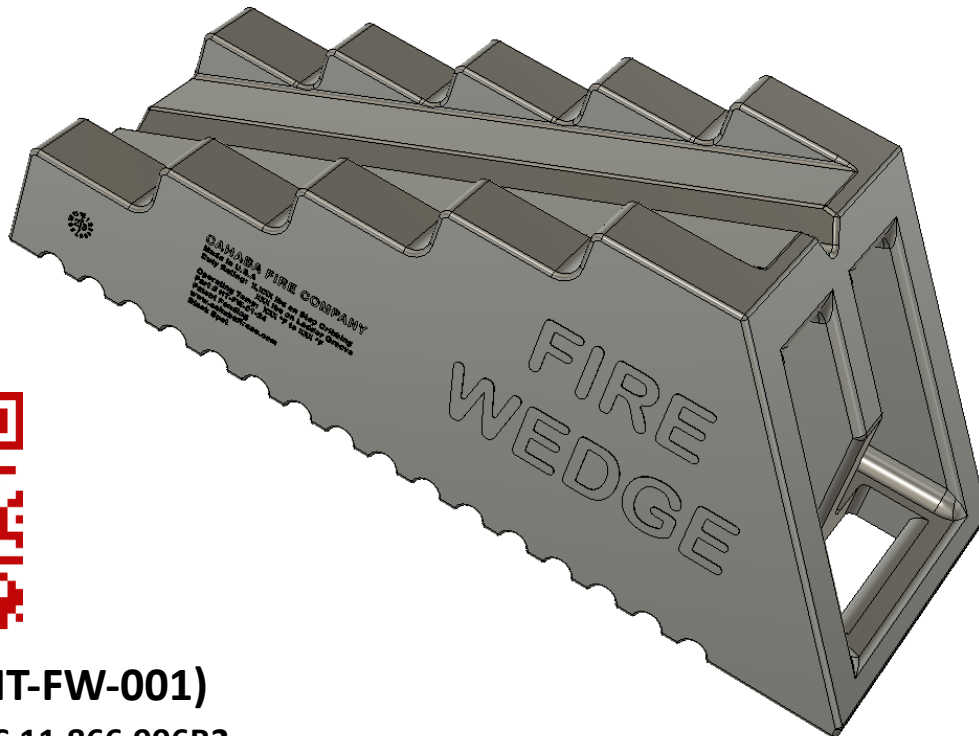
CAHABA FIRE COMPANY, LLC

FireWedge™

Use & Safety Manual

Safety First! Read and Follow All Instructions Before Use.

- ✓ Perform FireWedge™ Inspection
- ✓ Setup and Use Properly
- ✓ Properly Care for and Store



(Model # HT-FW-001)

Patent No.: US 11,866,996B2

☠ DANGER! FAILURE TO READ AND FOLLOW ALL INSTRUCTIONS IN THIS USER MANUAL MAY RESULT IN INJURY OR DEATH.

⚠ WARNING! DO NOT USE THE FireWedge WHEN SURFACE TEMPERATURE IS ABOVE 300°F.

Cahaba Fire Company, LLC (CFC) products are sold with instructions to guide users for proper use. These instructions and warnings should always be read and understood before use. Failure to follow all instructions and warnings may result in an injury, death, or property damage. Inventors, owners, manufacturers, wholesalers, retailers, distributors, and sales agents of Cahaba Fire Company, LLC are not responsible for injury, death, or damage caused by misuse or misapplication of the FireWedge. Any person or individual must be 18 years or older to use the FireWedge™.



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TABLE OF CONTENTS

INTRODUCTION	3
GENERAL	3
GENERAL TECHNICAL SPECIFICATIONS.....	3
PROPER CARE, MAINTENANCE, AND STORAGE.....	4
1. LADDER LEVELING	5
TECHNICAL SPECIFICATIONS FOR LADDER LEVELING	5
SAFETY REQUIREMENTS FOR LADDER LEVELING	5
INSPECTION BEFORE LADDER LEVELING	6
SETUP & USE INSTRUCTIONS FOR LADDER LEVELING	7
2. VEHICLE CRIBBING	10
TECHNICAL SPECIFICATIONS FOR VEHICLE CRIBBING.....	10
SAFETY REQUIREMENTS FOR VEHICLE CRIBBING.....	10
INSPECTION BEFORE VEHICLE CRIBBING	11
SETUP & USE INSTRUCTIONS FOR VEHICLE CRIBBING.....	12
3. WHEEL CHOCKING.....	14
TECHNICAL SPECIFICATIONS	14
SAFETY REQUIREMENTS FOR WHEEL CHOCKING.....	14
INSPECTION BEFORE WHEEL CHOCKING.....	15
SETUP & USE INSTRUCTION FOR WHEEL CHOCKING	15
WARRANTY.....	18



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INTRODUCTION

This Manual is intended to provide instructions for the safety, proper use, care, and maintenance of the FireWedge. This Manual is not intended or purposed to replace any of the existing standards, publications, or manuals covering fire service ladders, commercial ladders, ladder accessories, vehicle cribbing, or wheel chocks and the specifications for their use. It is not the intent of this Manual to restrict any jurisdiction from exceeding or combining these minimum requirements. It is intended to be a useful and important supplement to those publications.

