



Basic Safety

Module 00101-04



National Center
for Construction
Education and
Research

Core Curriculum: Introductory Craft Skills
Module 00101-04

Copyright © by the NCCER,
Published by Pearson Education, Inc.



Upon completion of this module, you will be able to do the following:

1. Explain the role that safety plays in the construction crafts.
2. Describe the meaning of job-site safety.
3. Describe the characteristics of a competent person and a qualified person.
4. Explain the appropriate safety precautions to take around common job-site hazards.
5. Demonstrate the use and care of appropriate personal protective equipment (PPE).
6. Properly don and remove personal protective equipment (safety goggles, hard hat, and personal fall protection).
7. Follow the safety procedures required for lifting heavy objects.
8. Describe safe behavior on and around ladders and scaffolds.
9. Explain the importance of Hazard Communications (HazCom) and material safety data sheets (MSDSs).
10. Describe fire prevention and firefighting techniques.
11. Define safe work procedures to use around electrical hazards.

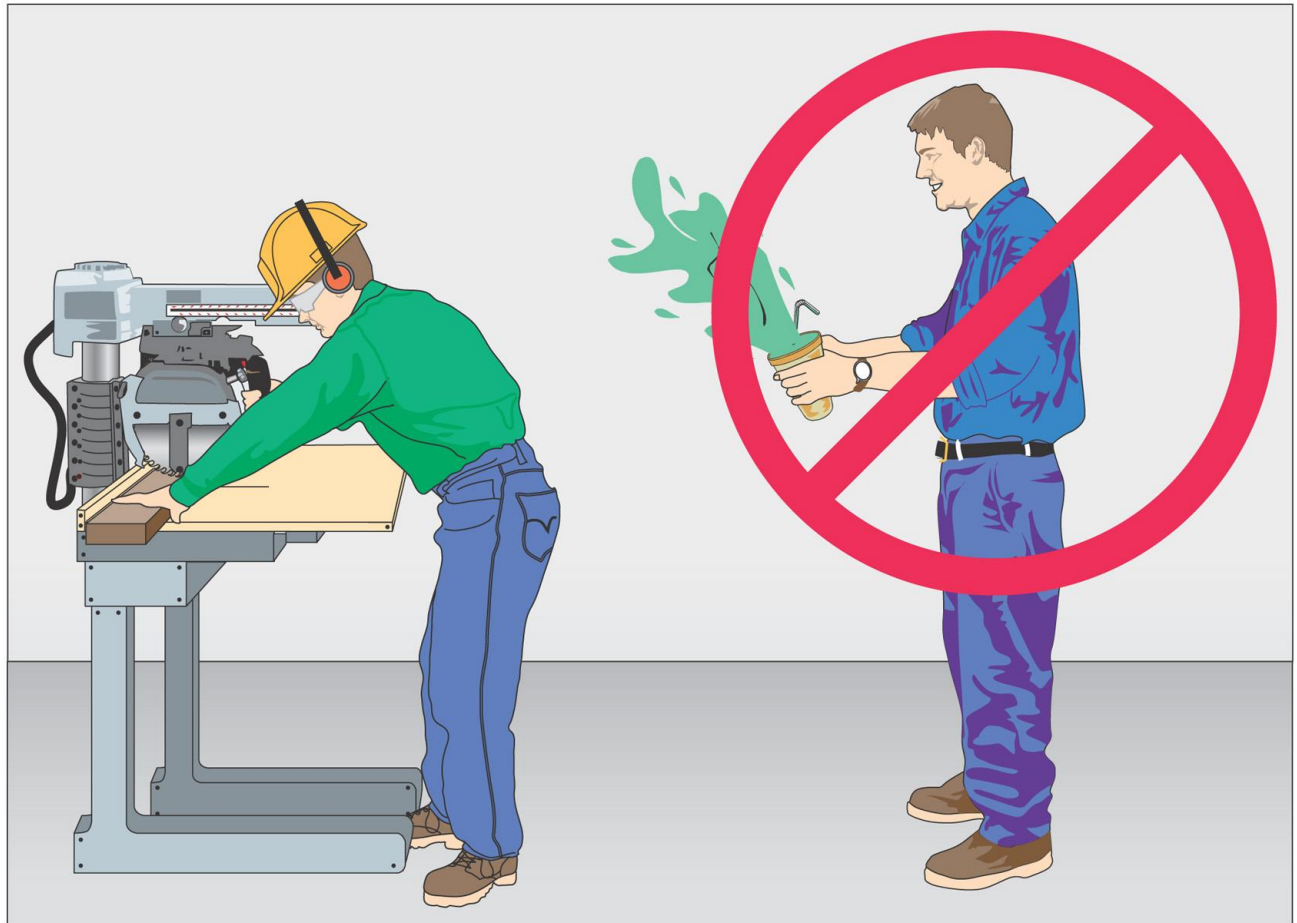




Under supervision of the instructor, you should be able to:

1. Inspect PPE to determine if it is safe to use (PPE should include safety goggles, hard hat, gloves, safety harness, and safety shoes).
2. Properly don and remove PPE (safety goggles, hard hat, and personal fall protection).
3. Demonstrate safe lifting procedures.





