

Duct Fabrication – Step 1 - Receiving Coil

Primary Task Involved:

- Unloading raw sheet metal roll

Hazard Controls

1. Operating forklifts:
 - a. Ensure training (operators must be trained on safe operation of the equipment, load limits, loading procedures, equipment inspections, and communication with other personnel).
 - b. Inspect equipment prior to each shift.
 - c. Be sure of the weight of the material being lifted (coil).
 - d. Be sure to inspect work area before operating the forklift. If the load is too large to see around, be sure a spotter is present to direct you, and notify surrounding people of hazard.
 - e. PPE must be worn at all times (eye and ear protection, gloves [never wear loose gloves], protective sleeves and work boots).
 - f. Secure loads prior to moving them.
 - g. Do not allow personnel between forklifts and solid objects.
 - h. Always have eye contact between operator and crew member.
 - i. Pedestrians always have the right away.
 - j. All vehicles should be parked with a fully operational parking brake engaged during loading and unloading.
 - k. Wheel chocks should be used in addition to the brake, particularly if any slope is present.
2. Retrieving materials off the truck using the overhead crane:
 - a. Employees must be properly trained on using the overhead crane.
 - b. Ensure the work area and path of travel are clear of obstructions to prevent additional hazards (tripping and caught between).
 - c. PPE must be worn at all times (eye and ear protection, gloves [never wear loose gloves], protective sleeves and work boots).
 - d. Ensure the weight of the coil is known. Know the limitations of the lifting device. Do not overload the machine. Rigging equipment must not be loaded in excess of its capacity.
 - e. Determine the proper rigging equipment needed for the application prior to use.
 - f. All rigging equipment must be inspected before each shift and at intervals during its use to minimize the possibility of a rigging failure. Remove damaged equipment from use.
 - g. Hooks must be provided with safety latches.
 - h. A properly trained signalman must communicate with the crane operator.
 - i. Keep personnel clear of lift area.
 - j. Determine the center of gravity of the load.
 - k. Keep hands away from sharp edges and corners.
 - l. Be aware of pinch points. Keeps hands clear of pinch points during the lift.
 - m. Before loads or empty lifting gear are raised, lowered, or swung, advance warning must be given to workers operating in the vicinity.
 - n. Avoid lifts near stacked material that may be knocked over by a swinging load.
 - o. Use a designated spotter to assure that proper clearances are maintained.
 - p. Rigging equipment must not be loaded in excess of its safe working load.
 - q. Keep fingers, hands and feet away from pinch points.
 - r. Never work under suspended loads or lift loads over people.
 - s. Never lift people with a hoist and never ride a load or a hook.
 - t. Lift load a few inches and check rigging.
 - u. Start and stop the lift slowly.
 - v. While operating the crane, the load may shift. Stay clear and be attentive of the load.
 - w. Maintain load control. If required, attach tag lines prior to lift.
 - x. When leaving the hoist unattended, land attached loads.
 - y. When the job is complete, place the hoist and hook in a location that will not interfere with the movement of people or materials.

3. Slips/Trip/Falls:
 - a. Ensure that the loading/unloading area is cleared of any debris, work materials, and tools and equipment that are not required during the unloading process.
 - b. Be aware of any trip hazards that cannot be eliminated or removed and of your surroundings at all times.
 - c. Maintain tools and equipment that are required for the unloading process in a neat and orderly fashion on the walking/working surface.
 - d. Loading docks should employ dock-plates and physical barriers around any gaps that present fall hazards.
 - e. Use dock levelers to provide safe access to trailers.
 - f. Utilize appropriate fall protection equipment and guardrail systems when necessary.

