Sam Carbis Solutions Group, LLC
ALCO-LITE
Established in 1930

FIRE LADDER
SAFETY HANDBOOK

Sam CARBIS Solutions Group, LLC

1.800.752.2526
www.FireLadder.com

Sam Carbis Solutions Group, LLC (ALCO-LITE™) appreciates your interest in using our fire department ground ladders. This handbook has been developed to help you understand the safe use of these ladders and to assist in your training and maintenance programs.

This handbook was not designed to replace any of the existing standards, publications, or handbooks covering fire department ground ladders and the specifications for their use. It is intended to be a handy supplement to those publications.

The primary publications dealing with fire department ground ladders are the NFPA Standards 1960 and 1930 and IFSTA (International Fire Safety and Training Association) publication entitled Fire Service Ground Ladder Practices, Ninth Edition. The Ninth Edition is an excellent document, designed as a training manual for the safe use of fire department ground ladders. A fire department utilizing both NFPA 1930 and IFSTA Ninth Edition can easily develop a good, safe ladder program.

A word of caution: injuries associated with ladders are usually catastrophic. Therefore, ladders should be recognized for what they are: specially designed access tools; and, like any other tool, a ladder must be properly used and maintained so that it safely and dependably functions.

Rung Replacement

Easy rung replacement with the use of regular tools

Visit FireLadder.com to see how quick and easy rung replacement is on an ALCO-LITE™ Ladder

ALCO-LITE™ HISTORY

The ALCO-LITE™ brand was founded back in 1930 by Sam Carbis. Before 1930, all portable ladders were constructed of wood. Sam was in research and design for ALCOA (the aluminum people), and his group was charged with thinking of new ways to use aluminum, which at that time was a relatively new material. Hard to believe now, isn't it?

Sam came up with the idea of making fire ladders out of aluminum. ALCOA did manufacture products such as aluminum foil, pots, and pans, etc., but they didn't wish to manufacture aluminum fire ladders. Sam did, and he built the first aluminum ladder in 1930 for the Tarentum, Pennsylvania Fire Department. When last we heard, that first ladder was still on the active list at the Tarentum Fire Department.

Gradually, ALCO-LITE™ grew and moved to larger facilities. After the initial start in fire department ladders, ALCO-LITE™ branched out into the industrial ladder field, as well as the manufacture for marine gangways. ALCO-LITE™ continues to lead the way as a symbol of quality and leadership in those areas today.

Because of our commitment to quality, technological leadership, dependability, safety, and service, Sam Carbis Solutions Group, LLC is quite proud of the ALCO-LITE™ emblem and the products it represents.

During World War II, when aluminum was scarce and only available to defense contractors, ALCO-LITE™ branched out into many specialty items. Today, the special fabrication field is one of our major growth areas. Other areas where you'll find ALCO-LITE™ products include the petrochemical field, the utility and electrical fields, tank car access equipment, and aviation ground support equipment. Wherever access is required, ALCO-LITE™ leads the way.

In the fire department field, ALCO-LITE™ has continued its position of leadership by participating in the development of stringent safety codes to provide the firefighter with the equipment needed to successfully complete his task.

TYPES OF LADDERS

I am often asked the difference between a fire department ladder and a much less expensive ladder available in my local discount store. The major difference, of course, is the quality of the item. All fire department ladders are constructed to meet and/or exceed the rigorous requirements of the National Fire Protection Association (NFPA) Standard 1960. In the non-fire department world, ladders are constructed to meet the ANSI (American National Standards Institute) requirements and/or OSHA requirements. Ladders meeting these requirements are designed to carry one person at a time, while fire ladders will carry multiple people (except for certain specialized models).

Commercial Ladders

Commercial ladders fall into four duty categories. They are:

Type III Household Duty Rating, designed for a load of 200 pounds
Type II Commercial Duty Rating, designed for a load of 225 pounds
Type I Heavy-Duty Industrial Rating, designed for a load of 250 pounds
Type IA Extra Heavy-Duty Industrial Duty Rating, designed for a load of 300 pounds

Fire department ladders, on the other hand, are tested to carry a load approximately three times that of an industrial grade ladder.

