Workplace Safety and Health Division

NEW WSH Regulations

April 12, 2007

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The Safer Workplaces Act

- Contractor S. 7.1

  The person who contracts with an employer/self employed person to do work and directs their activities. ***S. 1***

  – Ensure matters in their control do not create safety and health risks

  – Co-operate

  – Comply with Act and regulations

The Safer Workplaces Act

- Owners S. 7.2
  - Ensure land/premises under their control does not create risk to safety & health
  - Co-operate
  - Comply with The Act and regulations
  - *Homeowner* excluded, unless business conducted in the home S. 1

The Safer Workplaces Act

- Suppliers S. 7.3
  - Ensure that equipment/materials:
    - are safe when used according to instructions provided
    - Conform to requirements of The Act & regulations
  - Co-operate
  - Comply with The Act and regulations

Construction Projects

Prime Contractor required if more than one employer/self employed person works on project ***S. 7(1)***

- person hired to be prime contractor; or
- owner of construction project site S. 7(2)

- Prime Contractor's Duties S. 7.3
  - Ensure everyone working on project complies with Act and regulations (*)
  - Coordinate, organize and oversee work to protect safety and health
  - Co-operate
  - Comply with The Act and regulations

Construction Projects

- Prime Contractor's Duties (cont'd)
  - Co-ordinate safety and health programs of contracted employers S. 7.4(8)
  - Establish project safety and health committee if 20 or more workers / 90 days * S. 40(3)

- Employer's Duties S. 4(2)(g)(i)
  - Advise prime contractor of supervision on project

Construction Projects

- Self Employed Person's Duties S. 6(a.1)
  - Advise prime contractor when working on project

- Contractor's Duties S. 7.1(b)
  - Advise prime contractor about contracted employer/self employed persons

Duty to Provide Information

S. 7.5

- *may affect safety and health*
- *necessary to identify and control hazards* *S. 7.5(1)*

– Owner of Workplace S. 7.5(4),(5)

> employer/self employed person at workplace

> on construction project to prime contractor

– Prime Contractor (construction site) S. 7.5(2)

> owner of project site

> contractor/employer/self employed person on project

– Contractor S. 7.5(3)

> employer/self employed persons

> prime contractor on construction project

> owner of workplace

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ASSESS THE RISK
FIND A SAFER WAY
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Background

- New WSH regulations consolidate 12 existing regulations that had been developed over the past 30 years.
- These new regulations represent the second phase of the modernization of Manitoba workplace safety and health laws.

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Comprehensive Review Process

- WSH Division Staff Undertook a Complete Review
  - Considering laws in other jurisdictions
- 16 Technical Working Groups Established (employer, worker and government representatives)
  - Reviewed recommendations of WSH Division
- Minister's Advisory Council on WSH
  - Reviewed recommendations of WSH Division and the 16 Technical Working Groups
- Technical Working Groups' Recommendations
  - Posted on the Div. website for stakeholder information

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Regulation Development

- Careful effort was taken to ensure the new regulations are consistent with other jurisdictions
  - Particularly all other western provinces, and Ontario
- This new regulation package brings Manitoba into the mainstream of Canadian occupational safety and health law.

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PART 1
Definitions and General Matters

General Matters:

- **Conformity to publications, codes, or standards –** where a tool, machine or other thing is required to meet a publication, code or standard, the publication, code or standard must be the most recent edition in existence at the time the tool, machine or other thing was manufactured.

- **Compliance with another publication, code or standard** must be acceptable to the director.

- **Inconsistency –** the provisions of this regulation prevail where there is inconsistency between the requirements of this regulation and any publication, code, or standard.

- **Certification by a professional engineer** must be in writing and signed and sealed by the professional engineer. A copy of the certification must be readily available at the workplace.

- **Self-employed persons –** a provision of this regulation that applies to an employer or a worker also applies to a self-employed person.

PART 6
Personal Protective Equipment

- **Safe work procedures** to be developed, implemented, and workers trained.
- **Employer obligations re: personal protective equipment:** provided at no cost to the worker (except for protective headwear in construction and protective footwear in all sectors - where the worker must provide); must be appropriate to the risks associated with the workplace; must be stored in a clean and secure location readily accessible to workers; immediately repaired or replaced if defective; immediately replaced when contaminated.
- **Employer obligations re: equipment provided –** ensure the equipment is fit for its purpose, fits the worker correctly, and the worker is informed and understands the risks.
- **Worker obligations re: PPE –** wear or use in accordance with the manufacturer's specifications; take reasonable steps to prevent damage and inform the employer if the equipment becomes defective.

- **Where a worker is required to provide protective headwear or protective footwear –** the employer must ensure that the PPE meets, and is used in accordance with the requirements of this Part.
- **Specific types of personal protective equipment:**
  - **High visibility apparel** where there is a risk from moving vehicles or powered mobile equipment or due to visibility risks from environmental conditions.
  - **Skin protection equipment** where there is a risk from sparks, molten metal or ionizing or non-ionizing radiation.
  - **Protective clothing –** where there is a risk from contamination of the workers' skin or clothing by a hazardous substance. The employer must ensure that the clothing is laundered or disposed of on a regular basis. A place to store street clothes must also be provided.
  - **Protective headwear – employer to provide – at a workplace that is not a construction project site –** a liner for the headwear to protect the worker from cold conditions and a retention system to secure the headwear firmly to the worker's head

- **Protective footwear – responsibilities of employers (in all sectors) –** must provide outer foot guards, where there is substantial risk of a crushing injury to the worker's foot; and protective footwear, where the worker's feet may be endangered by a hot, corrosive or toxic substance.
- **Protective footwear – exception (in consultation with committee/representative) –** a worker may be allowed to use soft-soled, slip resistant protective footwear without puncture-proof plates in the soles and toecaps, if the worker is a steel erector or is engaged in the installation of roof finishing materials.
- **Eye and face protectors –** if there is a risk of irritation or injury to the worker's face or eyes from flying objects or particles; splashing liquids or molten metal; ultraviolet, visible or infrared radiation, or any other material, substance or matter. Prescription lenses or prescription eyewear are not included as eye protectors.

- **Hand, arm, leg and body protection must be provided by the employer –** if there is a risk of injury to the worker's hands, arms, legs or torso and appropriate gloves or mitts and sleeves if there is a risk of injury to the worker from contact with an exposed energized electrical conductor.
- **Respiratory protective equipment** appropriate to the risks must be provided. Equipment must be used and maintained as per the appropriate CSA Standard, must be of proper size and must make an effective seal. Equipment must be kept in a clean and convenient location and not shared by other workers.
- **Protection when working in dangerous atmospheres –** must be provided where a worker is required to enter an atmosphere that is immediately-dangerous to his or her safety.
- **Protection from drowning -** to be provided where a worker is required to work at a place, other than a boat, from which he/she could fall and drown.

- **All-terrain vehicles and snowmobiles –** if a worker is required or permitted to travel in an all-terrain vehicle or a snowmobile or a towed conveyance the employer must ensure that the worker is provided with protective headwear, including a liner where required, cold weather face guard and an eye protector for working in cold conditions. This does not apply where the all-terrain vehicle is equipped with roll-over protective structures and enclosed by a cab.

PART 7
Storage of Materials, Equipment, Machines and Tools

General requirement re: storage – all workplace materials, equipment, machines and tools must be stored in a manner that doesn't create a risk to safety and health or affect the safe operation of the workplace.

- **Safe loading conditions (permanent or temporary building or structure)** cannot be exceeded as per the Manitoba Building Code or Professional Engineer's design specifications during construction or when used for storage.
- **Storage beneath electrical lines** – written approval from the electrical authority having jurisdiction must be obtained prior to storing machinery, materials or equipment beneath an outdoor overhead electrical line.

- **Design of racking** – Must be:
  - Designed, constructed and maintained to support the load placed on them
  - Placed on firm foundation that can support the load
  - Commercially manufactured racks and frames must be installed, used and maintained in accordance with the manufacturer's specifications.
  - Racks that exceed a 3:1 height-to-depth ratio must be suitably anchored, externally braced, or properly secured to a building or structure.
  - All racks and frames used outdoors to store materials, equipment, machines or tools must be designed, constructed and maintained to support loads placed on them by wind, wind gusts and other environmental conditions.
  - **Risks re: powered mobile equipment**
    - Where powered mobile equipment may collide with a rack column, an employer must provide a post or guard rail

connected to the floor around the exposed column that can absorb the impact of the vehicle or a suitable means of reinforcing the exposed column by a device secured to the column.

- **Stacking material** – materials are to be stored on level and stable platforms and at heights that do not endanger the stability of the pile.
- **For materials stored outdoors -** the effect of wind, wind gusts and other environmental conditions must be considered.

PART 8
Musculoskeletal Injuries

Musculoskeletal Injury – defined as an injury or disorder of the muscles, tendons, ligaments, joints, nerves, blood vessels or related soft tissue including a sprain, strain or inflammation, that may occur to a worker in a workplace and that is caused or aggravated by any of the following:

- A repetitive motion
- A forceful exertion
- Vibration
- Mechanical compression
- A sustained or awkward posture
- A limitation on motion or action
- Any other factor that creates a risk of musculoskeletal injury

- **Assessing risks –** where an employer is aware, or ought reasonably to have been aware, or has been advised that a work activity creates a risk of musculoskeletal injury, the employer must (a) ensure that the risk is assessed, and (b) on the basis of the assessment, implement control measures to eliminate or reduce the risk.

- **Control measures** may include one or more of the following: (a) providing, positioning and maintaining equipment that is designed and constructed to reduce or eliminate the risk, (b) developing and implementing safe work procedures, (c) implementing work schedules that incorporate rest and recovery periods, changes to workload or other arrangements for alternate work, and (d) providing personal protective equipment.

- **Monitoring control measures –** an employer must monitor the effectiveness of control measures and where the monitoring identifies that a risk is not being or has not been eliminated or reduced, implement further control measures.

- **Workers to be informed –** of the risk and of the signs and common symptoms of any musculoskeletal injury associated with the worker's work and the worker receives instruction and training respecting any control measures implemented.

PART 13

Entrances, Exits, Stairways and Ladders

- **Safe access and egress** must be provided and maintained from the workplace and all work sites and work-related areas at a workplace.
  - **Employer and owner must ensure that each means of access and egress complies with the Manitoba Building Code and Manitoba Fire Code.**
- **Temporary doorways – construction project site -** must be designed and constructed to open outward and not locked in the closed position when a worker is at the site.
- **Secondary means of egress** - must be conspicuously marked and readily usable at all times if the primary exit becomes unusable or worker could be isolated from the primary egress.

- **Ladders:**
  - **Loads** – Ladders must be designed and constructed to safely support any load that will be imposed on it.
  - **Worker to inspect ladder –** prior to each use.
  - **Metal ladders or metal reinforced rails on a ladder -** may not be used near any exposed energized electrical equipment**.**
  - **Commercially manufactured portable ladder –** must comply with the appropriate CSA and ANSI standards.
  - **Site-fabricated portable wood ladder and double-width site-fabricated portable ladder –** same

- **Prohibition re: use of portable ladders –** work must not be performed from either of the top two rungs, steps or cleats of a commercially manufactured portable ladder or a step ladder unless it has a railed platform at the top or the manufacturer's specification for the stepladder permit it.
- **Fixed ladders –** employer or owner must ensure that a ladder that is permanently fixed to a building or structure is designed by a Professional Engineer and is constructed, erected and installed in accordance with the specifications certified by a professional engineer and the ANSI A 14.3 Safety requirements for Fixed Ladders.

