
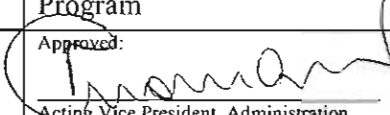
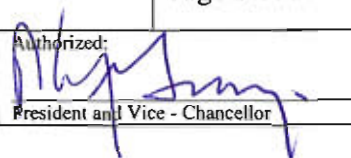


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| | Title: Falls From Heights Protection Program | |
| Submitted: Risk Management Support Group | Approved:  Acting Vice President, Administration | Authorized:  President and Vice - Chancellor |

1 PURPOSE


- 1.1 To define the requirements for the prevention of injury to persons working at and from heights.
- 1.2 To ensure compliance with the Occupational Health and Safety Act and the Criminal Code of Canada.

2 SCOPE

- 2.1 All individuals (faculty, staff, students and contractors) who are required to work at and from heights as defined in this policy.

3 RELATED DOCUMENTS


- 3.1 Occupational Health and Safety Act, R.S.O. 1990 and O. Reg. 851. R.R.O. 1990, Industrial Establishments, Section 85 and O. Reg. 213/ 91 Construction Projects, Section 26 and Section 207 (See Appendix A);
- 3.2 Criminal Code of Canada;
- 3.3 Canadian Standards Association, Z259.16-04, Design of Active Fall Protection Systems;
- 3.4 Canadian Standards Association, Z1156, Fall Arrest Systems Practical Essentials;
- 3.5 Canadian Standards Association, Z259. 10-06: Full Body Harnesses;
- 3.6 Canadian Standards Association, Z259. 11-05: Energy Absorbers and Lanyards
- 3.7 Canadian Standards Association, Z259. 2.1-98: Fall Arresters, Vertical Lifelines and Rails;
- 3.8 Canadian Standards Association, Z259.2.2-98: Self Retracting Devices for Personal Fall Arrest Systems
- 3.9 Canadian Standards Association, Z259. 1-05: Body Belts and Saddles for Work Positioning and Travel Restraint
- 3.10 Canadian Standards Association, Z25.9.12-01: Connecting Components for Personal Fall Arrest System (PFAS)
- 3.11 Canadian Standards Association, Z259.17: Guide to Selection of Fall Protection Components
- 3.12 Canadian Standards Association, Z259. 2.3-99: Descent Control Devices.
- 3.13 RMM#100 McMaster University Workplace and Environmental Health and Safety Policy.
- 3.14 RMM#307 Scaffolds / Suspended Scaffolds and Powered Elevated Platforms Program.
- 3.15 RMM#300 Safety Orientation and Training Program.

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- 3.16 RMM#301 Standard Operating Procedures (SOPs) Program.
- 3.17 RMM#313 Head Protection Program.
- 3.18 RMM#312 Foot Protection Program.
- 3.19 RMM#304 Working Alone Program.
- 3.20 RMM#111 Contracting Work Safety /Due Diligence Program.

