

**SAUDI ARAMCO
JEDDAH REFINERY DEPARTMENT
REFINERY INSTRUCTION MANUAL**

FINAL

Instruction No.: JRIM 03.078

Page 1 of 31

Subject : Contractor Safety Officer

Owner: Contract Unit Supervisor

CONTENTS

This Instruction outlines the procedure to be followed for Contractor Safety Officer at Jiddah Refinery operating facilities. The text includes:

1. Objective
2. Responsibilities
3. Training
4. Records
5. Attachments: CONTRACTOR SAFETY OFFICER EVALUATION (with & without answers)

1. OBJECTIVE

The objective of Contractor Safety Officer is to assure that his workforce is complying with all Saudi Aramco / Jiddah Refinery Department safety rules and requirements and to monitor work sites to identify and address hazards.

2. RESPONSIBILITIES

Contracts Unit shall:

- 2.1 Coordinate with contractors to submit resume of safety office for review and qualification
- 2.2 Coordinate with maintenance and project coordination unit to interview and qualify the safety officer.
- 2.3 Inform the contractor about the qualification result officially.

JRD Proponent (Maintenance or PCU as applicable) shall:

- 2.4 Review contractor safety officer's resume.
- 2.5 Administer the contractor's safety officer pre-qualifications.
- 2.6 Conduct personal interview of candidate.
- 2.7 Approve/disapprove contractor safety officer qualification.

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2.8 Inform contract unit of the result.

Contractor Safety Officer shall:

2.9 Administer his Company's Loss prevention program as applicable to work being performed.

2.10 Enforce his company's, Saudi Aramco's and JRD's Safety polices procedures and rules.

2.11 Identify and take action to correct Safety hazards.

2.12 Highlight unresolved Safety issues to his management.

Contractor Company shall:

2.13 Submit resume of their Safety officer.

2.14 Address unresolved Safety issues to JRD.

2.15 Ensure all required Safety reports submitted on time.

3. TRAINING

3.1 Contract Unit, SOT & Maintenance Representatives shall be trained on the criteria of qualify contractor Safety Officers.

4. RECORDS

4.1. Contractor Safety Officers resumes.

4.2. Interview result.

**SAUDI ARAMCO
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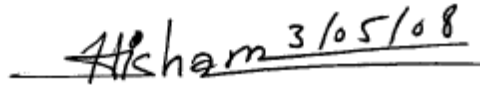
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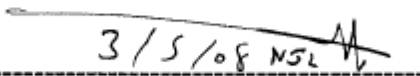
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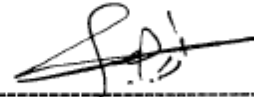
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Superintendent, Operation Division


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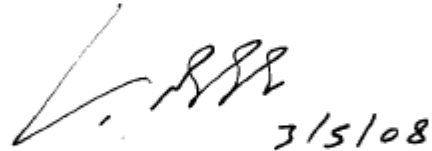
Superintendent, Maintenance Division



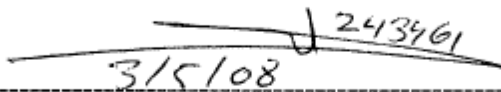
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Superintendent, P&HRD Division

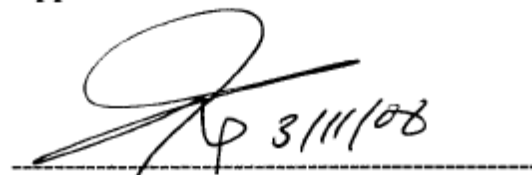

3/5/08

Supervisor, Contract Unit


3/5/08 243961

Safe Operation Team

Approved:


3/11/08

Manager, JRD

CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

CONTRACTOR SAFETY OFFICER EXAM

Circle the best answer for each of the questions

RESPONSIBILITIES

- 1) A contractor is responsible for all the following except:
- a) To ensuring employees and subcontractors are trained in SA Safety Rules
 - b) To ensuring employees and subcontractors are competent in their craft and skill
 - c) Complying with all SA rules, policies, and procedures
 - d) The operation of process and other SA equipment
 - e) Holding Pre-Job and other safety meeting
 - f) Assisting in incident investigations