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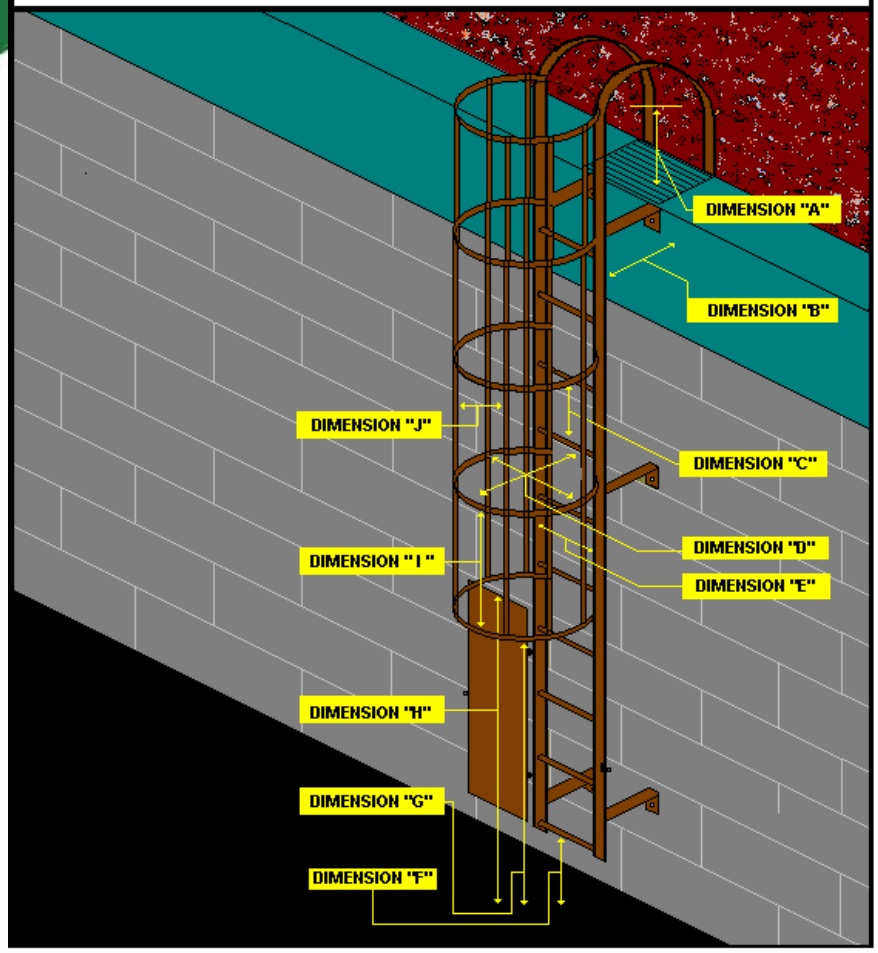
THIS DRAWING IS FOR ILLUSTRATION PURPOSES ONLY.
THE DRAWING DEPICTS ONE TYPE OF A FIXED LADDER DESIGN AND LADDER SAFETY SYSTEM (HOOP/CAGE)
Refer to ANSI A14.3 for design and construction specifications



Refer to ANSI A14.3 *Safety Requirements for Fixed Ladders*.
“A” Required distance 3.5 feet (1.07 m) excluding arch.
“B” Minimum 7 inches (18 cm)
“C” Maximum 12 inches (30 cm) between centres, all rungs.
“D” From centre of rung 27 inches - 30 inches (68.5 cm - 76.25 cm) and shall not be less than 27 inches(68.5 cm) in width
“E” Minimum 16 inches (40 cm) clear width between side rails
"F“ Maximum 12 inches (30 cm)
“G” Hooping shall begin at a height of 8 feet (2.44 m) from grade
"H“ Lockable blank doors to extend high enough to prevent unauthorized access
"I“ Maximum spacing between hoops 4 feet (1.22 m)
"J" Bands shall be spaced a maximum 40 degrees on centre around the circumference of the cage. This will result in a maximum spacing of 9.5 inches (24 cm)

The surface of the parapet between the handrails of the ladder shall be covered by expanded metal decking having a minimum width of 2ft (O.6m), or other non-skid surface acceptable to the inspecting authorities. For multi-level buildings, a fixed ladder is required to provide access to every level that is more than 13 feet above the preceding level.

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PART 14
Fall Protection

- **Fall protection required where there is a risk of a worker falling:**
  - A vertical distance of **3 m** or more.
  - A vertical distance of less than 3 m where there is an increased risk of injury due to the surface or item on which the worker might land;
  - Into operating machinery or moving parts of the machinery;
  - Into water or another liquid;
  - Into or onto a hazardous substance or object;
  - Through an opening on a work surface; or
  - A vertical distance of more than 1.2 m from an area used as a path for a wheelbarrow or similar equipment.

- **Safe work procedures** must be developed, implemented and workers trained.
- **Guardrail systems** must be used where there is a risk of a worker falling as outlined above. Specific requirements for construction and securing of guardrail systems are outlined in the Part of the Regulation.
  - **Temporary guardrail removal –** A fall protection system must be used while the guardrail is removed.
- **Requirements for fall protection system –** must be designed, installed, tested, used and maintained in accordance with the applicable requirement of the standards noted in this part of the regulation and designed and certified as safe by a professional engineer(14.7)
- **Safety belts –** may not be used as part of a fall protection system**.**

Standards in this part

- **CSA Z259.1-05 Body belts and saddles for work positioning and travel restraint – restriction on the body belt to be used)**
- **CSA Z259.2.1-M98 (R2004) Fall Arrestors, Vertical Lines and Rails**
- **CSA Z259.2.2 -98 (R2004) *Self-retracting Devices for Personal Fall Arrest Systems***
- **CSA Z259.2.3-99 (R2004) *Descente Control Devices***
- **CSA Z259.10-06 *Full Body Harness***
- **CSA Z259.11-05 *Energy Absorbers and Lanyards***
- **CSA Z259.12-01*Connecting Components for Personal Fall Arrest Systems (PFAS)***

Part 14
Fall Protection (con't)

- **CSA Z259.16-04 *Design of Active Fall-protection Systems***
- **CSA Z259.13-04 *Flexible Horizontal Lifeline Systems***
- **CSA Z91-02 *Health and Safety Code for Suspended Equipment Operations***
- **CSA Z271-98 (R2004) *Safety Code for Suspended Elevating Platforms***

- **Inspections requirements**
- **Safety net** must be inspected by a competent person before each shift according to the standard.
- **Inspection after fall arrest** by the manufacturer or a professional engineer.
- **Defective components –** must not be used and must immediately be removed from service.
- **Travel restraint system –** must consist of a full body harness with adequate attachment points; the full body harness is attached by a lifeline or lanyard to a fixed support; the length of the lifeline or the lanyard is selected so that the worker can only proceed to within **1 m of an opening or edge.**

- **Fall arrest system –**consists of a full body harness with adequate attachment points; lifeline or lanyard attached to an independent fixed support; and is designed in accordance with the appropriate CSA Standard; is manufactured so that a worker's free fall distance does not exceed 1.2 m; and is arranged so that a worker cannot hit the ground or an object or level below the work, or swing in a manner that poses a risk (14.21 and 14.22)

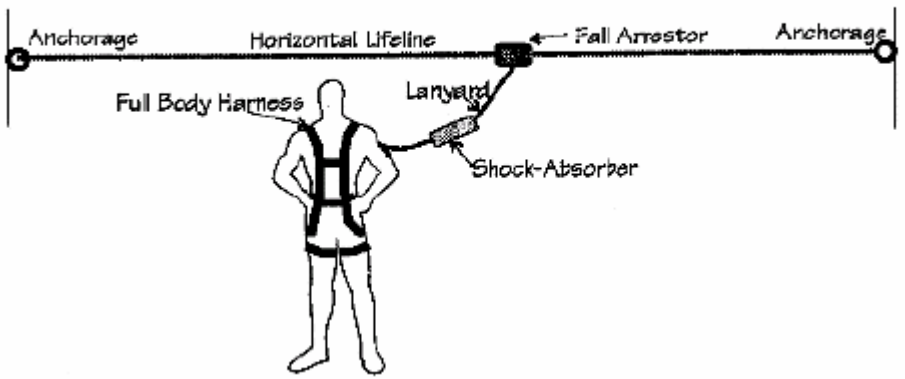
Systems designed to comply with:

CSA Z259.2.1-98 (2004) Fall arrestors, Vertical Lifeline and Rails

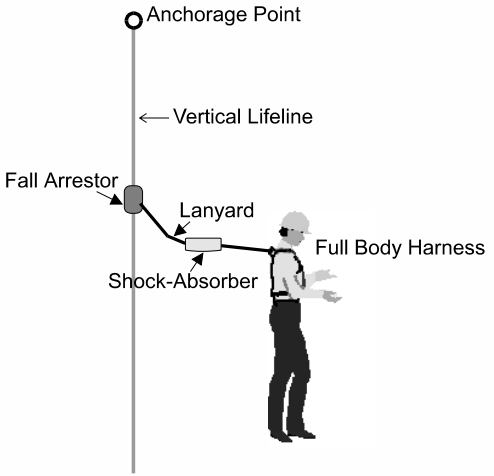
CSA Z259.13 – 04 Flexible Horizontal Lifeline Requirements

CSA Z259.16-04 Design of active Fall Protection Systems

Horizontal fall arrest system



Vertical fall arrest system



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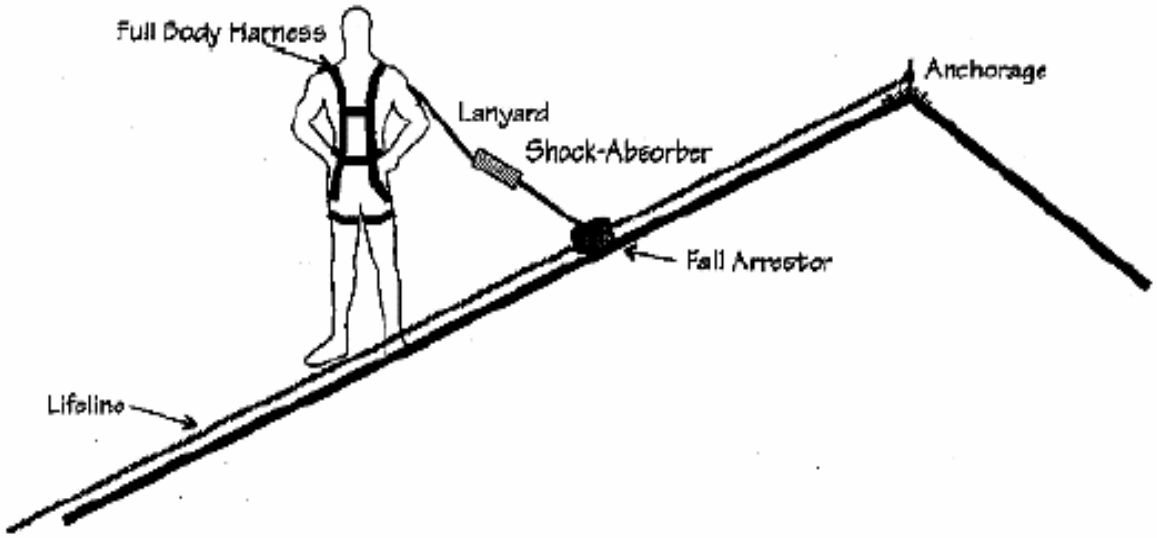
- **Fixed support system requirements**
  - **Permanent**
  - **Temporary (3 options depending on system used)**

- **Fall arrest systems used on powered mobile equipment (pme) –** anchor must be used in accordance with the specifications of the pme manufacturer.
- **Fall protection on a vehicle –** where a worker may have to climb on a vehicle or its load at any location other than a garage, warehouse or other permanent facility and a fall protection system cannot be provided, an employer must take steps to eliminate or reduce the need for a worker to climb onto the vehicle or its load; and provide information, instruction and training on the safe work procedures.