101F02.EPS





101F03.EPS

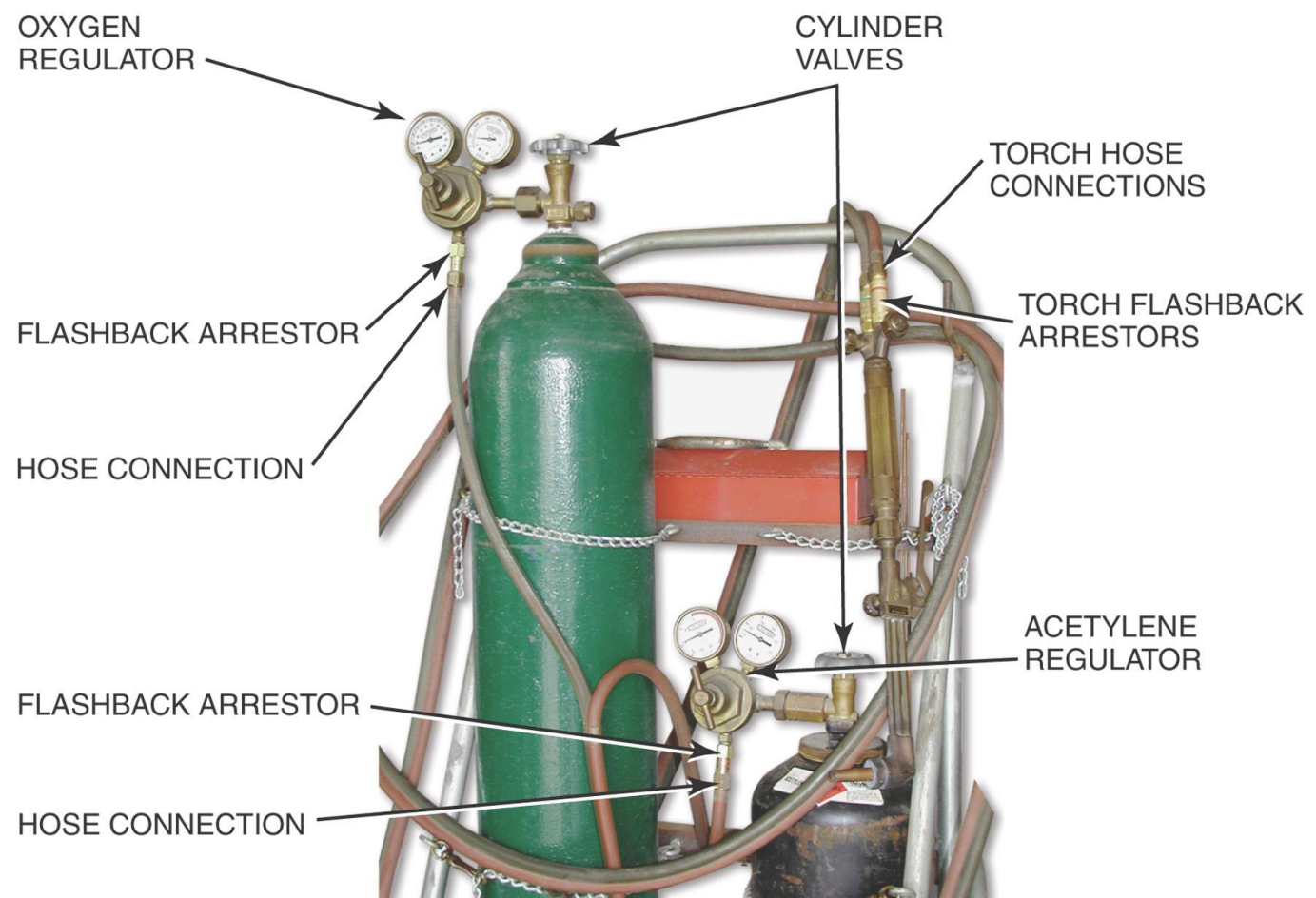


Figure 5 - Personal protective equipment for welding



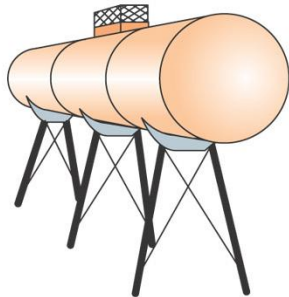
101F05.EPS



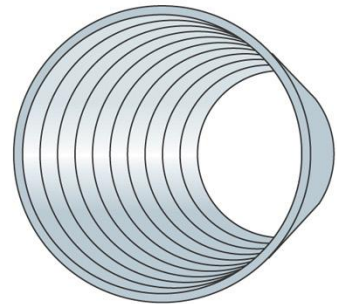


101F06.EPS

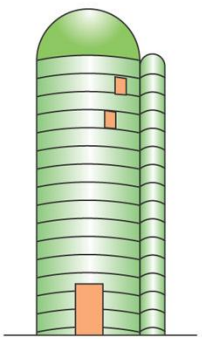




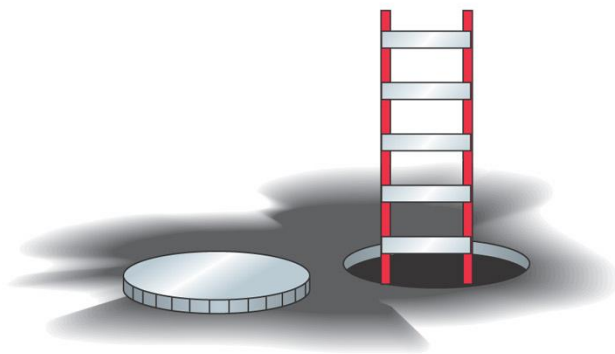
STORAGE TANK



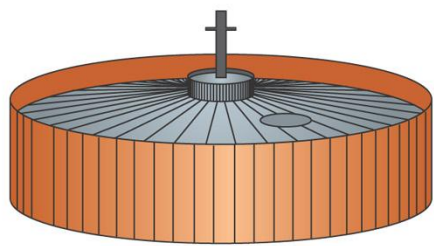
PIPELINE



SILO



MANHOLE



DIGESTER

101F12.EPS





DANGER

LIVE WIRE

SIGNED BY _____

DATE _____

DANGER

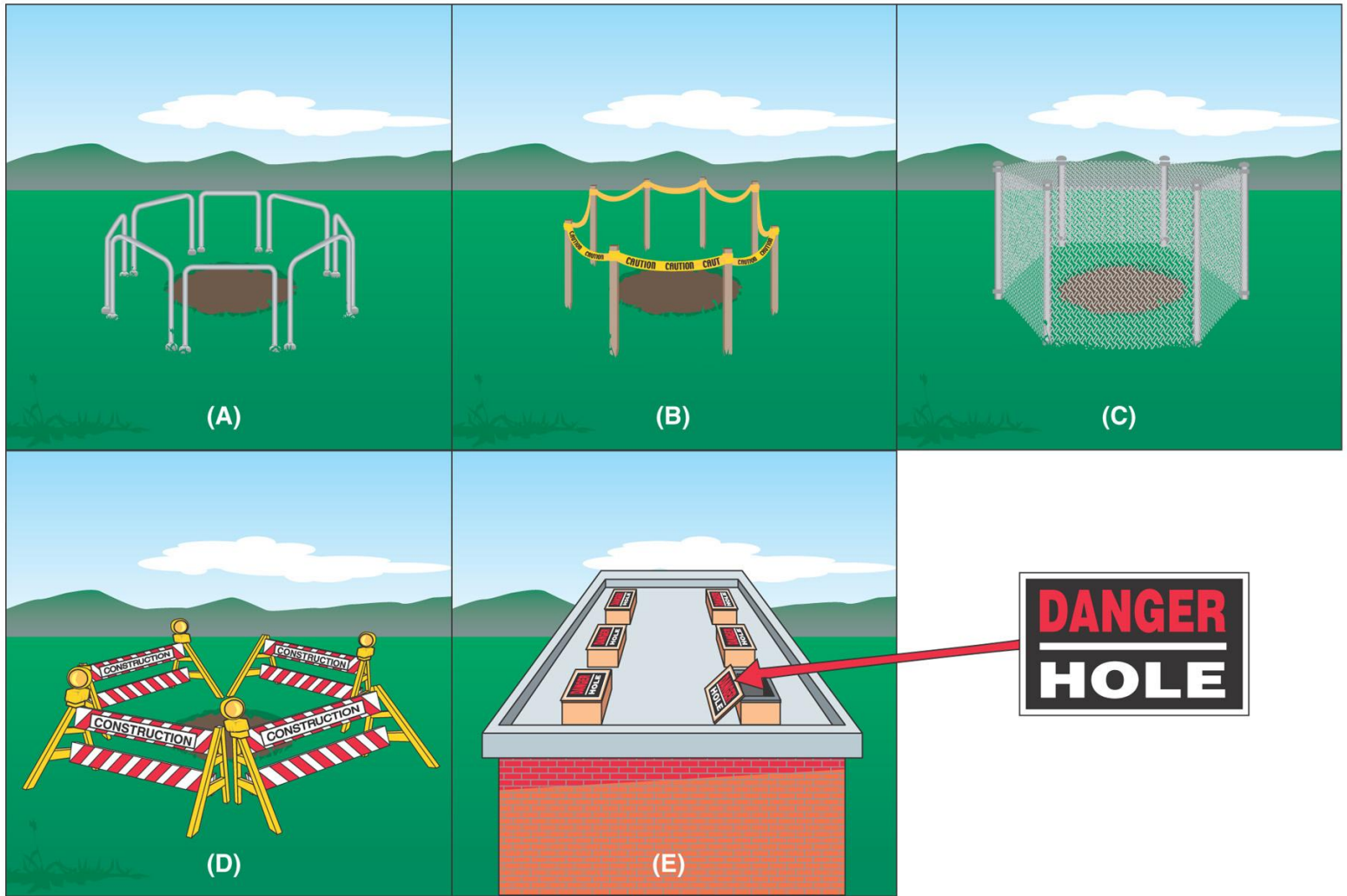
DO NOT REMOVE THIS TAG

REMARKS _____

SEE OTHER SIDE

101F14.EPS

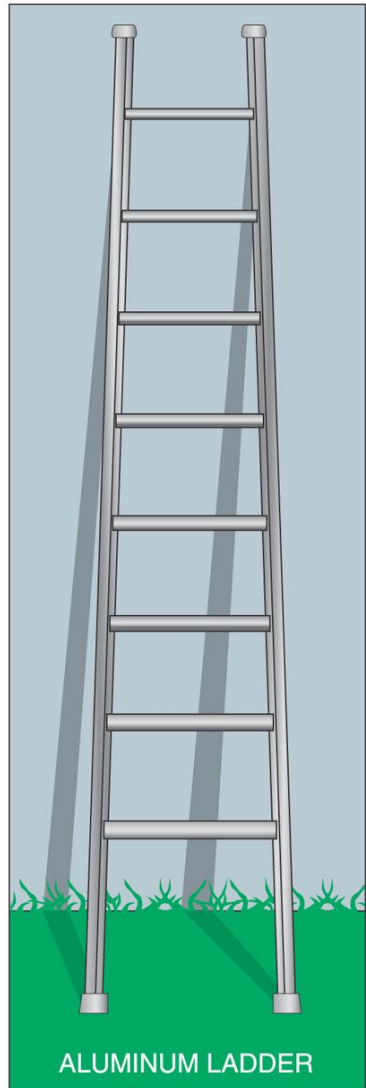




DANGER
HOLE

101F15.EPS





ALUMINUM LADDER

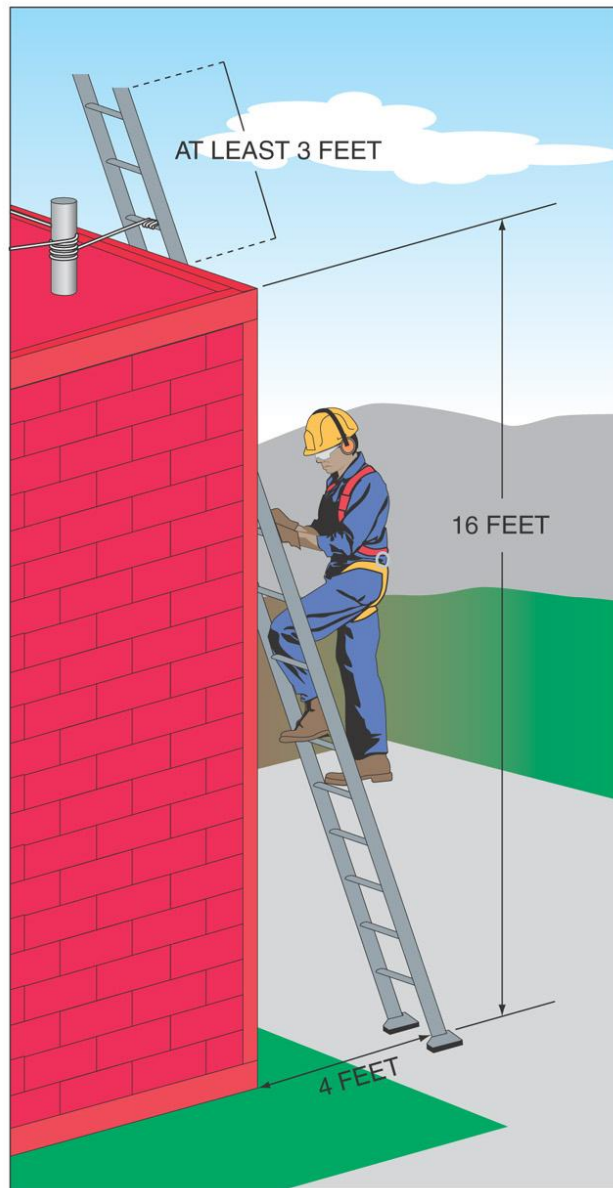


WOODEN LADDER



FIBERGLASS LADDER

101F27.EPS

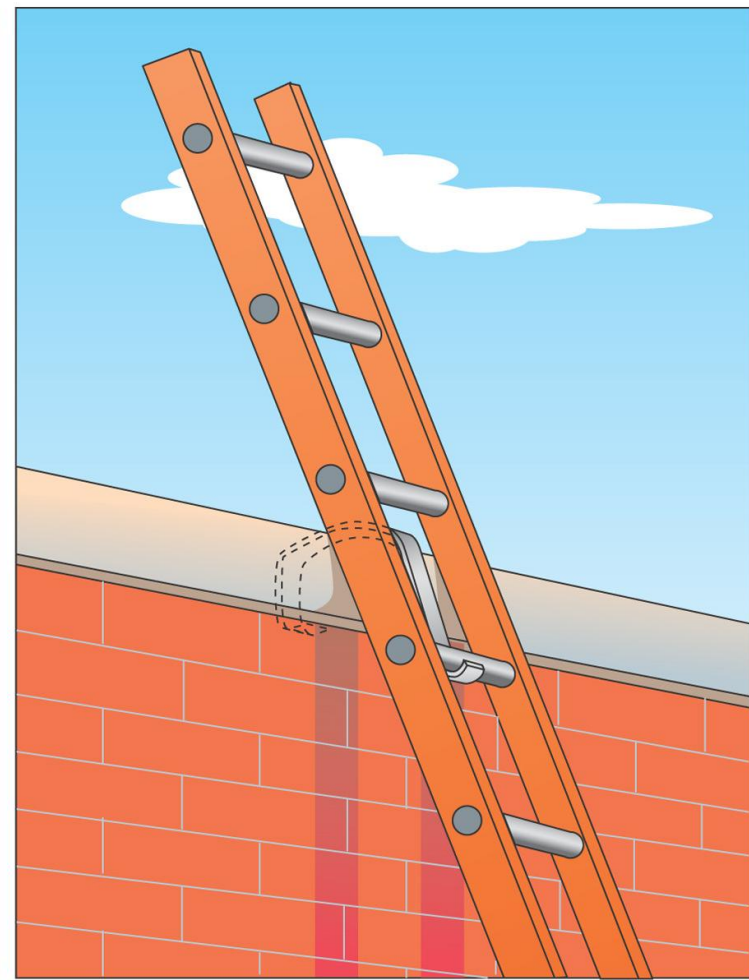


101F29.EPS





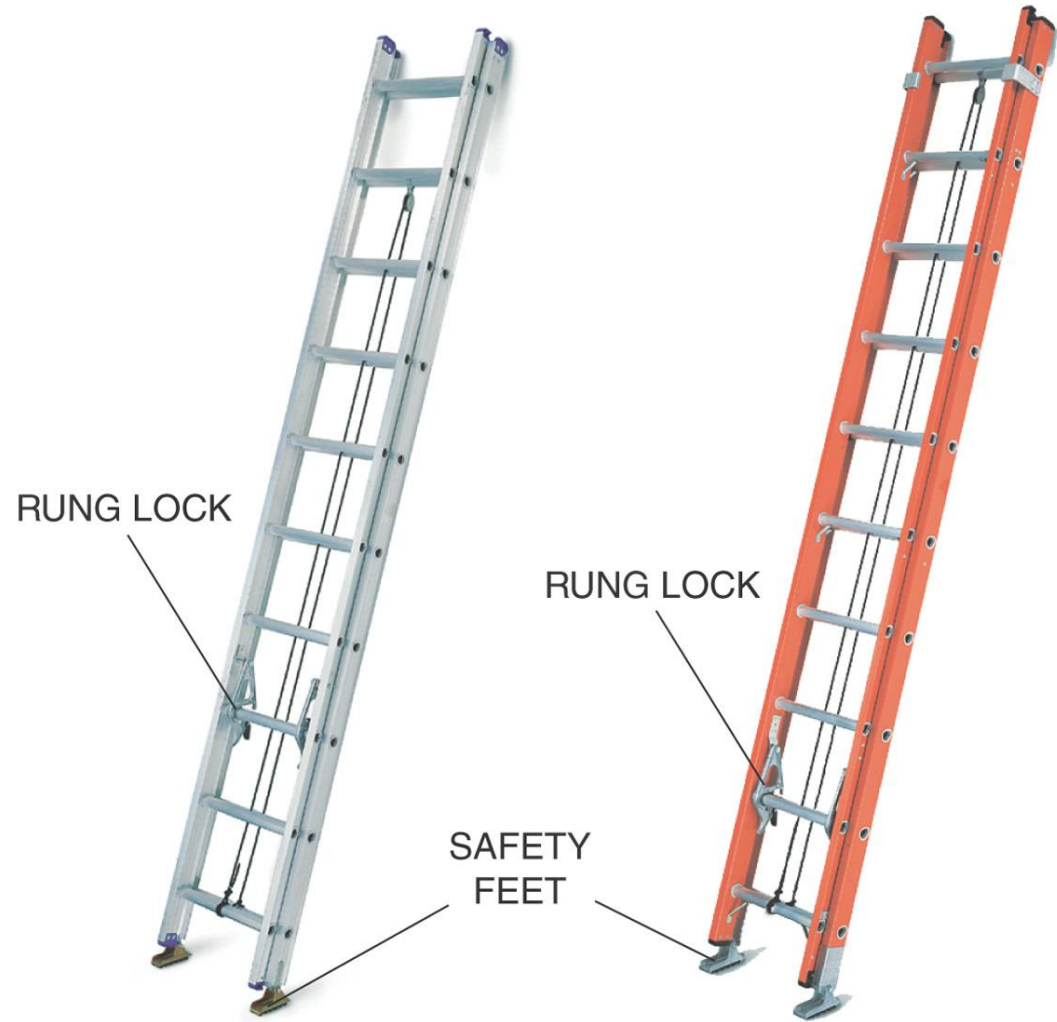
BOTTOM SECURED



TOP SECURED

101F30.EPS





ALUMINUM

FIBERGLASS

101F32.EPS

DO's

- Be sure your ladder has been properly set up and is used in accordance with safety instructions and warnings.
- Wear shoes with non-slip soles.



- Keep your body centered on the ladder. Hold the ladder with one hand while working with the other. Never let your belt buckle pass beyond either ladder rail.



- Move materials with extreme caution. Be careful pushing or pulling anything while on a ladder. You may lose your balance or tip the ladder.



- Get help with a ladder that is too heavy to handle alone. If possible, have another person hold the ladder when you are working on it.



- Climb facing the ladder. Center your body between the rails. Maintain a firm grip.
- Always move one step at a time, firmly setting one foot before moving the other.



- Haul materials up on a line rather than carry them up an extension ladder.
- Use extra caution when carrying anything on a ladder.



Read ladder labels for additional information.

DON'Ts

- DON'T stand above the highest **safe standing level**.
- DON'T stand above the second step from the top of a stepladder and the 4th rung from the top of an extension ladder. A person standing higher may lose their balance and fall.



- DON'T climb a closed stepladder. It may slip out from under you.
- DON'T climb on the back of a stepladder. It is not designed to hold a person.



- DON'T stand or sit on a step-ladder top or pail shelf. They are not designed to carry your weight.
- DON'T climb a ladder if you are not physically and mentally up to the task.