WORK PERMITS

- 2) The Saudi Aramco General Instruction which sets forth the Work Permit Receiver's requirements is:
- a) GI 1.200
 - b) GI 5.430
 - c) GI 2.100**
 - d) GI 6.200
- 3) A Work Permit is obtained from:
- a) Contractor Fireman
 - b) Any SA employee
 - c) A Unit Operator
 - d) Work Permit Issuer**
 - e) Unit Foreman
 - f) SA Superintendent
- 4) How long is a Work Permit usually valid?
- a) 1 month
 - b) 1 week
 - c) 1 shift**
 - d) 1 day

Central Region/Western Region Area Projects Department

CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

- 5) Where is a work permit required?
- a) All Saudi Aramco Areas
 - b) In areas designated by the department managers as requiring a work permit**
 - c) Construction work shop
 - d) None of the above

HOT WORK PERMITS

- 6) How long should the appointed "Fire Watch" remain at the site of HOT work after the work has stopped?
- a) 10 minutes
 - b) 15 minutes
 - c) 20 minutes
 - d) 30 minutes**
- 7) The maximum working pressure on an acetylene gauge is _____ psig.
- a) 7
 - b) 10
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 - d) 19.50
- 8) During storage of oxygen and acetylene gas cylinders they must be separated by (1) A Fire Resistant Wall or (2) A Distance of _____ .
- a) 20 ft**
 - b) 50 ft
 - c) Not required if tanks are empty
 - d) Not required if protective caps are on
 - e) None of the above
- 9) When hot tapping gasoline lines, it is very important to establish and maintain product flow.
- True** False

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CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

CONFINED SPACE ENTRY

10) What is the number one cause of confined space deaths?

- a) Explosive atmospheres
- b) Oxygen enriched atmospheres
- c) Attempted rescue of person inside the confined space
- d) Atmospheres with greater than 10% LEL
- e) Hydrogen sulfide poisoning
- f) **Oxygen deficient atmospheres**

EXCAVATIONS

11) The soil type that is least stable in an excavation is:

- a) Type A
- b) Type B
- c) **Type C**
- d) None of the above

12) Excavation not subject to vehicle traffic may be barricaded using Red and White Warning Tape:

True **False**

ISOLATION, LOCKOUT AND USE OF HOLD TAGS

13) What is the purpose of a hold tag?

- a) To isolate or de-energize equipment
- b) To identify who placed the tag
- c) To explain the reason why the equipment is being locked out
- d) **All of the above**

Central Region/Western Region Area Projects Department

CONTRACTOR SAFETY OFFICER EVALUATION
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14) Hold tags and locks are primarily intended to protect the individual who is doing the work from?

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15) Excavation "Spoils" must be set back a minimum of _____ from the sides of the excavation.

- a) 1 meter
- b) 6 ft
- c) 3 ft
- d) 2 ft**

16) What is the furthest distance a work may walk to reach a ladders when working in an excavation?

- a) 10 ft
- b) 15 ft
- c) 50 ft
- d) 25 ft**

17) Excavations not subjected to vehicle traffic may be barricaded using which of the following.

- a) Concrete barriers
- b) Red and white tape
- c) 55 gallon drums
- d) Scaffolding
- e) All of the above

INCIDENT REPORT & INVESTIGATION

18) If someone is injured on your job site, a preliminary written report must be submitted to the Saudi Aramco within _____ period of time:

- a) 2 hours
- b) 24 hours**
- c) 8 hours
- d) 3 days

Central Region/Western Region Area Projects Department

CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

PERSONAL PROTECTIVE EQUIPMENT

19) When grinding a piece of metal with a portable power grinder, the type of Personal Protective Equipment required is:

- g) Safety glasses only
- h) Goggles only
- i) Face shield only
- j) Safety glasses/face shield combination**

20) Hearing Protection is required when exposure reach _____ for an eight-hour work shift?