4. Struck by and caught between:
 - a. All personnel involved with a loading or unloading operation should assess the potential hazards before the operation begins.
 - b. A clear understanding of the procedures and communication between workers must be established.
 - c. Employees not involved in the unloading must stay clear of the loading zone during all mechanized loading or unloading operations.
 - d. During transfer of any load, all personnel must stay clear of the path of travel.
 - e. When moving multiple items or loads that may shift, properly secure them with straps, bands or other means.
 - f. When raising and moving loads with a boom or crane, ensure that the path of travel is clear of hazards.
 - g. Personnel should never be downhill of any load or cart being moved.
 - h. Be aware of pinch points. Keeps hands clear of equipment during operation.
 - i. Wear hardhats, gloves [never wear loose gloves], eye and ear protection, protective sleeves and work boots.
 - j. All personnel working around moving vehicles and mechanized equipment during loading and unloading operations should wear a high visibility vest.
 - k. Supervisors must ensure that the material handling and associated rigging equipment is inspected as required.
 - l. Spot the delivery trailer into position using a competent person.
 - m. Make eye contact with equipment operators.
 - n. Mark off the working area with warning tape and signage if necessary.
 - o. Ensure that the wheels of the trailer are chocked and all outriggers are applied when necessary.
 - p. Drivers should visually inspect and secure any truck or trailer and the area around it before moving it to assure all workers are clear.

5. Cuts and abrasions:
 - a. Wear cut-resistant gloves and protective sleeves [never wear loose gloves].
 - b. Identify, protect and modify sharp edges if necessary.

Duct Fabrication – Step 2 - Loading Coil Line

Primary Task Involved:

- Loading coil into the coil line

Hazard Controls

1. Operating forklifts:
 - a. Ensure training (operators must be trained on safe operation of the equipment, load limits, loading procedures, equipment inspections, and communication with other personnel).
 - b. Inspect equipment prior to each shift.
 - c. Be sure of the weight of the material being lifted (coil).
 - d. Be sure to inspect work area before operating the forklift. If the load is too large to see around, be sure a spotter is present to direct you, and notify surrounding people of hazard.
 - e. PPE must be worn at all times (eye and ear protection, gloves [never wear loose gloves], protective sleeves and work boots).
 - f. Secure loads prior to moving them.
 - g. Do not allow personnel between forklifts and solid objects.
 - h. Always have eye contact between operator and crew member.
 - i. Pedestrians always have the right away.
 - j. All vehicles should be parked with a fully operational parking brake engaged during loading and unloading.
 - k. Wheel chocks should be used in addition to the brake, particularly if any slope is present.
2. Loading the coil into the coil line using an overhead crane:
 - a. Employees must be properly trained on using the overhead crane.
 - b. Ensure the work area and path of travel are clear of obstructions to prevent additional hazards (tripping and caught between).
 - c. PPE must be worn at all times (eye and ear protection, gloves [never wear loose gloves], protective sleeves and work boots).
 - d. Ensure the weight of the coil is known. Know the limitations of the lifting device. Do not overload the machine. Rigging equipment must not be loaded in excess of its capacity.
 - e. Determine the proper rigging equipment needed for the application prior to use.
 - f. All rigging equipment must be inspected before each shift and at intervals during its use to minimize the possibility of a rigging failure. Remove damaged equipment from use.
 - g. Hooks must be provided with safety latches.
 - h. Keep personnel clear of lift area.
 - i. Determine the center of gravity of the load.
 - j. Keep hands away from sharp edges and corners.
 - k. Be aware of pinch points. Keeps hands clear of pinch points during the lift.
 - l. Before loads or empty lifting gear are raised, lowered, or swung, advance warning must be given to workers operating in the vicinity.
 - m. Avoid lifts near stacked material that may be knocked over by a swinging load.
 - n. Use a designated spotter to assure that proper clearances are maintained.
 - o. Rigging equipment must not be loaded in excess of its safe working load.
 - p. Keep fingers, hands and feet away from pinch points.
 - q. Never work under suspended loads or lift loads over people.
 - r. Never lift people with a hoist and never ride a load or a hook.
 - s. Lift load a few inches and check rigging.
 - t. Lower the load slowly and under control.
 - u. Start and stop the lift slowly.
 - v. While operating the crane, the load may shift. Stay clear and be attentive of the load.
 - w. Maintain load control. If required, attach tag lines prior to lift.
 - x. When leaving the hoist unattended, land attached loads.
 - y. When the job is complete, place the hoist and hook in a location that will not interfere with the movement of people or materials.