- DON'T exceed the Duty Rating, which is the maximum load capacity of the ladder. Do not permit more than one person on a single-sided stepladder or on any extension ladder.



- DON'T place the base of an extension ladder **too close** to the building as it may tip over backward.
- DON'T place the base of an extension ladder **too far away** from the building, as it may slip out at the bottom. **Please refer to the 4 to 1 Ratio Box.**



- DON'T over-reach, lean to one side, or try to move a ladder while on it. You could lose your balance or tip the ladder. **Climb down and then reposition the ladder closer to your work!**



4 TO 1 Ratio

Place an extension ladder at a 75-1/2° angle. The set-back ("S") needs to be 1 ft. for each 4 ft. of length ("L") to the upper support point.

"S" = 1/4 "L"

101F35.EPS





COMPLETE

ERECTED FOR _____
 DATE _____
 COMPLETE

HANDRAILS _____
 TOEBOARDS _____
 DECK _____
 LADDER _____
 LIFE LINE _____
 SCAFFOLD OVER _____
 LOCATION _____

CHARGE # _____
 ERECTION FOREMAN _____
 SIGNATURE _____

DATE _____
 LOCATION _____
 SIGNATURE _____

CAUTION

ERECTED FOR _____
 DATE _____
 INCOMPLETE

HANDRAILS _____
 TOEBOARDS _____
 DECK _____
 LADDER _____
 LIFE LINE _____
 SCAFFOLD OVER _____
 REASON INCOMPLETE

LOCATION _____
 CHARGE # _____
 ERECTION FOREMAN _____
 SIGNATURE _____

DATE _____
 LOCATION _____
 SIGNATURE _____

DANGER

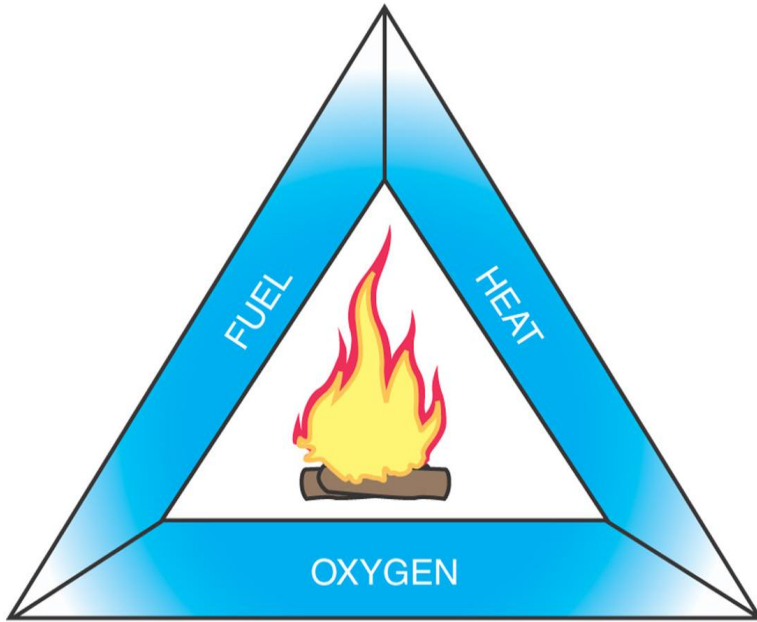
XYZ INC.

**SCAFFOLD
 INCOMPLETE
 TAG**

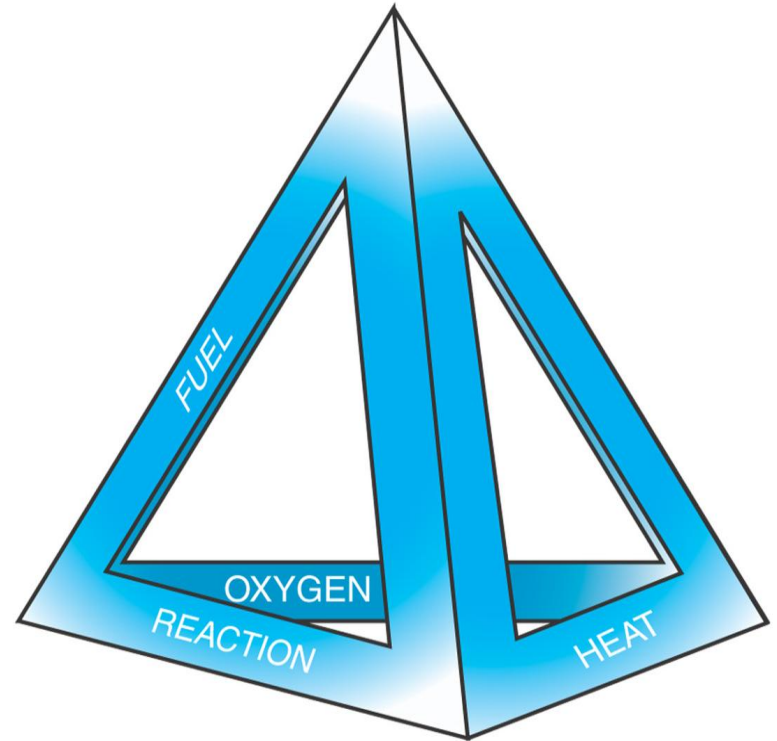
**DO NOT USE OR
 CLIMB SCAFFOLD
 UNTIL COMPLETE**

DATE _____
 LOCATION _____
 SIGNATURE _____

101F38.EPS



FIRE TRIANGLE




FIRE TETRAHEDRON

101F40.EPS






DO NOT REMOVE  FOR CITY, STATE AND FIRE INSURANCE INSPECTION

FULL WT _____

D.O.T. CERT. # _____

LICENSE NO. _____

SERVICED BY _____

<input type="checkbox"/> AFFF/LD. STRM		<input type="checkbox"/> ABC DRY CHEM
<input type="checkbox"/> CARBON DIOXIDE		<input type="checkbox"/> STD. DRY CHEM
<input type="checkbox"/> PRES. WATER		<input type="checkbox"/> PK DRY CHEM
<input type="checkbox"/> HALON 1211		<input type="checkbox"/> _____
<input type="checkbox"/> CO2 SYSTEM		<input type="checkbox"/> DRY CHEM SYS
<input type="checkbox"/> HALON SYSTEM		<input type="checkbox"/> WET CHEM SYS

1999/2000/2001

VOID 1 YR FROM MO PUNCHED SYSTEMS 6 MOS

SERVICED	NEW	RECHARGED
JAN	JAN	JAN
FEB	FEB	FEB
MAR	MAR	MAR
APR	APR	APR
MAY	MAY	MAY
JUNE	JUNE	JUNE
JULY	JULY	JULY
AUG	AUG	AUG
SEPT	SEPT	SEPT
OCT	OCT	OCT
NOV	NOV	NOV
DEC	DEC	DEC

(Model No.)  _____

(Mfr.)