Examples



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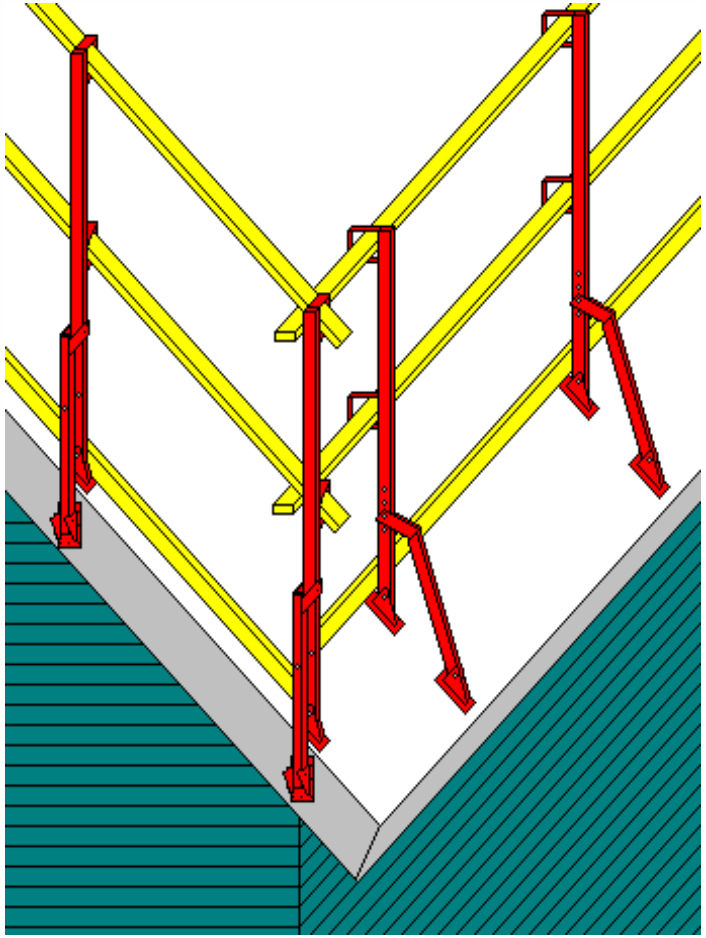
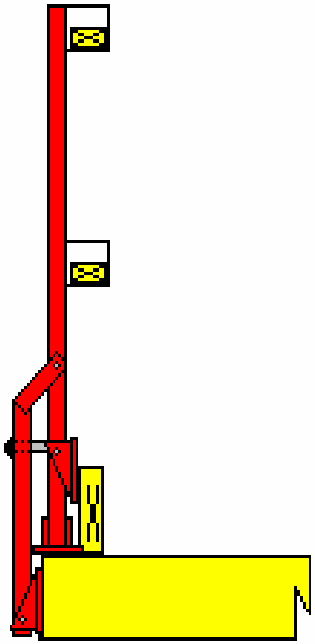
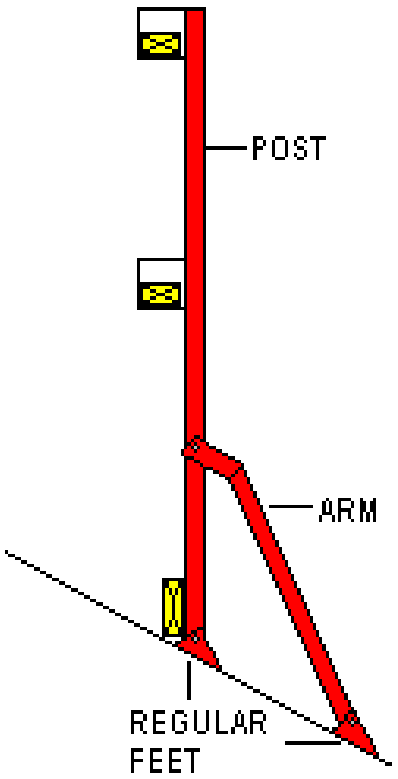




Flat Deck/Gable End Application


POST
ARM
REGULAR
FEET

Examples

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Workplace Safety and Health Division

Residential Construction:

- **Erection of second floor exterior wall –** where it is not reasonably practicable to provide a fall protection system, alternate safe work procedure offering protection that is equal or greater to the protection provided by a fall protection system must be implemented.
- **Installation of wood trusses –** where it is not reasonably practicable to provide a fall protection system before the installation of roof sheeting, alternate safe work procedure must be implemented.

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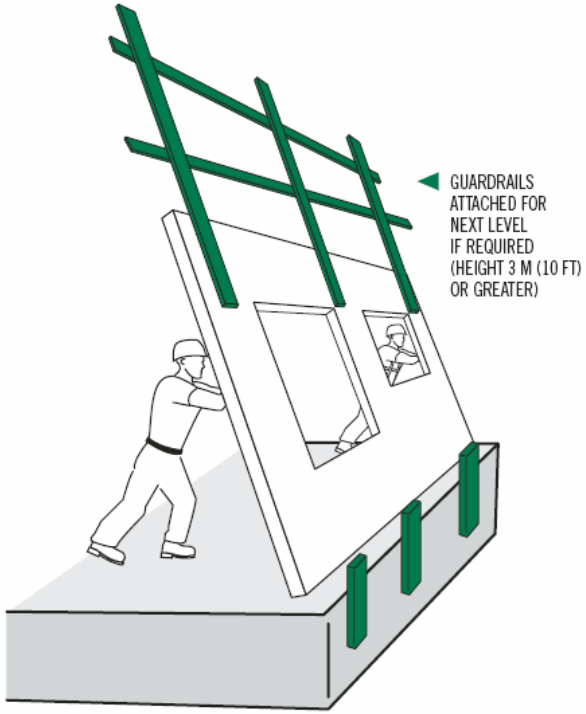

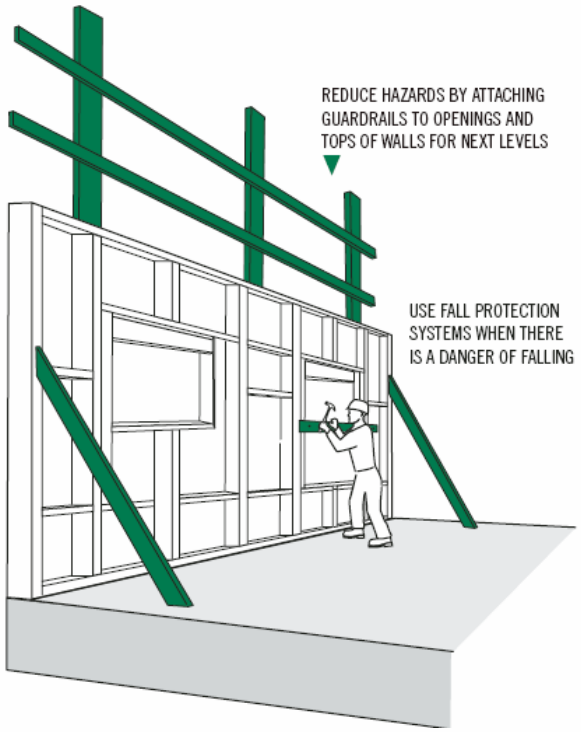

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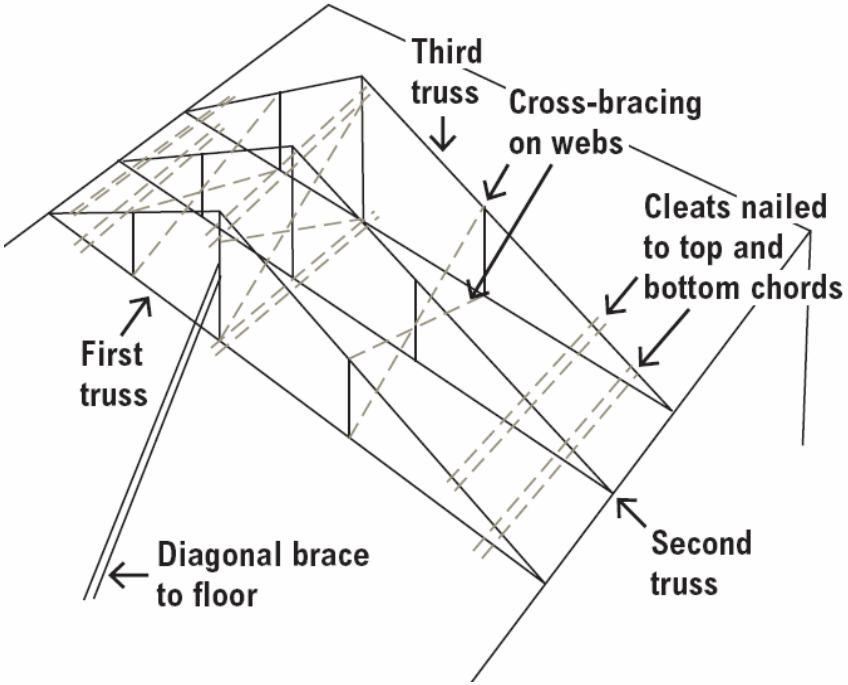

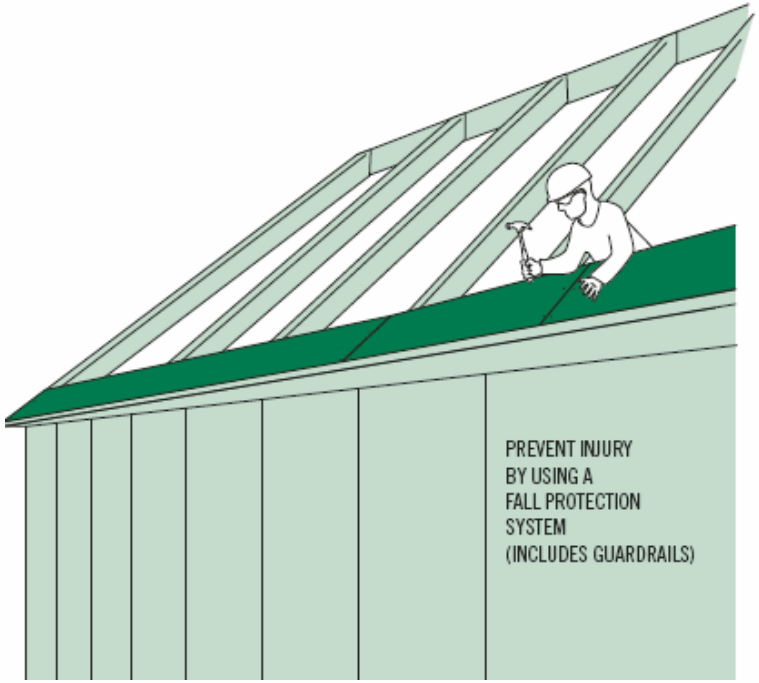

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Building Requirements (14.27):

- **Buildings more than 5 storeys or 15 m in height –** after this part of the regulation comes into force owners must provide a permanent perimeter guardrail system or provide roof-level protection:
  - continuous parapet, or
  - a system of lifeline anchors with one anchor set back minimum 3 m from the edge of the roof for every 6 linear meters of unprotected roof edge.

Building Requirements:

- **Steel frame building requirements –** During construction of a steel frame building, the owner of the building and the prime contractor responsible for the construction of the building must ensure the structural components of the building designed to accommodate fall protection systems

  (a) are designed approved and certified by a professional engineer; and

  (b) include

  (i) double connection at each beam webs column and at beam webs over a column'

  (ii) at least four anchor bolts per column, and

  (iii) perimeter columns that extend at least one meter above the finished floor to permit the installation of a perimeter safety cable.

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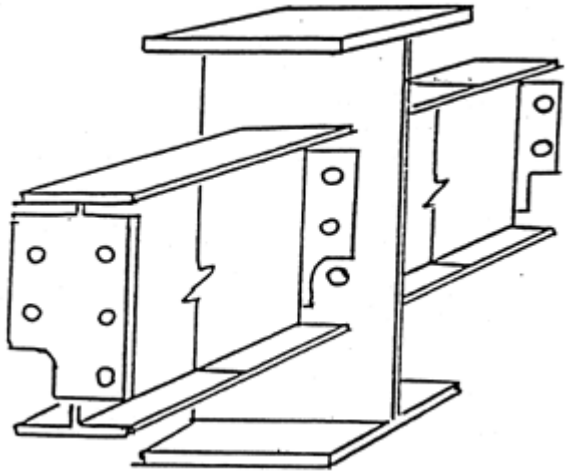
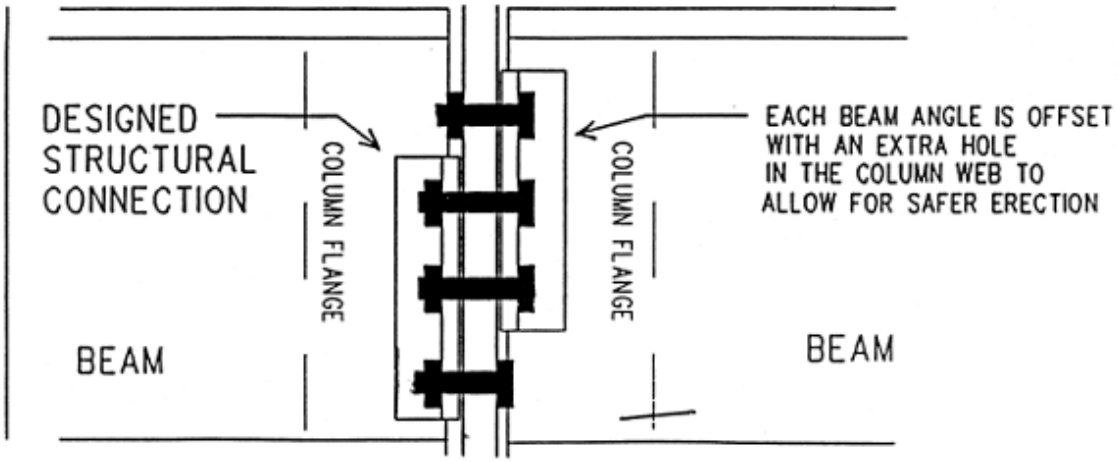
Double connection