Rung Spacing

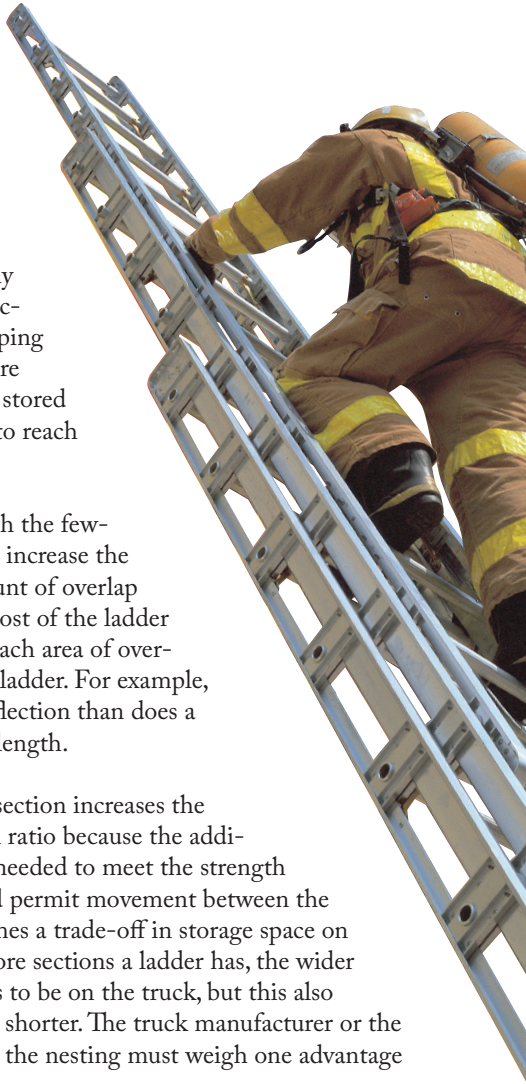
Rung spacing is another difference. Rungs on commercial ladders are generally 12 inches apart, while on fire ladders they are 14 inches apart. This is because a firefighter might encounter a situation where it is necessary for him to do a leg lock on a ladder. This is a difficult maneuver at best, but it is substantially easier with a 14-inch spacing versus a 12-inch spacing. Additionally, fire ladders provide greater stability and more area over which to do rescue work.

Ladder Types

You will generally find an assortment of ladders on any given ladder truck. First, there is the single, or wall ladder, which is a single-section ladder. This fixed length ladder can be easily handled by one person. The roof ladder is very similar to the wall ladder. The main difference is that it is equipped with two large hooks near the top of the ladder. These hooks may be turned from the stored position outward to help support the ladder on a sloped roof. Generally, this type of ladder is used for access work in venting a roof. The roof ladder is often used to spread the weight of the firefighters over a larger area of the roof.

Extension Ladders

Several types of extension ladders are available. The two-section, consisting of the base, or bottom, section and one telescoping fly section; the three-section, consisting of a base and two telescoping fly sections; and, in some rare cases, a four-section consisting of a base and three telescoping fly sections. Generally, extension ladders are designed to telescope so that they may be stored in shorter areas of the vehicle but extend to reach the necessary length when needed.



In most cases, it is best to use a ladder with the fewest sections needed to do your job. As you increase the number of sections, you increase the amount of overlap required in the ladder. This increases the cost of the ladder per foot of maximum usable length, and each area of overlap tends to increase the deflection in the ladder. For example, a two-section ladder generally has less deflection than does a three-section of similar construction and length.

Each additional section increases the weight-to-length ratio because the additional overlap is needed to meet the strength requirements and permit movement between the sections. It becomes a trade-off in storage space on the truck. The more sections a ladder has, the wider and thicker it has to be on the truck, but this also makes the ladder shorter. The truck manufacturer or the person designing the nesting must weigh one advantage against the other.

Specialty Ladders

In fire service, we have several specialty ladders, including the folding ladder. This ladder has two side rails that telescope toward each other when in the stored position. This long, thin ladder is ideal for storing on the truck, and it can be maneuvered through tight spaces. Unfortunately, it is difficult to maneuver around corners and into spaces where its length becomes unwieldy. For those situations, the combination ladder is generally a better selection.