OWNER'S I.D. NO. (if used) _____

REMARKS _____

**Dry and Wet Chemical Fixed
Temperature-Sensing Element Data**

Year Manufactured _____

Date Installed _____

MONTHLY INSPECTION RECORD

DATE	BY	DATE	BY

PRINTED IN U.S.A.

101F41.EPS



INSTRUCTIONS

1 PULL RING PIN.

2 START FROM 8 FEET BACK.

3 AIM AT BASE OF FIRE. USE EXTINGUISHER UPRIGHT.

4 SQUEEZE THE LEVER. SWEEP FROM SIDE TO SIDE.

ABC DRY CHEMICAL

MODEL: B5M • SLBS • FIRE RATING: 3-A:40-B:C

TRASH WOOD • PAPER

LIQUIDS

ELECTRICAL EQUIPMENT

23392

 **Badger**
fire protection

(A)

101F42A.EPS



National Center for Construction Education and Research

Core Curriculum: Introductory Craft Skills Module 00101-04

INSTRUCTIONS

- 1** PULL RING PIN. 
- 2** START FROM 8 FEET BACK.
- 3** AIM AT BASE OF FIRE. USE EXTINGUISHER UPRIGHT.
- 4** SQUEEZE THE LEVER. SWEEP FROM SIDE TO SIDE. 



A TRASH
WOOD • PAPER



B LIQUIDS



C ELECTRICAL
EQUIPMENT

WARNING: THE CONCENTRATED AGENT WHEN APPLIED TO FIRE CAN PRODUCE TOXIC BY-PRODUCTS. AVOID INHALATION OF THESE PRODUCTS BY EVACUATING AND VENTILATING THE AREA. DO NOT USE IN CONFINED SPACE LESS THAN 1540 CUBIC FEET PER EXTINGUISHER.

23722

HALOTRON 1

MODEL: 11HB • 11 LBS • FIRE RATING: 1-A-10-B-C



Badger

fire protection

101F42B.EPS

(B)



Supplemental Art



National Center
for Construction
Education and
Research

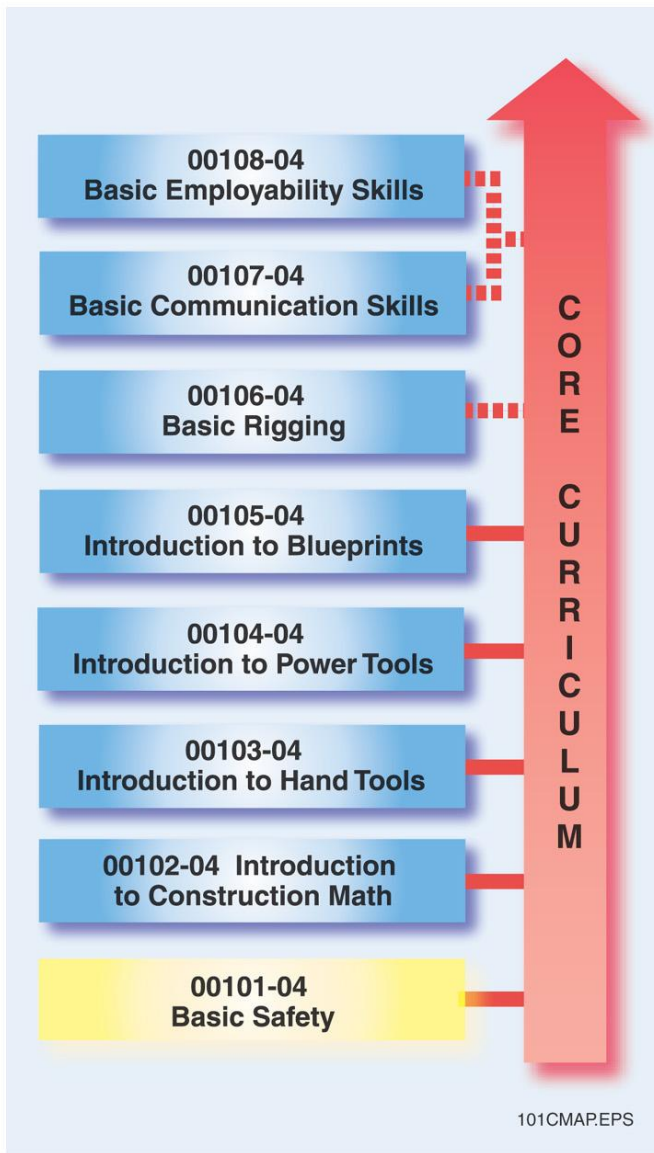
Core Curriculum: Introductory Craft Skills
Module 00101-04

Copyright © by the NCCER,
Published by Pearson Education, Inc.



National Center
for Construction
Education and
Research

Core Curriculum: Introductory Craft Skills
Module 00101-04



Copyright © by the NCCER,
Published by Pearson Education, Inc.

Figure 1 - Communication tags/signs



101F01A.EPS

INFORMATION SIGN



101F01B.EPS

SAFETY SIGN



101F01C.EPS

CAUTION SIGN



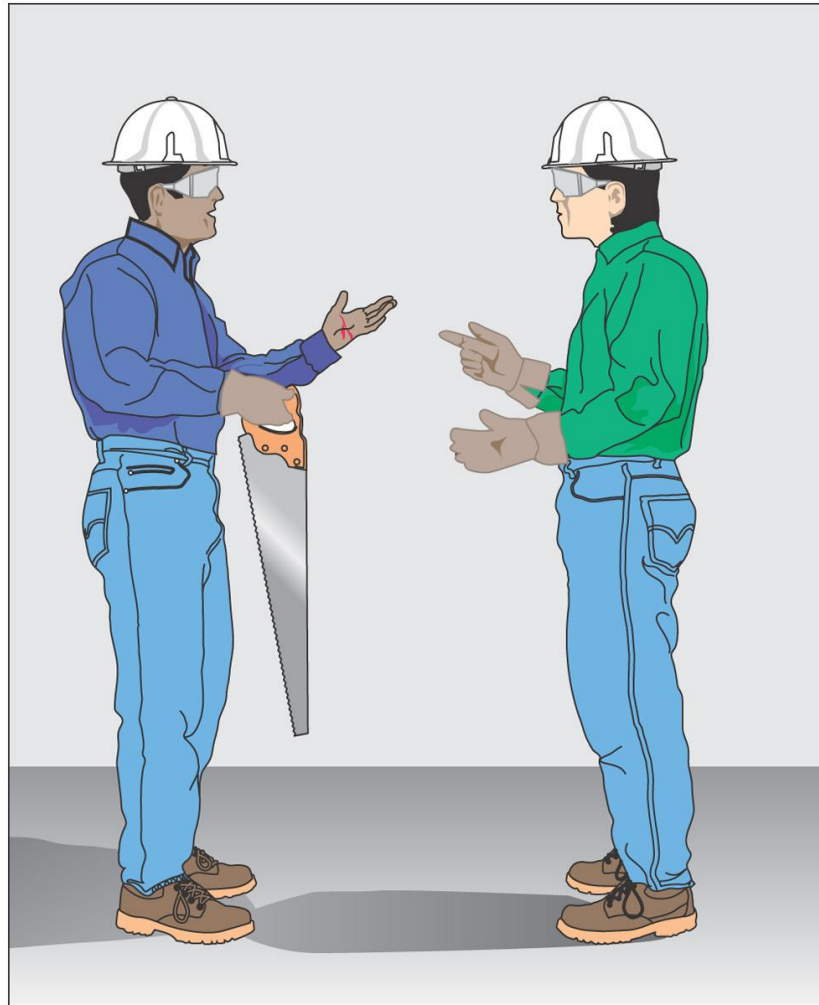
101F01D.EPS

DANGER SIGN



National Center
for Construction
Education and
Research

Figure 4 - All accidents, injuries, or incidents must be reported to your supervisor.



101F04.EPS

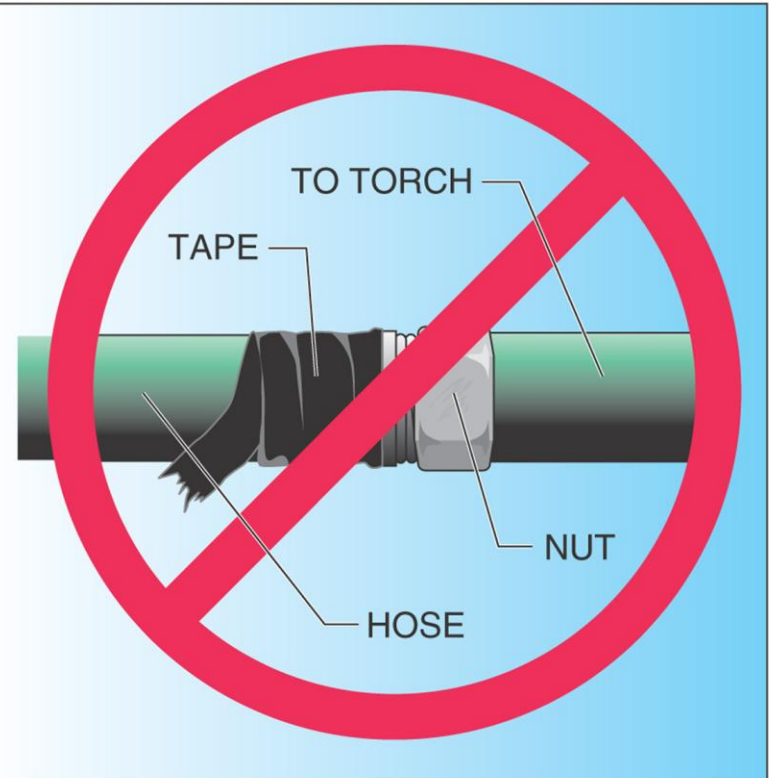
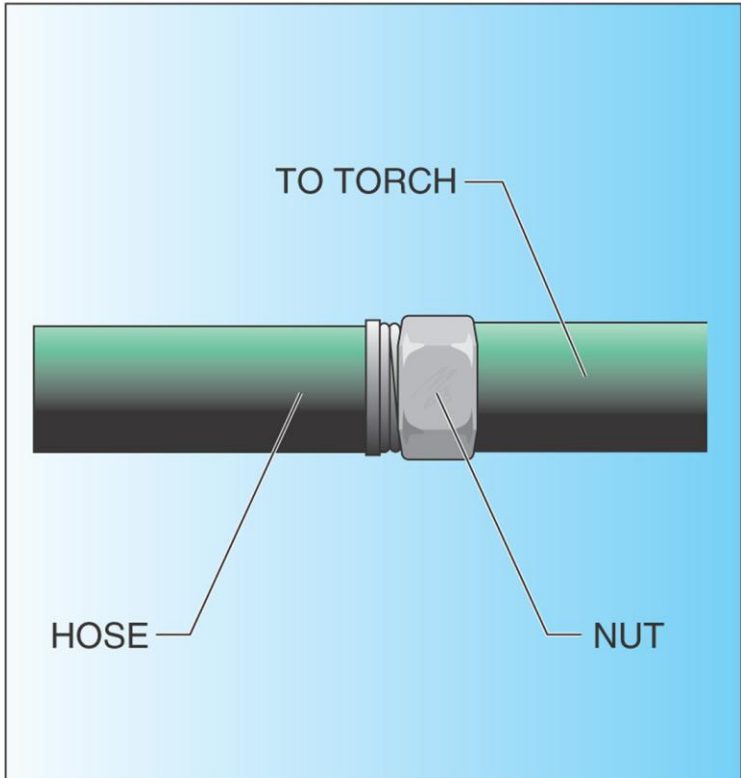