Multiple federal, state, local, Occupational Safety and Health Administration (OSHA) and industry regulations apply to ladders, ladder accessories, vehicle cribbing, and wheel chocks. It is your responsibility to be aware of and to comply with those rules and regulations in addition to this Manual. For further information, contact the ANSI, NFPA, or OSHA offices. Helpful references:

For fire department ground ladders and ladder accessories, please refer to the latest publications of National Fire Protection Association (NFPA) 1931 and 1932, American National Standards Institute (ANSI) ASC A14.1, A14.2, A14.5, & A14.8, OSHA 29 CFR 1926 Subpart X, and International Fire Safety and Training Association (IFSTA).

For vehicle cribbing (blocking), please refer to the latest publications of NFPA 1670, NFPA 1006, OSHA 1926, U.S. Army Corps of Engineers Urban Search and Rescue Field Operations Guide (FOG), and Federal Emergency Management Agency (FEMA).

For wheel chocks, please refer to the latest publications of NFPA 1901, NFPA 1911, OSHA 1910, Federal Highway Administration (FHWA), SAE, DOT and MSHA 30 CFR § 57.14207 and 56.14105 compliance standards.

The FireWedge complies with the safety requirements of a variety of industries and is 3rd party tested to strict quality standards to ensure safety.

GENERAL

GENERAL TECHNICAL SPECIFICATIONS

Duty Ratings (Working Load Limits):

See the 3 Sections in this document for working load limits based on function and use.

The FireWedge is multi-functional and has multiple working load limits depending on how it is used.

- 1. Ladder Leveler**
- 2. Vehicle Cribbing**
- 3. Wheel Chock**

Temperature Rating (Operational Temperature Limit): -22°F to 300°F (-30°C to 149°C)

At 300°F (149°C), the FireWedge maintains at least 75% of the strength necessary to pass all test requirements of the NFPA 1931, NFPA 1932, and ANSI A14.8 Standards.

Weight: 40.1 lbs.



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Dimensions: 9.0" T x 10-3/8" W x 24-1/8" L (9.0 in. T x 10.375 in. W x 24.125 in. L)

Material: EPDM Rubber compound (vulcanized):

- Outstanding resistance to cold, heat, ozone, steam, water, weather, fireproof hydraulic fluids, ketones, and alkalis.
- Excellent electrical insulator, crack-resistant, repels mold and mildew growth, and environmentally friendly.

PROPER CARE, MAINTENANCE, AND STORAGE

Always inspect the FireWedge before and after use.

Routinely inspect the FireWedge regardless of use frequency.

CLEANING: Mild soap (e.g., dish soap) and water works well. Flush the cavities and inside the bottom treads to clear them of debris such as rocks and mud to ensure proper traction on surfaces. For stubborn bottom tread clogs, use a soft bristle brush to loosen debris and scrub clean.

IMPORTANT: Do Not use any petroleum-based solvents to clean the FireWedge. Petroleum based solvents (e.g., mineral spirits) will damage EPDM rubber.

Do Not screw, drill, cut, or penetrate the FireWedge to manipulate or add to the design. Doing so may compromise the structural integrity and consequently the duty ratings of the FireWedge.

Replace the FireWedge a maximum of 7 years after purchase.

⚠️ IMPORTANT: Clean FireWedges with soap and water before initial use.

Manufacturing oils on the FireWedge surface can reduce the ability to grip to each other or to surfaces.

Manufacturing oils must be removed before initial use.



1. LADDER LEVELING

TECHNICAL SPECIFICATIONS FOR LADDER LEVELING

The FireWedge is designed to provide a stable, firm, level base for a variety of ladders up to 35-feet in length on inclined or uneven surfaces if it is setup and used in compliance with applicable ladder safety standards and guidelines along with manufacturer's instructions.

FireWedge Ladder Duty Rating (Working Load Limit):

750 lbs. Ladder Duty Rating, up to a 35-foot ladder (rating applicable for ladder leveling function)

Ladder Types: Fire Service, IAA, IA, I, II, III including extension, combination, articulated, articulated extendable, step ladder, and trestle ladder; wood, metal and reinforced plastic.

- a. The FireWedge can safely support a 750 lbs. rated ladder with a 4:1 safety factor.
- b. Rating includes various feet designs (e.g., shoes, spurs, cleats, swivel feet).
- c. Rating is based on static loading with the ladder at a 75.5° angle of inclination and a FireWedge on a slope of 15.0° (26.7% surface grade).

NOTE: The "load" is defined by the applied load, including the combined weight of the ladder, user, materials, and tools, which the FireWedge is to support.

The FireWedge™ is designed to meet and exceed the highest ladder duty rating and anti-slip requirements by NFPA, ANSI, and OSHA Standards at time of manufacture.

SAFETY REQUIREMENTS FOR LADDER LEVELING

READ AND FOLLOW ALL INSTRUCTIONS BEFORE USE!

⚠CAUTION: Injuries associated with ladders and ladder accessories can be severe and life-changing. Therefore, ladders and ladder accessories must be properly used and maintained so that they safely and dependably function.

⚠WARNING: The duty ratings for ladders are listed differently between the ANSI, NFPA, and OSHA Standards. It is extremely important to know the duty rating for the specific type of ladder you will be using to ensure it is not overloaded.

Ladder Requirements for use with the FireWedge™: All ladders employing a FireWedge™ covered by this user manual must meet or exceed the most current applicable standards publications:

- 1) ANSI A14.1, A14.2, and A14.5.
- 2) NFPA 1931 and 1932.
- 3) OSHA 29 CFR 1926.