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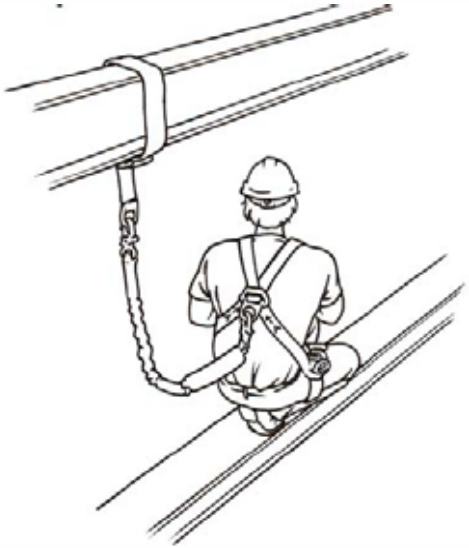
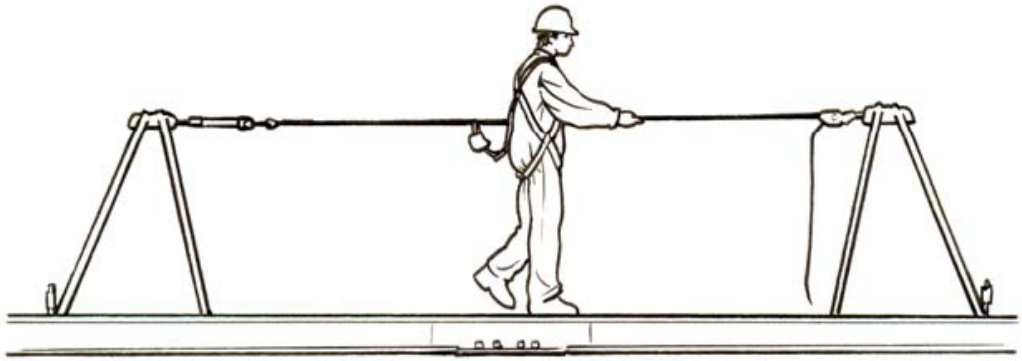
I-beam used as an anchor point with a sling specifically designed for this purpose



Wire Rope used as a Horizontal Lifeline:



Rigid Rail Used as a Horizontal Lifeline

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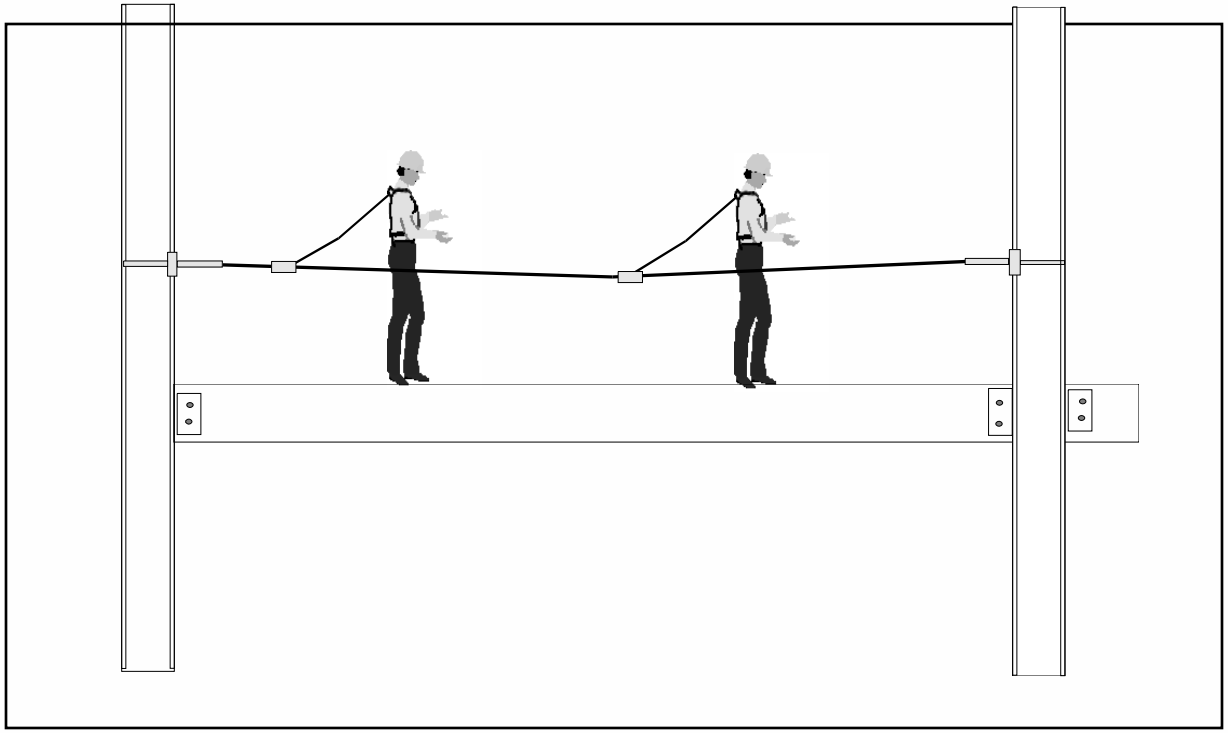

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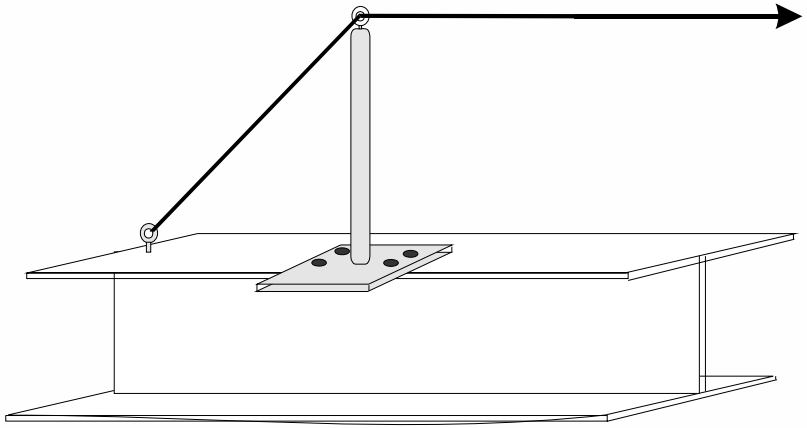
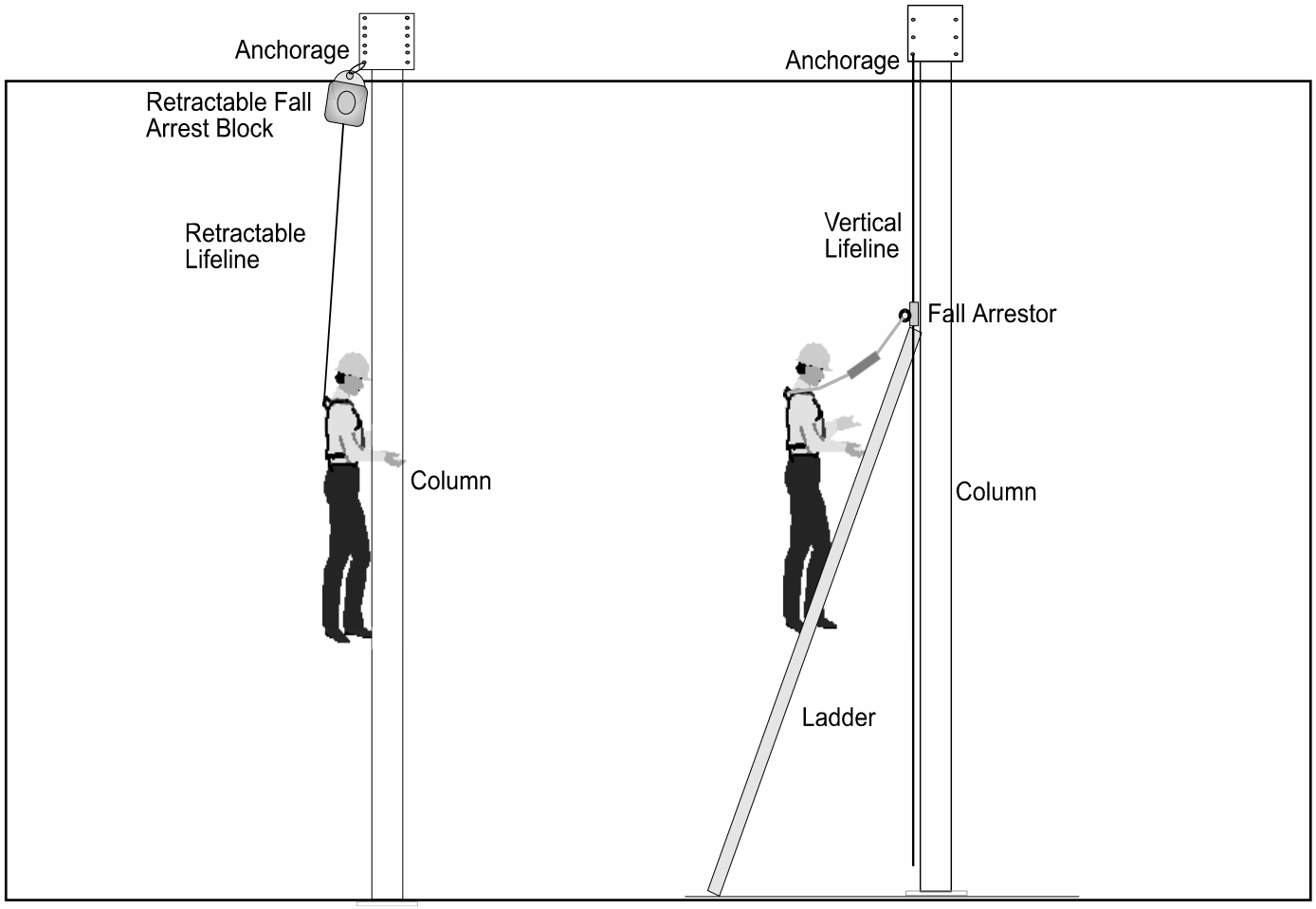


Horizontal Lifeline Support System


Anchorage
Retractable Fall Arrest Block
Retractable Lifeline
Column
Anchorage
Vertical Lifeline
Fall Arrestor
Column
Ladder

PART 16
Machines, Tools and Robots

- **Safe work procedures** must be developed, implemented and workers trained. Safe work procedures must include lockout procedures.
- **Machine and tool safety** - any machine or tool used must be:
  - Capable of safely performing its job function
  - Used, inspected and operated in accordance with the manufacturer's specifications and safe work procedures developed.
  - Installation, tasting, repair and maintenance of or any modification is carried out as per manufacturer specifications or the specifications certified by a professional engineer.

PART 22
Powered Mobile Equipment (PME)

- **Application –** applies to every workplace where PME is used.
- **Safe work procedures –** must be developed, implemented, and workers trained.
- **Written record of inspections, repairs, and maintenance** must be kept and made readily available to the operator of the equipment.
- **Exposed moving parts** must be shielded, enclosed or guarded.

- **Rollover Protective Structure (ROPS) Definition –** a structure designed to reduce the possibility of injury to an operator of pme in the event of a rollover or upset.
- **ROPS** must be commercially manufactured and complies with the appropriate CSA Standards or if not commercially manufactured it must be designed by a professional engineer.
- **If structural integrity is compromised** no person may operate the equipment until the ROPS is replaced or a professional engineer certifies that it has not been compromised.
- **Additions/modifications/ or structural repairs of ROPS** – as per the equipment manufacturer or a professional engineer.

- **Powered Lift Trucks - Definition –** a pme that is designed to allow the operator to lift, carry and unload a load.
- **New Code of Practice**
- **Operating certificate** issued by the employer required before a worker is permitted to operate a powered lift truck. The worker must receive instruction, training, and testing and must be familiar with the operating procedures of the truck the worker will be operating. An evaluation system to ensure continued competency must also be implemented.
- **Load rating chart** must be affixed to the truck.

PART 23
Cranes and Hoists

- **Safe work procedures** – must be developed, implemented, and workers trained.
- **Operator requirements** – only qualified operators can operate mobile cranes or boom truck hoists with a rated load of 7300 kg (8 ton) or more or tower cranes.
- **Operator to stay at controls** while a load is being hoisted.
- **Repairs or modifications** must be under the direction and certified by a professional engineer.
- **Maintenance & inspection schedule** in accordance with manufacturer or standard specifications.
- **Inspections -** before the start of each work shift, and before a supplier supplies a crane or hoist to any person.
- **Log book** to be maintained.