A combination ladder in the fire service is a ladder that is both an "A" section, very similar to a stepladder, and/or an extension or single ladder. The most popular combination ladders are those that can be quickly changed from one configuration to another.

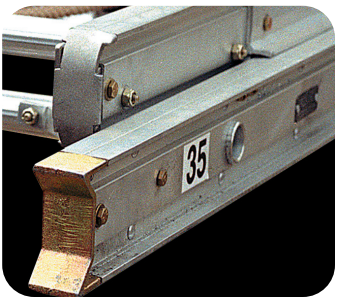
In recent years, the fire service has been exposed to "new" ladders that offer great versatility and appear to be easily manipulated from one position or size to another. Our experience shows that most fire departments find that the simpler a unit is to operate, particularly in an emergency situation, the better. The highly specialized ladders may have a place in some departments, but they do require a high degree of training for best results in actual use.

Another unique fire department ladder is the pompier ladder. This is nothing more than a pole with rungs out each side and with a large hook at the top. This single hook can be used to go over a window sill, allowing a firefighter to scale from one floor to the next. Although this particular ladder is not as popular as it once was, it is regaining some of its former appeal. The key to implementing this particular ladder depends upon the willingness of the fire department to actively train their personnel so they feel comfortable using this unusual item.

Many fire departments now carry an A-frame ladder on their fire trucks. This ladder is commonly called a stepladder in the industrial or commercial market. It is often used for maintenance and/or exterior work. The disadvantage is that it requires a lot of space on the truck. For that reason, many departments use a combination ladder in lieu of the stepladder.

Footnote

All fire department ladders have the size marked near the base for quick and easy reference. Train your personnel to quickly identify the ladder they are seeking. We recommend that the frequency of use be considered when designing your nesting compartment. A quick review can help you determine which ladders you most commonly use at the fire ground activities. This helps determine where a ladder should be nested on the apparatus.



TYPE OF MATERIALS

Theoretically, fire department ground ladders can be made from any type of material and still meet the NFPA Standards. In reality, there are three primary materials used in the the construction of fire department ground ladders. By far the most prevalent, due to its good strength-to-weight characteristics and its relative low cost, is aluminum. The next most common is wood. The newest and least common material is fiberglass. What follows is a brief overview of these three materials, along with some of the advantages and disadvantages associated with their use.

Aluminum

Since pure aluminum would not be structurally sound, we use manufactured alloys which are designed to give specific properties. There are a number of advantages to using aluminum. It is relatively lightweight. This helps keep the ladder manageable and requires fewer fire department personnel.

Since it is a man-made material, aluminum has been in relatively abundant supply. It is available in many sizes and shapes that can be designed to carry specific load levels. It is relatively inexpensive and can be tested to determine the continued structural integrity of the ladder. Failure can be more gradual than in wood and fiberglass. There are also disadvantages to aluminum. It is a good conductor of both heat and electricity and requires extreme caution when being used around power lines or potential electrical charges.

Use extreme caution and avoid all electrical charges when using aluminum ladders.

Aluminum, as it is found in fire department ground ladders today, is a heat treated alloy. This treatment is done to give greater strength for the relative weight of the section. Heat treating strength, however, can be reversed by exposure to elevated temperatures. Exposure to heat of approximately two hundred degrees (200°F) can cause irreparable changes which can lead to a loss of structural integrity. The higher the temperature, the quicker this change can be made.

Safety Tips

1. Remember, aluminum does not change color when heated. You cannot determine with the naked eye if there has been a change due to heat exposure.
2. If you see water that comes in contact with the ladder sizzling or turning to steam, immediately remove the ladder from service until tested.
3. WARNING: Keep aluminum ground ladders away from the exhaust system of the apparatus. Never lean a ground ladder against the apparatus near the exhaust in order to facilitate getting another ladder off of the truck. The heat from the exhaust system can weaken the ladder. Also, check that there are no sources of engine heat discharging over the ladder when it is in its nesting compartment.
4. Have your aluminum ground ladders regularly tested, and use heat sensor labels on each section. Use of these labels can help you determine when the ladder has been exposed to potentially damaging heat.

Aluminum ladders can become extremely cold in frigid conditions, causing a bare hand to adhere to the surface. However, this is usually not a problem in the fire service since virtually all firefighter are wearing gloves.

