Pallet Racking
Safe Loading & Unloading

DO NOT USE unless trained and authorized

Training is required before racking is loaded or unloaded, using powered mobile equipment.

Damaged racking must be reported immediately to a supervisor or manager.

Do not overload racking. Weight restrictions must be observed.

Do not climb on racking.

PRE-OPERATIONAL SAFETY CHECKS

1. **Racking must be regularly inspected, by a qualified person, for the following structural conditions:**
   a) Signs of damage
   b) Corrosion
   c) Missing or incompatible parts
   d) Evidence of questionable repairs
   e) Wear, fatigue and general disrepair
2. **Racking must be inspected, by a qualified person, for the following:**
   a) Unsafe loading practices
   b) Overloaded
   c) Excessive load overhang
   d) Correctly sized pallets
   e) Unsecured / unwrapped loads
   f) Unstable loads
   g) Unsafe unloading procedures

OPERATIONAL SAFETY

1. Do not use any racking that shows signs of actual damage. Report any damage immediately to your supervisor.
2. Do not use any racking that you suspect has been damaged. Report any suspected damage immediately to your supervisor.
3. Never exceed the racking manufacturer's capacity rating.
4. Ensure loads are uniformly distributed, in accordance with the manufacturer's recommendations.
5. Only use racking if you are trained and authorised to do so.

HOUSEKEEPING

1. Damaged racking must be reported immediately to a supervisor or manager.
2. Ensure racking areas are kept clean and free from debris.
3. Wet floors, near racking, can be hazardous when operating powered mobile equipment. Equipment is likely to skid or swerve and the potential for equipment / racking impacts are high. Spills / leaks must be cleaned immediately. If this is not practical, steps should be taken to isolate the area until such time the spill / leak can be remediated.

POTENTIAL HAZARDS (LOADING & UNLOADING)

Different types of racking will require their own, unique loading & unloading techniques.

There are several basic safety practices that will ensure racking is not damaged and its life expectancy is not prematurely shortened.

Avoid all contact between the racking and powered mobile equipment. Lift trucks are typically used to load and unload racking. They are both powerful and heavy and contact between a lift truck and any type of racking can have devastating results. Racking columns can be easily damaged by a carelessly driven lift truck. Never assume that a column guard or protector will prevent a lift truck from impacting the racking.

The following guidelines are for use with standard pallet racking.

LOADING PALLET RACKING

1. Lift trucks with a tilt function can contribute to potential racking failures.
    a) A backward tilted mast will allow an operator to drive too close to the racking. Impacts at low levels are likely when the lower part of the mast makes contact with a lower level beam. The load will not be far enough into the racking to be supported sufficiently. The load will be placed badly.
    b) Excessive forward tilt will allow the operator to potentially strike the racking (or another load) above the desired load position. The load will not be far enough into the racking to be supported sufficiently. The load will be placed badly.
    c) Use tilt to level the load with the racking before it is lowered into position.
2. Lift trucks with a reach mechanism can push the load into the racking too far, when the operator misjudges the amount of available reach movement.
3. Approach racking with the load as square to the racking as possible.
4. Stop at a safe distance from racking to allow load and forks to be lifted, without making contact with other loads or racking beams.
5. Confirm load is within the safe operating range for size and weight for the racking it will be placed on.
6. Lift load to height just above desired location.
7. Ensure load is level with the racking surface.
8. Confirm clearances all around load are sufficient.
9. Move load into position.
10. Lower load onto racking surface.
11. Confirm load is supported and back out if safe to do so.

POTENTIAL HAZARDS & CONTROLS - LOADING RACKING

Hazard	Control
Unsecured loads	Loads should be secured against movement. Use wraps, bands, ties, or other forms of restraint, to secure load.
Load too heavy	Check load is within rated capacity for racking. Where multiple loads are supported by the same racking section, a total maximum weight will need to be verified.
Load too large	Check load dimensions are within specified range for the racking to avoid excessive load overhang.
Load too small	Use correct racking system if load is likely to be too small to fit securely between racking beams. Use additional support if required.
Hidden obstructions	Check if there are any hidden obstructions that could affect the safe placement of a load. *Examples: Structural I-beams, electrical conduits, sprinkler systems, oversized or badly positioned loads on an adjacent rack.*
Damaged pallet	Broken pallets may snag the racking when loads are placed. Pallets are not able to support the load safely. Load could shift or fall at any time. Pallets must be adequate for the load they are supporting and be suitable for the racking in which they will be placed. Remove load to new pallet, if required.
Load placed too far into racking	Load may contact a pre-existing load on adjacent racking, behind the immediate work area. This can result in a pre-existing load being pushed off its supporting shelf / beam, causing damage to product and racking, as well as injury or death to a worker below the fallen load. Loads should be supported sufficiently by the racking. Pallets may overhang, but not excessively. Where racking is close to walls or other fixed objects, loads placed too far into racking may damage walls, or other fixtures.
Contact between powered mobile equipment and racking	Powered mobile equipment can easily damage or destroy racking. Do not make contact with any part of the racking system. Place loads gently onto racking. Over-lowering forks onto the racking will place additional weight onto the racking. Damage to the racking, lift truck and pallet are likely when the operator backs out. There is also a high risk of snagging the load (see below).
Snagging loads (accidental movement)	With a correctly placed load, the lift truck's forks should be level with the racking surface. Check behind lift truck, use the horn. If clear, back out of racking (or retract reach) slowly. Back out as straight as possible. Watch forks and load as you exit. If required, stop and confirm direction of travel is still clear. Stop and correct any problems. *Example: Forks snagging pallet on exit.*
Pallet collapses or falls	Pallet collapses are normally caused by damaged pallets. Only use serviceable pallets that adequately support the load. Poorly placed pallets will fall, causing damage, injury and even death. Place pallets where they will properly supported.

