Stacking/Piling- Know The Laws of Your Province



Stacking and piling regulations are essential for ensuring workplace safety while storing and organizing materials. These regulations require employers to implement safe stacking practices to prevent accidents caused by falling materials, collapses, or improper load handling. Key provisions include ensuring stability, maintaining clear access routes, and training workers on safe stacking techniques. While overarching principles are shared across Canada, specific requirements vary by province and territory, reflecting local priorities and occupational health standards. By adhering to these regulations, employers minimize risks, promote an organized work environment, and protect workers from injuries associated with unsafe stacking and piling practices.

FEDERAL

Under the <u>Code of Federal Regulations</u>, Sections 56.16001, 1926.250, and 1917.14, federally regulated employers must ensure safe stacking and piling practices to prevent accidents and maintain workplace safety. These regulations mandate that materials are stacked securely to prevent shifting or collapse, with clear access routes always maintained.

Stacking and storage of materials

Supplies shall not be stacked or stored in a manner which

creates tripping or fall-of-material hazards. Section 56.16001.

General requirements for storage

(a) **General**

(1) All materials stored in tiers **shall** be stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, falling, or collapse.

(2)

(i) The weight of stored materials on floors within buildings and structures **shall** not exceed maximum safe load limits.

(ii) Employers **shall** conspicuously post maximum safe load limits of floors within buildings and structures, in pounds per square foot, in all storage areas, except when the storage area is on a floor or slab on grade. Posting is not required for storage areas in all single-family residential structures and wood-framed multi-family residential structures.

(3) Aisles and passageways **shall** be kept clear to provide for the free and safe movement of material handling equipment or employees. Such areas **shall** be kept in good repair.

(4) When a difference in road or working levels exist, means such as ramps, blocking, or grading **shall** be used to ensure the safe movement of vehicles between the two levels.

(b) Material storage

(1) Material stored inside buildings under construction **shall** not be placed within 6 feet of any hoist way or inside floor openings, nor within 10 feet of an exterior wall which does not extend above the top of the material stored.

(2) Each employee required to work on stored material in silos, hoppers, tanks, and similar storage areas **shall** be

equipped with personal fall arrest equipment meeting the requirements of <u>subpart M of this part</u>.

(3) Noncompatible materials shall be segregated in storage.

(4) Bagged materials **shall** be stacked by stepping back the layers and cross keying the bags at least every 10 bags high.

(5) Materials **shall** not be stored on scaffolds or runways in excess of supplies needed for immediate operations.

(6) Brick stacks **shall** not be more than 7 feet in height. When a loose brick stack reaches a height of 4 feet, it **shall** be tapered back 2 inches in every foot of height above the 4-foot level.

(7) When masonry blocks are stacked higher than 6 feet, the stack **shall** be tapered back one-half block per tier above the 6-foot level.

(8) Lumber:

(i) Used lumber **shall** have all nails withdrawn before stacking.

(ii) Lumber **shall** be stacked on level and solidly supported sills.

(iii) Lumber **shall** be so stacked as to be stable and selfsupporting.

(iv) Lumber piles **shall** not exceed 20 feet in height provided that lumber to be handled manually **shall** not be stacked more than 16 feet high.

(9) Structural steel, poles, pipe, bar stock, and other cylindrical materials, unless racked, **shall** be stacked and blocked so as to prevent spreading or tilting.

(c) *Housekeeping*. Storage areas **shall** be kept free from accumulation of materials that constitute hazards from

tripping, fire, explosion, or pest harborage. Vegetation control will be exercised when necessary.

(d) Dockboards (bridge plates)

(1) Portable and powered dockboards **shall** be strong enough to carry the load imposed on them.

(2) Portable dockboards **shall** be secured in position, either by being anchored or equipped with devices which will prevent their slipping.

(3) Handholds, or other effective means, **shall** be provided on portable dockboards to permit safe handling.

(4) Positive protection **shall** be provided to prevent railroad cars from being moved while dockboards or bridge plates are in position. **Section 1926.250**.

Stacking of cargo and pallets

Cargo, pallets, and other material stored in tiers **shall** be stacked in such a manner as to provide stability against sliding and collapse. **Section 1917.14.**

Further details on the Code of Federal Regulations can be found at <u>Ecfr.gov</u>.

ALBERTA

Under Alberta's <u>Occupational Health and Safety (OHS) Code</u>, **Part 12: General Safety Precautions (Sections 187 to 189)**, **employers** are **required** to implement safe stacking and piling practices to prevent hazards such as material collapses or falling objects. These regulations **mandate** that materials are stacked securely, with stability ensured at all times, and clear access routes maintained.