⚠CAUTION: Multipurpose ladders are typically manufactured in accordance with commercial standards. Because these ladders have a typical duty rating of only 136 kg to 170 kg (300 lbs. to 375 lbs.), which is far less than that of a



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ladder manufactured in accordance with NFPA 1931, it is highly recommended that multipurpose ladders be loaded with only a single person and not used for the rescue of victims where both the victim and the fire fighter are required to be on the ladder simultaneously (ref. NFPA 1931 – 2020, A.3.3.26).

Duty ratings are based on static loading with the ladder at a 75.5° angle of inclination. Ladders should be rated to safely support the maximum load with a 4:1 safety factor.

Fire Service Ground Ladder Duty Rating (ref. NFPA 1931 – 2020)		
Type	Maximum Load	
	lbs.	kg
Folding Ladders	300	136
Multi-purpose Ladders	300	136
Pompier Ladders	300	136
Single and Roof Ladders	750	340
All extension Ladders	750	340
Combination Ladders	750	340

Commercial/Industrial Ladder Duty Rating (ref. ANSI & OSHA)		
Type	Maximum Load	
	lbs.	kg
III – Light Duty (Household)	200	90
II – Medium Duty (Commercial)	225	102
I – Heavy Duty (Industrial)	250	113
IA – Extra Heavy Duty (Industrial)	300	136
IAA – Special Duty (Rugged)	375	170

Source for Types IA, I, II, III: OSHA 29 CFR 1926 Subpart X-Appendix A (ANSI 14.1, 14.2, 14.5 (1982)) of OSHA's Construction standards.

Source for Type IAA: ANSI 14.1, 14.2, 14.5 (2009).

INSPECTION BEFOR LADDER LEVELING

⚠CAUTION: All inspections outlined in this Section of this document must be performed prior to the performance of any setup or use of the FireWedge.

Always inspect the FireWedge prior to using it. If there is unacceptable damage, it must be removed from service and discarded. Unacceptable damage includes but is not limited to:

- Gouges, dents, cracks, breaks, permanent buckling/deformation
 - Gouges, dents, cracks, or breaks deeper than 1/8" in sidewalls are considered unacceptable damage.
 - Gouges, dents, cracks, or breaks deeper than 1/4" in the ladder groove are considered unacceptable damage.



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- Permanent deformation (set) in the FireWedge is considered unacceptable damage if the “set” is more than 1/4” or if the FireWedge can no longer support the maximum load rating.

Removal from Service

If an unacceptable defect or damage is identified to the FireWedge, it shall be removed from service and obviously marked as “**Out of Service**” with the date and a description of the defect that required it to be removed from service.

Repair of a FireWedge is not permitted under any circumstances, including but not limited to:

- Vulcanizing adhesives or glue of any kind.
- Mechanical joining such as using screws or pins to close cracks.

SETUP & USE INSTRUCTIONS FOR LADDER LEVELING

Safety First! Read and Follow All Inspection and Setup Instructions Before Use.

Definitions:

Angle of Inclination – the forward-backward lean angle as measured from the back side of a ladder to the level supporting surface.

Load - is defined by the total applied load, including the combined weight of the ladder, user, materials, and tools, for which the FireWedge is to support.

Lateral Tilt Angle (Tipping Angle) – the left-right angle as measured from the siderail of a ladder to the level supporting surface.

Grade (% pitch) – An upward or downward incline or slant, calculated as the rise divided by the run and expressed as a percentage. (e.g., a 33.3% grade = 4/12 pitched roof = 18.4° slope).

Slope Angle (Degree of Slope) – the angle that’s formed between the idealized level surface and your surface’s angular deviation from that idealized level surface. To calculate this, you divide the rise divided by the run, and then obtain the inverse tangent of the result. (e.g., a 23° slope = 42.4% grade ≈ 5/12 pitched roof).

The FireWedge groove is specifically designed to support fire service ground ladders that are equipped with butt spurs (pronged feet). The FireWedge ramp (adjacent to the groove) can support ladders with various style shoes, cleats, and swivel feet.

Regardless of foot type, the FireWedge has shown to effectively help prevent (but not completely stop) kickout and slippage at ladder angles of inclination between 55.0° to 75.5°. **Always use a ladder healer.**

⚠CAUTION: Slippery surfaces such as mud, sand, snow, or wet surfaces may cause the FireWedge to move when loaded. Do not climb a ladder that is supported by a poorly positioned, unstable FireWedge.

Ladder Leveling Do’s:

- Always wear PPE as directed by the AHJ and as needed to ensure safety while using the FireWedge.
- Only use the FireWedge for its designed purposes.
- Use at least two people while positioning and climbing a ladder that is supported by a FireWedge.



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- The person at the base of the ladder should act as a healer to prevent ladder kickout.

⚠ **WARNINGS** ⚠

Failure to understand and follow the instructions listed below may lead to injury, death, or property damage.

