NCCER Module 26102-20

Safety for Electricians

Section Four

Hazards and Safety Requirements

Objective

4. Recognize the safety requirements for various hazards.
   a. Identify the safety hazards associated with ladders, scaffolds, and lift equipment.
   b. Avoid back injuries by practicing proper lifting techniques.
   c. Demonstrate basic tool safety.
   d. Identify confined space entry procedures.
   e. Work safely with dangerous materials.
   f. Select and use appropriate fall protection.

Performance Tasks

Under the supervision of an instructor, trainees should be able to do the following:

1. Properly select and use PPE.
2. Describe the safety requirements for an instructor-supplied task, such as replacing the lights in your classroom.
   - Discuss the work to be performed and the hazards involved.
   - If a ladder is required, perform a visual inspection on the ladder and set it up properly.
   - Ensure that local emergency telephone numbers are either posted or known by you and your partner(s).
   - Plan an escape route from the location in the event of an accident.

4.0.0 – 4.1.1 Ladders, Scaffolds, and Lift Equipment (1 of 2)

- Ladders must be inspected before each use.
- Never climb a damaged ladder.

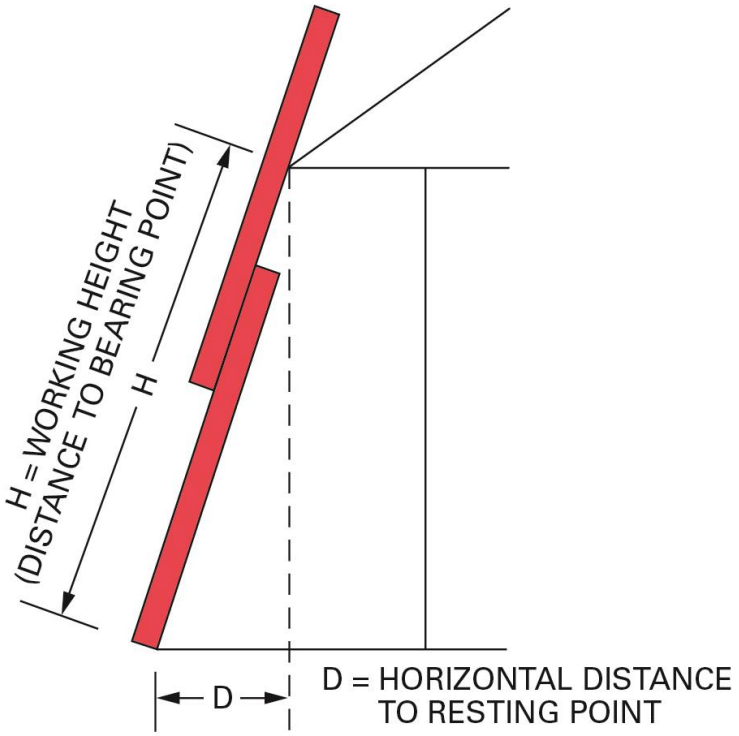
(A) CRUMBLING RAIL

(B) CRACKED STEP

(C) BENT BACK BRACE

4.0.0 – 4.1.1 Ladders, Scaffolds, and Lift Equipment (2 of 2)

- When positioning a straight ladder, the horizontal distance from the ladder feet to the wall should be one-fourth the working height of the ladder. Side rails should extend beyond the top support by 36 inches.
- Always lock the spreaders on a stepladder and never stand on the top two rungs.



THE RATIO OF H TO D SHOULD BE 4 TO 1.