4 DEFINITIONS

- 4.1 **Anchorage Point** – a secure point of attachment for lifelines, lanyards, or deceleration devices that is independent of all means of supporting or suspending the worker.
 - 4.2 **Buddy System** – a system of organizing individuals into work groups so that each individual within the group is designated to be observed, by at least one other person in the work group.
 - 4.3 **Authorized Workers** – Individuals who have been trained and certified as being competent to work safely on a specific task involving the use of scaffolds, suspended scaffolds or powered elevated platforms.
 - 4.4 **Competent Person (OHSA)** – means a person who.
 - (a) is qualified because of knowledge, training and experience to organize the work and its performance,
 - (b) is familiar with this Act and the regulations that apply to the work, and
 - (c) has knowledge of any potential or actual danger to health or safety in the workplace.
 - 4.5 **Constructor** – means a person who undertakes a project for an owner and includes an owner who undertakes all or part of a project by himself or by more than one employer.
 - 4.6 **Employer**- A person who employs one or more workers or contracts for the services of one or more workers and includes a contractor or subcontractor who performs work or supplies services and a contractor or subcontractor who undertakes with the owner, constructor, contractor or subcontractor, to perform work or supply services.
 - 4.7 **Ensure** – take every reasonable precaution to achieve the stated objective.
 - 4.8 **Fall Arrest System** – an assembly of components joined together so that when the assembly is connected to a fixed support, it is capable of arresting a workers fall; consists of a full body harness with back mounted “D” ring, a shock absorber lanyard, a lifeline, connecting hardware and anchorage point(s).
 - 4.9 **Fall Protection** – specialized personal protective equipment designed to prevent falls from height or to bring an individual to a safe and controlled stop after falling
 - 4.10 **Fall Restricting System** – a type of fall arrest system that has been designed to limit a worker’s fall to a specific distance.
 - 4.11 **Guardrail System:** an assembly of components joined together to provide a barrier to prevent a person from falling from the edge of a surface.
 - 4.12 **Kilonewton (kN)** – a unit of force, approximately equivalent to 225 pounds of force (See Appendix D).
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- 4.13 **Safety Net:** a safety net that complies with O. Reg. 213/91, section 26.8, and is located and supported in such a way that it arrests the fall of a worker who may fall into it without endangering the worker.
- 4.14 **Swing-fall** – the hazard of swinging into an obstruction after falling.
- 4.15 **Supervisor** – Person who has charge of a workplace or authority over a worker.
- 4.16 **Travel Restraint System** – an assembly of components capable of restricting a person’s movements on a work surface and preventing the person from reaching a location from which he or she could fall that includes; equipment designed to keep a person away from the location of the fall hazard; a mechanism which restricts the movement of a person on a work surface; consists of a full-body harness, a lifeline or retractable lanyard, and an anchorage point also referred to as a fall restraint.
- 4.17 **Worker** – Person who performs work or supplies services for monetary compensation
- 4.18 **Worker Safety Representative** – Worker member of a JHSC or a Health and Safety representative as defined in the OHSA.
- 4.19 **Acronyms**
- CJHSC** – Central Joint Health and Safety Committee
- EOHSS** – Environmental and Occupational Health Support Services
- FAS**- Fall Arrest System
- FHSc Safety Office**- Faculty of Health Science Safety Office
- JHSC** – Joint Health and Safety Committee
- MOL** – Ministry of Labour
- OHSA** - Occupational Health and Safety Act
- RMSG** -Risk Management Support Group
- SOP** – Standard Operating Procedure

5 RESPONSIBILITIES

5.1 Role of Senior Managers (Directors / Deans / Chairs / Department Managers)

Senior Managers shall:

- provide the resources and direction necessary to support and maintain an effective Fall Protection Program; and
- whenever feasible, eliminate the need for work at elevations that present fall hazards by utilizing engineering solutions in the design and retrofit of new and existing facilities.

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5.2 Facility Services Department / Other Departments Issuing Contracts for Construction Projects and/or Facilities and Equipment Repairs

- ensure that the requirements outlined in the McMaster University Fall From Heights Protection Program and other relevant programs defined by McMaster University Risk Management Manual are complied with;
- ensure that contractors and subcontractors demonstrate by documentation their ability to manage projects in compliance with McMaster University Risk Management Programs and Policies and the OHSA and related regulations under O. Reg. 851 RRO. 1990 and O. Reg. 213 / 91 prior to being awarded contracts for work on McMaster University property; and
- ensure that regular inspections and safety audits are conducted on all project sites.

5.3 Contractors


Contractors and Sub-contractors shall:

- ensure that all of the conditions outlined in the McMaster University Fall From Heights Protection Program and other relevant programs defined in the McMaster University Risk Management Manual are strictly enforced while working on McMaster University property;
- ensure that all related requirements under OHSA and O. Reg. 851 RRO. 1990 and O. Reg. 213 / 91 Construction Projects as noted in Appendix A are strictly enforced while working on McMaster University property; and
- ensure that only competent workers are assigned to the project.