National Center
for Construction
Education and
Research

Core Curriculum: Introductory Craft Skills
Module 00101-04

Copyright © by the NCCER,
Published by Pearson Education, Inc.

Figure 7 - Proper hose connection

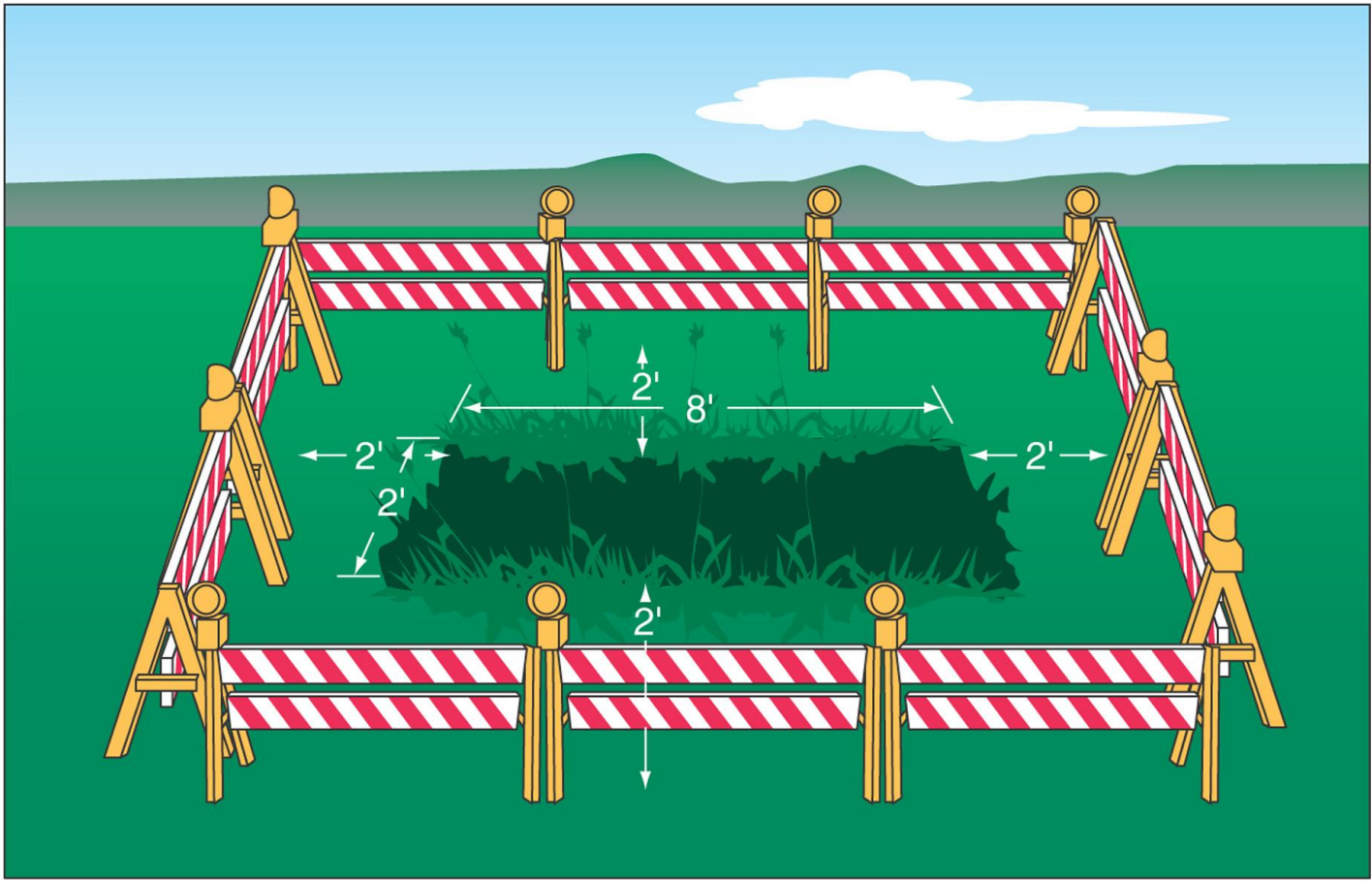


101F07.EPS



National Center for Construction Education and Research

Figure 8 - Barricade around a trench



101F08.EPS



National Center
for Construction
Education and
Research

Figure 10 - Avoid touching high-temperature components



101F10.EPS



National Center
for Construction
Education and
Research

Core Curriculum: Introductory Craft Skills
Module 00101-04

Copyright © by the NCCER,
Published by Pearson Education, Inc.

Figure 11 - Work safely around near pressurized or high-temperature systems

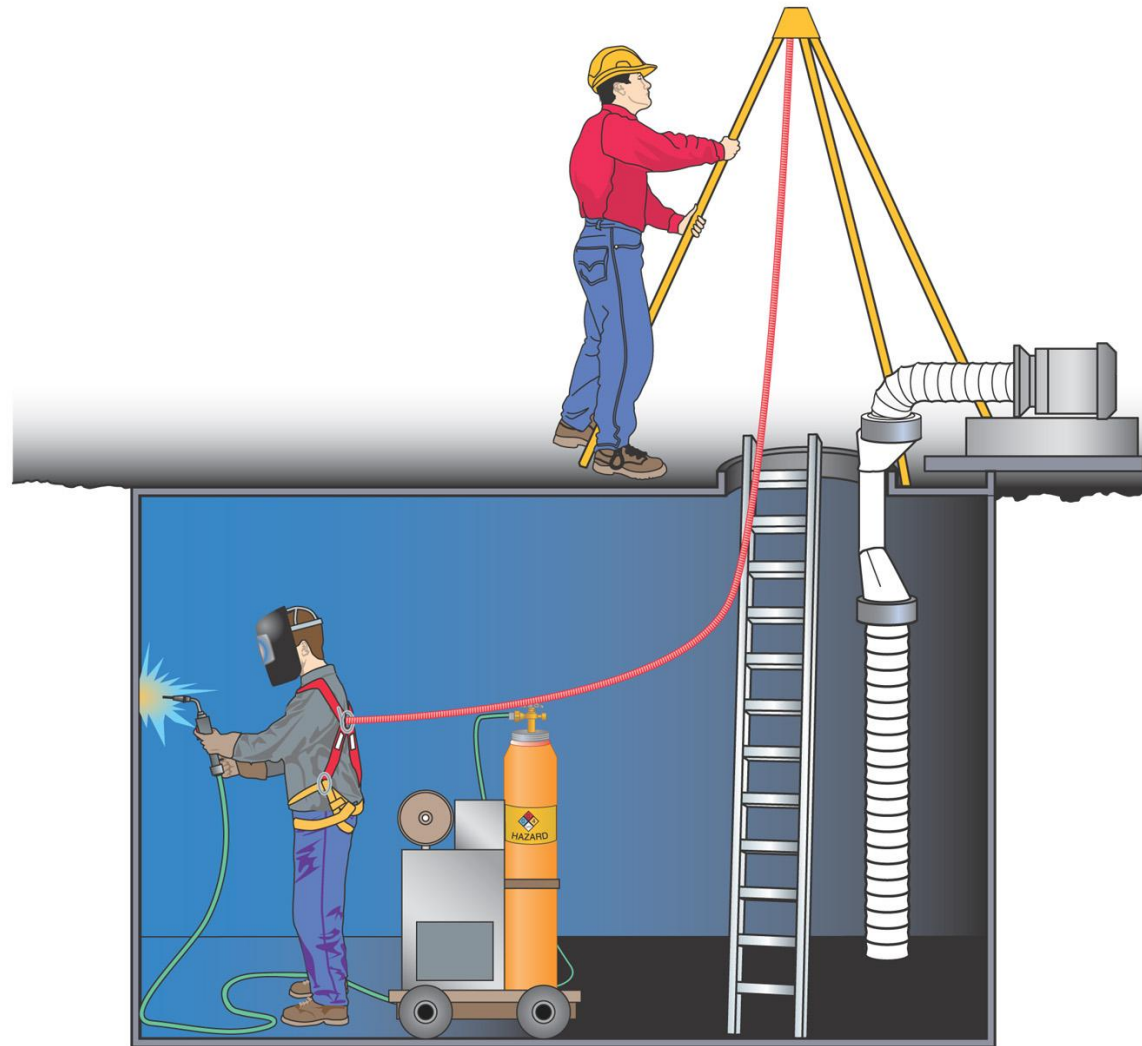


101F11.EPS



National Center
for Construction
Education and
Research

Figure 13 - Permit-required confined space



101F13.EPS



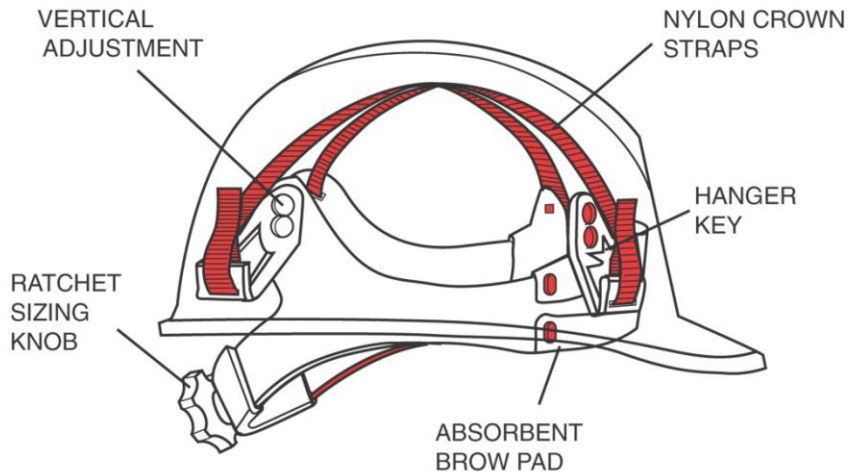
Figure 16 - Typical hard hat



101F16A.EPS



101F16B.TIF



101F16C.EPS



Figure 17 - Typical safety glasses, goggles, and full face shields



SAFETY GLASSES

101F17A.TIF



GOGGLES

101F17B.TIF



TINTED HEADBAND
WELDING
FACE SHIELD



CLEAR HEADBAND
SAFETY
FACE SHIELD

101F17C.TIF



Figure 18 - Typical full-body safety harness



101F18.EPS



National Center
for Construction
Education and
Research

Core Curriculum: Introductory Craft Skills
Module 00101-04

Copyright © by the NCCER,
Published by Pearson Education, Inc.