4.1.1 What's wrong with this picture?

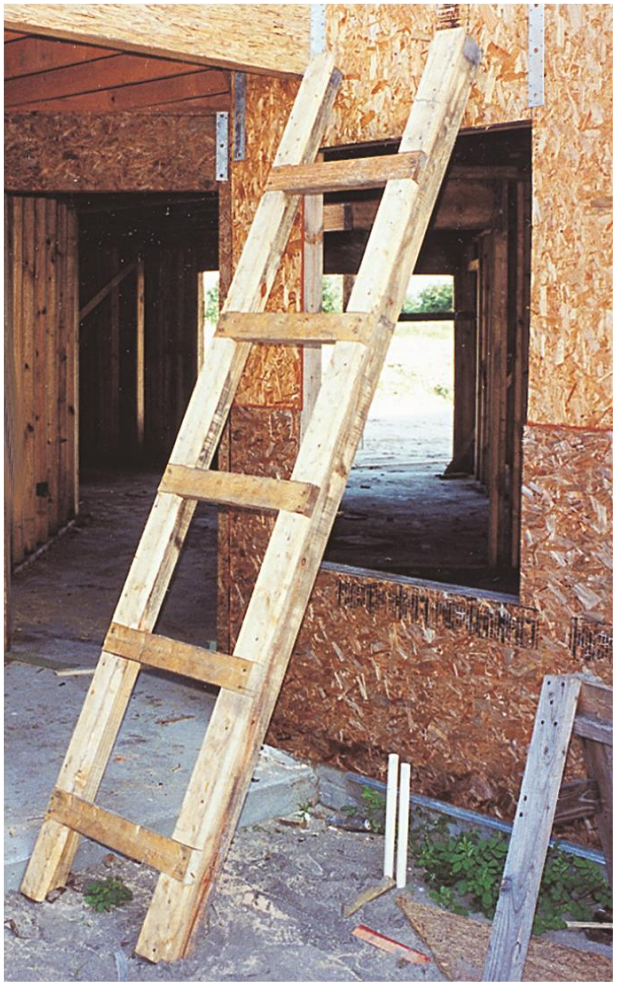


Figure Credit: Mike Powers

4.1.2 – 4.1.3 Scaffolds

- Scaffolding must be erected and inspected by qualified individuals. It must be straight and plumb, with a sound footing and proper decking, toeboards, and guardrails.

- Exercise extreme caution when working in the vicinity of lifts, hoists, and cranes. Never assume that the operator can see you. Never stand or walk under a load.

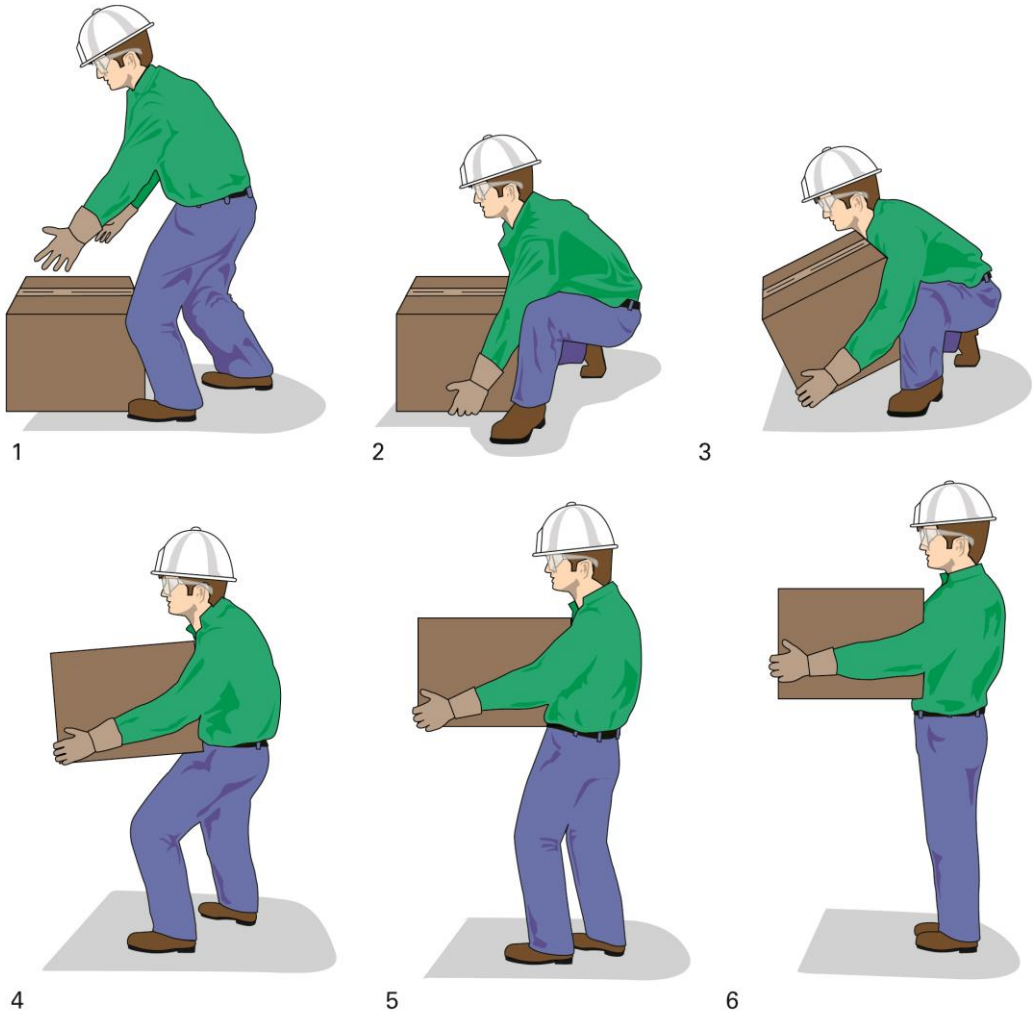
4.1.2 What's wrong with this picture?