3. Slips/Trip/Falls:
 - a. Ensure that the loading/unloading area is cleared of any debris, work materials, and tools and equipment that are not required during the unloading process.
 - b. Be aware of any trip hazards that cannot be eliminated or removed and of your surroundings at all times.
 - c. Maintain tools and equipment that are required for the unloading process in a neat and orderly fashion on the walking/working surface.
4. Struck by and caught between:
 - a. All personnel involved with a loading or unloading operation should assess the potential hazards before the operation begins.
 - b. A clear understanding of the procedures and communication between workers must be established.
 - c. Employees not involved in the unloading must stay clear of the loading zone during all mechanized loading or unloading operations.
 - d. During transfer of any load, all personnel must stay clear of the path of travel.
 - e. When moving multiple items or loads that may shift, properly secure them with straps, bands or other means.
 - f. When raising and moving loads with a boom or crane, ensure that the path of travel is clear of hazards.
 - g. Personnel should never be downhill of any load or cart being moved.
 - h. Be aware of pinch points. Keeps hands clear of equipment during operation.
 - i. Wear hardhats, gloves [never wear loose gloves], eye and ear protection, protective sleeves and work boots.
 - j. All personnel working around moving vehicles and mechanized equipment during loading and unloading operations should wear a high visibility vest.
 - k. Supervisors must ensure that the material handling and associated rigging equipment is inspected as required.
 - l. Make eye contact with equipment operators.
 - m. Mark off the working area with warning tape and signage if necessary.
5. Cuts and abrasions:
 - a. Wear cut-resistant gloves and protective sleeves [never wear loose gloves].
 - b. Identify, protect and modify sharp edges if necessary.

Duct Fabrication – Step 3 - Coil Fed Plasma

Primary Tasks Involved:

- Loading coil or placing raw sheet onto the plasma table
- Cutting/burning the raw material

Hazard Controls

1. Equipment use:
 - a. Employees operating machinery must be trained prior to use:
 - i. Training must also cover equipment limitations and inspecting equipment.
 - ii. Inspect equipment prior to use.
2. Prep material:
 - a. Material handling:
 - i. Wear Kevlar or leather gloves [never wear loose gloves], protective sleeves, safety work boots and eye protection.
 - ii. Keep hands away from sharp edges and corners.
 - b. Back/body strain:
 - i. Use proper lifting techniques.
 - ii. Keep back straight, bend at your knees and lift with your legs.
 - iii. If not able to lift, get help or lift using a mechanical means (cart or hand truck) for lifting (proper training on use and inspection of equipment is required).
 - iv. Do not attempt to lift more than 50 pounds.
3. Operating plasma cutter:
 - a. Ensure all guards and safety devices are in place.
 - b. Pinch points:
 - i. Be aware of pinch points.
 - ii. Keep hands clear of equipment during operation.
 - c. Electrocution:
 - i. Contact with energized point of operation can cause severe shock.
 - d. Lacerations:
 - i. Keep hands clear of moving parts during operation.
 - ii. Be careful of sharp edges after a cut is made.
 - e. Slips, trips and falls:
 - i. Ensure work area is clean to prevent tripping hazards.
 - f. Wear appropriate hearing protection if necessary.
4. Positioning sheets onto the plasma cutter manually:
 - a. Cuts and abrasions:
 - i. PPE must be worn at all times (eye and ear protection, gloves [never wear loose gloves], protective sleeves and work boots).
 - ii. Identify, protect and modify sharp edges if necessary.
 - b. Musculoskeletal disorders (sprains and strains):
 - i. Utilize proper materials handling equipment such as hand trucks, dollies, come-a-longs, forklifts, and cranes in order to minimize manual lifting.
 - ii. Seek assistance when manually handling large, heavy materials.
 - iii. Use proper lifting and materials handling techniques, which should be reviewed prior to starting work as part of pre-task planning.

Duct Fabrication – Step 4 - Beads, Snaplocks, and TDC Connections

Primary Tasks Involved:

- Operating the Bead Machine, Male and Female Snaplock Machines, and the TDC Machine