101F19B.TIF



101F19A.TIF





101F20.EPS





101F21.EPS



Figure 22 - Earplugs for hearing protection



101F22.EPS



National Center
for Construction
Education and
Research

Core Curriculum: Introductory Craft Skills
Module 00101-04

Copyright © by the NCCER,
Published by Pearson Education, Inc.

Figure 23 - Earmuffs for hearing protection



101F23.EPS

Figure 24 - Examples of respirators



NORTH SAFETY PRODUCTS

101F26A.EPS

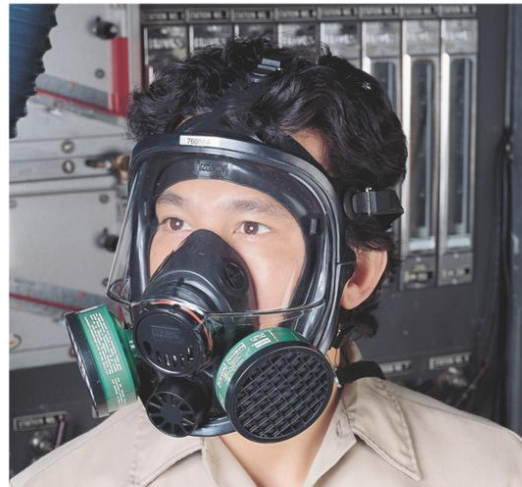
(A)



NORTH SAFETY PRODUCTS

101F26B.EPS

(B)



NORTH SAFETY PRODUCTS

101F26C.EPS

(C)



BECKI SWINEHART

101F26D.EPS

(D)



National Center
for Construction
Education and
Research

Figure 25 - How to lift safely



1



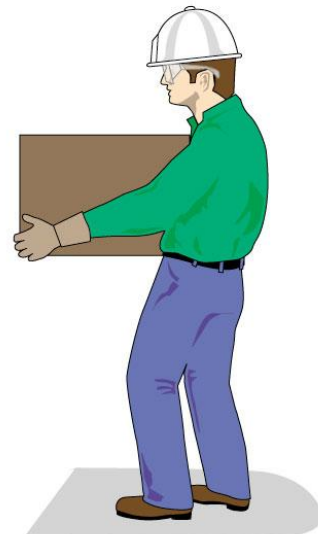
2



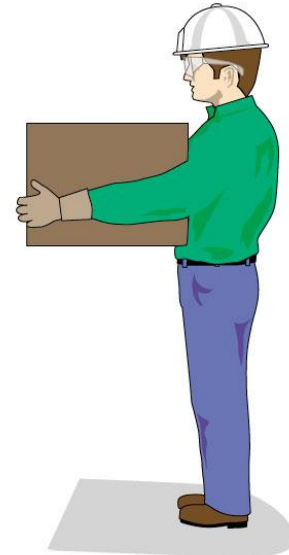
3



4



5



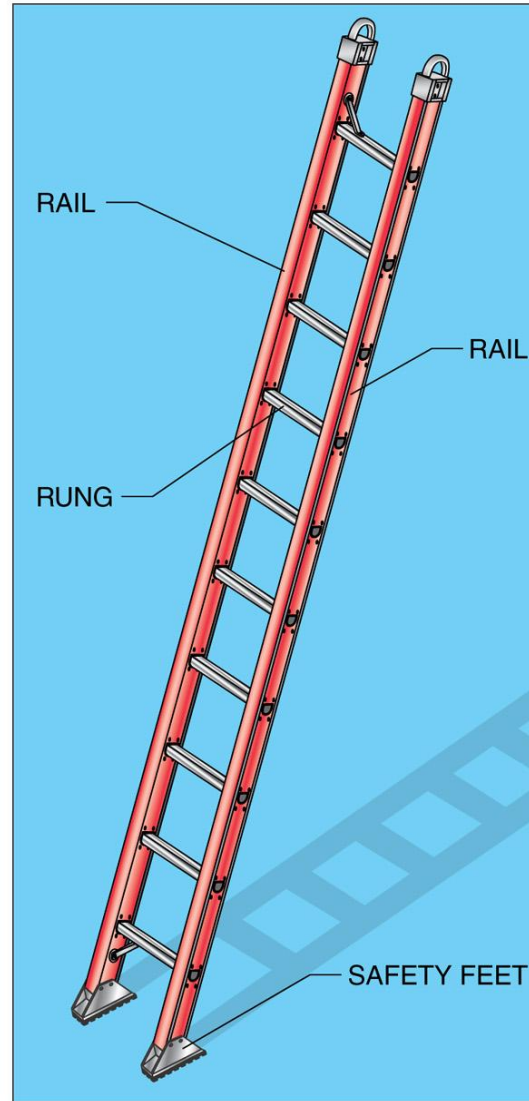
6

101F25.EPS



National Center
for Construction
Education and
Research

Figure 26 - Portable straight ladder



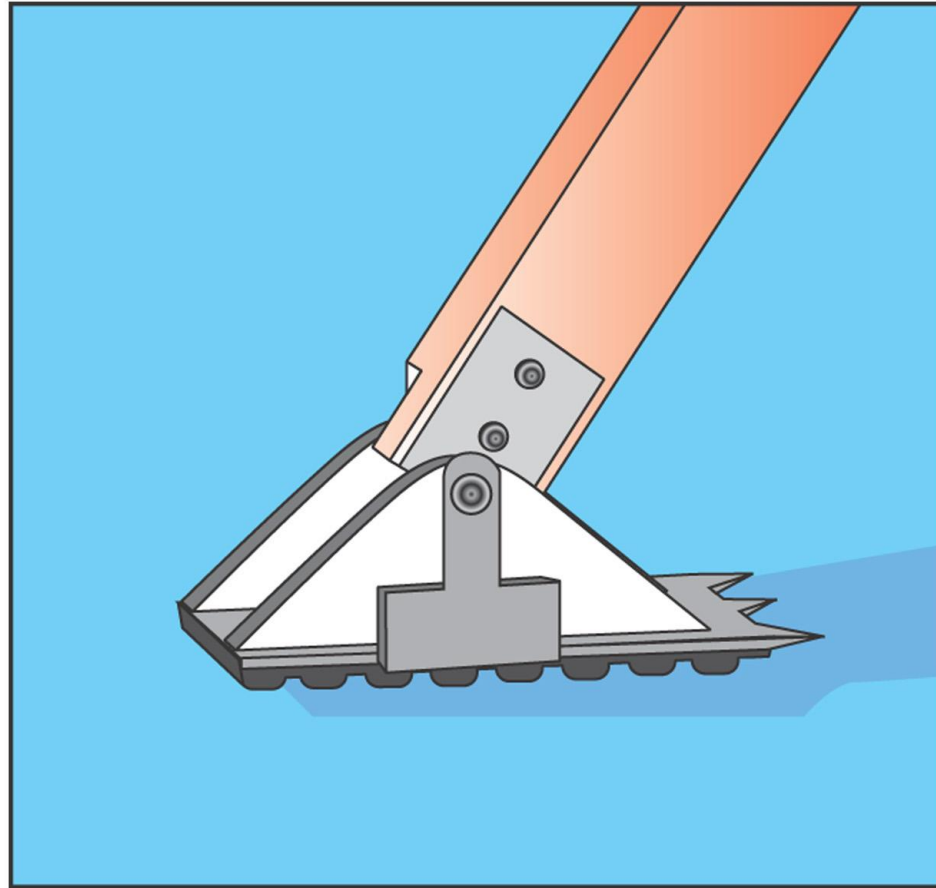
101F26.EPS



National Center
for Construction
Education and
Research

Core Curriculum: Introductory Craft Skills
Module 00101-04

Copyright © by the NCCER,
Published by Pearson Education, Inc.