Ladder Leveling Do Not's:

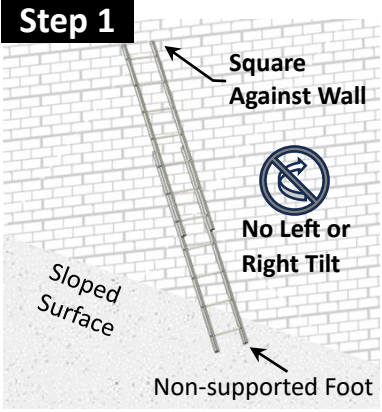
- Do not place or use the FireWedge in any way that could interfere with proper operation of the ladder or inhibit the function of any component parts.
- Do Not place a ladder on any FireWedge substitutes such as debris and objects (i.e., wood, bricks, rocks) that are not specifically designed, engineered, and tested to safely support a ladder.
- Do Not use the FireWedge as a substitute for care in placing, lashing, or holding a ladder that is used upon slippery surfaces including, but not limited to, metal or concrete surfaces that are constructed so they cannot be prevented from becoming slippery (*ref. OSHA 1926.1053.b.7*).
- Do Not lean over the ladder beams in a way that could cause the ladder to dislodge from the FireWedge.
- Do Not stack FireWedges on top of each other to gain extra support height during ladder operations.
- Do Not use the FireWedge if the slope or uneven surface is not within 1° to 23° inclusive.
- Do Not use the FireWedge if it is sliding, slipping, or rolling while climbing. Repositioning or mechanical anchoring may be necessary to ensure stability.
- Do Not use a ladder in conjunction with the FireWedge if the ladder is outside the acceptable working angles and not properly anchored/stabilized as stated by the ladder manufacturer and applicable Standards.
 - Typically, if ladder angles of inclination are outside of 60.0° to 75.5°, then additional means of securing and anchoring the ladder are necessary such as tiedowns.
- Do Not use the FireWedge cribbing steps as ladder support. This could create an unstable support.



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Instructions for proper ladder leveler setup on a sloped surface:

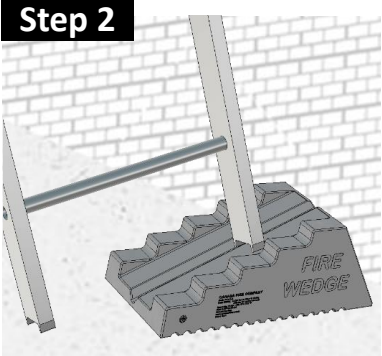
Step 1



Set the ladder at the proper working angle (i.e., the angle incorporated between the beams and a level plane) according to the manufacturer and applicable standard.

- Angle of Inclination** - When a non-self-supporting ladder is leaned against a wall, the bottom of the ladder should be one-quarter of the ladder's working length away from the wall (*ref. OSHA 1926.1053.b.5*).
- Upper contact points touching wall** - The ladder beams should be square to the stable structure against which it is leaning and one ladder foot placed securely on a stable ground surface. *The non-supported foot will be stabilized in the next step (Step 2).*
- Ladder not tilting/tipping**- The ladder should not be leaning left or right from center regardless of angle of inclination.

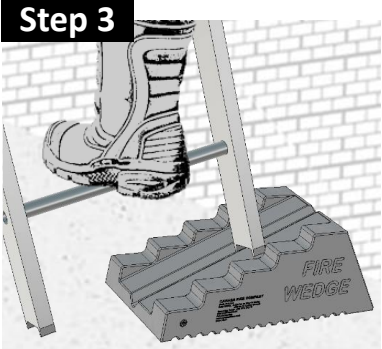
Step 2



Position the FireWedge under the non-supported foot of the ladder to create a level base so that it adjusts for uneven or irregular surfaces such that all legs of the ladder are securely and evenly supported when the ladder is maintained at its normal working angle during use (*ref. ANSI A14.8, 6.3.1.4*).

- If the ladder is equipped with a butt spur (pronged feet), then position the FireWedge until the non-supported butt spur is firmly supported in the FireWedge groove.
- The FireWedge handle must be on the downhill side and the groove should be approximately parallel to the wall for optimal performance.

Step 3



Put pressure on the bottom rung of the ladder to ensure proper positioning of the FireWedge under the base of the ladder. This action should “set” the ladder.

- Slippery surfaces such as mud, sand, snow, or wet surfaces may cause the FireWedge to move when loaded. It is best to safely test weight and load shifting at very low heights before ascending the ladder. One safe way to test, is to apply weight (e.g., hanging, not stepping) on the 4th or 5th rung from the base of the ladder.

NOTE: If properly positioned, when weight is applied, the top of the ladder should not tip left/right to unstable, unsafe positions.

The FireWedge must only be used on sloped or uneven surfaces that are **between 1° to 23° inclusive (grades 1.75% to 42.4%)** to provide a level base for ladders.



2. VEHICLE CRIBBING

TECHNICAL SPECIFICATIONS FOR VEHICLE CRIBBING

FireWedge Step Cribbing Duty Ratings (Working Load Limits):

4,500 lbs. for each crib step level alone (2.2:1 safety factor).

- The FireWedge can support more load than 4,500 lbs. **if** additional crib step levels are included to uniformly distribute the load. Each crib step level addition as a load support will add 4,500 lbs. to the top crib step Working Load Limit.

22,500 lbs. for all crib step levels combined (2.2:1 safety factor).

- The Total Working Load Limit with all 5 crib step levels combined, equally supporting a distributed load is 22,500 lbs. with a 2.2:1 safety factor.

NOTE: The Crib Step Level (also known as Level of Steps) is the row of steps that measures the same distance from the FireWedge bottom at the same level from one side wall to the other.