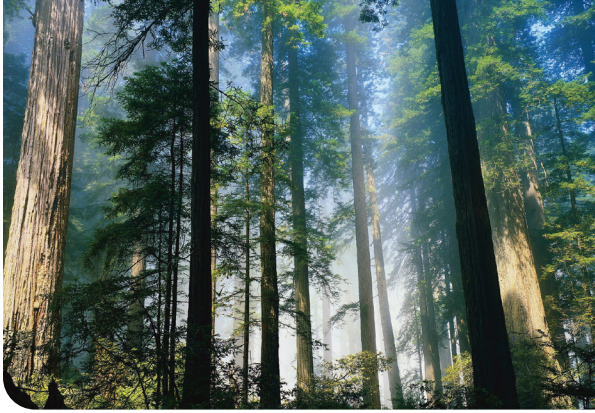
General Comments on Aluminum Ladders

Despite the negative factors, aluminum tends to be the best material currently available for fire department ground ladders. Aluminum ladders do require training in their use because of the characteristics of the material. With a good training program and the use of proper precautions, especially around electricity, aluminum ladders can give you years of trouble-free service with little maintenance.

Wood

Until ALCO-LITE™ invented the aluminum ladder, wooden ladders were the only thing going. Since that time, the use of wood in fire service ground ladders has been steadily decreasing. In this section, we will touch on several factors in the decrease of wooden ladder use.

There are a few advantages to wooden ladders. Wood is less affected by heat than aluminum or fiberglass. A dry wooden ladder is relatively nonconductive of both heat and electricity. Wooden ladders tend to be slightly more resistant to abrasions and damage. A highly polished, well conditioned wooden ladder is more attractive and has a shinier finish than do either aluminum or fiberglass ladders.



One of the major disadvantages of wooden ladders is the very nature of wood itself. The quality of wood required for a ladder rail is higher than the quality of wood required for other applications. Therefore, the tree must be developed longer and be more defect-free for a ladder rail. Costs increase, and there is a far higher rate of scrap from wooden ladder material than from either aluminum or fiberglass. This increased scrap also increases the cost of wooden ladders.

Because of these factors, wooden ladders are more expensive than comparable ladders of other materials. They are also heavier. Wooden ladders can have structural defects that are not readily visible to the manufacturer or to the untrained user. In fact, some of the defects are virtually impossible to detect. Wooden ladders tend to fail without warning and require substantially more maintenance than either aluminum or fiberglass ladders. A wooden ladder, improperly maintained, can develop serious structural defects. Wooden ladders cannot be tested as reliably as aluminum ladders.

General Comments on Wooden Ladders

While some departments have either continued using wooden ladders or have even switched back to wood in recent years, wooden ladders are not as popular as aluminum ladders. The major factors are the increased weight and maintenance of wooden ladders. Since a wooden ladder must have periodic maintenance to remain safe and usable, most of the major wooden ladder users have highly trained maintenance personnel and must maintain well-staffed shops.

Fiberglass

Although fiberglass ladders are relatively new in the fire service, they are not new in the ladder industry. At ALCO-LITE™, we have been manufacturing fiberglass ladders for industrial and utility applications for more than three decades. Beginning in 1989, we also manufacture fiberglass fire ladders.

As a material, fiberglass is relatively new. What we call fiberglass is more accurately described as FRP (fiber reinforced plastic).

General Comments on Fiberglass Ladders

Generally, the fiberglass you see in a fire department ground ladder has been made through what is called a "pultrusion" operation. Aluminum, on the other hand, is made through an extrusion process. The difference is that the aluminum is pushed through the die, while the fiberglass is pulled through the die.

There are advantages to fiberglass. It is non-conductive and relatively impervious to chemical attack. Since fiberglass is a man-made material, it can be produced in many different shapes. With a good quality control program, the material maintains consistent quality.

At ALCO-LITE™, we have brought the same care and concern for quality to the manufacturing of fiberglass ground ladders. We have selected an I-beam shape to provide the greatest strength to our fiberglass ladders.

We use a reinforced fiberglass resin that provides the greatest possible chemical r esistance and flame retardance. The rungs are attached with the exclusive ALCO-LITE™ bushing method. This means greater strength and easy repairability in the field.