101F28.EPS



Figure 31 - Moving up or down a ladder



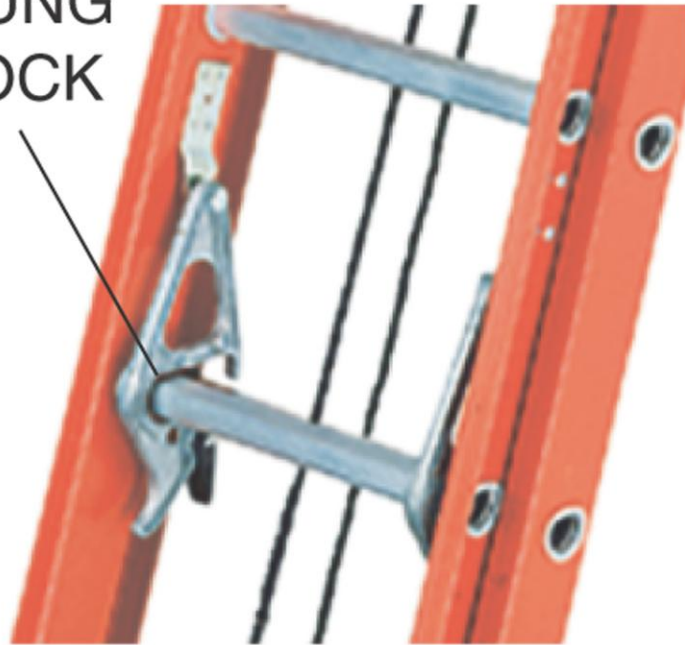
101F31.EPS



National Center
for Construction
Education and
Research



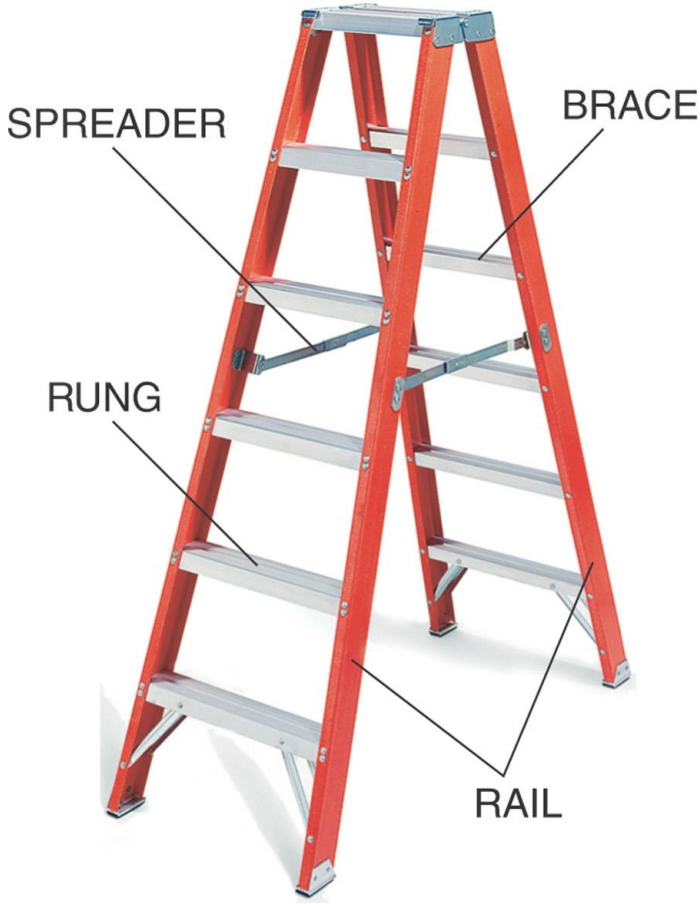
RUNG
LOCK



101F33.EPS



Figure 34 - Typical fiberglass stepladder

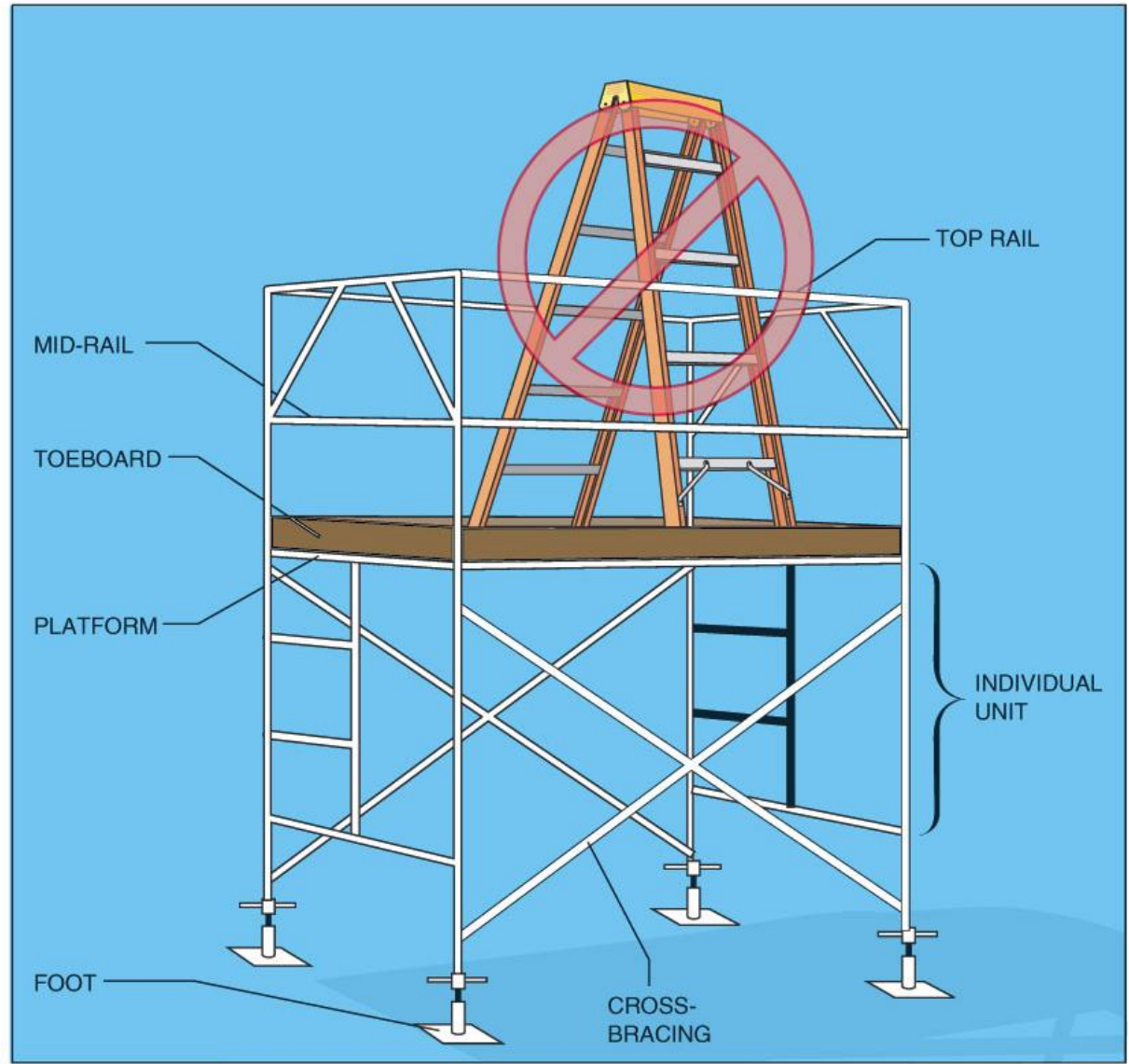


101F34.EPS



National Center
for Construction
Education and
Research

Figure 36 - Typical manufactured scaffold



101F36.EPS

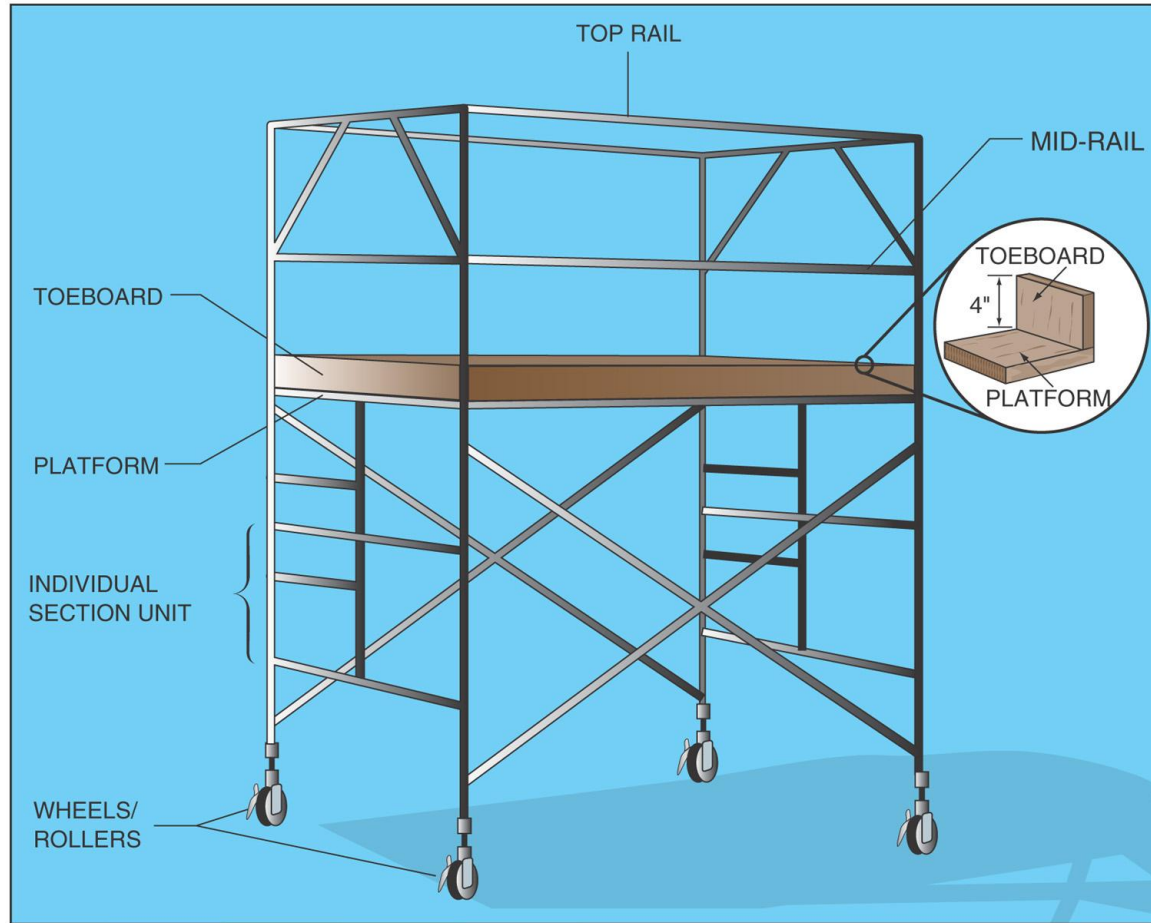


National Center
for Construction
Education and
Research

Core Curriculum: Introductory Craft Skills
Module 00101-04

Copyright © by the NCCER,
Published by Pearson Education, Inc.

Figure 37 - Typical rolling scaffold



101F37.EPS



National Center
for Construction
Education and
Research

Core Curriculum: Introductory Craft Skills
Module 00101-04

Copyright © by the NCCER,
Published by Pearson Education, Inc.

Material Safety Data Sheet
 May be used to comply with OSHA's Hazard
 Communication Standard, 29 CFR 1910 1200. Standard
 must be consulted for specific requirements.