- a) 70 dB
- b) 80 dB
- c) 90 dB**
- d) 120 dB

21) Full face shields shall be used to protect the face and neck from.

- a) Welding Sparks
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- c) Flying Particles**
- d) Caustics
- e) All of the above

22) Gloves shall be worn to protect the hands from which of the following.

- a) Sharp edges
- b) Acid
- c) Chemicals
- d) Heat
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23) Respiratory protective devices can be classified as

- a) Supplied air, Air purifying, and Self-contained breathing devices
- b) Self-contained breathing devices, mixed air
- c) Air supplied, SCBA, Air mixed
- d) All of the above**

Central Region/Western Region Area Projects Department

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24) Holes may be drilled into sides of hard hats to provide for cross ventilation air-flow during very hot weather.

True **False**

25) Rubber boots must be provided for persons engaged in the pouring of concrete.

True False

ABRASIVE BLASTING, COATING AND PAINTING

CHEMICAL SAFETY

26) It is okay to bring chemicals on site without a MSDS if you only have 20 liters of liquid or 10 cubic meters of a toxic gas.

True **False**

CRANES & HEAVY EQUIPMENT

27) Which of the following factors does **not** affect the load capacity of a mobile crane?

- a) Boom length
- b) Boom angle
- c) Extension of outriggers**
- d) Installation of a anti-two block device

28) How many clips are required to construct an eye in a one-half inch wire rope?

- e) 3 clips with U-bolts on the live end
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CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

- 29) A small mobile crane with rubber tires has struck a power line. The line, which is now believed to be dead, is lying across the crane boom. Which of the following best describes the proper course of action for the crane operator?
- a) Jump from the crane and run away
 - b) Stay in the crane until emergency crews arrive**
 - c) Have the oiler knock the line from the boom with a wood pole
 - d) Swing the boom back and forth until the line breaks or falls off
- 30) One purpose of the “Anti-Two-Block” device on cranes is?
- a) To determine the weight of the load being lifted
 - b) To prevent cribbing blocks from contacting outrigger floats
 - c) To determine the length of the wire rope that has been extended
 - d) To prevent the overhaul ball from contacting the boom sheaves**
- 31) When lifting over or adjacent to process piping, etc., what is required?
- a) Hold Tag
 - b) Rigger II
 - c) Critical Lift Plan
 - d) Hot Work Permit
 - e) All of the above**
- 32) What is used to control suspended loads?
- a) Slings
 - b) Guys
 - c) Tag Lines**
 - d) Shackles
 - e) All of the above
- 33) Before a Lift Plan can be used it must first be what?
- a) Signed by the Superintendent
 - b) Singed by Operations
 - c) Copied and filed
 - d) Approved by a competent person or rigger 1
 - e) Sent to the Crane Unit

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CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

34) Crane operations must be stopped when the wind speed is over which of the following.

- a) 10 miles per hour
- b) 15 miles per hour
- c) 20 miles per hour**
- d) 25 miles per hour

35) Wire rope slings shall be taken out of service when you find

- a) 4-broken wires in one strand of one lay
- b) 10-broken wires total in one lay
- c) Crushing
- d) Severe surface abrasion/scraping
- e) All of the above**

ELECTRICAL

36) The maximum voltage permitted for portable power tool is:

- a) 110V**
- b) 220V
- c) 240V
- d) 150V

37) Workers using portable electrical power tools must be protected by which of the following as outlined in the Saudi Aramco CSM.