Like all materials, fiberglass is not without its disadvantages. It is more expensive than aluminum and tends to be heavier and less resistant to impact damage than aluminum. Fiberglass ladders, like wooden ladders, tend to fail more catastrophically and with less warning than do aluminum ladders. Fiberglass is as susceptible to heat as aluminum; and, according to some experts, in approximately the same temperature ranges.

TYPE OF LADDER CONSTRUCTION

Generally speaking, there are two types of construction used in fire department ground ladders: truss construction and solid beam construction. You can recognize truss construction by the open ladder side rail between the rungs. This opening is achieved by building a truss, like that in a bridge's structural member, along the side rail or beam of the ladder.

Truss construction is generally considered to be heavier and more wind resistant. Ladders of truss construction have better repairability and increased versatility of sizes to fit particular nesting compartments.

It is generally believed that a truss construction ladder is a heavier duty, or stronger, ladder than a solid beam ladder. This, however, is not necessarily the case. The NFPA Standards do not differentiate between types of construction when defining strength requirements for a particular size ladder.

Truss construction ladders tend to be more expensive than solid beam ladders. One might think that the cost would be lower because truss construction uses less materials and the resulting ladders weigh less. In reality, the increased labor costs offset any saving in material costs. Solid beam construction ladders tend to be slightly lower in profile than the truss construction. The beam may be one continuous beam - as in a wooden ladder - or it can be two extrusions fastened together to form a solid beam. Such is the case in the popular ALCO-LITE™ pumper ladder model.

In most circumstances, the manufacturer uses solid beam construction to cut down on labor costs and to reduce the nesting space required. There is less versatility in modifying a solid beam ladder; i.e., changing the length to fit a specific nesting requirement. However, modifications can be done as the need arises.

General Comments on Construction

Since the NFPA Standards do not differentiate between the strength requirements for different construction types, there is no major reason why a department should choose one type over another. Many times, this is simply a question of consistency with past practices. If you have a manpower shortage, you might consider pumper construction in order to take advantage of the lighter weight. If you have budgetary and/or nesting constraints, you might elect to go with the solid beam ladder.

In either case, the important factor is the overall quality of the product you are buying and not whether it is solid beam or truss construction. Each type has its advantages, and you should make your selection based upon your department's individual requirements and needs.

INSPECTION AND TESTING

Ladders are tools and must be maintained to ensure safety. For complete testing information, please refer to NFPA 1930, which has a chapter entitled "Service Testing Ground Ladders".

Inspection is a visual procedure and should be performed every time a fire department ground ladder has been, or is going to be, used. Some items to check for include fractured rails, fractured rungs, loose rungs, damaged pawls, worn or missing halyards, worn wire rope on threesection extensions, improperly adjusted wire rope, heat sensor labels that indicate an exposure to high temperatures, missing or loose fasteners, or any other indication of structural strain or damage. In other words, if the ladder doesn't look factory fresh from a structural standpoint, have it tested prior to use.

Testing

NFPA 1930 details when fire ladders shall be tested. Many fire departments, in the past, have never tested their ground ladders. This is a practice that is undergoing substantial change. Unfortunately, part of that change is due to the change in the legal environment in our country today. Departments have a legal responsibility to their firefighters to maintain the equipment they use, and part of that maintenance is based upon periodic testing.

A ladder must be tested at least every year and at any point throughout the year if it has been subjected to loads above the NPFA recommended level.

As a rule of thumb, a ladder must be tested at least every year and at any point throughout the year if it has been subjected to loads above the NPFA recommended level or used in an unusual way (such as forcing a door open). In addition, the ladder shall be tested each time it is suspected of being unsafe and after all repairs.

If a ground ladder, when tested, does not meet all of the requirements of NFPA 1930, then it shall be removed from service and repaired. If it cannot be repaired, it needs to be destroyed.

Tests To Be Performed

There are two basic types of tests outlined in NFPA 1930. One type is a load test. This is done by taking the ladder and applying a certain load to the ladder while it is in various positions. Although there are several different tests outlined in NFPA 1930, the primary test by far is the center load test. An abbreviated version of that test is outlined below.

