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Portable Ladder Safety[1]

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Portable ladders are one of the handiest, simplest tools we use. Because of their effectiveness, ladders are used by many different people to perform many different tasks. Although ladders are very uncomplicated, planning and care are still required to use them safely. Each year in the U.S., accidents involving ladders cause an estimated 300 deaths and 130,000 injuries requiring emergency medical attention.

LADDER HAZARDS

Ladder accidents usually are caused by improper selection, care or use, not by manufacturing defects. Some of the more common hazards involving ladders, such as instability, electrical shock, and falls, can be predicted and prevented. Prevention requires proper planning, correct ladder selection, good work procedures and adequate ladder maintenance.

Prevention tips:

- Do not hand-carry loads on a ladder.
- Do not try reaching so far that you lose your balance; move the ladder.
- Non-skid feet or spurs may prevent a ladder from slipping on a hard, smooth surface.
- Do not stand on the ladder's top three rungs.
- A damaged side rail may cause one side of a ladder to give way.
- The base should be spaced 1 foot away for every 4 feet it reaches up (see Figure 1).
- Ladders used to reach a walking surface or roof must extend at least 3 feet beyond.
- Extension ladders need both locks holding to prevent overloading a rail.
- Step ladders should be securely spread open. Never use a folding step ladder in an unfolded position.
- Electrical shock can occur with metal or wet wooden ladders. Not only is the shock itself dangerous, but it can cause falls resulting in injury.

LADDER SELECTION

Portable ladders are designed as "one-man" equipment with the proper strength to support the worker as well as his tools and materials. Ladders are constructed under three general classes:

- Type I **Industrial** - Heavy-duty with a load capacity not more than 250 pounds.
- Type II **Commercial** - Medium-duty with a load capacity not more than 225 pounds (suited for painting and similar tasks).
- Type III **Household** - Light-duty with a load capacity of 200 pounds.

LADDER MAINTENANCE

Wood ladders should be protected with a clear sealer varnish, shellac, linseed oil or wood preservative. Wood ladders should not be painted, because the paint could hide defects. Check carefully for cracks, rot, splinters, broken rungs, loose joints and bolts and hardware in poor condition.

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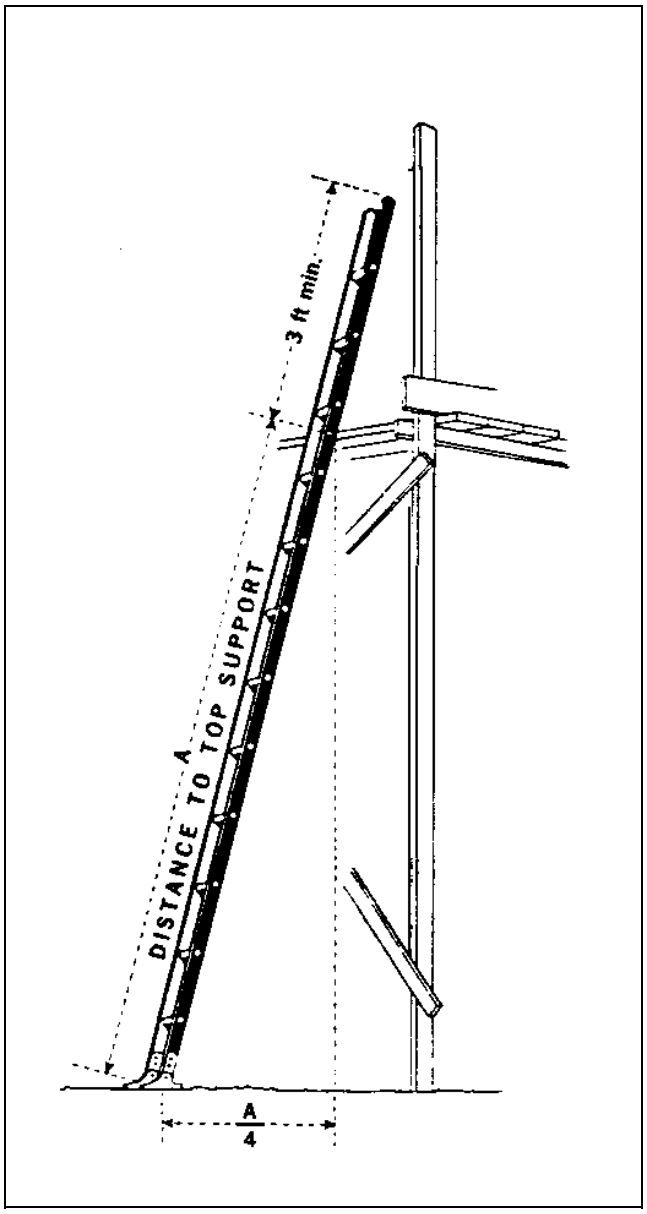

Figure 1.

Aluminum or steel ladders should be inspected for rough burrs and sharp edges before use. Inspect closely for loose joints and bolts, faulty welds and cracks. Make sure the hooks and locks on extension ladders are in good condition. Replace worn or frayed ropes on extension ladders at once.

Fiberglass ladders should have a surface coat of lacquer maintained. If it is scratched beyond normal wear, it should be lightly sanded before applying a coat of lacquer.

HELPFUL HINTS

- When working on cylindrical objects like poles and columns, the top rung of portable ladders can be replaced with chain or rope to reduce rocking.
- Aluminum ladders are very corrosion-resistant, but exposing them to fertilizer can cause damage.

- Use the ladder inspection checklist to remind yourself of what you should look out for in order to prevent accidents.

REFERENCES

National Safety Council, *Job Made Ladders*, Data Sheet No. 1-568-76, 1976.

National Safety Council, *Accident Prevention Manual for Industrial Operations*, Ninth Edition, 1988.

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Ladder Inspection Checklist

General	Needs repair	O.K.	Date repaired
Loose steps or rungs (considered loose if they can be moved at all with the hand)?			
Loose nails, screws, bolts, or other metal parts?			
Cracked, spilt, or broken uprights, braces, or rungs?			
Slivers on uprights, rungs, or steps?			
Damaged or worn non-slip bases?			
Step ladders			
Wobbly (from side strain)?			
Loose or bent hinge spreaders?			
Stop on hinge spreaders broken?			
Loose hinges?			
Broken, split, or worn steps?			
Extension ladders			
Loose, broken, or missing extension locks?			
Defective locks that do not seat properly while extended?			
Worn or rotted rope?			