Hazard Controls

1. Equipment use:
 - a. Employees operating machinery must be trained prior to use.
 - i. Training must also cover equipment limitations and inspecting equipment.
 - ii. Inspect equipment prior to use.
2. Prep material:
 - a. Material handling:
 - i. Wear Kevlar or leather gloves [never wear loose gloves], protective sleeves, safety work boots and eye protection.
 - ii. Keep hands away from sharp edges and corners.
 - b. Back/body strain:
 - i. Use proper lifting techniques.
 - ii. Keep back straight, bend at your knees and lift with your legs.
 - iii. Employ the use of a roller conveyer to help improve control of the sheet and reduce strain.
 - iv. Do not attempt to lift more than 50 pounds.
 - v. Employ the use or rolling tables to transport materials.
3. Operating equipment:
 - a. PPE must be worn at all times (eye and ear protection, gloves [never wear loose gloves], protective sleeves and work boots).
 - b. Ensure all guards and safety devices are in place.
 - c. Pinch points (machine rollers):
 - i. Be aware of pinch points.
 - ii. Keep hands clear of equipment during operation.
 - iii. Tie long hair back.
 - iv. Do not wear loose jewelry or clothing.
 - d. Struck by:
 - i. While operating the tool the metal may shift. Stay clear of any shifting metal during this process.
 - e. Electrocution:
 - i. Contact with energized point of operation can cause severe shock.
 - ii. Use GFCI adapters.
 - iii. Check area for water, and equipment for electrical hazards. If found, fix immediately or tag and remove from service.
 - iv. All extension cords must be checked regularly for defects and ground assuring.
 - f. Lacerations:
 - i. Keep hands clear of moving parts during operation.
 - ii. Be careful of sharp edges on metal sheets.
 - g. Slips, trips and falls:
 - i. Ensure work area is clean to prevent tripping hazards.

Duct Fabrication – Step 5 - 90 Degree Duct Brake

Primary Tasks Involved:

- Forming the 90 degree bend in the sheet and staging it for joining, finishing and sealing

Hazard Controls

1. Equipment use:
 - a. Employees operating machinery must be trained prior to use.
 - i. Training must also cover equipment limitations and inspecting equipment.
 - ii. Inspect equipment prior to use.
2. Prep material:
 - a. Material handling:
 - i. Wear Kevlar or leather gloves [never wear loose gloves], protective sleeves, safety work boots and eye protection.
 - ii. Keep hands away from sharp edges and corners.
 - b. Back/body strain:
 - i. Use proper lifting techniques.
 - ii. Keep back straight, bend at your knees and lift with your legs.
 - iii. Employ the use of a front table to help support materials.
 - iv. Do not attempt to lift more than 50 pounds.
 - v. Employ the use of material carts to transport materials.
3. Operating equipment:
 - a. PPE must be worn at all times (eye and ear protection, gloves [never wear loose gloves], protective sleeves and work boots).
 - b. Ensure all guards and safety devices are in place.
 - c. Pinch points (where the upper die contacts the metal sheet):
 - i. Be aware of pinch points.
 - ii. ANSI requires that you keep your hands a minimum of 4 inches away from where the upper die contacts the metal sheet. The 4 inch minimum is accepted by OSHA.
 - iii. Keep hands clear of equipment during operation.
 - iv. Tie long hair back.
 - v. Do not wear loose jewelry or clothing.
 - d. Struck by:
 - i. While operating the tool the metal may shift. Stay clear of any shifting metal during this process.
 - e. Electrocution:
 - i. Contact with energized point of operation can cause severe shock.
 - ii. Use GFCI adapters.
 - iii. Check area for water, and equipment for electrical hazards. If found, fix immediately or tag and remove from service.
 - iv. All extension cords must be checked regularly for defects and ground assuring.
 - f. Lacerations:
 - i. Keep hands clear of moving parts during operation.
 - ii. Be careful of sharp edges on metal sheets.
 - g. Slips, trips and falls:
 - i. Ensure work area is clean to prevent tripping hazards.

Duct Fabrication – Step 6 - Joining, Finishing and Sealing

Primary Tasks Involved:

- Joining and screwing the Snaplock seams, installing the TDC corners and sealing the seams