Horizontal Bending Test (Center Load Test)

Place the ladder in a flat, horizontal position, with a support under each end rung. The support should be approximately the height of a sawhorse to allow for the deflection that will occur in the ladder during testing. In the case of an extension ladder, the ladder should be fully extended with the pawls engaged. Fully extended means to its normal working length, which is approximately the length shown on the base of the ladder.

Once the pawls are engaged, a strap shall be applied around the rung on the fly section and the corresponding rung on which the pawl rests on the base section. Tighten this strap down to prevent the pawls from disengaging during the test.

A similar strap should be placed on the pawl rung of the uppermost fly and its companion rung on the center rung of the center section on a three-section ladder. This strap simply keeps the pawls from disengaging under load, which can occur in the horizontal position, but which could not occur in the elevated use position as gravity would keep the pawls engaged. Proceed through the following steps.

If your ladder does not pass the test, it is necessary to replace it or remove it from service until it is repaired.

1. Determine the load area, which is the center of the ladder or center between the supports. The load is applied over a 32-inch long area and over the width of the ladder. In other words, the load is to rest on the beams or the side rails of the ladder and shall extend no more than 16 inches on each side of the center.

2. Apply 350 pounds to the load area. Wait one (1) minute.

3. Remove this weight and measure the distance from a pre-determined point, which should approximately be the center of the ladder, to the ground.

4. Apply 500 pounds to the load area, wait five (5) minutes, and remove the load.

5. Wait five (5) minutes after removing the load, then measure the dimension again as you did in step 3.

6. The pass/fail criteria as outlined in NFPA 1930 is as follows. If the ladder suffers catastrophic failure or visibly fails, it obviously fails the test. If it sustains permanent set greater than the allowable amount, it shall be removed from service and repaired, or destroyed. The allowable amount of permanent set is defined in NFPA 1930 as being no greater than 1/2 inch for ladders up to 25 feet, no greater than 1 inch for ladders over 25 feet, and no greater than 1-1/2 inches for ladders over 35 feet.

If you have questions during any part of testing, please contact us at 1.800.752.2526

If your ladder does not meet these criteria, it is necessary to replace it or remove it from service until it is repaired.

Safety Notes

1. It is quite possible the ladder you are testing could fail during this test procedure. Extreme care should be taken to ensure that no one is injured should the ladder fail and the structure collapse or the weights fall.

2. For this test, many departments use a container which they fill with water until they have the desired weight. Others use sand bags. Any method of applying the weights is okay, as long as safety is maintained and the required weight is applied to the ladder. The described test is by no means the only test to be performed on the ladder structure. A complete list of testing can be found in NFPA 1930.

Test Records

You need to maintain a record of all tests performed on each ladder. This record should be maintained by truck or company number and by the specific ladder. This way, you will have a file on each individual ladder.

SERVICE AND REPAIR

The most important aspect of fire department ground ladders, other than basic training and proper handling, is the service and repair of the equipment to ensure that it is in proper working order. Both NFPA 1930 and IFSTA Ninth Edition have specific sections dealing with inspection of your fire department ground ladders.

Briefly, we at ALCO-LITE™ suggest the following.

1. Inspect each ladder before and after each use. If there is any reason to question its structural integrity, do not use a ladder until it has been tested and its structural integrity proven.

2. Any time you are handling a ladder, you should also be doing a visual inspection, watching for any signs of structural defects. This may include, but is not limited to, chips, gouges in the rail, loose fasteners, loose rungs, fractures of the rails, and discoloration of heat sensor labels. You should also pay particular attention to the lock mechanism (pawls or dogs) to ensure that they are in safe working order. It is not uncommon for the pawls to need periodic maintenance, cleaning, and even replacement of the spring mechanism within that assembly.

Any part for your pawl mechanism on an ALCO-LITE™ ladder is available from the factory. It is also a good idea to check the halyard for any sign of fraying

or weakening. On three-section ladders, check the adjustment of the cable that is used to raise the third or upper fly section. On four-section ladders, the cable raises the upper two fly sections. That cable should be moderately taut when the ladder is in the unextended position.

It is imperative that a ladder be cleaned after each use. A clean ladder is easier to visually inspect, and the act of cleaning provides an opportunity to determine the structural integrity of the ladder.

Only ALCO-LITE™ fire ladder rungs can be quickly and simply removed at your location without the need for special tools or training.