- **CAN/CSA Standard B167-96 (R2002)** ***Safety Standard for Maintenance and Inspection of Overhead Cranes, Gantry Cranes, Monorails, Hoists and Trolleys***
- **CSA Standard C22.2 No. 33-M1984 (R1999)** ***Construction and Test of Electric Cranes and Hoists***
- **CSA Standard Z150-1998 (R 2004)** ***Safety Code on Mobile Cranes***
- **CAN/CSA Standard Z185-M87 (R 2001)** ***Safety Code for Personnel Hoists***
- **CSA Standard Z248- 2004** ***Code for Tower Cranes***
- **CAN/CSA Standard Z256-M87(R2001)** ***Safety Code for Material Hoists***

- **Temperature and weather** – a crane or hoist cannot be operated when temperature is below or wind velocity is above conditions recommended by the manufacturer.

- **Multiple lifts** – a professional engineer must develop a plan.

- **Operator protection** from any falling material or equipment required.

- **Tower cranes requirements:** The foundation for a tower crane must be designed and certified by a professional engineer. Other specific requirements as outlined in this Part of the Regulation.

- **Multiple cranes –** must be operated so that there are no collisions between the cranes or their loads.

- **Structural testing and examination –** must be undertaken under the direction and control of a professional engineer as per manufacturer's specifications.
- **Overhead cranes - positive lockout system** must be provided so that the power is shut off when a worker is maintaining or servicing it.
- **Material hoists - inspection and testing** of material hoists required before being used.
- **Barricading base** required to prevent unauthorized entry.
- **Roofer's Hoists - employer obligations:** Bolts or pins used to interconnect component parts must be equipped with safety pins; drivers, pulleys and belts must be effectively guarded; must only be used for vertical lifting and is in a level position; counterweights are designed as a component part of the hoist that remains attached until all hoisting is completed and is heavy enough to counterbalance four times the maximum weight of the load. Cannot use roofing materials as counterweights.

- **Rigging specifications:** Commercially manufactured rigging must be assembled, used, maintained, inspected and dismantled as per manufacturer's specifications. Rigging not commercially manufactured must be assembled, used, etc. as per professional engineer specification.
- **Spreader bar requirements -** must be designed and certified by a professional engineer.
- **Rigging and spreader bars** must be suitable for and capable of supporting the load being rigged; capable to support 5 times the maximum weight of the load and labeled or marked with rated load.
- **Containers** used for lifting loads must be designed for that purpose.
- **A hook block** must have its rated load and weight legibly stamped.
- **Automotive lifts** must meet the requirements of the current ANSI standards. The operator must remain at the controls while a vehicle lift is in motion and does not block the controls during raising and lowering. No workers are to be under a suspended load unless the load is supported by a vehicle lift designed for that purpose or rated stands or blocks, other than jacks, that are designed, constructed and maintained to support the load and placed on firm foundations.

PART 24
Pile Driving

Application – this part applies to every workplace where piles are driven into, or removed from, the ground.

- **Safe work procedures** – must be developed and implemented, workers must be trained, and the employer to ensure that workers comply with the procedures
- **Pile Hoisting –** Employer requirements for certain tasks i.e. :
  - **Ladder systems** must be provided for use by a worker who is required to climb on a lead.
  - **Support of piles and sheet-piles** to prevent their uncontrolled movement while they are being hoisted, placed, cut, removed or withdrawn.
  - **Rigging suspended pile hammer** must be securely rigged when the equipment is not operating.

- **Pile driving operation–** Employer to ensure:
  - workers in the area of a pile being struck by a pile driver are protected from any risk that may result of the pile shattering;
  - before piles are placed in position for driving, pile head are trimmed to fit the follower on the pile driving cap and free of debris;
  - a follower or pile-driving cap is of a size and type suitable for the type of piling to be driven.
- **Extraction of piles -** only by the use of a device approved by a professional engineer.
- **Crane boom inspection –** at intervals of not more than 600 operating hours and when not in use, before being returned to hoisting service.
- **Crane boom with a vibratory pile extractor and crane booms used for dynamic compaction** must be inspected and certified by a professional engineer at intervals of not more than 200 operating hours while in use and before being returned to hoisting service when not in use.

PART 26
Excavation and Tunnels

- **Application** – Applies to every workplace where excavation work takes place but does not apply to a mine.
- **Safe work procedures** – must be developed, implemented, and workers trained.
- **Registration requirements:**
  - Employer must notify the Workplace Safety and Health Division that he/she intends to do excavation work and receive a registration number from the Division.
- **Notice of excavation –** required if an excavation is more than **1.5 m (5ft.)** deep and a worker will be required to enter. Excavation work may not begin until the Division has assigned a serial number. The notification requirements do not apply to the digging of a burial lot or plot in a cemetery. The notice must be received by the Workplace Safety and

Health Division not more than 48 hours before the day that excavation work is scheduled to begin.

- **Employer to appoint a supervisor –** the supervisor must be on site when a worker is in the excavation or excavation work is being performed.
- **Competent person to be located at the surface** for excavations that are more than 1.5 m (5ft.) deep.
  - **Underground facilities –** before excavation work begins, an employer must: give notice of the proposed excavation to the owners of underground facilities in the area where the work is to be done.
- **Hazards:**
  - **Flooding risks –** no workers may enter the excavation unless appropriate precautions are taken.
  - **Hazardous atmosphere risks –** no worker may enter the excavation until a competent person determines whether a breathing or other hazard exists. If it is determined that a breathing hazard exists no worker may enter the excavation

unless the necessary precautions are taken.

- **Water hazards –** excavation sites must be kept free of accumulation of water that may create a risk.
- **Hazardous objects** such as trees, utility poles, etc. must be removed or adequately supported before excavation work begins.
- **Powered mobile equipment and machinery** may not be driven, operated, or located so that it endangers the stability of the walls of an excavation.
  - **Guarding excavations required** when excavation is adjacent to an area where the public may pass; if there is a danger of a worker falling into excavation that is more than 3 m (10 ft.) deep; and when an excavation poses a hazard to traffic because it is located close to roadway.
- **Walkways** required if a worker is required to cross over an excavation.

- **Safe means of entering and leaving an excavation is required.** If a worker is required to enter an open excavation that is more than 1.5 m deep a ladder, stairway or ramp is required. If a ladder is used it must extend 1 m (3 ft.) above the top of the excavation and must be located not more than 3 m (10 ft.) from the worker when it is used in a trench.

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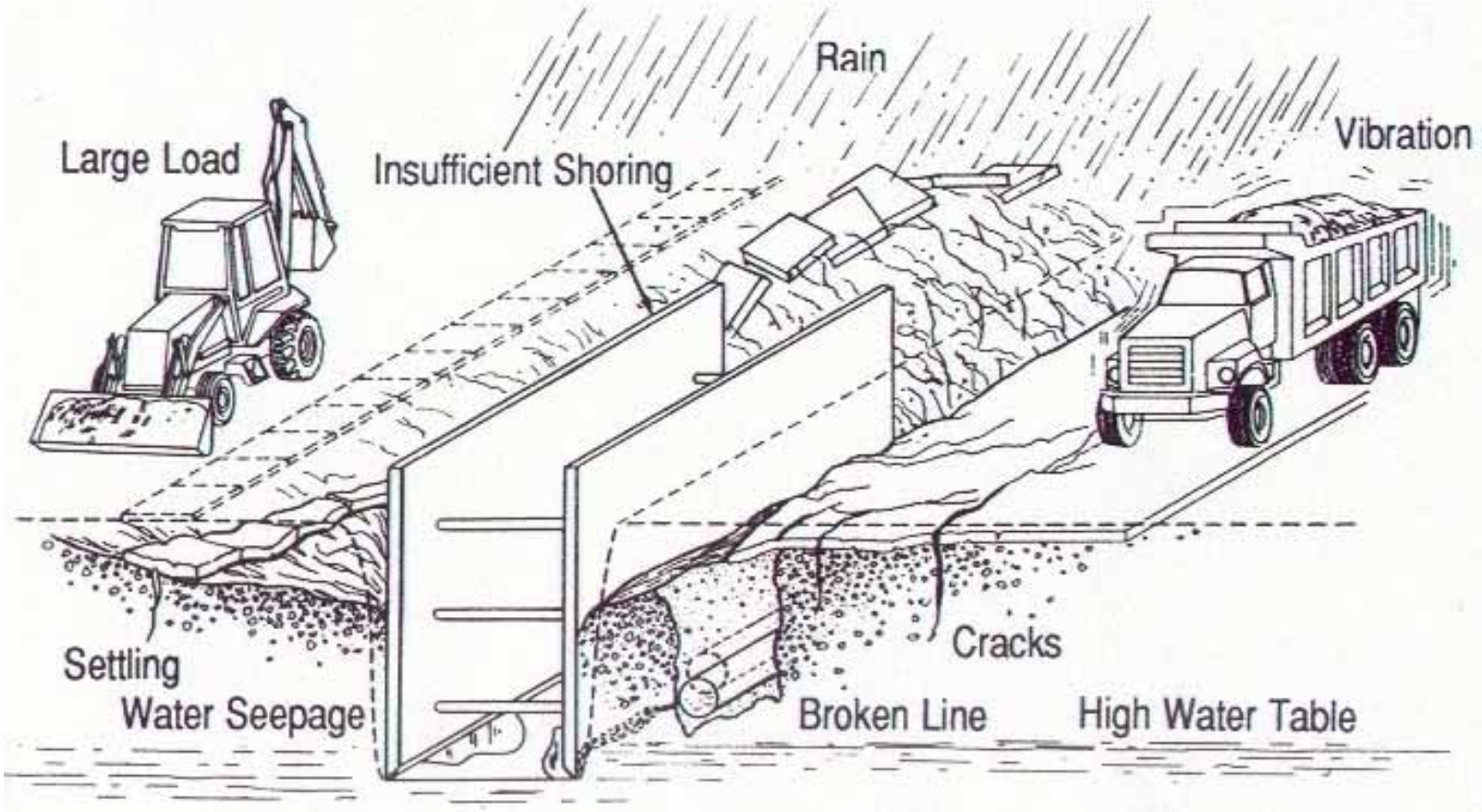
Example



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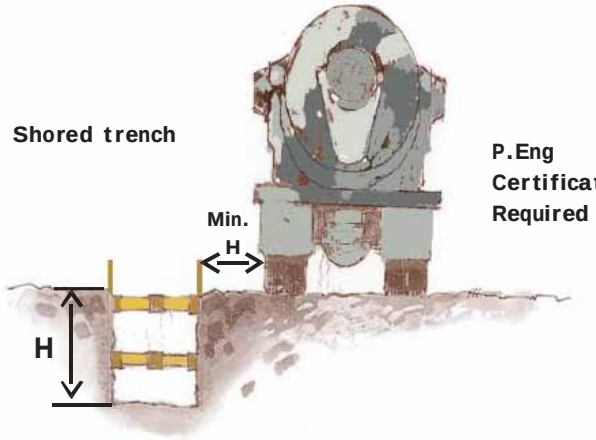
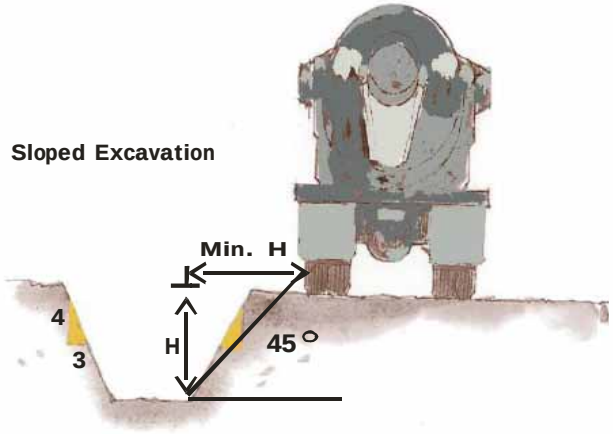
Shored trench

P.Eng
Certification
Required



Sloped Excavation



SAFE WORK

SAFE
SPOT THE HAZARD
ASSESS THE RISK
FIND A SAFER WAY
EVERYDAY

- **Support structures** required if a worker is to enter an excavation that is more than 1.5 m (5ft.)deep unless:
  - the excavation is cut in solid rock or other equally stable material, excluding frozen ground;
  - the wall of the excavation are sloped at an angle not greater than 45 degrees; or
  - a combination of slope and vertical face is used for stabilizing the walls where the vertical face is not more than 1 metre high and the remaining walls are sloped at an angle not greater than 45 degrees.
  - **Specific support structure requirements** are outlined in Sections 26.15 to 26.27 in this Part of the Regulation.