Pallets and storage racks

An employer **must** ensure that pallets used to transport or store materials or containers are loaded, moved, stacked, arranged, and stored in a manner that does not create a danger to workers. **Sections 187(1)**.

An employer **must** ensure that racks used to store materials or equipment:

(a) are designed, constructed and maintained to support the load placed on them, and

(b) are placed on firm foundations that can support the load. Section 187(2).

A worker **must** report any damage to a storage rack to an employer as quickly as practicable. **Sections 187(3).**

The employer and the workers at a work site **must** take all reasonable steps to prevent storage racks from being damaged to the extent that their integrity as structures is compromised. **187(4)**.

Placement of roofing materials

An employer **must** ensure that supplies and roofing materials stored on the roof of a residential building under construction are located not less than 2 metres from a roof edge. **Section 187.1(1).**

An employer **must** ensure that the weight of supplies and roofing materials referred to in subsection (1) is uniformly distributed. **Section 187.1(2).**

Restraining hoses and piping

An employer **must** ensure that a hose or piping and its connections operating under pressure are restrained if workers could be injured by its movement if it fails or if it is disconnected. **Section 188(1)**.

Despite **subsection (1)**, if a hose or piping and its connections operating at a working pressure of 2000 kilopascals or more cannot be restrained, in order to prevent a failure that could injure workers, an employer **must** ensure that the hose or piping and its connections are designed, installed, used, inspected, and maintained

(a) in accordance with the manufacturer's specifications, or

(b) in accordance with specifications certified by a professional engineer. **Section 188(2).**

Subsection (1) does not apply to properly maintained fire hoses used by competent workers. **Section 188(3)**.

Securing equipment and materials

If a worker may be injured if equipment or material is dislodged, moved, spilled or damaged, both the employer and the worker **must** take all reasonable steps to ensure the equipment or material is contained, restrained, or protected to eliminate the potential danger. **Section 189**.

Further details on the Occupational Health And Safety Code can be found at <u>Alberta.ca</u>.

BRITISH COLUMBIA

Under British Columbia's Occupational Health and Safety Regulation, Part 4: General Conditions – Buildings, Structures, and Equipment (Sections 4.43 to 4.45), employers are required to ensure safe stacking and piling of materials to prevent accidents such as collapses or falling objects. These regulations emphasize proper stacking practices, maintaining stability, and ensuring materials are stored in a manner that does not pose a hazard to workers.

Stacking materials

(1) Material and equipment **must** be placed, stacked, or stored in a stable and secure manner.

(2) Stacked material or containers must be stabilized as necessary by interlocking, strapping, or other effective means of restraint to protect the safety of workers. Section 4.43(1)(2).

Storage racks

(1) In this section, "storage rack" means a combination of steel frames, beams, and associated accessories used, once assembled into a structure, to support materials and products, including, for example, a pallet rack or cantilever rack, but excludes shelving and display fixtures used for retail purposes.

(2) This section applies in respect of a storage rack that is

(a) 2.4 m (8 ft) or taller in height, as measured from the floor to the top of the highest shelf level of the storage rack, or

(b) under 2.4 m (8 ft) in height, if the materials and products are loaded on or unloaded off the storage rack by other than manual means.

(3) The employer **must** ensure that a storage rack in the workplace is

(a) capable of safely supporting the items stored on it,

(b) designed and constructed in accordance with good engineering practice, and

(c) used in accordance with the specifications and instructions of the manufacturer or a professional engineer.

(4) The employer **must** ensure that a qualified person installs and uninstalls the storage rack, in whole or in part, in accordance with the instructions of the manufacturer or a professional engineer.

(5) The employer **must** ensure that the instructions of the manufacturer or a professional engineer for safely loading, unloading and maintaining the storage rack are readily available in the workplace to workers.

(6) The employer **must** ensure that the rated capacity of the storage rack is clearly posted near the storage rack and readily visible to workers.

(7) The employer **must** ensure that any structural modification, including reconfiguration, of the storage rack is carried out in accordance with the specifications of the manufacturer or a professional engineer.

(8) The employer **must** ensure that a qualified person

(a) inspects the storage rack

(i) for wear, corrosion, damage, missing or incompatible parts, and signs of fatigue, and

(ii) at regular intervals that will prevent the development of unsafe working conditions,

(b) makes a record of the results of each inspection, and

(c) provides the record to the employer.