Visit FireLadder.com to see our rung replacement video.

ALCO-LITE™ ladders can generally be repaired in the field with factory-supplied components. Should you have a ladder that is in need of repair, simply call our Customer Service Department. We will be happy to work with you in completing the project.

In some cases, it may be necessary to ship the entire ladder back to the factory for inspection and/or repair. Most simple repairs, such as rung or pawl replacement, can be accomplished in the field with our factory parts and installation instructions.

Although you can replace different components of a damaged section, it may be less expensive to simply replace that section of the ladder. Again, our Customer Service Department stands ready to assist you in these needs.

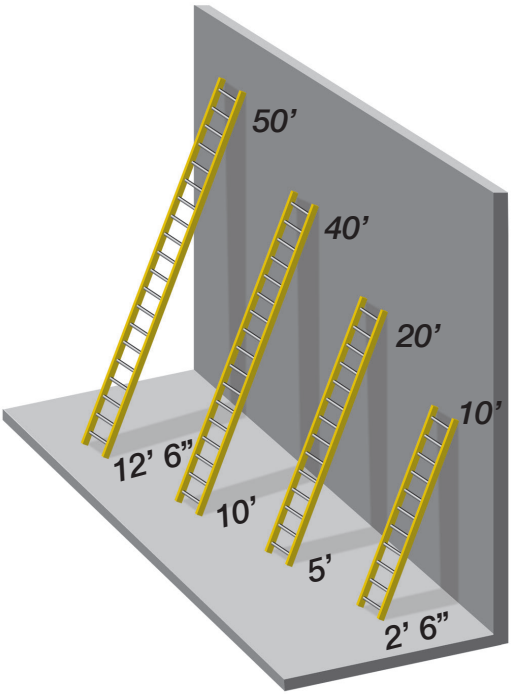
All ALCO-LITE™ ladders are detailed on engineering drawings. These drawings can be used by your maintenance personnel to determine nesting dimensions as well as parts replacement information. For a complete set of drawings covering your specific models, simply contact our Customer Service Department.

SAFE USE OF FIRE DEPARTMENT LADDERS

Fire department ground ladders can be excellent tools that are safe and easy to use. Unfortunately, without proper training and supervision, they can be misused. To assist you in providing that proper training, we present some very important safety tips to be followed when using ground ladders.

Safety Note

For maximum load carrying capacity, ladders must be properly positioned. Ground ladders need to be positioned at an angle of 75°. To accomplish this, position the base out one-quarter (1/4) the distance along the ground that the top is from the ground to the support point. In other words, a 24-foot ladder, fully extended into the air but fully supported at the 20-foot level, would have the base 5 feet out horizontally from the support point



Ladder Loading Information

1. Never overload a ground ladder. NFPA 1930 establishes ladder loadings. These maximum loadings, as shown below, are only applicable if the ladder has been service tested in accordance with the full load as defined in NFPA 1930.

Maximum Ladder Loading

Folding Ladders	300 pounds
Pompier Ladders	300 pounds
Single and Roof Ladders	750 pounds* distributed
Extension Ladders	750 pounds* distributed

*500 pounds concentrated load - these weights include all people, equipment, and other weights, such as a charged hose, and are only applicable for ladders set at approximately 75°.

For other angles, the weight shall be reduced to 250 pounds maximum.

*These weights only apply to ladders that have been service tested to the full 500 pounds center load test (horizontal bending test). If the ladders have not been tested to meet NFPA 1930, do not load above 250 pounds. In fact, the ladder should be removed from service until tested. Overloading a ladder can cause it to collapse!