U.S. Department of Labor
 Occupational Safety and Health Administration
 (Non-Mandatory Form)
 Form Approved
 OMB No. 1218-0072



IDENTITY (as Used on Label and List)	Note: Blank spaces are not permitted. If any item is not applicable or no information is available, the space must be marked to indicate that.
--------------------------------------	--

Section I	
Manufacturer's name	Emergency Telephone Number
Address (Number, Street, City, State and ZIP Code)	Telephone Number for Information
	Date Prepared
	Signature of Preparer (optional)

Section II—Hazardous Ingredients/Identity Information				
Hazardous Components (Specific Chemical Identity, Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)

Section III—Physical/Chemical Characteristics			
Boiling Point		Specific Gravity (H ₂ O = 1)	
Vapor Pressure (mm Hg)		Melting Point	
Vapor Density (AIR = 1)		Evaporation Rate (Butyl Acetate = 1)	
Solubility in Water			
Appearance and Odor			

Section IV—Fire and Explosion Hazard Data			
Flash Point (Method Used)	Flammable Limits	LEL	UEL
Extinguishing Media			
Special Fire Fighting Procedures			
Unusual Fire and Explosion Hazards			

(Reproduce locally) OSHA 174 Sept. 1985

101F39A.EPS



National Center
 for Construction
 Education and
 Research



Section V—Reactivity Data			
Stability	Unstable		Conditions to Avoid
	Stable		
Incompatibility (Materials to Avoid)			
Hazardous Decomposition or Byproducts			
Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur		
Section VI—Health Hazard Data			
Route(s) of Entry	Inhalation?	Skin?	Ingestion?
Health Hazards (Acute and Chronic)			
Carcinogenicity	NTP?	IARC Monographs?	OSHA Regulated?
Signs and Symptoms of Exposure			
Medical Conditions Generally Aggravated by Exposure			
Emergency and First Aid Procedures			
Section VII—Precautions for Safe Handling and Use			
Steps to Be Taken in Case Material Is Released or Spilled			
Waste Disposal Method			
Precautions to Be Taken in Handling and Storing			
Other Precautions			
Section VIII—Control Measures			
Respiratory Protection (Specify Type)			
Ventilation	Local Exhaust	Special	
	Mechanical (General)	Other	
Protective Gloves		Eye Protection	
Other Protective Clothing or Equipment			
Work/Hygienic Practices			



Figure 42 - Typical fire extinguisher labels



(C) 101F42C.EPS



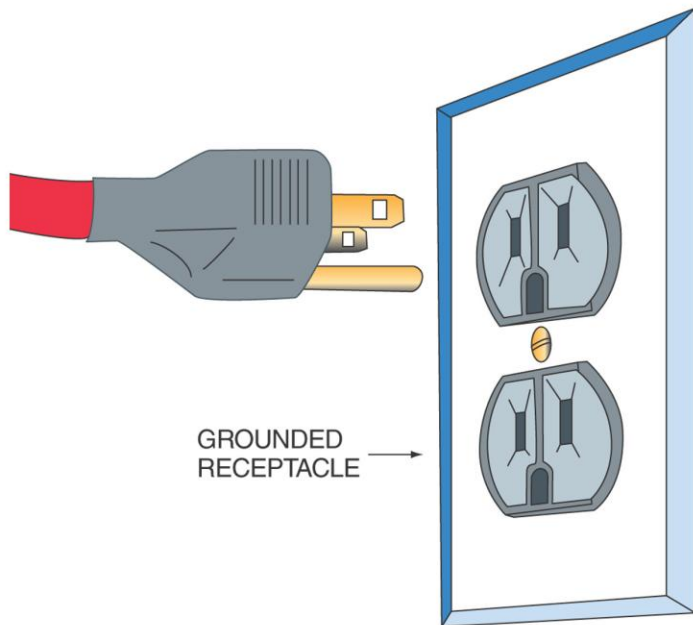
(D) 101F42D.EPS



(E) 101F42E.EPS

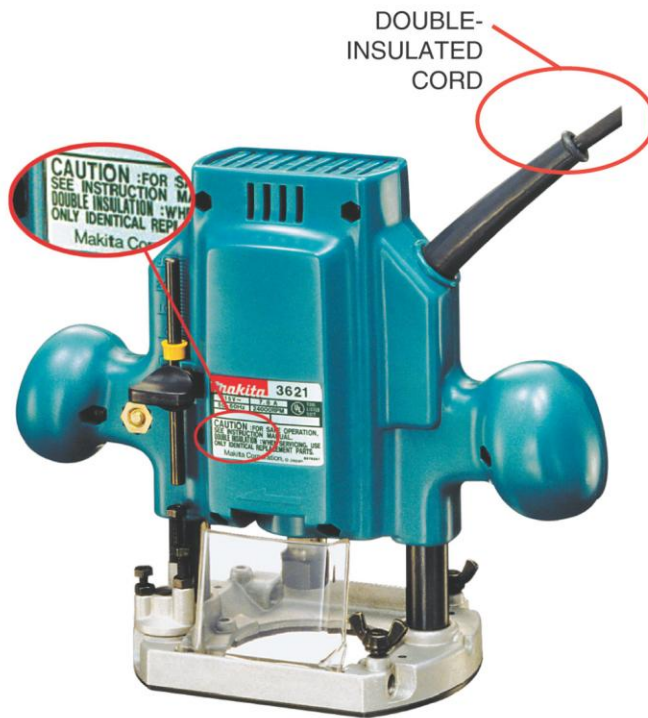


Figure 43 - Three-wire system and double-insulated tool



THREE-WIRE SYSTEM

101F43A.EPS



DOUBLE-INSULATED TOOL

101F43B.EPS

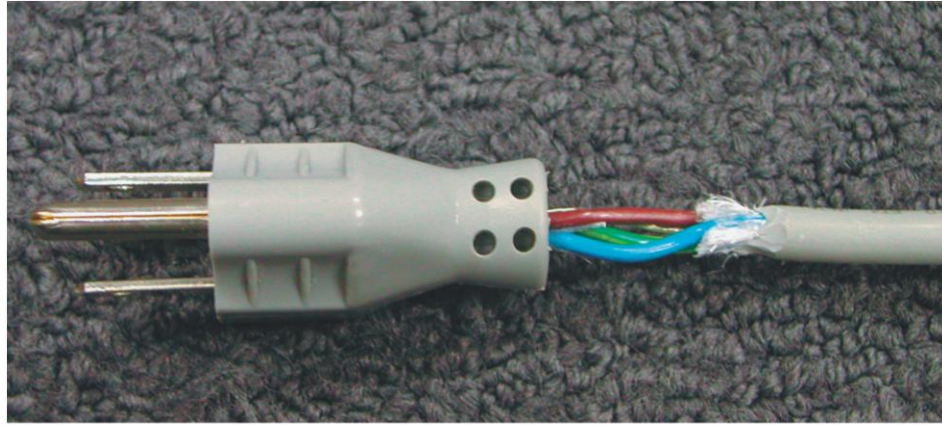


101F43C.EPS

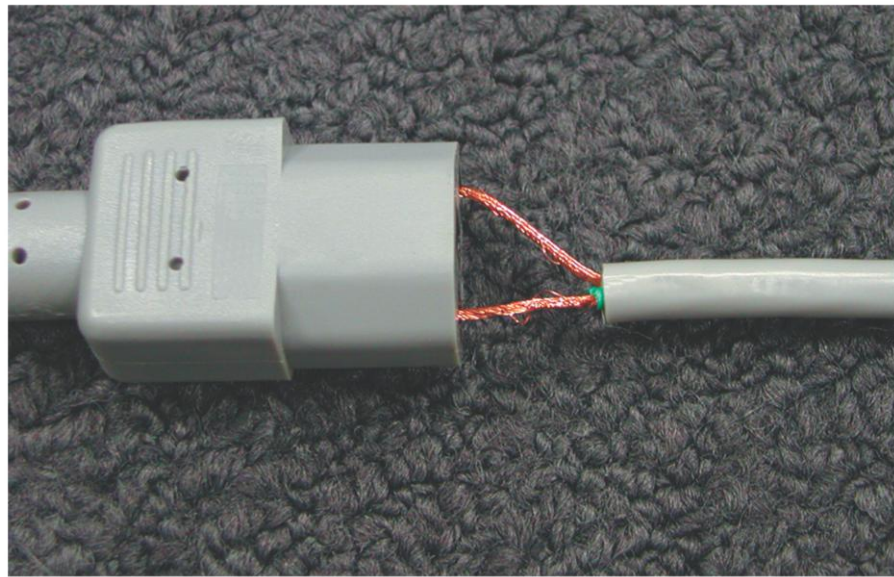
DOUBLE-INSULATED SYMBOL



National Center
for Construction
Education and
Research



101F44A.EPS



101F44B.EPS

Figure 45 - Work light with protective guard



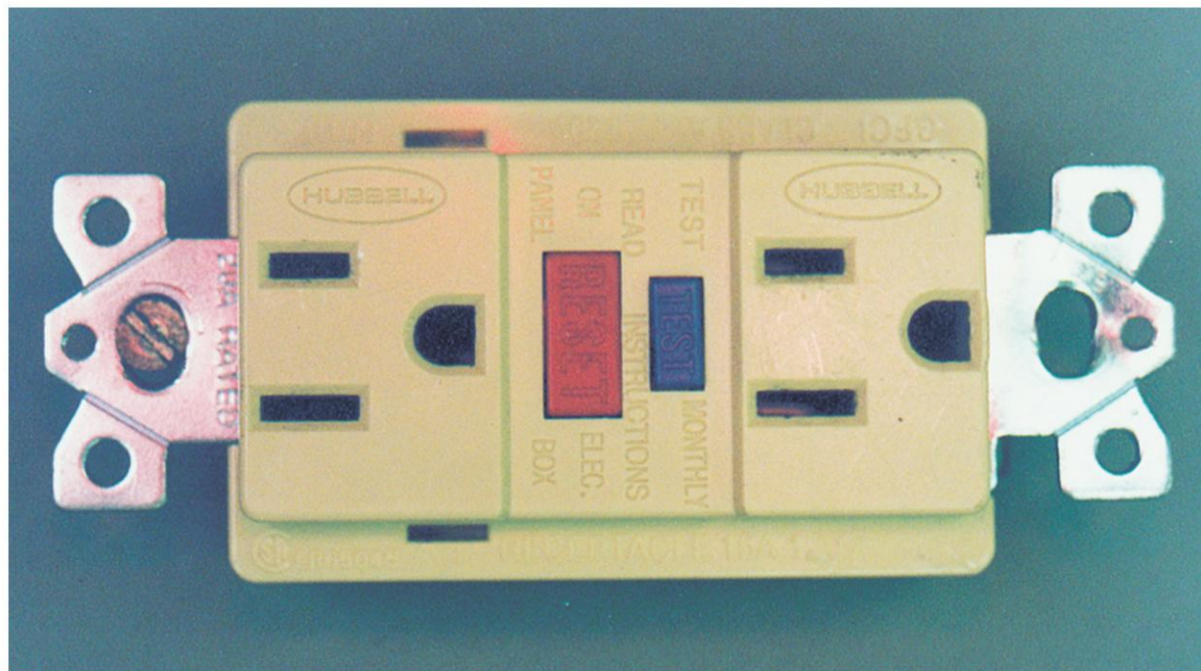
101F45.EPS



National Center
for Construction
Education and
Research

Core Curriculum: Introductory Craft Skills
Module 00101-04

Copyright © by the NCCER,
Published by Pearson Education, Inc.



101F46A.EPS