- a) Smoke detector
- b) Ground Fault Circuit Interrupter**
- c) Three prong plug
- d) Warning tape

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CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

FIRE PREVENTION

- 38) Which of the following would be classified as a Class “A” fire?
- a) A fire involving ordinary combustibles
 - b) A fire involving flammable liquids
 - c) A fire involving combustible metals
 - d) A fire involving live electrical equipment
- 39) Flammable materials storage areas cannot be located within _____ of other buildings or structures:
- a) 25 ft
 - b) 50 ft
 - c) 50 meters
 - d) 100 ft
- 40) Class “B” fires involve flammable liquids or gases that could be under pressure. What would give you most concern when selecting a Class “B” fire extinguisher?
- a) Exposure to electrical equipment
 - b) Depth of flammable liquid
 - c) Location of fire exits
 - d) Type of fire detectors present
- 41) When transferring an extremely flammable liquid from a 55 gallon drum via a hand pump to a small metal safety can, which of the following provides the best protection?
- a) Ground both containers
 - b) Bond both containers together
 - c) Bond containers together and ground each to a separate low resistance ground
 - d) Ground each container to a single low resistance ground and then bond them to each other
- 42) Which of the following is true concerning explosive equipment? Explosive proof equipment is allowed to operate in a flammable or explosive atmosphere because it is capable of:
- a) Containing internal explosions
 - b) Not producing sparks under any condition
 - c) Operating below the auto ignition temperature
 - d) Shutting down the equipment serviced in an emergency

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CONTRACTOR SAFETY OFFICER EVALUATION
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43) Class "C" fires are what type of fire.

- a) Wood and paper
- b) Oils and grease
- c) Gasoline
- d) Electrical**
- e) All of the above

44) Class "B" fires are classified as which of the following

- a) Flammable liquids and gases
- b) Paper and trash
- c) Energized electrical equipment
- d) None of the above

45) Cigarette smoking everywhere within Jeddah Refinery except at designated smoking areas.

True False

46) A fire extinguisher must be placed near (5 to 15 feet) to any combustion engine being operated on site.

True False

LADDERS, SCAFFOLDS and ELEVATED HEIGHTS

47) The ratio of vertical to horizontal spacing for a straight or extension ladder is:

- a) 1 to 1
- b) 2 to 1
- c) 3 to 1
- d) 4 to 1**

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CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

- 48) Work platforms must have toe boards, mid rails, top rails and access ladders once they reach a height of _____:
- a) 4 ft
 - b) 8 ft
 - c) 6 ft**
 - d) When the height is four times greater than the base width
- 49) A straight or extension ladder must extend over the edge of a roof, excavation, or scaffold platform by a minimum distance of:
- a) 1 foot
 - b) 4 feet
 - c) 0.9 meter**
 - d) No set distance
- 50) What is necessary for a worker to work from a steel beam six feet or more above ground?
- a) A steel belt with steel or brass couplings
 - b) A full body harness with lanyard attached to an anchor point**
 - c) He must never go on a steel beam
 - d) None of the above
- 51) When there are openings in roof work and/or at edges of roofs, and a fall hazard exist, barricades must be installed capable of withstanding a force of:
- a) 100 lbs (45.4 kg)
 - b) 150 lbs (68 kg)
 - c) 200 lbs (91 kg)**
 - d) 125 lbs (56.7 kg)
- 52) When step ladders have steps on one side and rungs on the other, two men may be on the same ladder at the same time:
- True **False**

Central Region/Western Region Area Projects Department

CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

HAND TOOLS

53) If a tool breaks it is permissible to weld a piece of pipe as a handle temporarily

True **False**

54) Hand held power tools such as drills and grinders may be locked-on if the job is going to take a long period of time to accomplish.

True **False**

HYDROGEN SULFIDE

55) Hydrogen Sulfide alarms sound at which level:

- a) 5 ppm
- b) 10 ppm**
- c) 20ppm
- d) 50 ppm
- e) 100 ppm

56) Which alarm is for Hydrogen Sulfide

- a) Continuous Siren Blast
- b) Red flashing light and bell
- c) Green rotating beacon
- d) Blue flashing light and local alarm
- e) Operator will tell you when to leave

GENERAL

57) If you found a fire exit blocked by a wooden pallet what would you do?

- a) Leave it
- b) Move it at quitting time
- c) Move it immediately**
- d) Wait for someone else to move it

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CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

58) When using a table saw what must be used to push the wood past the saw blade?

