

Manual Materials Handling	S.O.P. 3M		Page 1 of 4
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STANDARD OPERATING PROCEDURE			

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I. SCOPE AND PURPOSE

- A. The purpose of this procedure is to provide methods for safe handling of materials to prevent injuries, especially to the back. It applies to all employees who lift, move, or carry materials.

II. RELATED PROCEDURES AND RESOURCES

- A. S.O.P. 3G, Personal Protective Equipment
- B. S.O.P. 3P, Lifting Devices, Rigging and Signaling
- C. Back Injury Prevention Field Training Module

III. PERSONNEL RESPONSIBILITY

- A. Supervisor
 - 1. Every effort shall be made to provide a mechanical method or automated method to handle materials to eliminate the need for manual handling.
 - 2. Ensure that all employees are trained on proper manual handling procedures and practice them.
- B. Employee
 - 1. All employees shall be familiar with these procedures and follow them as needed.

IV. GENERAL PRECAUTIONS FOR MANUAL HANDLING

- A. Inspect materials for slivers, jagged edges, burrs, rough or slippery surfaces.
- B. Get a firm grip on the object.
- C. Keep fingers away from pinch points, especially when putting materials down.
- D. When handling lumber or other long objects keep hands away from the ends to prevent them from being pinched.
- E. Wipe off greasy, wet, slippery, or dirty objects before trying to handle them.
- F. Keep hands free of oil and grease.

- G. If an object being handled shows resistance, either while being pushed or pulled, stop pushing or pulling and look around object to determine what the object maybe hung up on.
- H. When more than one person is handling an object, the employees involved should clearly communicate with each other the method of handling.
- I. A standard method of hand signals shall be determined and understood by all persons involved in handling objects.
- J. Where possible use mechanical lifting devices to lift objects large distances, overhead.
 - 1. Permanently installed tuggers should be utilized, if available.
 - i. Personnel responsible for the operation of the tugger shall be properly trained.
 - ii. Personnel shall be trained on the proper procedures for tying and un-tying of materials.
 - iii. Personnel shall be trained on signaling.
 - 2. If a tugger is not available, an overhead Block and Tackle pulley system can be utilized.
 - i. Personnel should be trained on the proper procedures for tying and un-tying of materials.
 - ii. Only one (1) scaffold board may be tied and transferred at a time.
 - 3. If Block and Tackle pulley systems are not feasible, a human chain system may be used.
 - i. Personnel should be staggered to ensure they are not directly above or below others while passing material.
 - iii. Personnel involved in the chaining operation should
 - a. Make sure they have a secure grip on the material being passed.
 - b. Communicate constantly with the person above and below to ensure proper passing of the materials.
 - c. Maintain a constant pace of material transfer.
- K. Never throw materials or objects up to scaffolds, i.e., clamps.
 - 1. Use a canvas bag or a metal bucket with a handle made of “doubled” #9 wire.
 - 2. Plastic buckets are prohibited and shall not be used to transfer objects overhead.

V. HANDLING SPECIFIC SHAPES

- A. Basic rules to be followed for manual lifting are:
 - 1. Never overexert yourself when lifting. If the load is thought to be more than one person can handle, an additional person shall be assigned to the job.
 - 2. Bend your knees and keep your back straight.
 - 3. Lift gradually with your legs (not your back), without jerking, to minimize the effects of acceleration.
 - 4. Keep the load close to the body.
 - 5. Lift without twisting the body.
 - 6. Follow safe lifting procedures described below.
- B. Boxes, cartons, and crates
 - 1. Grasp at alternate top and bottom corners; draw on corner between the legs.
 - 3. Any box, carton, or crate should either be handled by two persons or with

mechanical handling equipment if it appears either too large or too heavy for one person to handle it.

3. Personnel carrying a load must be able to see in front of their load.
4. If a sack is to be raised to shoulder height, it should be raised to waist height first, and rested against the belly or hip before it is swung to the shoulder.

C. Barrels and drums

1. Never stand below an object being raised, always stand to the side of it.
2. If two people are assigned to upend a full drum, they should use the following procedure:
 - i. Stand on opposite sides of the drum and face one another.
 - ii. Grasp both “chimes” (rolled edges at both end of the drum) near their high points. Lift one end; press down on the other.
 - iii. As the drum is upended and brought to balance on the bottom chime, release the grip on the bottom chime and straighten up the drum.
3. When two people are to overturn a full drum, they should use the following procedure:
 - i. Make sure that there is enough room. Cramped quarters can result in badly injured hands.
 - ii. Stand near one another, facing the drum. Grip the closest point of the top chime with both hands. Rest palms against the side of the drum, and push until the drum balances on the lower chime.
 - iii. The two workers step forward a short distance and each person releases one hand from the top chime in order to grip the bottom chime. They ease the drum down to a horizontal position until it rests solidly on its side.
4. If one person is to overturn a drum, they should
 - i. Make sure there is enough room.
 - ii. Stand in front of the drum, reach over it, and grasp the far side of the top chimes with both hands. (A short person can grasp the near side of the chime, if this is easier.) If the drum is tight against a wall or against other drums, pull on the chime with one hand and push against the wall (or other drum) with the other hand for additional control.
 - iii. Pull the top of the drum toward you, until it is balanced on the edge of the lower chime.
 - iv. Transfer both hands to the near side of the top chime. Keep the hands far enough apart to avoid their being pinched when the drum touches the floor.
 - v. Lower the drum. Keep the back straight, inclined as necessary. Bend the legs so that the leg muscles take the strain.
5. Long objects, like ladders, lumber, or pipe, should be carried over the shoulder.
 - i. The front end should be held as high as possible to prevent its striking other employees, especially when turning corners.
 - ii. When two or more people carry a long object, they should place it on the same shoulder, respectively, and walk in step.
 - iii. A maximum of two (2) scaffold boards may be carried by any one individual at any given time.

VI. NON-POWERED HAND TRUCKS (DOLLY)

- A. When not in use, trucks should be parked in a designated area, not in the aisles or in other places where they constitute tripping hazards or obstruct traffic.
- B. Guidelines for using a hand truck.
 - 1. Keep the center of gravity of the load as low as possible. Place heavy objects below lighter objects.
 - 2. Place the load well forward so the axle will carry the weight.
 - 3. Position the load so it will not slip, shift, or fall. Load only to a height that will allow a clear view ahead.
 - 4. Let the truck carry the load. The operator should only balance and push.
 - 5. Never walk backwards with a hand truck.
 - 6. When going down an incline, keep the truck in front of you. When going up, keep the truck behind you.
 - 7. Move the truck at a safe speed. Do not run. Keep the truck under control at all times.
- C. Guidelines for using a wheelbarrow.
 - 1. Keep the center of gravity of the load as low as possible.
 - 2. Center the load so the axle will carry the weight.
 - 3. Position the load so it will not slip, shift, or fall.
 - 4. Make sure the tires are inflated and at the proper pounds per square inch (p.s.i.).
 - 5. Position your body between the handles, using your right hand for the right handle and left hand for the left handle.
 - 6. To properly lift the load, bend your knees, while keeping your back straight.
 - 7. Let the wheelbarrow carry the load. The operator should only balance and push.