Figure Credit: Mike Powers

4.2.0 Proper Lifting Techniques (1 of 2)

- Always lift with your legs, not your back.
- Avoid lifting objects over your head.
- Ask for help with heavy loads.
- Never lift over the side or tailgate of a pickup truck.
- Go around obstructions when carrying a load. Never step over objects.

4.2.0 Proper Lifting Techniques (2 of 2)



4.2.0 What's wrong with this picture?

Figure Credit: Mike Powers

4.3.0 – 4.3.1 Basic Tool Safety

- Only use tools for their intended purpose.
- Inspect tools regularly. Repair or replace damaged tools.
- Keep tools sharp.
- Wear protective equipment when using hand tools.

(A) HAMMER

(B) RATCHET CABLE CUTTER

(C) SCREWDRIVERS

(D) MULTI-PURPOSE TOOL

4.3.2 Power Tool Safety

- Power tools can be operated using electricity, pneumatics, liquid fuels, or hydraulic energy.
- Never operate any tool unless you are qualified to do so. Follow the manufacturer's instructions for use and maintenance.
- Never alter or defeat the safety equipment on a power tool.
- Wear protective equipment when using power tools.

4.4.0 – 4.4.2 Confined Space Entry Procedures (1 of 2)

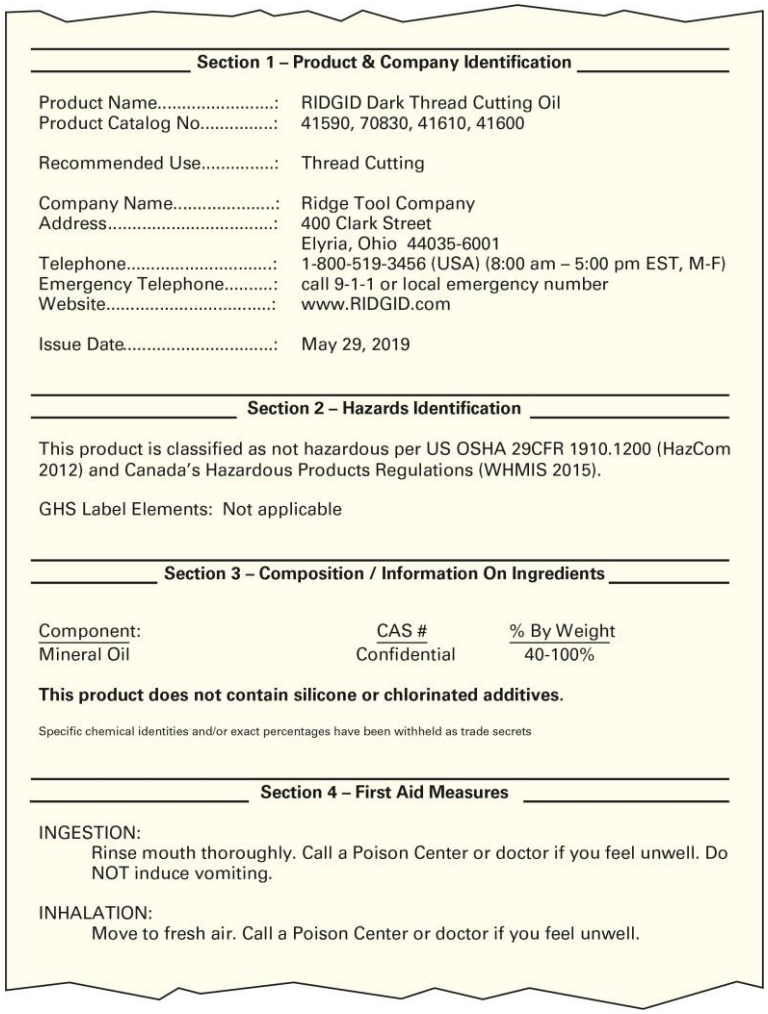
- A confined space has a restricted means of entry and exit and may contain a hazardous atmosphere, engulfment hazard, or other hazards. Confined spaces may be permit required or non-permit required. Confined-space entry requires a formal hazard review and rescue plan.