30,000 lbs. in the stacked configuration including:

- One FireWedge is upside down on top of the other
- Steps Levels 1 and 5 are interfacing with each other (all steps interlaced).
- Gap filler - A typical wood 2×6 (1.5" × 5.5") spanning the ladder groove length in between FireWedges.

IMPORTANT: FOR THE STACKED CONFIGURATION - A typical wood 2×6 (1.5" × 5.5") spanning the ladder groove length in between FireWedges must be in place before loading!

☠ DANGER! Do Not use the FireWedges in the stacked configuration without the 2x6 wood gap filler!

The 2x6 wood gap filler drastically increases stability in the stacked configuration in order to help prevent the FireWedges from sliding off of one another in the sidewall-to-sidewall direction.

SAFETY REQUIREMENTS FOR VEHICLE CRIBBING

READ AND FOLLOW ALL INSTRUCTIONS BEFORE USE!

User(s) of the FireWedge must review, understand, and be trained in cribbing/blocking/shoring methods and techniques as described or required by their organization, NFPA, OSHA, FEMA and/or the U.S. Army Corps of Engineers.

Requisite Knowledge & Skills: (ref. NFPA 1006)

- Different types of cribbing systems and their construction methods, limitations of construction lumber, load calculations, principles of and applications for cribbing, and safety protocols.
- The ability to select and construct cribbing systems, evaluate the structural integrity of the system, determine stability, and calculate loads.



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3. The ability to deploy and operate lifting devices, ability to deploy cribbing, recognition of competent lift points, calculation of weights and center of gravity, assessment of vehicle stability, use of tools or systems to prevent unwanted movement

Blocking (also referred to as "cribbing") can be wood or other material used to support and stabilize equipment or a component and distribute loads to the ground. Cribbing is an essential rescue tool, often supporting tremendous weight while rescuers operate underneath. It is necessary that all rescuers understand the safe and proper use of this vital tool.

- Due to the variation in the quality of any grade or species of wood and environmental factors such as temperature and humidity, it is difficult to predict the load capacity for any individual blocking/cribbing/shoring built using wood.
- Be cautious in mixing different materials in a cribbing stack, as load bearing capacity varies between different materials.

Tools that are used to move and lift: Airbags, Bars, Jacks, Hydraulic tools, etc. should not be considered as stabilizing objects (they are lifting objects) and should be backed up by appropriate cribbing and wedges.

Do Not exceed the Working Load Limit of the FireWedge in any blocking/cribbing configuration.

⚠WARNING: If the FireWedge experiences deformation past 3/4" (0.75"), the weight limit is in danger of being surpassed and the FireWedge being overloaded.

The FireWedge is intended for temporary cribbing/blocking use only.

INSPECTION BEFORE VEHICLE CRIBBING

⚠CAUTION: All inspections outlined in this Section of this document must be performed prior to the performance of any setup or use of the FireWedge.

Always inspect the FireWedge prior to using it. If there is unacceptable damage, it must be removed from service and discarded. Unacceptable damage includes but is not limited to:

- Gouges, dents, cracks, breaks, permanent buckling/deformation
 - Gouges, dents, cracks, or breaks deeper than 1/8" in sidewalls are considered unacceptable damage.
 - Permanent deformation (set) in the FireWedge is considered unacceptable damage if the "set" is more than 1/4" or if the FireWedge can no longer support the maximum load rating.

Removal from Service

If an unacceptable defect or damage is identified of the FireWedge, it shall be removed from service and obviously marked as "**Out of Service**" with the date and a description of the defect that required it to be removed from service.

Repair of a FireWedge is not permitted under any circumstances, for example:

- Vulcanizing adhesives or glue of any kind.
- Mechanical joining such as using screws or pins to close cracks.



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SETUP & USE INSTRUCTIONS FOR VEHICLE CRIBBING

Safety First! Read and Follow All Inspection and Setup Instructions Before Use.

One of the most desirable features of the FireWedge is that it provides the rescuer warning signs when it is becoming overloaded and before failure in the form of gradual buckling with increasing load or prolonged heavy load. This warning should allow the rescuer to mitigate the situation by immediately installing additional support to secure the load and taking safety precautions. The size, amount, condition and method of stacking the blocking must be sufficient to sustain the loads and maintain stability. Blocking/cribbing must be appropriately placed to prevent dangerous movement and collapse of supported loads.

Vehicle Cribbing Do's:

- Always wear PPE as directed by the AHJ and as needed to ensure safety while using the FireWedge.
- Always make the search and rescue area safe, including identifying and controlling the hazards presented by the vehicle, its position, or its systems.
- Identify the center of gravity of the load. Where there is insufficient information to accurately identify the center of gravity, measures designed to prevent unintended dangerous movement resulting from an inaccurate identification of the center of gravity must be used.
- Ensure the load is uniformly distributed throughout the cribbing stack. Avoid point loading.
- When cribbing on a slope, ensure the center of the load is contained within the footprint of the cribbing.
- Place the FireWedge so that it does not interfere with extrication or patient packaging.
- Place the FireWedge so that it does not prevent the opening of car doors.
- Place the FireWedge so that it does not become a trip hazard.
- Place the FireWedge so that it does not prevent the ability to push a dash or cut a vehicle component such as an "A pillar".

⚠ WARNINGS ⚠

Failure to understand and follow the instructions listed below may lead to injury, death, or property damage.