(9) The employer must ensure that, with respect to the storage rack,

(a) regular maintenance is done, and

(b) wear, corrosion, damage, missing or incompatible parts, and signs of fatigue are repaired or replaced in accordance with the specifications and instructions of the manufacturer or a professional engineer. **Section 4.43.1(1) to (9).**

Entrapment

A worker **must** not enter or remain in any place where there is a danger of entrapment or engulfment in loose materials or from other circumstances unless

(a) safe access and a safe work area is provided by catwalks, walkways, barriers, or other means, or

(b) measures are taken, where practicable, to control the risk of entrapment or engulfment and, if the risk is not eliminated, the worker uses a lifeline and harness of a type that will keep the worker in a position so as to be able to be rescued and is continuously tended by a standby person who is equipped for and capable of effecting immediate rescue. Section 4.44.

Falling materials

An area in which material may be dropped, dumped or spilled **must** be guarded to prevent inadvertent entry by workers, or protected by adequate covers and guarding. **Section 4.45**.

Further details on the Occupational Health and Safety Regulation can be found at <u>BClaws.gov.bc.ca</u>.

MANITOBA

Under Manitoba's <u>Workplace Safety and Health Act and</u> <u>Regulation</u>, Part 7: Storage of Materials, Equipment, Machines, and Tools (Sections 7.1 to 7.6), employers are required to ensure that materials, equipment, and tools are stored safely to prevent accidents, such as material collapses or falling objects. These regulations mandate that stacking and piling be done stably, with proper organization and clear access routes.

General requirement for re-storage

An employer must ensure that all workplace materials,

equipment, machines and tools are stored in a manner that does not create a risk to the safety or health of a worker or affect the safe operation of the workplace. **Section 7.1**.

Safe loading conditions – permanent or temporary building or structure

(1) An employer **must** ensure that the safe loading conditions for a permanent or temporary building or structure, as specified in the Manitoba Building Code or the design specifications of a professional engineer, are not exceeded

(a) during its construction; or

(b) when it is used to store materials, equipment, machines or tools. Section 7.2(1).

(2) If it appears that the loading conditions specified in subsection (1) may be exceeded when the use of a building or structure is changed, the employer **must** ensure that the loading conditions respecting the changed use are certified in advance of the change in use as being safe by a professional engineer. Section 7.2(2).

Storage beneath electrical lines

An employer **must** obtain the written approval of the electrical authority having jurisdiction before storing machinery, materials, or equipment beneath an outdoor overhead electrical line. Section 7.3.

Design of racking

(1) An employer **must** ensure that all racks and frames used to store materials, equipment, machines, or tools are

(a) designed, constructed, and maintained to support the load placed on them; and

(b) placed on firm foundations that can support the load.

Section 7.4(1).

(2) An employer **must** ensure that commercially manufactured racks and frames are installed, used and maintained in accordance with the manufacturer's specifications. **Section 7.4(2)**.

(3) An employer **must** ensure that racks that exceed a 3:1 height-to-depth ratio are suitably anchored, externally braced, or properly secured to a building or structure. **Section 7.4(3)**

(4) An employer **must** ensure that all racks and frames used outdoors to store materials, equipment, machines, or tools are designed, constructed, and maintained to support loads placed on them by wind, wind gusts, and other environmental conditions. **Section 7.4(4)**.

Risks re-powered mobile equipment

When there is a risk that powered mobile equipment may collide with a rack column, an employer **must** provide

(a) a post or guardrail connected to the floor around the exposed column that is capable of absorbing the impact of the powered mobile equipment; or

(b) a suitable means of reinforcing the exposed column by a device secured to the column. **Section 7.5.**

Stacking material, including brick, steel, and bags

An employer **must** ensure that

(a) materials are stored on level and stable platforms and are not piled to a height that could endanger the stability of the pile;

(b) without limiting clause (a),

(i) bricks or other masonry building materials are not piled

more than 2 m high, unless the pile is tapered back to one half block per tier above the two metre level,

(ii) structural steel material, including poles, pipe, or bar stock, are stacked in racks or frames, or otherwise suitably restrained to prevent movement, and

(iii) bagged or loose materials are supported to prevent movement; and

(c) if materials are stored outdoors, the effect of wind, wind gusts and other environmental conditions are considered when determining the manner of stacking and storing the material. **Section 7.6.**

Further details on the Manitoba Workplace Safety and Health Act and Regulation can be found at <u>Gov.mb.ca</u>.

NEW BRUNSWICK

Under New Brunswick's Occupational Health and Safety Act, Part VIII: Handling and Storage of Materials (Sections 52 to 57), employers are required to implement safe practices for stacking and piling materials to prevent accidents, such as collapses or falling objects. These regulations mandate that materials be stored in a stable manner, with clear access routes maintained at all times.

VIII Handling and Storage of Materials

Equipment and training

Where the health or safety of an employee handling an object or material may be endangered, an employer **shall** ensure that

(a) adequate and appropriate equipment is provided to the employee and is used by the employee for lifting and moving the object or material, and

(b) the employee is instructed as to the appropriate method of

lifting and moving objects and material. Section 52.