- a) Hands
- b) Push stick**
- c) Screw driver
- d) Hammer handle
- e) All of the above

59) When dangerous Safety Hazards are found which of the following should be done.

- a) Write it down and report it at the next safety meeting.
- b) Write it down for you personal records.
- c) Write it down and correct the hazard.
- d) Write it down and do nothing

60) Soap and water must be provided for the men to wash before meals.

True False

61) The windsocks in Saudi Aramco facilities are to let people know in which direction a gas or chemical leak will flow.

True False

62) A Safety Officer must tour the site several times a day.

True False

63) Dangerous safety hazards should be noted and kept in writing so that they can be reported properly reported and followed up on.

True False

64) A weekly Safety Inspection of each area should be carried out and a report of defects given to those responsible for correcting them.

True False

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CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

65) A Safety Officer checks all construction activities only. The personnel officer checks the medical facilities, toilet facilities, drinking water and all things affecting health and welfare.

True

False

Central Region/Western Region Area Projects Department

CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

Circle the best answer for each question

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CONFINED SPACE ENTRY

10) What is the number one cause of confined space deaths?

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EXCAVATIONS

11) The soil type that is least stable in an excavation is:

- e) Type A
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12) Excavation not subject to vehicle traffic may be barricaded using Red and White Warning Tape:

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INCIDENT REPORT & INVESTIGATION

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ABRASIVE BLASTING, COATING AND PAINTING

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 - b) Guys
 - c) Tag Lines**
 - d) Shackles
 - e) All of the above

Central Region/Western Region Area Projects Department

CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

33) Before a Lift Plan can be used it must first be what?

- a) Signed by the Superintendent
- b) Singed by Operations
- c) Copied and filed
- d) Approved by a competent person or rigger 1**
- e) Sent to the Crane Unit

34) Crane operations must be stopped when the wind speed is over which of the following.

- a) 10 miles per hour
- b) 15 miles per hour
- c) 20 miles per hour**
- d) 25 miles per hour

35) Wire rope slings shall be taken out of service when you find

- a) 4-broken wires in one strand of one lay
- b) 10-broken wires total in one lay
- c) Crushing
- d) Severe surface abrasion/scraping
- e) All of the above**

ELECTRICAL

36) The maximum voltage permitted for portable power tool is:

- e) 110V**
- f) 220V
- g) 240V
- h) 150V

37) Workers using portable electrical power tools must be protected by which of the following as outlined in the Saudi Aramco CSM.

- a) Smoke detector
- b) Ground Fault Circuit Interrupter**
- c) Three prong plug
- d) Warning tape

Central Region/Western Region Area Projects Department

CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

FIRE PREVENTION

38) Which of the following would be classified as a Class “A” fire?

- e) **A fire involving ordinary combustibles**
- f) A fire involving flammable liquids
- g) A fire involving combustible metals
- h) A fire involving live electrical equipment

39) Flammable materials storage areas cannot be located within _____ of other buildings or structures:

- e) 25 ft
- f) **50 ft**
- g) 50 meters
- h) 100 ft

40) Class “B” fires involve flammable liquids or gases that could be under pressure. What would give you most concern when selecting a Class “B” fire extinguisher?

- e) Exposure to electrical equipment
- f) **Depth of flammable liquid**
- g) Location of fire exits
- h) Type of fire detectors present

41) When transferring an extremely flammable liquid from a 55 gallon drum via a hand pump to a small metal safety can, which of the following provides the best protection?

- e) Ground both containers
- f) **Bond both containers together**
- g) Bond containers together and ground each to a separate low resistance ground
- h) Ground each container to a single low resistance ground and then bond them to each other

Central Region/Western Region Area Projects Department

CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

42) Which of the following is true concerning explosive equipment? Explosive proof equipment is allowed to operate in a flammable or explosive atmosphere because it is capable of:

- e) **Containing internal explosions**
- f) Not producing sparks under any condition
- g) Operating below the auto ignition temperature
- h) Shutting down the equipment serviced in an emergency

43) Class "C" fires are what type of fire.