Hazard Controls

1. General safety:
 - a. PPE must be worn at all times (eye and ear protection, gloves [never wear loose gloves], protective sleeves and work boots).
 - b. Ensure work area is clean to prevent tripping hazards.
 - c. Keep hands away from sharp edges and corners.
2. Power and manual hand tool use:
 - a. You must be properly trained on the safe use of a tool before using it.
 - b. Use the right tool for the job.
 - c. Keep all tools in good condition with regular maintenance.
 - d. Examine each tool for damage before use and do not use damaged tools. Tag them “Do Not Use” and report them to your supervisor.
 - e. Operate tools according to the manufacturers' instructions (read all tool literature).
3. Power tool use:
 - a. General safety:
 - i. Never carry a tool by the cord or hose.
 - ii. Never yank the cord or the hose to disconnect it from the receptacle.
 - iii. Keep cords and hoses away from heat, oil and sharp edges.
 - iv. All extension cords must be checked regularly for defects and ground assuring.
 - v. Use GFCI adapters.
 - vi. Disconnect tools when not using them, before servicing and cleaning them, and when changing accessories such as blades, bits, and cutters.
 - vii. Keep all people not involved with the work at a safe distance from the work area.
 - viii. Secure materials with clamps or a vise so that both hands are free to operate the tool.
 - ix. Avoid accidental starting. Do not hold fingers on the switch button while carrying a plugged-in tool.
 - x. Reduce physical fatigue by supporting or suspending heavy tools wherever possible.
 - xi. Use only the attachments that the manufacturer recommends for use.
 - xii. Maintain tools with care; keep them sharp and clean for best performance.
 - xiii. Follow instructions in the user's manual for lubricating and changing accessories.
 - xiv. Be sure to keep good footing and maintain good balance when operating power tools.
 - xv. Wear proper apparel for the task. Loose clothing, long hair and jewelry can become caught in moving parts.
 - xvi. Check the area for standing water and eliminate them to prevent electrocution.
 - b. Pneumatic tools:
 - i. Inspect tools, hoses and compressed air source prior to use (loose hoses and fittings, etc.).
 - ii. Keep tools clean and lubricated, and maintain them according to the manufacturers' instructions.
 - iii. Be aware of pinch points.
 - iv. Keep hands clear of equipment during operation.
 - v. Always shut off the air supply, drain the hose of air pressure and disconnect the tool from air supply when not in use or when making adjustments to the tool.
 - vi. Do not exceed maximum air pressure of the tool.
 - vii. Do not direct airstream at yourself or others.
 - viii. Do not carry the tool by the hose.
 - ix. Make sure the hose is secured using clips, ties or whip checks.

4. Sealing (ingestion and inhalation protection):
 - a. Read the safety data sheet.
 - b. Wear appropriate eye protection.
 - c. Wear hand protection such as chemical-resistant nitrile, neoprene, or butyl gloves.
 - d. Wear appropriate clothing required to minimize contact.
 - e. Be sure the product is applied in a well ventilated area and do not breath in the vapors (keep your head out of the path of the vapors).
 - f. Do not eat, drink or smoke while using the product.
 - g. Thoroughly wash your hands with soap and water before eating, drinking, or smoking.

5. Material handling:
 - a. Use proper lifting techniques.
 - b. Keep back straight, bend at your knees and lift with your legs.
 - c. Do not attempt to lift more than 50 pounds.
 - d. Employ the use of moving equipment (hand trucks, material carts, etc.) to transport finished pieces.
 - e. Store materials in designated areas as close to where they will be needed in order to keep walkways clear and workspaces clean.

Duct Fabrication – Step 7 - Assembling

Primary Tasks Involved:

- Prefabricated pieces are connected and other connections are made (e.g., taps are installed)