Heavy objects on inclines or rollers

(1) Where a heavy object is handled on an incline, an employer **shall** ensure that an employee handling the object uses, and the employee handling the object **shall** use chocks and ropes or other tackle to control the motion of the object, and both **shall** ensure that other employees do not stand on the downward side of the incline. **Section 53(1)**.

(2) Where a heavy object is moved by using rollers, an employer **shall** ensure that an employee moving the object uses, and the employee moving the object **shall** use, bars or sledges to change the direction of the moving rollers. **Section 53(2)**.

Bulk Material in Bins, Hoppers, and Process Vessels

An employer **shall** ensure that a bin, hopper, or process vessel used to store bulk material

(a) is designed and built for removal of the material from the bottom,

(b) if the material is highly combustible, is provided with a lid and an adequate ventilation system and is fire-resistive, and

(c) where appropriate, is provided on the outside with stairways or fixed ladders with platforms and guardrails. Section 54.

Bulk material in bin, hopper, or process vessel

(1) An employer **shall** establish a code of practice for the safe breaking up of clogs in bulk material stored in a bin, hopper, or process vessel and **shall** ensure that a copy of the code of practice is readily available near the bin, hopper or process vessel. **Section 55(1)**.

(2) Where an employee is required to enter a bin, hopper or process vessel used to store bulk material, an employer **shall** ensure that the provisions of Part XVII are complied with. **Section 55(2)**.

Stockpiled bulk material

(1) An employer **shall** ensure that unconsolidated bulk material that is stockpiled is

(a) regularly inspected for hazardous conditions, and

(b) found to be in a safe condition before an employee is permitted to work close to or on top of the pile. **Section 56(1)**.

(2) Where unconsolidated bulk material is stockpiled and removed by means of powered mobile equipment, an employer **shall** ensure that

(a) the working face of the unconsolidated bulk material is sloped at an angle of repose, or

(b) the vertical height of the working face of the unconsolidated bulk material is not more than 1.5 m above the maximum reach of the equipment. **Section 56(2)**.

(3) Where the face of unconsolidated bulk material that is stockpiled is undermined by means of powered mobile equipment, an **employer and any employee** who undermines the material **shall** each ensure that the undermining

(a) is restricted to the depth of the bucket of the powered mobile equipment, and

(b) is permitted only when the approach by the operator of the powered mobile equipment is at a ninety degree angle to the face of the material. **Section 56(3)**.

Piled solid material

(1) An employer shall ensure that piled solid material is

(a) located so as not to interfere with

(i) illumination,

(ii) ventilation,

(iii) means of access and egress,

(iv) passageways or traffic lanes,

(v) the operation of machines,

(vi) sprinklers and firefighting equipment, or

(vii) electrical panels or energized electrical lines;

(b) located on a firm foundation strong enough to support the load;

(c) located so that the pile is not resting against a partition or wall of a building unless the partition or wall is strong enough to support the load;

(d) subject to subsection (2), stacked in a manner to make it stable; and

(e) protected from conditions that may damage the structural integrity of any container used to store the material. **Section 57(1)**.

(2) An employer shall ensure that pipe and bar stock is stacked

(a) on storage racks, or

(b) where storage racks are not practical,

(i) in layers resting on wood strips with stop bars fixed on the ends, or (ii) on metal bars with upturned ends, so that the storage or withdrawal of the stock does not create a hazard. Section 57(2).

Further details on the Occupational Health and Safety Act can be found at <u>Laws.gnb.ca</u>.

NEWFOUNDLAND & LABRADOR

Under <u>Newfoundland and Labrador Regulation 5/12</u>, Part V: General Health and Safety Requirements (Section 31), employers are required to ensure that materials are stored and stacked in a safe manner to prevent hazards such as material collapses or falling objects. The regulation mandates that materials be properly secured and organized, ensuring stability and maintaining clear access routes.

Material storage

(1) Material and equipment **shall** be placed, stacked or stored in a stable and secure manner that does not constitute a hazard to a worker who is in the area or who is manually stacking the items.

(2) Stacked material or containers **shall** be stabilized where necessary by interlocking, strapping, or other effective means of restraint.

(3) A worker **shall** not enter or remain in a place where there is a danger of entrapment or engulfment unless

(a) safe access and a safe work area is provided by catwalks, walkways, barriers, or other means; or

(b) measures are taken, where practicable, to control the risk of entrapment or engulfment and, where the risk is not eliminated, the worker

(i) shall use a lifeline and harness prescribed in Part X that

keeps the worker in a position to be able to be rescued, and

(ii) is continuously tended by a standby person who is equipped for and capable of effecting immediate rescue.