Vehicle Cribbing Do Not's:

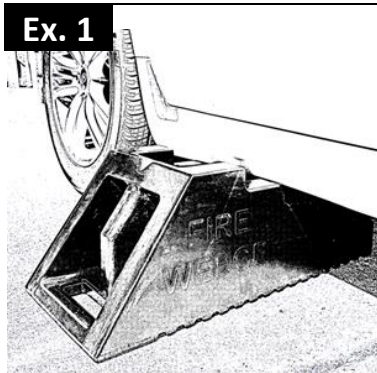
- Do Not work on top of or under a vehicle until it has been blocked or mechanically secured to prevent it from rolling, sliding, falling, or accidentally lowering.
- NEVER put a part of your body between the load and the blocking/cribbing.
- Do Not support loads from above if the load cannot transfer through blocking/cribbing in a stable fashion.
- Do Not use the FireWedge for outrigger blocking or cribbing.
- Do Not use the FireWedge on its side as it is not designed to support loads in that manner.
- Do Not leave blocking/cribbing unattended while supporting a load especially on uneven or sloped surfaces.
- **Do Not stack FireWedges more than 3 times higher than the minimum base dimension of cribbing stack (3:1 ratio).**
 - If cribbing is on a slope, the safe height of the stack is limited to 2× the minimum base dimension (2:1 ratio).

⚠WARNING: If the FireWedge experiences deformation past 3/4" (0.75 in.), it is in danger of being overloaded.



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Cribbing setup may vary depending on the scene. Here are a few examples for various scenarios:

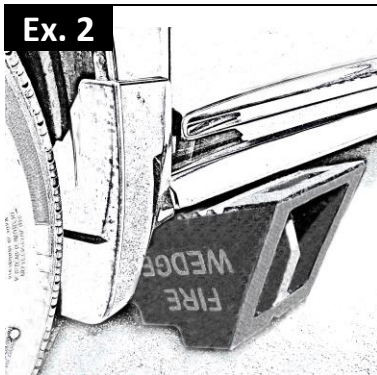


Ex. 1

Slide the FireWedge under the frame of the vehicle until the FireWedge snugly supports a load from tipping, rolling, sliding, or falling.

- a. Extra wedging/blocking may be necessary to obtain a snug fit with the vehicle.
- b. In some cases, it may be possible to lower the load onto the crib to gain more stability.

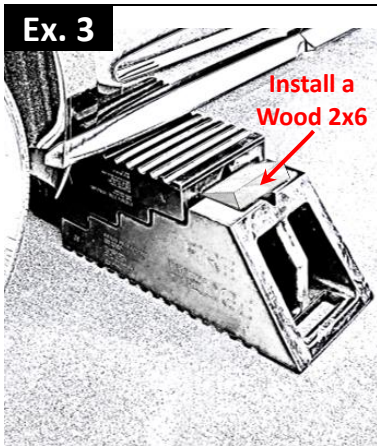
For example, position the cribbing in place under the frame, and then lower the load by flattening the tires.



Ex. 2

Turn the FireWedge upside down and slide under the vehicle until the FireWedge snugly supports a load from tipping, rolling, sliding, or falling.

⚠CAUTION: If upside down, the FireWedge has 50% less friction contact with the ground and 40% less load capacity. Caution should be taken to ensure stability of the load.



Ex. 3

To obtain taller support by stacking FireWedges, follow these instructions:

1. Slide a FireWedge under the center of the load to be supported.
2. Place a gap filler spanning the ladder groove length.
 - a. Gap filler = A typical wood 2x6 (1.5" x 5.5")
3. Turn another FireWedge upside down and stack it on top of the bottom with the steps interlacing with one another.
 - a. Ensure that the wood gap filler is in place and snug.
4. Alternate one FireWedge upside down on top of another, until the desired height is reached.
 - a. Extra wedging/blocking may be necessary to obtain a snug fit with the vehicle.

IMPORTANT: FOR THE STACKED CONFIGURATION - A typical wood 2x6 (1.5" x 5.5") spanning the ladder groove length in between FireWedges must be in place before loading!

⚠WARNING: Do Not stack FireWedges more than 3 times higher than the minimum base dimension of cribbing stack (3:1 ratio). If cribbing is on a slope, the safe height of the stack is limited to 2x the minimum base dimension (2:1 ratio).

☠ DANGER! Do Not use the FireWedges in the stacked configuration without the 2x6 wood gap filler!



3. WHEEL CHOCKING

TECHNICAL SPECIFICATIONS

Wheel Chock Duty Ratings (Working Limits):

Rated for tire sizes up to 41 in. (104.1 cm) diameter and Gross Vehicle Weight Rating (GVWR) up to 86,000 lbs. (39,008.9 kg).

- a. Rating applicable on a hard surface with a slope of 11.3° (i.e., 20% grade) with the transmission in neutral and the parking brake released.
- b. Gross Vehicle Weight Rating (GVWR) includes total vehicle weight plus fluids, passengers, and cargo.
 - i. The GVWR can usually be found on a placard or sticker on or around the driver's seat or door jam.
- c. Before use, the FireWedge must be tested on the vehicle to ensure effectiveness in preventing unwanted vehicle movement on various surface grades.

More Details on vehicle weight classes can be found on the U.S. Department of Transportation, and Energy and Environmental Protection Agency websites.