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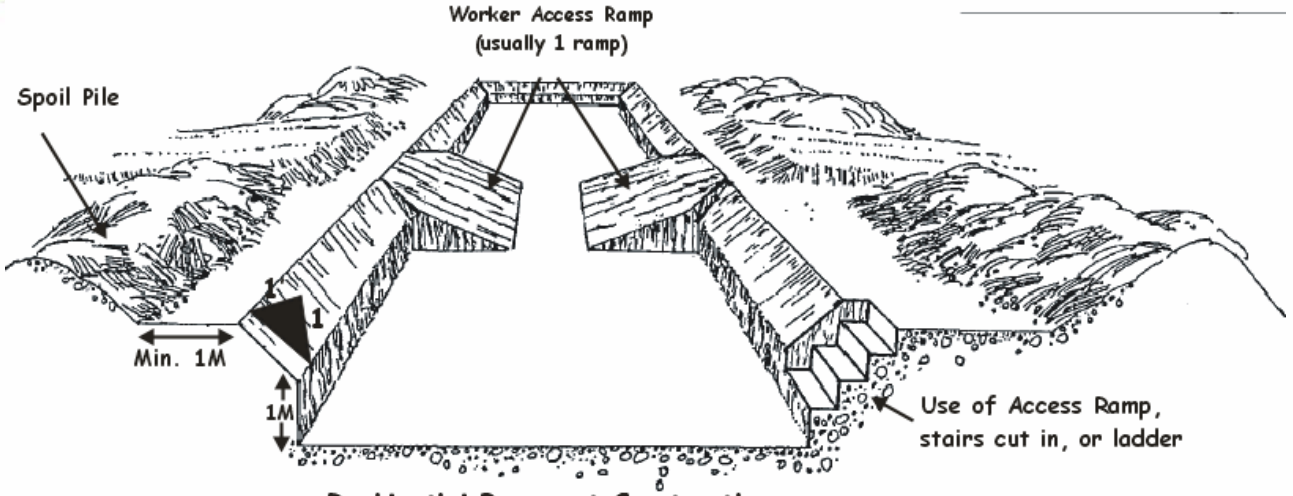
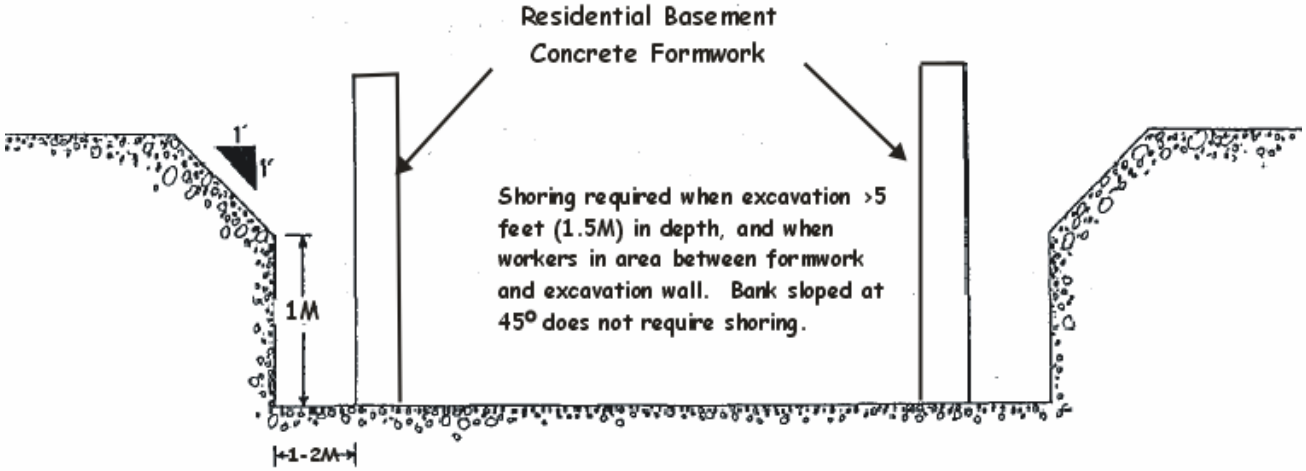


Residential Basement Construction



SAFE WORK

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- **Support structures in excavations grater than 3 m. (10ft.)** where a worker may enter shall be designed certified by a PEng. and constructed installed, used maintained and dismantled in accordance with the PEng specifications and is inspected after installation (section 26.16 (1), (2), (3))
- **Support structures in a trench up to 4.5 m (15 ft.)** shall comply with the Schedule for the type of soil without retaining a PEng. (section 26.16(4))
- **Trench Cages** must be design by a professional engineer and approved for stacking (section 26.27)

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Category 1a) - stiff clays, & stiff ---> hard clay tills, & stiff fissured clays

DEPTH (ft)	DEPTH (m)	UPRIGHTS (Vertical Members) Member minimum dimensions (millimetres)	UPRIGHTS minimum 2-span continuous maximum spacing horizontally (ft)	UPRIGHTS (mm)	STRINGERS / WALES (Horizontal Members)* Member minimum dimensions (millimetres)	STRINGERS minimum 2-span continuous maximum spacing vertically (ft)	STRINGERS (mm)	CROSS-BRACES, STRUTS (Horizontal)* Member minimum dimensions (millimetres) Width of Trench: less than 1.8 metres	CROSS-BRACES Width of Trench: 1.8 metres to 3.7 metres	maximum spacing vertically (to match Stringers / Wales) (ft)	maximum spacing vertically (to match Stringers / Wales) (mm)	maximum spacing horizontally along Stringers / Wales (ft)	maximum spacing horizontally along Stringers / Wales (mm)
5	1.5												
10	3.0	38 x 235 (2x10s)	1.26	384	89 x 140 (4x6s)	4.0	1200	89 x 89 (4x4s)	140 x 140 (6x6s)	4.0	1200	4.22	1291
15	4.6	38 x 235 (2x10s)	1.13	344	191 x 191 (8x8s)	3.0	915	89 x 89 (4x4s)	140 x 140 (6x6s)	3.0	915	4.82	1475

Category 1b) - stiff fissured soils, & stiff clay fills

DEPTH (ft)	DEPTH (m)	UPRIGHTS (Vertical) Member minimum dimensions (millimetres)	UPRIGHTS minimum 2-span continuous maximum spacing horizontally (ft)	UPRIGHTS (mm)	STRINGERS / WALES (Horizontal) Member minimum dimensions (millimetres)	STRINGERS minimum 2-span continuous maximum spacing vertically (ft)	STRINGERS (mm)	CROSS-BRACES, STRUTS (Horizontal) Member minimum dimensions (millimetres) Width of Trench: less than 1.8 metres	CROSS-BRACES Width of Trench: 1.8 metres to 3.7 metres	maximum spacing vertically (to match Stringers / Wales) (ft)	maximum spacing vertically (to match Stringers / Wales) (mm)	maximum spacing horizontally along Stringers / Wales (ft)	maximum spacing horizontally along Stringers / Wales (mm)
5	1.5												
10	3.0	89 x 140 (4x6s)	2.25	686	89 x 140 (4x6s)	4.0	1200	89 x 89 (4x4s)	140 x 140 (6x6s)	4.0	1200	2.60	796
15	4.6	89 x 140 (4x6s)	1.85	564	191 x 191 (8x8s)	3.0	915	89 x 89 (4x4s)	140 x 140 (6x6s)	3.0	915	3.07	939

Category 2 - soft cohesive soils, & stiff ---> wet/loose silt soils

DEPTH (ft)	DEPTH (m)	UPRIGHTS (Vertical) Member minimum dimensions (millimetres)	UPRIGHTS minimum 2-span continuous maximum spacing horizontally (ft)	UPRIGHTS (mm)	STRINGERS / WALES (Horizontal) Member minimum dimensions (millimetres)	STRINGERS minimum 2-span continuous maximum spacing vertically (ft)	STRINGERS (mm)	CROSS-BRACES, STRUTS (Horizontal) Member minimum dimensions (millimetres) Width of Trench: less than 1.8 metres	CROSS-BRACES Width of Trench: 1.8 metres to 3.7 metres	maximum spacing vertically (to match Stringers / Wales) (ft)	maximum spacing vertically (to match Stringers / Wales) (mm)	maximum spacing horizontally along Stringers / Wales (ft)	maximum spacing horizontally along Stringers / Wales (mm)
5	1.5												
10	3.0	38 x 235 (2x10s)	0.75	229	89 x 140 (4x6s)	4.0	1200	89 x 89 (4x4s)	140 x 140 (6x6s)	4.0	1200	3.00	918
15	4.6	89 x 140 (4x6s)	1.50	457	191 x 191 (8x8s)	3.0	915	89 x 89 (4x4s)	140 x 140 (6x6s)	3.0	915	2.90	887

Category 3a) - Cohesionless: loose ---> medium dense soils

DEPTH (ft)	DEPTH (m)	UPRIGHTS (Vertical) Member minimum dimensions (millimetres)	UPRIGHTS minimum 2-span continuous maximum spacing horizontally (ft)	UPRIGHTS (mm)	STRINGERS / WALES (Horizontal) Member minimum dimensions (millimetres)	STRINGERS minimum 2-span continuous maximum spacing vertically (ft)	STRINGERS (mm)	CROSS-BRACES, STRUTS (Horizontal) Member minimum dimensions (millimetres) Width of Trench: less than 1.8 metres	CROSS-BRACES Width of Trench: 1.8 metres to 3.7 metres	maximum spacing vertically (to match Stringers / Wales) (ft)	maximum spacing vertically (to match Stringers / Wales) (mm)	maximum spacing horizontally along Stringers / Wales (ft)	maximum spacing horizontally along Stringers / Wales (mm)
5	1.5												
10	3.0	38 x 235 (2x10s)	1.07	326	89 x 140 (4x6s)	4.0	1200	89 x 89 (4x4s)	140 x 140 (6x6s)	4.0	1200	3.90	1193
15	4.6	38 x 235 (2x10s)	0.96	293	191 x 191 (8x8s)	3.0	915	89 x 89 (4x4s)	140 x 140 (6x6s)	3.0	915	4.44	1359

Category 3b) - Cohesionless: dense to very dense soils

DEPTH (ft)	DEPTH (m)	UPRIGHTS (Vertical) Member minimum dimensions (millimetres)	UPRIGHTS minimum 2-span continuous maximum spacing horizontally (ft)	UPRIGHTS (mm)	STRINGERS / WALES (Horizontal) Member minimum dimensions (millimetres)	STRINGERS minimum 2-span continuous maximum spacing vertically (ft)	STRINGERS (mm)	CROSS-BRACES, STRUTS (Horizontal) Member minimum dimensions (millimetres) Width of Trench: less than 1.8 metres	CROSS-BRACES Width of Trench: 1.8 metres to 3.7 metres	maximum spacing vertically (to match Stringers / Wales) (ft)	maximum spacing vertically (to match Stringers / Wales) (mm)	maximum spacing horizontally along Stringers / Wales (ft)	maximum spacing horizontally along Stringers / Wales (mm)
5	1.5												
10	3.0	38 x 235 (2x10s)	1.51	460	89 x 140 (4x6s)	4.0	1200	89 x 89 (4x4s)	140 x 140 (6x6s)	4.0	1200	4.62	1414
15	4.6	38 x 235 (2x10s)	1.36	415	191 x 191 (8x8s)	3.0	915	89 x 89 (4x4s)	140 x 140 (6x6s)	3.0	915	5.28	1616

***Notes for Tables:**

1. 38mmx235mm (2x10s) except as noted above, S.P.F No. 2 & better
2. Design based on O86.1-2001 Wood Design Manual; all "uprights" (vertical shoring) to be minimum 2-span continuous (cantilevers not to be included as "spans"). All shoring assumed to have members orientated for weak-axis bending
3. All members to be graded lumber meeting S.P.F. No. 2 or better.
4. All spacings shown are centre-to-centre of members.