(4) An area in which material may be dropped, dumped or spilled shall be guarded to prevent inadvertent entry by a worker, or protected by adequate covers and guarding. Section 31(1) to (4).

Further details on the Newfoundland and Labrador Regulation 5/12 can be found at <u>Assembly.nl.ca</u>.

NOVA SCOTIA

Under Nova Scotia's Occupational Safety General Regulations, Part 5: Handling and Storage of Material (Sections 26 to 35), employers are required to ensure that materials are safely stored and stacked to prevent accidents such as collapses or falling objects. These regulations mandate that materials be stored in a stable and secure manner, with clear access routes maintained.

Part 5 - Handling and Storage of Material

Where the lifting or moving of a thing or person may be a hazard to the health or safety of a person at the workplace, an employer **shall** ensure that

(a) adequate and appropriate equipment for the lifting and moving is provided; and

(b) training and instruction as to the appropriate method of performing the lifting and moving is provided in accordance with the equipment manufacturer's instructions, or, where there are no equipment manufacturer's instructions, in accordance with adequate work methods and lifting and moving techniques. Section 26.

(1) An employer **shall** ensure that where rubbish or debris is moved, it is carried in suitable containers, or moved by means of chutes or other safe methods that provide an equivalent degree of protection.

(2) An employer **shall** ensure that a chute or other safe method that provides an equivalent degree of protection is used where rubbish or debris is lowered more than 6 m vertically.

(3) Subsections (1) and (2) do not apply during demolitions if

(a) a heavy weight suspended by a cable from a crane or other hoist; or

(b) a power shovel, bulldozer or other powered mobile equipment, is used to conduct the demolition. Section 27(1)(2)(3).

An employer shall ensure that a chute

(a) is well constructed and rigidly fastened;

(b) if at more than 45° to the horizontal, is enclosed on all sides; and

(c) has an adequate gate on every loading entrance and at the bottom. **Section 28**.

An employer **shall** ensure that the entrance to a chute

(a) has a 100 mm by 100 mm or larger curb or cleat, where the entrance is at or below the floor level;

(b) is not more than 1.2 m above the floor; and

(c) is kept closed when not in use. Section 29.

Bulk material in bins, hoppers, and tanks

An employer **shall** ensure that a bin, hopper, tank, or other similar structure used to store combustible bulk material

(a) has a lid, an adequate ventilation system, and is fire resistant; or

(b) has alternative measures that provide an equivalent level of safety. **Section 30.**

Where a person is likely to be endangered by clogs in bulk material stored in a bin, hopper, tank or other similar structure, an employer **shall** establish a written work procedure for the safe breaking up of clogs and **shall** ensure that a copy of the work procedure is readily available near the bin, hopper, tank, or structure. **Section 31**.

Piled material

An employer shall ensure that piled material is

(a) located so as not to interfere with

(i) illumination,

(ii) ventilation,

(iii) means of access and exit,

(iv) passageways or traffic lanes,

(v) the operation of machines,

(vi) sprinklers and firefighting equipment, or

(vii) electrical panels or energized electrical power lines;

(b) located on a firm foundation that is able to support the load;

(c) located so that the pile is not resting against a partition or wall of a building unless the partition or wall is designed to support the load;

(d) arranged in a manner that makes it stable;

(e) protected from conditions that may significantly damage the structural integrity of any container used to store the material; and

(f) regularly inspected for hazards. Section 32.

Where pipes, bar stock or other material or objects may create a hazard by rolling, an employer **shall** ensure that the piled material is stacked in a manner to prevent rolling. **Section 33.**

(1) Where unconsolidated bulk material is stockpiled, an employer must

(a) ensure that it is inspected by a competent person to determine if it is in a safe condition before a person is permitted to work close to or on the pile; and

(b) comply with the requirements of Sections 185 to 189 of these regulations.

(2) Where unconsolidated bulk material is stockpiled and removed by means of powered mobile equipment, an employer **shall** ensure that

(a) the working face of the unconsolidated bulk material is sloped at the angle of repose;

(b) the vertical height of the working face of the unconsolidated bulk material is not more than 1.5 m above the maximum reach of the equipment; or

(c) the work is performed in accordance with written specifications and a written safe work procedure certified by an engineer, following consultation with the committee or representative, if any.

(3) Where the face of unconsolidated bulk material is undermined or undercut by means of powered mobile equipment, an employer **shall** ensure that the undermining or undercutting (a) restricted to the depth of the bucket of the powered mobile equipment;

(b) permitted only when the approach of the powered mobile equipment is at a 90° angle plus or minus 5° to the face of the material; and

(c) performed in accordance with written specifications and a written safe work procedure certified by an engineer, following consultation with the committee or representative, if any.