5.4 Supervisors

Supervisors shall:

- be trained and authorized to recognize and supervise work that involves the use of fall protection equipment;
 - ensure that all fall arrest system and travel restraint system components are CSA approved;
 - ensure that all workers assigned to work that requires the use of fall protection equipment are trained and deemed to be competent in the safe use, care and maintenance of the equipment;
 - ensure that the components of fall arrest and travel restraint systems are inspected by a competent person before and after each use and that defective components are taken out of service immediately;
 - a written record of such inspection and approval for continued use should be retained
 - implement a buddy system whenever fall arrest systems are required;
 - provide an SOP for all work that involves the use of fall protection equipment; and
 - provide a written rescue plan for fallen worker in advance of all work requiring the use of a fall arrest system or safety net.
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5.5 Authorized Worker

Authorized Workers shall:

- participate in the development of the SOP and rescue plan for all work involving the use of fall arrest equipment or safety nets;
- follow the safety procedures outlined in the SOP and observe the regulatory requirements noted in Appendix A;
- inspect all of the components of fall arrest and travel restraint equipment before and after each use and report defective components to their immediate supervisor; and
- report all incidents involving personal injury or property damage to their immediate supervisor.

5.6 Role of Environmental and Occupational Health Services (EOHSS) and Faculty of Health Sciences Safety Office (FHSc):

The EOHSS and/or FHSc Safety Office shall:

- provide advice regarding the development of SOP's for work involving the use of fall arrest equipment or safety nets; and
- conduct periodic audits of the effectiveness of the Falls from Heights Protection Program and update the program as necessary.

5.7 Role of the Joint Health and Safety Committees

The JHSCs shall:

- review SOP's related to the Fall Protection Program; and
- assess the effectiveness of the program as part of the safety inspection process.

5.8 Role of the Central Joint Health and Safety Committee:


The CJHSC shall:

- Review and make comment on the Falls from Heights Protection Program on a regular basis.

6 PROCEDURES

6.1 Approval of Work at Elevations that Present Fall Hazards

- 6.1.1 Fall protection strategies (e.g. enclosures, barriers and guardrail systems, protective coverings, travel restraint systems or fall arrest system) shall be approved in writing by the responsible supervisor and or contractor after consultation with the worker safety representative and when appropriate a representative from the RMSG.
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6.2 **Work Procedures**


- 6.2.1 The regulatory procedures for work involving the falling hazards as described in Appendix A shall be deemed to be minimum standards of protection for work at such heights. (A fall from-height risk can exist at heights exceeding 0.6 metres or 2 feet).
- 6.2.2 A fall arrest systems shall be used by University employees, students and contractors whenever a fall-from-height risk cannot be eliminated.
- 6.2.3 A full body harness must be used when using a fall arrest system.
- 6.2.4 All fall arrest system components, travel restraint components and system components shall be CSA-approved.
- 6.2.5 Fall arrest system components and travel restraint system components shall be inspected by a competent worker before and after each use. Defective components shall be taken out of service immediately. Temporary anchoring points for travel restraint and fall arrest systems shall be selected with input from a professional engineer. Permanent anchors shall be installed according to the Building code and shall be conspicuously labeled for the intended purpose and with load capacity information.
- 6.2.6 Contractors shall provide written fall protection strategies to the University Project Manager or Coordinator whenever the work site involves fall-from-height hazards. (This documentation may be part of the contractor's Safety Management Plan).
- 6.2.7 An SOP must be put in place for all work involving the use of fall arrest equipment.

6.3 **Emergency Procedures**

- 6.3.1 A written rescue plan for fallen workers shall be provided by the workplace supervisor in advance of all work requiring a fall arrest system. (See Appendix C.).
- 6.3.2 A Buddy system shall be documented and implemented whenever fall arrest systems are deemed to be necessary for the protection of the worker. This shall include co-workers trained as spotters to watch the individuals required to use fall arrest equipment, and to activate the emergency plan in the event of a fall.