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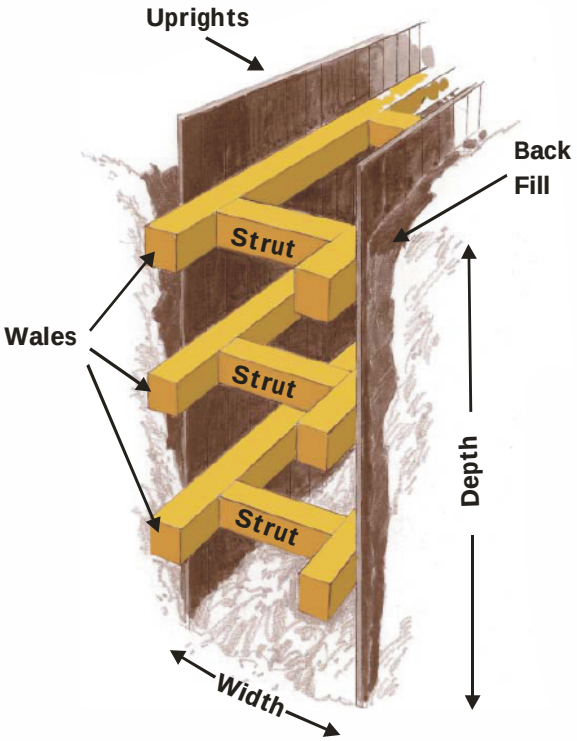

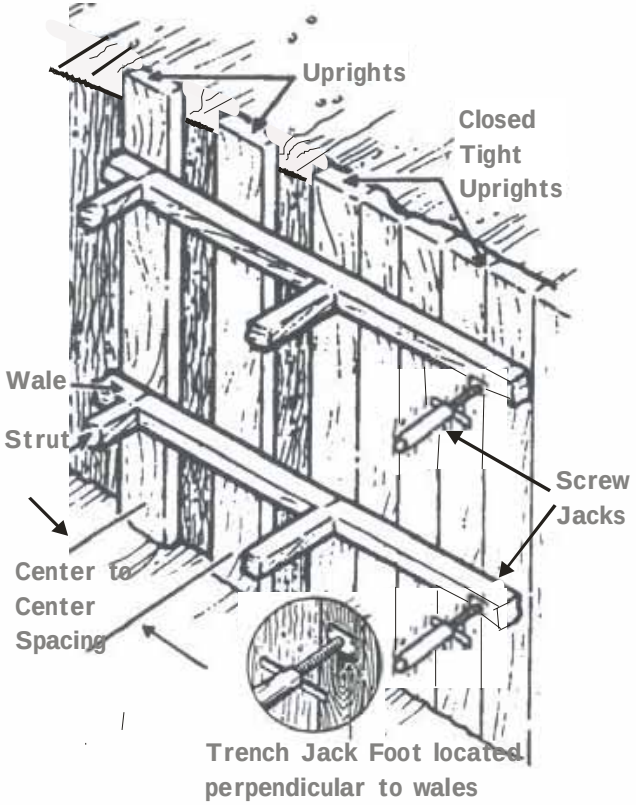

SAFE WORK
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- **Support structure for deep foundation excavations** must be designed and certified by a professional engineer.
- If a worker is required to enter a deep foundation excavation, the method of entering and leaving the excavation is approved by a PEng.
- **Worker in a deep foundation excavation to wear body harness at all time.**
- **Hoisting device** to be used to lower and raise the worker entering a deep foundation excavation.
- **Guarding deep foundation excavation** when work on the excavation is not being performed.
- **Specific requirements for shafts and tunnels** are outlined in Section 26.33 to Section 26.43 of this Part of the Regulation.

PART 27
Work in a Compressed Air Environment

- **Application** – This part applies where work is being done in a compressed air environment, but does not apply to divers or to persons working in diving bells.
- **Safe work procedures** must be developed, implemented, and workers trained.
- **General requirements** – before a worker is allowed or permitted to enter a compressed air environment, the employer must:
  - Notify the Workplace Safety and Health Division at least 30 days before work begins
  - Establish and adhere to a work plan that has been designed and approved by a professional engineer and meets the requirements of the current CSA standard. The employer must ensure that work done in a compressed air environment is done in accordance with the work plan.

PART 28
Scaffolds and Other Elevated Work Platforms

Application - applies to every workplace where a scaffold or elevated work platform is used.

- **Safe work procedures** – must be developed, implemented, and workers trained.
- **Commercially manufactured scaffold and elevated work platforms** must be installed, used, maintained and dismantled in accordance with manufacturer's specifications.
- **Scaffolds – general provisions: Types that must be designed by an engineer:**
  - open access scaffold more than **10 m** (33 ft.) high;
  - enclosed or hoarded access scaffold more than 7.5 m in height.

- **General design and use requirements:**
  - able to safely support at least four times the maximum load that will be imposed on it;
  - if partially or fully enclosed, must have components that are adequate to support any added load from wind, wind gusts or other environmental conditions;
  - installed plumb; and must be stabilized
- **Additional criteria: scaffolds of particular height.**
  - If the scaffold platform is 3 m or more above the level a worker may fall, it must be equipped with a guardrail.
  - If a scaffold is more than 6 m in height, it must be equipped with hoisting device for hoisting material.
  - If a scaffold is more than 9 m in height is must be equipped with an internal stairway or ladders, and if any ladder exceeds 3 m in height, the ladder must be equipped with fall protection attachments.

- **Characteristics: rope, wire rope and tie backs must be:**
  - protected against abrasion or other physical damage and made of heat or chemical resistant material, if there is a possibility of exposure to heat or chemicals,
  - No wire to be used in tie back systems.
- **Platforms: secured and minimum width must be**
  - 500 mm wide nominally (181/2”);
  - 1.5 m wide(5 ft.), if it is to be used by bricklayers, stonemasons, plasters or a similar tradespeople and the scaffold is used to hold their immediate supply of building materials.
- **Manufactured or wood planks** must be used, stored, inspected and maintained in accordance with the manufacturer’s specifications.
- **Competent persons to supervise and inspect the scaffolds**
- **No scaffold may be loaded in excess of its rated load**.
- **Specific provisions for particular types of scaffolds** are outlined in Section 28.14 to Section 28.20 of this Part of the Regulation.

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Not acceptable !

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- **Elevated Work Platforms**
  - **Suspended work platforms** must be designed, constructed, installed, maintained, used and dismantled in accordance with the most current CSA Standards.
- **Prior notification of suspended work platform use –** if a platform is used at a height in excess of 3 m above ground the Workplace Safety and Health Division must be notified at least eight hours before the platform is suspended. The Division will assign a serial number to the worksite.
  - **Specific requirements for suspended work platforms** are outlined in Section 28.23 to Section 28.31 of this Part of the Regulation.
- **When crane used to suspend a personnel basket or cage:**
  - **General restrictions re: use of the crane –** a crane may only be used to hoist a personnel basket or cage where it is not reasonably practicable to do the work by use of a scaffold or other type of elevated work platforms.

Standards in this part

- **CSA S269.2-M87 (R2003)** ***Access Scaffolding for Construction Purposes***
- **CSA Z91-02 Health and Safety Code for Suspended Equipment Operations (second time referenced)**
- **CSA Z271-1998 (R2003) Safety Code for Suspended Elevating Platforms (second time referenced)**
- **CSA B354.1-04** ***Portable Elevating Work Platforms***
- **CSA B354.2-01 (R2006)** ***Self-propelled Elevating Work Platforms***
- ***CSA B354.4-02 Self-propelled Boom-Supported Elevating Work Platforms***
- **CSA C225-00 (R2005)** ***Vehicle-Mounted Aerial Devices***
- **CSA Z 150– 98** ***Safety Code on Mobile Cranes*** (second time referenced)

  - **Specific requirements for basket or cage when crane is used to hoist a personnel basket or cage –** outlined in Section 28.33 to Section 28.36 of this Part of the Regulation.
  - **Specific requirements for aerial devices and self-elevating work platforms** are outlined in Section 28.37 to Section 28.44 of this Part of the Regulation.
- **Forklift-Mounted Work Platform**
  - Must be commercially manufactured or constructed in accordance with professional engineer specifications.
  - When a worker is on a work platform mounted on a forklift, the employer must ensure that the forklift is on stable, level surface and the operator of the forklift remains at its controls when the platform and forklift are in the elevated position.
  - Fall arrest system required.

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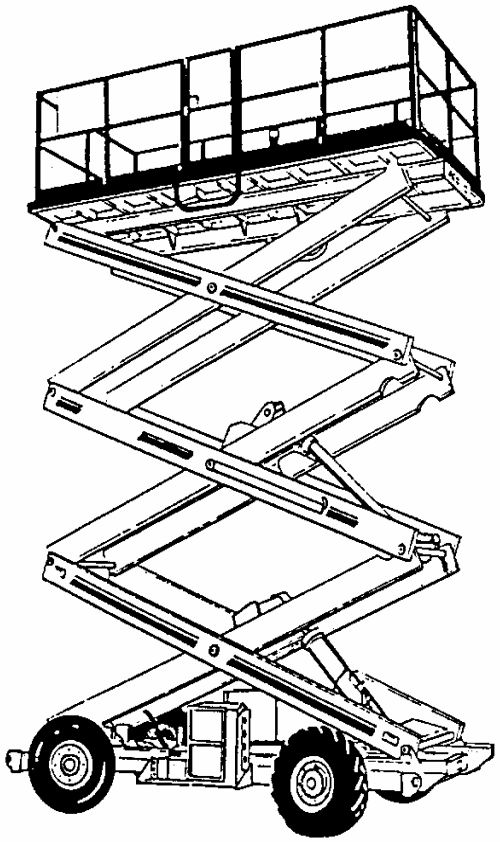
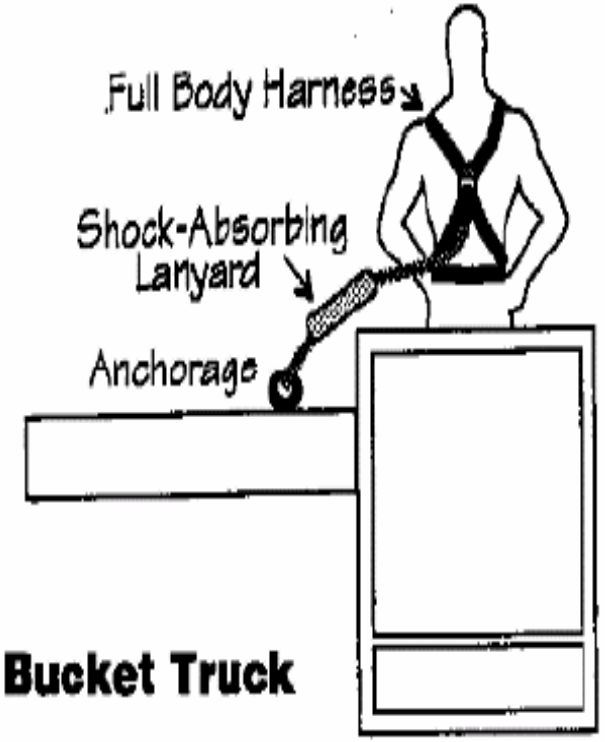
Examples





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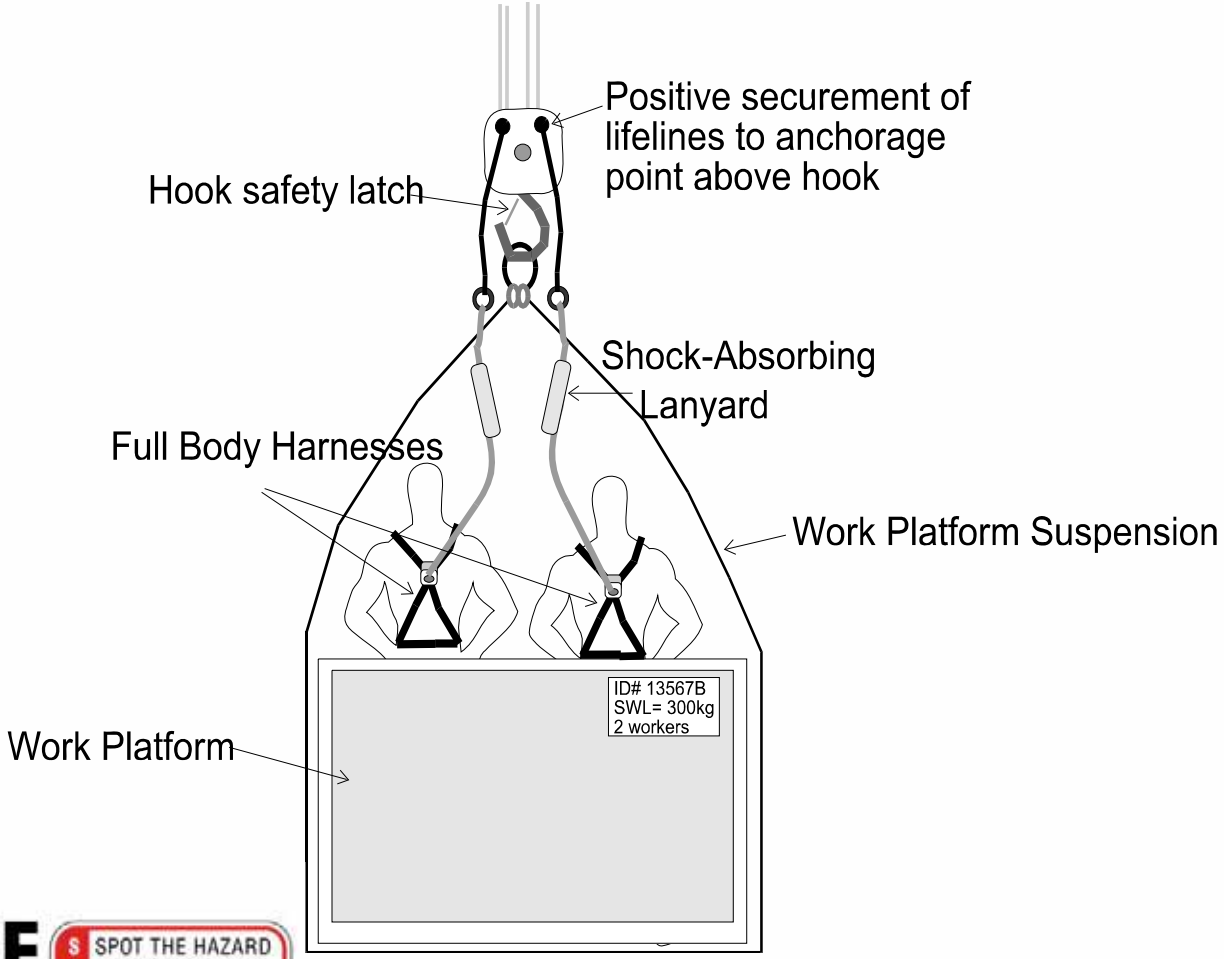
Positive securement of lifelines to anchorage point above hook
Hook safety latch
Shock-Absorbing Lanyard
Full Body Harnesses
Work Platform Suspension
ID# 13567B
SWL= 300kg
2 workers
Work Platform