SAFETY REQUIREMENTS FOR WHEEL CHOCKING

READ AND FOLLOW ALL INSTRUCTIONS BEFORE USE!

User(s) of the FireWedge must review, understand, and be trained in wheel chocking methods and techniques as described or required by their organization, NFPA, OSHA, FHWA, MSHA, SAE, or DOT.

If the emergency vehicle is not equipped with two wheel chocks mounted in readily accessible locations, the emergency vehicle shall be taken out of service (*ref. NFPA 1911*).

FireWedges should be stored on the apparatus/vehicle in readily accessible locations, that together when properly placed will hold the apparatus/vehicle, when loaded to its GVWR, on a hard surface with a 20 percent grade with the transmission in neutral and the parking brake released (*ref. NFPA 1901*).

The Gross Vehicle Weight (GVW) must fall within the GVWR of the FireWedge.

Before using the FireWedge as a wheel chock, test the ability for it to safely hold the specific vehicle to be chocked in the environment it is to be used in with the vehicle operator in the driver's seat. Many variables can affect the wheel chocking ability including vehicle weight, tire diameter, surface grade, surface condition, and tire pressure.

⚠️WARNING: To ensure safety, before deployment in the field the end user is required to test the FireWedge as a suitable wheel chock for their apparatus/vehicle and for their application.



CAHABA FIRE COMPANY, LLC

INSPECTION BEFORE WHEEL CHOCKING

⚠CAUTION: All inspections outlined in this Section of this document must be performed prior to the performance of any setup or use of the FireWedge.

Always inspect the FireWedge prior to using it. If there is unacceptable damage, it must be removed from service and discarded. Unacceptable damage includes but is not limited to:

- Unacceptable gouges, dents, cracks, breaks, permanent buckling/deformation
 - Gouges, dents, cracks, or breaks deeper than 1/8" in sidewalls is considered unacceptable damage.
 - Permanent deformation (set) in the FireWedge is considered unacceptable damage if the "set" is more than 1/4" or if the FireWedge can no longer support the maximum load rating.

Removal from Service

If an unacceptable defect or damage is identified of the FireWedge, it shall be removed from service and obviously marked as "**Out of Service**" with the date and a description of the defect that required it to be removed from service.

Repair of a FireWedge is not permitted under any circumstances, including but not limited to:

- Vulcanizing adhesives or glue of any kind.
- Mechanical joining such as using screws or pins to close cracks.

SETUP & USE INSTRUCTION FOR WHEEL CHOCKING

Safety First! Read and Follow All Inspection and Setup Instructions Before Use.

The proper setup is intended to prevent movement of parked vehicles, and to prevent injury or death.

Under all circumstances, due regard must be exercised for the safety of others. To ensure safety, it is the responsibility of the end user to determine proper chocking of a vehicle under the circumstances presented.

Definitions:

Heavy Vehicle - Heavy duty highway, off-road, construction, or mass transit vehicles constructed of materials presenting resistance to common extrication procedures, tactics, and resources and posing multiple concurrent hazards to rescuers from occupancy, cargo, size, construction, weight, or position.

Grade (% pitch) – An upward or downward incline or slant, calculated as the rise divided by the run and expressed as a percentage. (e.g., a 20% grade = 11.3° slope).

Gross Vehicle Weight Rating (GVWR) - total vehicle weight plus fluids, passengers, and cargo.

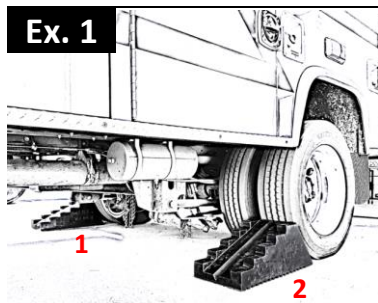
Slope Angle (Degree of Slope) – the angle that's formed between the idealized level surface and your surfaces angular deviation from that idealized level surface. To calculate this, you divide the rise divided by the run, and then obtain the inverse tangent of the result. (e.g., a 13% grade = 7.4° slope).



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Required Number of FireWedges as Wheel Chocks			
Surface Grade	Light Duty	Medium Duty	Heavy Duty
Level	0	0	2
≤ 13% (≤ 7.4° slope)	2	2	2
> 13% (> 7.4°) or in doubt	2	2	4
Slippery Terrain	4	4	4

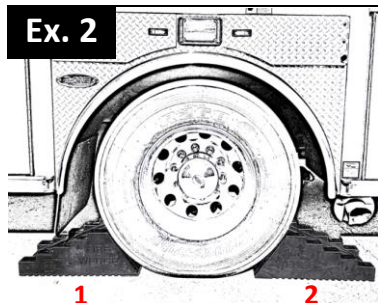
Wheel Chocking setup may vary depending on the scene, GVWR, and wheel size. Here are a few examples:



Light Duty & Medium Duty Vehicles – any surface grade

- Use a minimum of 2 FireWedges as wheel chocks.
- Apply the chocks firmly to wheels of the same axle on the downhill side.
- If terrain is slippery, apply more FireWedges as necessary.

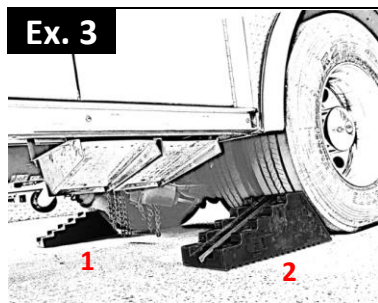
⚠CAUTION: Always apply in pairs across the same axle.