6.4 **Training**

- 6.4.1 All supervisors and individual employees and students involved with work that requires the use fall protection equipment shall be trained and authorized as being competent in the use and care of such equipment. Such training shall include but not be limited to the following
 - (i) the requirements of the McMaster University Fall Protection Program.
 - (ii) The regulatory requirements for work involving the use of fall arrest and travel restraint systems (See Appendix A.).
 - (iii) Ten Essential Principles for Users of Fall Arrest Systems (FAS) (See Appendix B).
 - (iv) Strategies to Eliminate the Risk of Falls From Heights (See Appendix B).
 - (v) Hands on training in the selection, use, care, inspection and proper storage of fall arrest and travel restraint systems.
 - (vi) Emergency procedure as indicated in Section 6.3.
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7 RECORDS

- 7.1 Equipment inspection and safety training records for work involving the use of fall arrest and travel restraint systems shall be maintained by the operating department and kept for a period of three years after the use of such equipment.

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Appendix A

(Note Metric Conversion Table: Appendix D.).

Requirements of O. Reg. 851 for Industrial Establishments Section 85

85. Where a worker is exposed to the hazard of falling and the surface to which he or she might fall is more than three metres below the position where he or she is situated,

- (a) the worker shall wear a serviceable safety belt or harness and lifeline adequately secured to a fixed support and so arranged that the worker cannot fall freely for a vertical distance of more than 1.5 metres; and
- (b) the fall arresting system described in clause (a) shall,
 - (i) have sufficient capacity to absorb twice the energy and twice the load that under the circumstances of its use may be transmitted to it, and
 - (ii) be equipped with a shock absorber or other devices to limit the maximum arresting force to 8.0 kilonewtons to the wearer. R.R.O. 1990, Reg. 851, s. 85.

Requirements of O. Reg. 213/91 for Construction Projects, Section 26, Section 207

26. Sections 26.1 to 26.9 apply where a worker is exposed to any of the following hazards:


1. Falling more than 3 metres.
2. Falling more than 1.2 metres, if the work area is used as a path for a wheelbarrow or similar equipment.
3. Falling into operating machinery.
4. Falling into water or another liquid.
5. Falling into or onto a hazardous substance or object.
6. Falling through an opening on a work surface. O. Reg. 145/00, s. 12; O. Reg. 85/04, s. 4.

26.1 (1) A worker shall be adequately protected by a guardrail system that meets the requirements of subsections 26.3 (2) to (8). O. Reg. 145/00, s. 12.

(2) Despite subsection (1), if it is not reasonably possible to install a guardrail system as that subsection requires, a worker shall be adequately protected by at least one of the following methods of fall protection:

1. A travel restraint system that meets the requirements of section 26.4.
2. A fall restricting system that meets the requirements of section 26.5.
3. A fall arrest system, other than a fall restricting system designed for use in wood pole climbing, that meets the requirements of section 26.6.
4. A safety net that meets the requirements of section 26.8. O. Reg. 145/00, s. 12; O. Reg. 85/04, s. 5 (1).

(3) The components of any system listed in subsection (2) shall be designed by a professional engineer in accordance with good engineering practice, and shall meet the requirements of any of the following National Standards of Canada standards that are applicable:

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1. CAN/CSA-Z259.1-05: Body Belts and Saddles for Work Positioning and Travel Restraint.
2. CAN/CSA-Z259.2.1-98 (R2008): Fall Arresters, Vertical Lifelines and Rails.
3. CAN/CSA-Z259.2.2-98 (R2004): Self-Retracting Devices for Personal Fall-Arrest Systems.
4. CAN/CSA-Z259.2.3-99 (R2004): Descent Control Devices.
5. CAN/CSA-Z259.10-06: Full Body Harnesses.
6. CAN/CSA-Z259.11-05: Energy Absorbers and Lanyards.
7. CAN/CSA-Z259.12-01 (R2006): Connecting Components for Personal Fall Arrest Systems (PFAS).
8. CAN/CSA-Z259.14-01 (R2007): Fall Restrict Equipment for Wood Pole Climbing.

(4) Before any use of a fall arrest system or a safety net by a worker at a project, the worker's employer shall develop written procedures for rescuing the worker after his or her fall has been arrested. O. Reg. 145/00, s. 12.

26.2 (1) An employer shall ensure that a worker who may use a fall protection system is adequately trained in its use and given adequate oral and written instructions by a competent person. O. Reg. 145/00, s. 13.