Hazard Controls

1. General safety:
 - a. PPE must be worn at all times (eye and ear protection, gloves [never wear loose gloves], protective sleeves and work boots).
 - b. Ensure work area is clean to prevent tripping hazards.
 - c. Keep hands away from sharp edges and corners.
2. Power and manual hand tool use:
 - a. You must be properly trained on the safe use of a tool before using it.
 - b. Use the right tool for the job.
 - c. Keep all tools in good condition with regular maintenance.
 - d. Examine each tool for damage before use and do not use damaged tools. Tag them “Do Not Use” and report them to your supervisor.
 - e. Operate tools according to the manufacturers' instructions (read all tool literature).
3. Power tool use:
 - a. General safety:
 - i. Never carry a tool by the cord or hose.
 - ii. Never yank the cord or the hose to disconnect it from the receptacle.
 - iii. Keep cords and hoses away from heat, oil and sharp edges.
 - iv. All extension cords must be checked regularly for defects and ground assuring.
 - v. Use GFCI adapters.
 - vi. Disconnect tools when not using them, before servicing and cleaning them, and when changing accessories such as blades, bits, and cutters.
 - vii. Keep all people not involved with the work at a safe distance from the work area.
 - viii. Secure materials with clamps or a vise so that both hands are free to operate the tool.
 - ix. Avoid accidental starting. Do not hold fingers on the switch button while carrying a plugged-in tool.
 - x. Reduce physical fatigue by supporting or suspending heavy tools wherever possible.
 - xi. Use only the attachments that the manufacturer recommends for use.
 - xii. Maintain tools with care; keep them sharp and clean for best performance.
 - xiii. Follow instructions in the user's manual for lubricating and changing accessories.
 - xiv. Be sure to keep good footing and maintain good balance when operating power tools.
 - xv. Wear proper apparel for the task. Loose clothing, long hair and jewelry can become caught in moving parts.
 - xvi. Check the area for standing water and eliminate them to prevent electrocution.
 - b. Pneumatic tools:
 - i. Inspect tools, hoses and compressed air source prior to use (loose hoses and fittings, etc.).
 - ii. Keep tools clean and lubricated, and maintain them according to the manufacturers' instructions.
 - iii. Be aware of pinch points.
 - iv. Keep hands clear of equipment during operation.
 - v. Always shut off the air supply, drain the hose of air pressure and disconnect the tool from air supply when not in use or when making adjustments to the tool.
 - vi. Do not exceed maximum air pressure of the tool.
 - vii. Do not direct airstream at yourself or others.
 - viii. Do not carry the tool by the hose.
 - ix. Make sure the hose is secured using clips, ties or whip checks.

4. Sealing (ingestion and inhalation protection):
 - a. Read the safety data sheet.
 - b. Wear appropriate eye protection.
 - c. Wear hand protection such as chemical-resistant nitrile, neoprene, or butyl gloves.
 - d. Wear appropriate clothing required to minimize contact.
 - e. Be sure the product is applied in a well ventilated area and do not breath in the vapors (keep your head out of the path of the vapors).
 - f. Do not eat, drink or smoke while using the product.
 - g. Thoroughly wash your hands with soap and water before eating, drinking, or smoking.

5. Material handling:
 - a. Use proper lifting techniques.
 - b. Keep back straight, bend at your knees and lift with your legs.
 - c. Do not attempt to lift more than 50 pounds.
 - d. Employ the use of moving equipment (hand trucks, material carts [and cart paddles to secure loads], etc.) to transport finished pieces.
 - e. Ensure that loading areas are neat, clean and well lit.
 - f. Ensure that dock plates are installed where they are needed.
 - g. Ensure that guardrails are installed on and around loading docks where necessary.
 - h. Position material carts safely near the edge of the dock so that the forklift operator can safely and easily access the load.

Duct Fabrication – Step 8 - Bundling and Staging for Shipment

Primary Tasks Involved:

- Materials are bundled and wrapped and then either staged or loaded

Hazard Controls

1. General safety:
 - a. PPE must be worn at all times (eye and ear protection, gloves [never wear loose gloves], protective sleeves and work boots).
 - b. Ensure work area is clean to prevent tripping hazards.
 - c. Keep hands away from sharp edges and corners.
2. Operating forklifts:
 - a. Ensure training (operators must be trained on safe operation of the equipment, load limits, loading procedures, equipment inspections, and communication with other personnel).
 - b. Inspect equipment prior to each shift.
 - c. Be sure of the weight of the material being lifted (coil).
 - d. Be sure to inspect work area before operating the forklift. If the load is too large to see around, be sure a spotter is present to direct you, and notify surrounding people of hazard.
 - e. PPE must be worn at all times (eye and ear protection, gloves [never wear loose gloves], protective sleeves and work boots).
 - f. Secure loads prior to moving them.
 - g. Do not allow personnel between forklifts and solid objects.
 - h. Always have eye contact between operator and crew member.
 - i. Pedestrians always have the right away.
 - j. All vehicles should be parked with a fully operational parking brake engaged during loading and unloading.
 - k. Wheel chocks should be used in addition to the brake, particularly if any slope is present.
3. Power hand tools:
 - a. General safety:
 - i. You must be properly trained on the safe use of a tool before using it.
 - ii. Use the right tool for the job.
 - iii. Keep all tools in good condition with regular maintenance.
 - iv. Examine each tool for damage before use and do not use damaged tools. Tag them "Do Not Use" and report them to your supervisor.
 - v. Operate tools according to the manufacturers' instructions (read all tool literature).
 - b. Tool use safety:
 - i. Never carry a tool by the cord or hose.
 - ii. Never yank the cord or the hose to disconnect it from the receptacle.
 - iii. Keep cords and hoses away from heat, oil and sharp edges.
 - iv. All extension cords must be checked regularly for defects and ground assuring.
 - v. Use GFCI adapters.
 - vi. Disconnect tools when not using them, before servicing and cleaning them, and when changing accessories such as blades, bits, and cutters.
 - vii. Keep all people not involved with the work at a safe distance from the work area.
 - viii. Secure materials with clamps or a vise so that both hands are free to operate the tool.
 - ix. Avoid accidental starting. Do not hold fingers on the switch button while carrying a plugged-in tool.
 - x. Reduce physical fatigue by supporting or suspending heavy tools wherever possible.
 - xi. Use only the attachments that the manufacturer recommends for use.
 - xii. Maintain tools with care; keep them sharp and clean for best performance.
 - xiii. Follow instructions in the user's manual for lubricating and changing accessories.
 - xiv. Be sure to keep good footing and maintain good balance when operating power tools.

- xv. Wear proper apparel for the task. Loose clothing, long hair and jewelry can become caught in moving parts.
 - xvi. Check the area for standing water and eliminate them to prevent electrocution.
4. Material handling:
- a. Employ the use of moving equipment (forklifts, hand trucks, material carts [and cart paddles to secure loads], etc.) to transport loads.
 - b. Ensure that loading areas are neat, clean and well lit.
 - c. Ensure that dock plates are installed where they are needed.
 - d. Ensure that guardrails are installed on and around loading docks where necessary.
 - e. Position material carts safely near the edge of the dock so that the forklift operator can safely and easily access the load.
 - f. Designated storage areas should be used to keep the work area clean, organized and safe.
 - g. Use dunnage to level and stabilize loads on the flatbed and tie down straps to secure it.
5. Slips/Trip/Falls:
- a. Ensure that the loading/unloading area is cleared of any debris, work materials, and tools and equipment that are not required during the unloading process.
 - b. Be aware of any trip hazards that cannot be eliminated or removed and of your surroundings at all times.
 - c. Maintain tools and equipment that are required for the unloading process in a neat and orderly fashion on the walking/working surface.
 - d. Loading docks should employ dock-plates and physical barriers around any gaps that present fall hazards.
 - e. Use dock levelers to provide safe access to trailers.
 - f. Utilize appropriate fall protection equipment and guardrail systems when necessary.
6. Struck by and caught between:
- a. All personnel involved with a loading or unloading operation should assess the potential hazards before the operation begins.
 - b. A clear understanding of the procedures and communication between workers must be established.
 - c. Employees not involved in the unloading must stay clear of the loading zone during all mechanized loading or unloading operations.
 - d. During transfer of any load, all personnel must stay clear of the path of travel.
 - e. When moving multiple items or loads that may shift, properly secure them with straps, bands or other means.
 - f. When raising and moving loads with a boom or crane, ensure that the path of travel is clear of hazards.
 - g. Personnel should never be downhill of any load or cart being moved.
 - h. Never stand beneath a load.
 - i. Be aware of pinch points. Keeps hands clear of equipment during operation.
 - j. Wear hardhats, gloves [never wear loose gloves], eye and ear protection, protective sleeves and work boots.
 - k. All personnel working around moving vehicles and mechanized equipment during loading and unloading operations should wear a high visibility vest.
 - l. Supervisors must ensure that the material handling and associated rigging equipment is inspected as required.
 - m. Spot the delivery trailer into position using a competent person.
 - n. Make eye contact with equipment operators.
 - o. Mark off the working area with warning tape and signage if necessary.
 - p. Ensure that the wheels of the trailer are chocked and all outriggers are applied when necessary.
 - q. Drivers should visually inspect and secure any truck or trailer and the area around it before moving it to assure all workers are clear.