UNLOADING PALLET RACKING

1. Lift trucks with a tilt function can contribute to potential racking failures.
   a) A backward tilted mast will allow an operator to drive too close to the racking. Impacts at low levels are likely when the lower part of the mast makes contact with a lower level beam. The load will not be far enough onto the forks to be supported sufficiently. The load will be lifted badly.
   b) Excessive forward tilt will allow the operator to potentially strike the racking (or another load) above the desired load position. The load will not be far enough onto the forks to be supported sufficiently. The load will be lifted badly.
   c) Use tilt to level the forks with the load before it is lifted.
   d) Loads should be lifted, level with the supporting surface.
   e) Use tilt after load has been lifted.

2. Lift trucks with a reach mechanism can push the load into the racking too far, when the operator misjudges the amount of available reach movement.
3. Approach racking with lift truck as square to the racking as possible.
4. Stop at a safe distance from racking to allow the forks to be lifted without making contact with other loads or beams.
5. Confirm load is within the safe operating range for size and weight for the lift truck.
6. Level forks with the load to be lifted.
7. Lift forks high enough to permit clean entry into the pallet. Allow for more space under the forks. As the forks are tapered, the available space under the forks will diminish, as the fork is inserted under the pallet. Contact between lift truck and pallet will result in the pallet being pushed into the racking - causing racking damage.
8. Lift load gently. Do not over-lift as the load may be crushed under the beam above. A load back rest can also make contact with a beam above the load being lifted. This contact can damage the racking, but also the beam can be dislodged and will be supported by the load back rest. As the lift truck backs away, the beam will also be pulled from the racking. The consequences can be catastrophic as the dislodged beam collapses and the entire racking assembly can be pulled down.
9. Confirm clearances all around load are sufficient before backing out.
10. If the load has been tilted backwards, ensure the load has adequate clearance on top, as you back out.
11. Once backed out, stop and lower the load to a safe height.

POTENTIAL HAZARDS & CONTROLS - UNLOADING RACKING

Hazard	Control
Load too heavy	Check load is within rated capacity for lift truck. Use different truck if required.
Load too large	Check forks are spaced as widely apart as possible to still fit under the load. Fork extensions may be required if load is too long.
Load too small	Lift truck may not be able to secure load fully on the forks. Once lifted, it may be necessary to reposition the load further towards the heel of the forks. This will increase the truck's stability and allow for a heavier load to be lifted.
Unsecured loads	Loads that are unsecured are likely to fall when lifted. Other equipment may be required to fix potentially dangerous situations, before any attempt is made to move an unsecured load. For example: an order picker may be used to allow a worker to access an unsecured load while it is still in the racking, and secure it with wraps, bands, ties, or other restraints.
Hidden obstructions	Check if there are any hidden obstructions that could affect the safe lifting of a load. *Examples: structural I-beams, electrical conduits, sprinkler systems, oversized or badly positioned loads on an adjacent rack.*
Forks contact object behind racking	If forks are too long, or operator drives into racking too far, the forks may make contact with another load or object. Another load may be accidentally moved and may fall from the racking (causing damage, injury or death). Damage to stock may result if forks puncture or scrape other loads when desired load is lifted. Damage to the building may occur. Understand how long your forks are and where they are likely to be when lifting a load (they may stick out beyond the pallet). It may be necessary to lift the load, with the forks not fully engaged. Reposition the forks as soon as possible.
Load placed too far into racking	Load may contact a pre-existing load on adjacent racking, behind the immediate work area. This can result in pre-existing load being pushed off its supporting shelf / beam, causing damage to product and racking, as well as injury or death to a worker below the fallen load. Watch and listen for any signs that another load is being accidentally moved. Where racking is close to walls or other fixed objects, loads placed too far into the racking may damage walls, or other fixtures, when they are lifted. Always lift loads gently, with level forks.
Damaged pallet & snagging loads	Broken pallets may snag the racking when loads are lifted. Damage may not be obvious until after the operator has begun to remove the load from the racking. Watch pallet as it is removed. Check behind lift truck, use the horn. If clear, back out of racking (or retract reach) slowly. Back out as straight as possible. Watch load, pallet and lift truck as you exit. If required, stop and confirm direction of travel is still clear, before continuing. Stop and correct any problems *Example: Pallet snagging the racking on exit.*
Contact between powered mobile equipment and racking	Powered mobile equipment can easily damage or destroy racking. Do not make any contact with any part of the racking system. Lift loads gently from racking. Only lift high enough to clear the racking beam.

This guide does not necessarily cover all possible hazards associated with the use of pallet racking and should be used in conjunction with other references. It is designed to be used as an adjunct to teach Safety Procedures and to act as a reminder to users prior to use.