- a) Wood and paper
- b) Oils and grease
- c) Gasoline
- d) Electrical**
- e) All of the above

44) Class "B" fires are classified as which of the following

- a) Flammable liquids and gases**
- b) Paper and trash
- c) Energized electrical equipment
- d) None of the above

45) Cigarette smoking everywhere within Jeddah Refinery except at designated smoking areas.

True False

46) A fire extinguisher must be placed near (5 to 15 feet) to any combustion engine being operated on site.

True False

Central Region/Western Region Area Projects Department

CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

LADDERS, SCAFFOLDS and ELEVATED HEIGHTS

47) The ratio of vertical to horizontal spacing for a straight or extension ladder is:

- e) 1 to 1
- f) 2 to 1
- g) 3 to 1
- h) 4 to 1**

48) Work platforms must have toe boards, mid rails, top rails and access ladders once they reach a height of _____:

- e) 4 ft
- f) 8 ft
- g) 6 ft**
- h) When the height is four times greater than the base width

49) A straight or extension ladder must extend over the edge of a roof, excavation, or scaffold platform by a minimum distance of:

- e) 1 foot
- f) 4 feet
- g) 0.9 meter**
- h) No set distance

50) What is necessary for a worker to work from a steel beam six feet or more above ground?

- a) A steel belt with steel or brass couplings
- b) A full body harness with lanyard attached to an anchor point**
- c) He must never go on a steel beam
- d) None of the above

51) When there are openings in roof work and/or at edges of roofs, and a fall hazard exist, barricades must be installed capable of withstanding a force of:

- e) 100 lbs (45.4 kg)
- f) 150 lbs (68 kg)
- g) 200 lbs (91 kg)**
- h) 125 lbs (56.7 kg)

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CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

52) When step ladders have steps on one side and rungs on the other, two men may be on the same ladder at the same time:

True **False**

HAND TOOLS

53) If a tool breaks it is permissible to weld a piece of pipe as a handle temporarily

True **False**

54) Hand held power tools such as drills and grinders may be locked-on if the job is going to take a long period of time to accomplish.

True **False**

HYDROGEN SULFIDE

55) Hydrogen Sulfide alarms sound at which level:

- a) 5 ppm
- b) 10 ppm
- c) **20ppm**
- d) 50 ppm
- e) 100 ppm

56) Which alarm is for Hydrogen Sulfide

- a) Continuous Siren Blast
- b) Red flashing light and bell
- c) Green rotating beacon
- d) **Blue flashing light and local alarm**
- e) Operator will tell you when to leave

Central Region/Western Region Area Projects Department

CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

GENERAL

57) If you found a fire exit blocked by a wooden pallet what would you do?

- a) Leave it
- b) Move it at quitting time
- c) **Move it immediately**
- d) Wait for someone else to move it

58) When using a table saw what must be used to push the wood past the saw blade?

- a) Hands
- b) **Push stick**
- c) Screw driver
- d) Hammer handle
- e) All of the above

59) When dangerous Safety Hazards are found which of the following should be done.

- a) Write it down and report it at the next safety meeting.
- b) Write it down for you personal records.
- c) **Write it down and correct the hazard.**
- d) Write it down and do nothing

60) Soap and water must be provided for the men to wash before meals.

True False

61) The windsocks in Saudi Aramco facilities are to let people know in which direction a gas or chemical leak will flow.

True False

62) A Safety Officer must tour the site several times a day.

True False

Central Region/Western Region Area Projects Department

CONTRACTOR SAFETY OFFICER EVALUATION
BASIC FUNDAMENTALS EXAMINATION

63) Dangerous safety hazards should be noted and kept in writing so that they can be reported properly reported and followed up on.

True False

64) A weekly Safety Inspection of each area should be carried out and a report of defects given to those responsible for correcting them.

True False

65) A Safety Officer checks all construction activities only. The personnel officer checks the medical facilities, toilet facilities, drinking water and all things affecting health and welfare.

True **False**