(4) Where unconsolidated material is loaded or unloaded from a vehicle or equipment, an employer **shall** ensure that adequate precautions are taken to ensure that the vehicle or equipment does not overturn. **Section 34(1) to (4).**

Further details on the Occupational Safety General Regulations can be found at <u>Novascotia.ca</u>.

NORTHWEST TERRITORIES & NUNAVUT

Under the Official Consolidation of Occupational Health and Safety Regulations, Part 9: Safeguards, Storage, Warning Signs, and Signals (Sections 135 and 136), employers in the Northwest Territories are required to ensure that materials are stored and stacked in a safe manner to prevent accidents such as collapses or falling objects. These regulations mandate that materials be stored securely, with clear access routes maintained and appropriate safeguards in place.

Storage of Materials

An employer shall ensure that

(a) material or equipment is not placed, stacked or stored so as to constitute a hazard to workers; and

is

(b) stacked material or containers are stabilized, if necessary, by interlocking, strapping or other effective means of restraint. Section 135.

Pallets and Storage Racks

An employer or supplier shall ensure that

(a) pallets are maintained to permit safe lifting of the pallets and their loads by a forklift or other device; and

(b) racks for the storage of material or equipment are

(i) designed, constructed and maintained to support loads placed on the racks, and

(ii) erected on a firm foundation. Section 136.

Further details on the Official Consolidation of Occupational Health and Safety Regulations can be found at <u>Canlii.org</u>.

ONTARIO

Under Ontario Regulation 213/91 – Part II: General Construction (Sections 39 and 40) and Reg. 851: Industrial Establishments – Part I: Safety Regulations (Sections 45 to 48), employers are required to ensure that materials are safely stacked and stored to prevent risks such as material collapses or falling objects. These regulations mandate that materials be properly secured, and stable stacking practices be followed.

Material and equipment at a project **shall** be piled or stacked in a manner that prevents it from tipping, collapsing or rolling. **Section 39.**

(1) No material shall be stored, stacked or piled closer than1.8 metres to,

(a) an opening in a floor or roof; or

(b) the open edge of a floor, roof or balcony; Section 40.

Material Handling

Material, articles, or things,

(a) required to be lifted, carried, or moved, **shall** be lifted, carried, or moved in such a way and with such precautions and safeguards, including protective clothing, guards, or other precautions as will ensure that the lifting, carrying, or moving of the material, articles, or things does not endanger the safety of any worker;

(b) **shall** be transported, placed or stored so that the material, articles, or things,

(i) will not tip, collapse, or fall, and

(ii) can be removed or withdrawn without endangering the safety of any worker; and

(c) to be removed from a storage area, pile or rack, **shall** be removed in a manner that will not endanger the safety of any worker. **Section 45**.

Machinery, equipment or material that may tip or fall and endanger any worker **shall** be secured against tipping or falling. **Section 46.**

Cylindrical objects stored on their side **shall** be piled symmetrically with each unit in the bottom row chocked or wedged to prevent motion. **Section 47.**

Barrels, drums or kegs that are piled on their ends **shall** have two parallel planks placed on top of each row before another row is added. **Section 48.**

Further details on the Ontario Regulation 213/91 and Reg. 851: Industrial Establishments can be found at <u>Ontario.ca</u> and <u>Ontario.ca/laws</u>.

PRINCE EDWARD ISLAND

Under Prince Edward Island's <u>Occupational Health and Safety</u> <u>Act General Regulations</u>, Part 43: Handling & Storage of Materials (Sections 43.1 to 43.7), employers are required to ensure safe storage and stacking practices to prevent accidents such as material collapses or falling objects. These regulations mandate that materials be stored securely, with stable stacking methods and clear access routes.

Part 43 - Handling & Storage of Materials

Temporary storage structure

The employer **shall** ensure that a temporary storage structure **shall**

(a) be designed and constructed to withstand safely the loads imposed by the material to be stored; and

(b) not be loaded in excess of safe loading. Section 43.1.

Loading limits

The employer **shall** ensure that building materials or equipment **shall** not be placed or stored on a permanent or temporary structure so as to exceed the safe loads of the structure or any part thereof. **Section 43.2**.

Storage prohibitions

The employer **shall** ensure that no building material **shall** be stored, stacked, or piled within 1800 mm (72 in.) of

- (a) a floor or roof opening;
- (b) the open edge of a floor or roof; or
- (c) an excavation. Section 43.3.

Piling of materials

(1) The employer **shall** ensure that material **shall** be so piled that the piles will not interfere with

(a) the adequate distribution of natural or artificial light;

(b) the proper operation of machines or other equipment;

(c) the unobstructed use of passageways or traffic lanes.