2. Never tie two or more ground ladders together to increase their length. The side

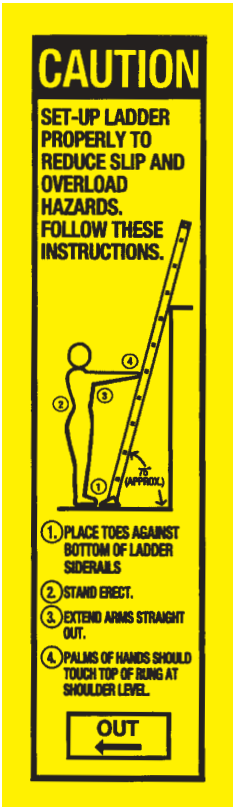
rails are engineered to carry a pre-determined load over a set distance. Tying two units together does not give you the side rail strength necessary for the increased span.
3. Secure butt spurs on a firm, level support.
4. Ground ladders must be secured at the base to prevent slippage. This can be accomplished by either having one or more firefighters foot the ladder or by tying the ladder off to prevent the base from moving.
5. Portable ladders need to be secured at the top to prevent slippage.
6. Never reposition a raised ladder from the top. If you slide or roll a ladder into a new position, it is possible that the new footing would not be secure or that the pawls could become disengaged. Reposition from the base of the ladder only.
7. Always use extension ladders in a fly-out position. Some departments want to position their extension ladder in the fly-in configuration. In order to do so, the ladder must be designed accordingly, or else the hardware can present a tripping hazard. All ALCO-LITE™ ladders are designed for fly-out position as specified in IFSTA and the NFPA 1930 Standards.
8. Keep aluminum ladders, wet wood, or fiberglass ladders from coming into contact with electrical circuits. Never let any ladder contact any electrical charge.
9. After each use, make a visual check of ladders for defects and changes in the heat sensor label. If any change in the ladder's condition is noted, remove the ladder from service until it can be tested.
10. If a ground ladder equipped with stay poles is being used, and you cannot position one of the poles, you must remove the other pole from service. Using only one pole can induce a twisting load on the ladder and shall not be permitted.

Positioning Labels

All ALCO-LITE™ fire ladders include a label on the side rail to help you properly position the ladder (see example).

This label illustrates and instructs the proper way to position the ladder before climbing. When the illustrations are followed, the ladder will be set at the correct climbing degree of 75.

Contact our Customer Service Department, toll-free, at 1-800-752-ALCO for more information.



Warning Labels

ALCO-LITE™ has prepared a series of safety warning labels utilizing the latest industry knowledge and incorporating additional safety tips. These labels are available for all existing ALCO-LITE™ ladders. You can obtain your labels by contacting our Customer Service Department, toll-free, at 1.800.752.2526 for more information.

These items are by no means a complete list of all of the precautions to be considered when using fire department ground ladders. For more information, please refer to NFPA 1930 and to the IFSTA Ninth Edition publication.

Safety Note

In the IFSTA publication, there are references to unusual use of ground ladders. While we realize that such activities may be necessary in an emergency situation, the ladder structure shall not be used again as a ladder until it is tested and approved as structurally safe for fire service use. IN NO CASE shall a ground ladder be used as a bridge; and, if a ladder is used at angles of less than 75°, the maximum load shall not exceed one person.

Ordering Information

When ordering ladders for a new truck, or replacement ladders for an existing fire apparatus, the ALCO-LITE™ catalog is your primary tool. We realize, however, that you may have unusual nesting configurations or space limitations that may appear at first glance to be out of the range of any of our catalog models. This is not at all uncommon.

If we can ever be of service for your ladder requirements, please let us know.

Should you encounter this situation, simply contact our factory, and one of our Customer Service Representatives will be happy to work with you. We'll help you develop the ladder or ladder complement to fit your particular application.

For information on replacement parts, engineering blueprints, and current literature, contact our Customer Service Representatives at 1.800.752.2526

Free Fire Ladder Catalogs

This newly revised catalog features the complete line of fire fighting equipment carrying the ALCO-LITE™ brand. The catalog includes full specifications, accessories which are available, and simple repair instructions. Nesting arrangements for pumper type and truss type ladders are also included to assist in making your selection of proper replacement ladders for existing fire equipment.

Call **1-800-752-2526** today for your free copy of this catalog.

FINAL WORD

We hope this safety handbook helps you develop and maintain a safe ladder program within your department.

We invented the aluminum ladder, and we continue to be the technological leaders in this industry.

The most important product we sell is our service. To discuss your ladder questions or needs, call us toll-free at **1.800.752.2526** or visit our web-site at www.fireladder.com.

If we can ever be of service for your ladder requirements, please let us know.

Sam Carbis Solutions Group, LLC
ALCO-LITE
Established in 1930

Sam CARBIS
Solutions Group, LLC

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