Ex. 2

Heavy Duty Vehicle – Level surface grade

- Use a minimum of 2 FireWedges as wheel chocks.
- Apply the chocks firmly to both sides of one wheel on the rear axle.
- If terrain is slippery, apply more FireWedges as necessary.

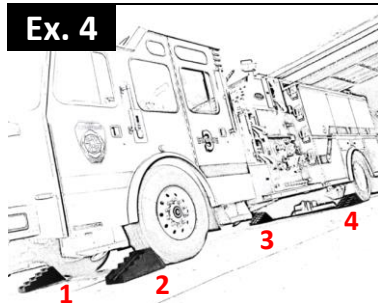


Ex. 3

Heavy Duty Vehicle - Surface grades of less than 13% (i.e., ≤ 7.4° slope).

- Use a minimum of 2 FireWedges as wheel chocks.
- Apply the chocks firmly to wheels of the same axle on the downhill side.
- If terrain is slippery, apply more FireWedges as necessary.

⚠CAUTION: Always apply in pairs across the same axle.



Ex. 4

Heavy Duty Vehicle – Surface grades of more than 13% (i.e., > 7.4° slope).

- Use a minimum of 4 FireWedges as wheel chocks.
- Apply the chocks firmly to wheels of both axles on the downhill side.
- If in doubt of surface grade, use 4 FireWedges as wheel chocks.



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Wheel Chocking Do's:

- Always wear PPE as directed by the AHJ and as needed to ensure safety while using the FireWedge.
- Always make the search and rescue area safe, including identifying and controlling the hazards presented by the vehicle, its position, or its systems.
- Before use, Do test the FireWedge to ensure it is a suitable wheel chock for the apparatus/vehicle and for the application.
- Park vehicle according to manufacturer's instructions.
- Always set the parking brake when in park.
- If leaving the apparatus/vehicle unattended when parked upon any perceptible grade, turn the front wheels to the curb or side of the highway facing away from traffic. (ref. 30 CFR 56.14207)
- Use in pairs, on downhill side of the vehicle. For level grades, place on both sides of one rear wheel.
- Place the FireWedge centered and squared with the wheel.
- Push the FireWedge firmly against the wheel tread.
- Chock Heavy-Duty Vehicles on a level surface grade with a minimum of 2 wheel chocks applied firmly to both sides of one wheel on the rear axle.
- Chock Light-Duty, Medium-Duty & Heavy-Duty Vehicles on surface grades of 13% or less (i.e., $\leq 7.4^\circ$ slope) with a minimum of 2 wheel chocks applied firmly to the downhill side of wheels on the same axle.
- Chock Light-Duty & Medium-Duty Vehicles on surface grades of more than 13% (i.e., $>7.4^\circ$ slope) with a minimum of 2 wheel chocks applied firmly to the downhill side of wheels on the same axle.
- Chock Heavy-Duty Vehicles on surface grades of more than 13% (i.e., $>7.4^\circ$ slope) with a minimum of 4 wheel chocks applied firmly to the downhill side of wheels on both axles.
- If in doubt of surface grade or holding ability, use 4 FireWedges as wheel chocks.

⚠ WARNINGS ⚠

Failure to understand and follow the instructions listed below may lead to injury, death, or property damage.

Wheel Chocking Do Not's:

- Do Not use the FireWedge in place of setting brakes or parking controls. Always set the parking brake!
- Never chock just one front wheel! Always apply in pairs across the same axle.
- Do Not purposefully drive over FireWedges.
- Do Not use the FireWedge for vehicles that have tire diameters larger than 41 inches.
- Do Not use the FireWedge for vehicles that have a GVW over 86,000 lbs.
- Do Not rely on the FireWedge to stop or prevent uncontrolled movement on inclined surfaces greater than 11.3° (i.e., 20% grade).
- Do Not use the FireWedge until it has been tested as a suitable wheel chock for the apparatus/vehicle and for the application.



CAHABA FIRE COMPANY, LLC

WARRANTY

Cahaba Fire Company, LLC (CFC) products shall be free from defects in material and defects in workmanship under normal use and service. This warranty is in effect within the first one year of purchase. The Company's warranty is limited to replacement of any product CFC determines has failed during the warranty period due to defective material or workmanship. After written approval by CFC, the product or defective part must be returned prepaid to the manufacturing plant. The provisions of the warranty shall not apply to any CFC product which has been subject to misuse, negligence, alteration or accident, or which has been repaired in any way.

When we receive and accept a valid warranty claim for a product purchased from us, we will replace the product. If we are unable to replace the product within a reasonable time at CFC's discretion, the customer will be entitled to a full refund upon the prompt return of the product to us. CFC will pay for shipment of the replaced product and the customer will be responsible for the return shipment of the product to the manufacturer.

There are no warranties which extend beyond the description on the face hereof.

Re-sale or distribution of the FireWedge is not permitted either directly or indirectly unless approved by Cahaba Fire Company, LLC.

Renting or leasing of the FireWedge is prohibited.

The FireWedge is only allowed to be used by the end user or purchaser in accordance with this Use & Safety Manual.



CAHABA FIRE COMPANY, LLC

A digital copy of this Use & Safety Manual is available at:

www.cahabafireco.com/product-user-manuals



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