Foundations

(2) Material piles **shall** be placed on firm foundations not liable to settle and **shall** be subject to weight control, as required by the Division, so as not to overload the floors.

Walls

(3) Material **shall** not be piled against partitions or walls of buildings when it is known that the partition or wall is not of sufficient strength to withstand the pressure.

Height

(4) Material **shall** not be piled to a height which would render the pile unstable.

Bagged material

- (5) When piling heavy bagged material
- (a) the mouths of the bags **shall** be placed inwards;
- (b) bags shall be cross-tied; and

(c) a step back of one bag shall be made at the first 1 500 mm (5 ft.) level and at each additional 900 mm (3 ft.) of height. Section 43.4(1) to (5).

Masonry units

The employer shall ensure that masonry units shall be stacked

(a) on level wooden planks, a platform or other level base;

(b) in tiers throughout a pile;

(c) so that a vertical face of a pile is not over 1 800 mm (72 in.) in height;

(d) when the pile exceeds 1 800 mm (72 in.) in height, by progressively stepping the pile back from the vertical face;

(e) when the pile exceeds 1 800 mm (72 in.), with wood strips between tiers to prevent toppling; and

(f) with header units in the pile where necessary to provide stability. **Section 43.5**.

Steel and pipe

Reinforcing steel and pipe **shall** be stacked in substantially supported and broad racks or frames, unless other provision is made to prevent their movement sideways. **Section 43.6**.

Other materials

The employer **shall** ensure that other materials to be used on the project **shall** be stored in an orderly manner and so as not to endanger the safety of workers. **Section 43.7.**

For more information:

• Handling Materials. Section 43.8.

Further details on the Occupational Health and Safety Act General Regulations can be found at <u>Princeedwardisland.ca</u>.

QUÉBEC

Under Québec's <u>Safety Code for the Construction Industry</u>, Handling and Storage of Materials (Sections 3.16 to 3.16.7), employers are required to ensure that materials are stored and stacked safely to prevent accidents such as collapses or falling objects. These regulations **mandate** stable stacking, proper organization, and maintaining clear access routes.

Handling and storage of materials

Generalities:

(1) All construction site materials **shall** be used, displaced or transported onto the site or unloaded from a vehicle or from a pile so as not to compromise the safety of workers and the public.

(2) The load imposed by storing materials on a permanent or temporary structure **shall** not exceed the permissible load. **Section 3.16.**

Piling of materials:

(1) Piling of materials **shall** be done so that piles do not disturb:

(a) the spread of natural or artificial light;

(b) the good operation of machines and other installations;

(c) movement in passages, aisles, stairways, elevators, or near doors; and

(d) the efficient operation of fire prevention equipment.

(2) Materials **shall** not be piled against walls or partitions of buildings without ensuring that they can resist the lateral pressure.

(3) Materials **shall** not be piled to a height which might jeopardize the stability of the pile.

(4) The employer **shall** supply the necessary equipment to reach the height of piles to the person assigned to warehousing.

(5) The distance between the side of an opening in an opening

in a floor or roof and the bottom of a pile of materials **shall** be more than the height of the pile except if a device prevents the falling of materials. **Section 3.16.2.(1) to (5).**

Building lumber: Reserves of building lumber **shall** be neatly piled. These piles **shall** be:

(a) supported at a certain height off the ground;

(b) disposed in horizontal layers, crisscrossed, and slightly inclined; and

(c) stabilized by means of transversal supports or wedges, if the piles are more than 1.2 m high. **Section 3.16.3.**

Masonry materials:

Masonry units **shall** be stacked:

(a) on planks, a platform or other level base;

(b) in layers covering the entire area of the stacks;

(c) in such a way that the height of the vertical face of the stacks does not exceed 1.8 m;

(d) in tiers, when the height of the stockpiling exceeds 1.8 m;

(e) with wooden transversal supports between the layers to prevent the pile from crumbling, if the height of the pile exceeds 1.8 mm;

(f) bound together, if necessary, so as to ensure the stability thereof. Section 3.16.4.

Pipes:

Pipes shall be stacked:

(a) on racks or solid shelves;

(b) on wooden blocks provided with tappets at both ends; or

(c) on metal bars of which both ends are bent upwards. Section 3.16.5.

Bagged materials:

Bagged materials shall :

(a) be stacked by cross-piling the bags to form layers piled not higher than 10 bags unless:

- 1. the bags are stored in reservoirs or enclosures; and
- the sides of the piles are supported by the walls of the reservoirs or enclosures; and

(b) be removed from the piles in such a way that the top of the pile remains horizontal. **Section 3.16.6.**

Bound objects:

(1) When drums or barrels are stacked:

(a) full, standing upright, the height of the piles **shall** be limited and 2 planks shall be laid side by side on each row before proceeding on to the next row;

(b) empty, lying on their sides, the piles shall be symmetrical and stable, and all units in the bottom row **shall** be carefully wedged.