- Emergency numbers must be readily available on every job site.

4.4.0 – 4.4.2 Confined Space Entry Procedures (2 of 2)

4.5.0 – 4.5.7 Dangerous Materials

- All materials that present health hazards must have a safety data sheet (SDS) on site that lists PPE and safe use, storage, and disposal instructions.
- Common hazardous materials include solvents, asbestos, batteries, PCBs, and lead.
- Wear all appropriate PPE, including respiratory protection, when working near toxic materials.



Section 1 – Product & Company Identification

Product Name.....: RIDGID Dark Thread Cutting Oil
Product Catalog No.....: 41590, 70830, 41610, 41600

Recommended Use.....: Thread Cutting

Company Name.....: Ridge Tool Company
Address.....: 400 Clark Street
Elyria, Ohio 44035-6001
Telephone.....: 1-800-519-3456 (USA) (8:00 am – 5:00 pm EST, M-F)
Emergency Telephone.....: call 9-1-1 or local emergency number
Website.....: www.RIDGID.com

Issue Date.....: May 29, 2019

Section 2 – Hazards Identification

This product is classified as not hazardous per US OSHA 29CFR 1910.1200 (HazCom 2012) and Canada's Hazardous Products Regulations (WHMIS 2015).

GHS Label Elements: Not applicable

Section 3 – Composition / Information On Ingredients

Component:	CAS #	% By Weight
Mineral Oil	Confidential	40-100%

This product does not contain silicone or chlorinated additives.

Specific chemical identities and/or exact percentages have been withheld as trade secrets

Section 4 – First Aid Measures

INGESTION:
Rinse mouth thoroughly. Call a Poison Center or doctor if you feel unwell. Do NOT induce vomiting.

INHALATION:
Move to fresh air. Call a Poison Center or doctor if you feel unwell.

4.6.0 – 4.6.1 Fall Protection (1 of 2)

- All employees must receive annual training in fall protection when there is the possibility that they will be exposed to a fall of six feet or more.
- Fall protection may include guardrails, fall restraint or personal fall arrest systems (PFAS), or controlled access zones.

4.6.0 – 4.6.1 Fall Protection (2 of 2)

OSHA has specific construction requirements for guardrail systems.

4.6.1 What's wrong with this picture?

Figure Credit: Mike Powers

4.6.2 Controlled Access Zone

- Controlled access zones are used where a guardrail cannot be attached to the building.
- A controlled access zone must be located a minimum of six feet from the edge.

SIX FEET FROM EDGE
(FOR ROOFERS ONLY; ALL OTHER WORKERS MUST REMAIN 15 FEET FROM THE EDGE)

4.6.3 Personal Fall Arrest System (PFAS) (1 of 3)

- PFAS equipment must be worn when working 6 feet or more above the ground. It consists of a full-body harness, lanyards, and one or more anchor points.
- PFAS equipment must be inspected before each use and discarded if involved in a fall.

4.6.3 What's wrong with this picture? (1 of 2)

Figure Credit: Mike Powers

4.6.3 Personal Fall Arrest System (PFAS) (2 of 3)

- Retractable lanyards keep the line out of the way for safety when close to the ground or in a tight area.
- Do not put a shock absorber in line with a retractable lanyard.

4.6.3 Personal Fall Arrest System (PFAS) (3 of 3)

NOTE:

When assessing a location for fall protection, examine the space below to ensure that it is clear of any obstructions.

4.6.3 What's wrong with this picture? (2 of 2)

Figure Credit: Mike Powers

Wrap Up – Trade Term

Polychlorinated biphenyls (PCBs): Toxic chemicals that may be contained in liquids used to cool certain types of large transformers and capacitors.

4.0.0 Section Review Question 6

6. Fall protection is required when working at elevations of ____.
   a. 6' (1.8 m) or more
   b. 7' (2.1 m) or more
   c. 8' (2.4 m) or more
   d. 10' (3 m) or more

4.0.0 Section Review Question 6 Answer

6. Fall protection is required when working at elevations of ____.

   a. 6' (1.8 m) or more

   b. 7' (2.1 m) or more

   c. 8' (2.4 m) or more

   d. 10' (3 m) or more

Next …

Review and Module Examination

Complete the Review Questions at the end of the module and prepare for the Module Exam.