PART 29
Falsework and Flyforms

- **Application –** applies to every workplace where falsework or flyform systems are used.
- **Safe work procedures** – must be developed, implemented, and workers trained.
- **Competent supervisor** – only competent persons in the use of falsework and flyform systems can supervise the construction, installation, maintenance and dismantling of the systems.
- **Falsework**
  - **Design** – must be designed and certified by a professional engineer in accordance with current CSA standards. Drawings and supplementary information must include:
    - information that enables assembly to meet design requirements,

- minimum dimensions and materials of sills and other foundation members, including load bearing capacity,
- where concrete is to be placed, the sequence, method and rate of concrete placement to prevent overloading, and
- all field design details and any field modifications

– **Falsework used for concrete** – must be inspected (record kept at project site) to ensure it is constructed in accordance with design drawings before each placement, it cannot be removed as a temporary support structure until concrete has attained sufficient strength, and where re-support is required after removal, the method for re-support must be approved by a professional engineer.

- **Flyform systems**
  – **Design**
    - must be designed and certified by a professional engineer; design and installation drawings must include a plan view, a longitudinal section and cross section of each type of panel to be used, and indicate the calculated position of the centre of gravity of the panels;

- **Moving**
  - a worker rigging the panel or system near the edge of a structure must be attached to a lifeline in accordance with Part 14 -Fall Protection requirements.
  - the panel or system must be cleared of all material that is not part of the design prior to the move and it must be inspected by a competent person immediately after the move to ensure stability and that it meets the design specifications**.**

PART 30

Temporary Structures

- **Application –** applies to every workplace where temporary structured are constructed or used.
- **Safe work procedures** – must be developed, implemented, and workers trained.
- **Support** – a temporary or unfinished structure, including masonry walls, must be adequately braced or supported to withstand any load, including wind and wind gusts. Any temporary support structure used cannot be removed until the structure is permanently stabilized.
- **Flooring** – Where workers are required to work or pass beneath the work area of a skeleton frame building of more than one storey, a permanent or temporary floor must be provided.
  - Temporary floors must extend over the entire work area except for necessary openings that must be protected by guardrails,

be designed to safely support any loads imposed on it, and be securely fastened to structural members.

- Temporary plank floors must be structurally sound, at least 50mm thick, securely fastened to the frame, and laid close together to form a solid floor.
- Openings that cannot be protected with guardrails must be covered with securely fastened planks or other materials able to support loads.

- **Temporary stairs and landings** – must be designed and constructed to support any load that may be imposed on them. Temporary stairs must have:
  - In any one flight, a rise that is uniform and treads that are similar in width, length and height,
  - A slope not exceeding 50 degrees from the horizontal,
  - A vertical distance of not more than 4 metres between landings or floors**,**
  - Securely fastened handrails (equivalent in strength to the top of guardrail) on open sides, including landings,

- A minimum width of 750 mm (30”)except where temporary stairs are prefabricated steel scaffold stairs or space restrictions require narrower stairs.
- Steel stairs that are designed to have concrete fill must have temporary wooden tread fillers which extend the full width and length of treads and landings secured in place.

Temporary runways, ramps, and platforms – must be designed and constructed to support any load likely to be imposed on them,

- be a minimum of 600mm (24”)in width, and securely fastened and supported to prevent horizontal or lateral movement.
- Slope of ramps – special previsions (see notes)

PART 31
Roof Work

Manitoba

Application – applies to every workplace where roofing material is repaired, applied to or removed from a building or structure.

Division 1 – General

- **General requirements –** before any work begins on the roof of a building, an employer must evaluate the structure of the building to determine if it is capable of withstanding the loads that may be imposed on it including the loads resulting from workers, equipment and materials.
- **Safe work procedures** – must be developed, implemented, and workers trained

Division 2 – Residential Roof Work

- **Application –** applies to residential construction projects where roofing material is repaired, applied to or removed from an existing building, provided that the eave height is not more than 6 m and the fall height is more than 3 m.

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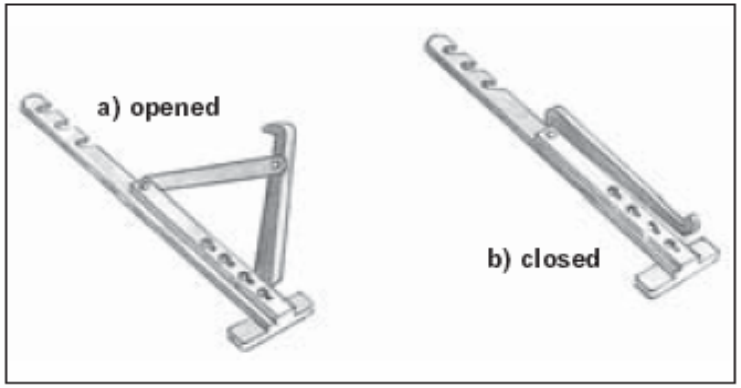
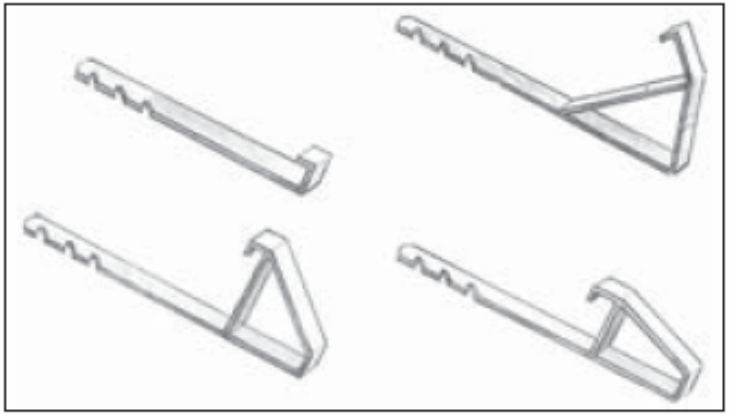
- **Slopes 4:12 to 6:12 -** employer to ensure
  - roof jacks and toe-boards are installed continuously along the length of the eave, and below the work area at intervals of not more than 2.4 m (8ft.) as measured along the roof deck;
  - guardrails are installed; or
  - fall protection systems provided.
- **Roof decks with slopes more than 6:12**
  - guardrails, or
  - fall protection system provided.
- **Exemption -** Part 14 (Fall Protection) does not apply to residential construction projects where the slope is 4:12 or less



Folding roof jacks.



These are examples of various kinds of roof jacks.

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PART 32
Precast Concrete

- **Application –** applies to every workplace where precast concrete is used.
- **Precast construction: general requirements –** precast concrete parts must be designed, constructed, installed, used, maintained, and inspected in accordance with the specifications of a professional engineer who designed it and the manufacturer who manufactured the part and the professional engineer who designed the structure.
- **Safe work procedures** – must be developed, implemented, and workers trained.

- **Specifications and precast design engineer**
- Design specifications and drawings of precast concrete parts must be signed and certified by the professional engineer who designed the part as well as the professional engineer who designed the structure. Design specifications must include the following information:
  - Information necessary to enable the part to be accurately constructed and installed in the proper sequence.
  - The hoisting, site, storage, placement, grouting and field repair procedures for the part;
  - The minimum dimensions of the bearing surfaces of the part;
  - Identification of the components of the part that require shoring, bracing or other temporary support;
  - If an opening is to be cut in the part, the method to be used to cut the opening;
  - The weight of the part.

- **Supervisor -** A worker who works with precast concrete parts must be supervised by a person who is experienced in precast concrete construction.
- **Placement and support –** precast concrete part must be placed on a supporting component of the structure that is capable of safely supporting the load and is properly braced to withstand any load, including wind and wind gusts, that may be imposed on it when it is placed in its final position.
- **Hoisting of precast concrete parts –** device used to hoist the part must be designed and certified by a professional engineer, is equipped with a clearly visible and legible load rating chart, is rated for the safe working load and size of the part, and is inspected by a competent person before it is first used. The part must not be hoisted directly over any person.
- **Rigging clamps –** must be designed for hoisting precast concrete parts and provided with a safety sling of adequate capacity to safely support the load that may be imposed on it.

- **Specific provision re tilt-up precast panels –** must be void of any cold joints (unless approved by a professional engineer); must be protected from damage from welding or any other application of heat or any other work procedure; is broken from the casting surface by a mechanical bond breaker; is protected from damage by a lifting insert, bracing insert or other bracing component; and is hoisted only after the concrete has attained the required strength specifications of a professional engineer.
- **Tension equipment and operation –** safe work procedures must be developed and implemented for pre-tensioning, post-tensioning or detensioning operations.
- **Protection from damage –** no work may proceed on a tensioning operation until the strands have been adequately protected.

PART 33
Demolition Work

Application – applies to every workplace where demolition work takes place.

- **Safe work procedures** –must be developed, implemented, and workers trained.
- **General Requirements** – demolition work must be carried out in accordance with the current CSA S350 Code of Practice for Safety in Demolition of Structures, and conducted so that it does not expose workers or other persons to risks,
- **Employer's obligations** – prior to work commencing employer to ensure the following are removed from the building or structure:
  - Glass, metal cornices, or other material that may shatter,
  - Hazardous substances including asbestos,

- Tanks, wells, piping systems, flammable or explosive materials, or gas cylinders.
- Where hazardous substances cannot be removed must be subjected to control measures contained in Part 36 (Chemical and Biological Substances) and Part 37 (Asbestos),
- Authority having jurisdiction must provide written confirmation that utilities have been disconnected (available at site),
- Ensure site is free of unauthorized persons and appropriately barricaded,
- Ensure a competent person inspects and is in charge of the site and demolition work at all times,
- Notify owners of adjacent property in writing of intended demolition and provide adequate time to ensure safety of others, and
- If the stability of an adjoining structure may be affected, a professional engineer must design and certify safeguarding procedures (must be kept on site).

- **Ventilation, loads, removal of debris and chutes** – an employer must ensure:
  - Adequate ventilation is provided for machines powered by internal combustion engines operating in enclosed areas.
  - Every floor, roof or other surface is of sufficient strength of safely support the load of a worker and the load of any equipment, including powered mobile equipment, placed on it.
  - Material or debris is removed promptly and is not allowed to accumulate.
  - Unless it is being demolished at the time, no wall or other part of the building or structure is left unstable or in danger of collapsing.
  - That a chute for use in removing debris and dust is provided.

- **Demolition – special previsions**
  - **Explosives** – only competent persons must develop a demolition procedure where explosives are to be used in accordance with Part 34 – Explosives.
  - **Pushing** – the point at which the force is applied must be at the point specified by a professional engineer, at least 2/3 up the height of the part being demolished – measured from the base of the part being pushed. Crane booms cannot be used for pushing.
  - **Pulling** – the horizontal distance from the pulling machine to the face of the part being demolished must be 20 percent greater than the height of the part and no person is located between the two. Crane booms cannot be used for pulling.
- **Pre-stressed concrete** – it must be determined if pre-stressed or post tension concrete parts are present in the building, where present, must be demolished in accordance with specifications of a professional engineer.

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Stay safe !!!.....

Thank you for your attention !

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