(2) Subsection 1 also applies to large-diameter pipes, to rolls of paper or to any other object having a circular cross-section. **Section 3.16.7.**

For more information:

• Hand lifting and carrying. Section 3.16.8.

Further details on the Safety Code for the Construction Industry can be found at <u>Legisquebec.gouv.qc.ca</u>.

SASKATCHEWAN

Under Saskatchewan's Occupational Health and Safety Regulations, Part 9: Safeguards, Storage, Warning Signs, and Signals (Sections 9-18 to 9-20), employers are required to ensure safe storage and stacking of materials to prevent accidents such as collapses or falling objects. These regulations mandate that materials be securely stacked, with clear access routes and appropriate safeguards in place to minimize risks.

Storage of materials

An employer, contractor or owner **shall** ensure that:

(a) no material or equipment is placed, stacked or stored so as to constitute a hazard to workers; and

(b) stacked materials or containers are stabilized, if necessary, by interlocking, strapping or other effective means of restraint. Section 9-18.

Pallets and storage racks

An employer, contractor, owner, or supplier **shall** ensure that:

(a) pallets are maintained in a manner that will permit safe lifting of the pallets and the pallets' loads by a forklift truck or other device; and

(b) racks for the storage of material or equipment are:

(i) designed, constructed, and maintained to support any load placed on the racks; and

(ii) Pressurized hoses erected on a firm foundation. Section9-19.

Pressurized hoses

An employer, contractor or owner shall ensure that an

effective restraining device is used on a hose, pipe or connection that is under pressure if inadvertent disconnection of the hose, pipe, or connection could result in danger to workers. **Section 9-20**.

Further details on the Occupational Health and Safety Regulations can be found at <u>Saskatchewan.ca</u>.

<u>YUKON</u>

Under the <u>Workers' Safety and Compensation (WSC) Regulations</u>, **Part 8: Material and Storage (Sections 8.01 to 8.15)**, **employers** are **required** to ensure the safe storage and stacking of materials to prevent accidents such as collapses or falling objects. These regulations **mandate** stable stacking practices, proper organization of materials, and the maintenance of clear access routes.

Part 8 – Material and Storage

In this part, the following definitions apply:

"Enclosure"

means a barrier, such as plastic sheeting, Gyproc, plywood, or other effective material, used to isolate an area in which airborne contaminants are present;

"HEPA filter"

means high efficiency particulate air filter;

"MSDS"

means material safety data sheet. Section 8.01.

General

Secured material

(1) Materials and equipment shall be placed, stacked, or

stored so as not to constitute a hazard to workers.

Stable piles

(2) Stacked containers and materials **shall** be stabilized by interlocking strapping or other effective means of restraint.

Pallets

(3) Pallets **shall** be stacked and maintained in a manner that permits safe lifting of the pallets or pallet loads by a forklift, truck, or other device.

Storage racks

(4) Storage racks and foundations **shall** be designed, constructed, and maintained to support the load placed on them. **Section 8.02.**

Mechanical lifting

(1) Mechanical appliances for lifting or carrying materials and objects that are too heavy or awkward for workers to lift **shall** be provided and used.

Lift training

(2) Workers required to lift or carry objects **shall** be trained to do the job safely.

Coordination of lift

(3) Where two or more workers are involved in lifting or carrying heavy objects, the raising or lowering of the objects **shall** be coordinated by well-understood signals to ensure unity of action.

Loaded drums

(4) Where heavy objects such as loaded drums or tanks are handled on inclines in either direction

(a) ropes or other tackle **shall** be used in controlling their motion, and

(b) workers **shall** not stand between the skids on the downhill side.

Rollers

(5) Where rollers or bars are used to move heavy objects, sledges or other mechanical means **shall** be used to change the direction of the rollers.

Hazardous materials

(6) Areas where hazardous materials may be dropped, spilled or dumped **shall** be

(a) covered or guarded to prevent inadvertent entry by a worker, and

(b) posted with appropriate legible and effective warning signs. Sections 8.03.

Storage near electrical

(1) Material or equipment to be moved by a crane or similar hoisting equipment **shall** not be stored under or in proximity to an overhead energized electrical conductor.

Load loosening

(2) Blocking, support chains, wire ropes, metal bands and rigging components **shall** be removed from equipment and material in a manner that does not cause a danger to a worker. **Section 8.04.**

Further details on the Workers' Safety and Compensation (WSC) Regulations can be found at <u>Wcb.yk.ca</u>.