(2) The employer shall ensure that the person who provides the training and instruction referred to in subsection (1) prepares a written training and instruction record for each worker and signs the record. O. Reg. 145/00, s. 13.

(3) The training and instruction record shall include the worker's name and the dates on which training and instruction took place. O. Reg. 145/00, s. 13.


(4) The employer shall make the training and instruction record for each worker available to an inspector on request. O. Reg. 145/00, s. 13.

26.3 (1) Despite paragraph 1 of section 26, a guardrail system that meets the requirements of this section shall be used if a worker has access to the perimeter or an open side of any of the following work surfaces and is exposed to a fall of 2.4 metres or more:

1. A floor, including the floor of a mezzanine or balcony.
2. The surface of a bridge.
3. A roof while formwork is in place.
4. A scaffold platform or other work platform, runway or ramp. O. Reg. 145/00, s. 14.

(2) One of the following precautions shall be used to prevent a worker from falling through an opening on a work surface:

1. A guardrail system that meets the requirements of this section.
2. A protective covering that,
 - i. completely covers the opening,
 - ii. is securely fastened,
 - iii. is adequately identified as covering an opening,

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iv. is made from material adequate to support all loads to which the covering may be subjected, and

v. is capable of supporting a live load of at least 2.4 kilonewtons per square metre without exceeding the allowable unit stresses for the material used. O. Reg. 145/00, s. 14.

(3) The guardrail system or protective covering required under subsection (1) or (2) may be removed temporarily to perform work in or around the opening if a worker is adequately protected and signs are posted in accordance with subsections 44 (1) and (2). O. Reg. 145/00, s. 14.

(4) The following are the specifications for a guardrail system:

1. It shall have a top rail, an intermediate rail and a toe board.
2. The intermediate rail may be replaced by material that can withstand a point load of 450 newtons applied in a lateral or vertical downward direction.
3. Subject to subsection 116 (8), the top of the guardrail system shall be located at least 0.9 metres but not more than 1.1 metres above the surface on which the system is installed.
4. The intermediate rail shall be located midway between the top rail and the toe board.
- 4.1 The toe board shall extend from the surface to which the guardrail system is attached to a height of at least 89 millimetres.
5. If the guardrail system is located at the perimeter of a work surface, the distance between the edge of the surface and the guardrail system shall not be greater than 300 millimetres. O. Reg. 145/00, s. 14.


(5) A guardrail system shall be capable of resisting anywhere along the length of the system the following loads when applied separately, without exceeding the allowable unit stress for each material used:

1. A point load of 675 newtons applied in a lateral direction to the top rail.
2. A point load of 450 newtons applied in a vertical downward direction to the top rail.
3. A point load of 450 newtons applied in a lateral or vertical downward direction to the intermediate rail, or midway between the top rail and the toe board.
4. A point load of 225 newtons applied in a lateral direction to the toe board. O. Reg. 145/00, s. 14.

(6) The distance between any two adjacent posts of the guardrail system may be greater than 2.4 metres only if the system is capable of resisting the loads specified in subsection (5) increased in proportion to the greater distance between the posts. O. Reg. 443/09, s. 2 (2).

(7) The following additional requirements apply to a guardrail system that is made of wood:

1. The wood shall be spruce, pine or fir (S-P-F) timber of construction grade quality or better and shall not have any visible defect affecting its load-carrying capacity.
 2. The wood shall be free of sharp objects such as splinters and protruding nails.
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3. The system shall have posts that are at least 38 millimetres by 89 millimetres, are securely fastened to the surface and are spaced at intervals of not more than 2.4 metres.

4. The top rail and the intermediate rail shall each be at least 38 millimetres by 89 millimetres. O. Reg. 145/00, s. 14.

(7.1) If a guardrail system that is made of wood is constructed and installed so that it is capable of resisting all loads that it may be subjected to by a worker, the following do not apply:

1. The requirement in paragraph 2 of subsection (4) that the replacement material can withstand a point load of 450 newtons.

2. Subsections (5) and (6). O. Reg. 443/09, s. 2 (4).

(8) The following additional requirements apply to a guardrail system that is made of wire rope:

1. The top rail and intermediate rail shall be made of wire rope that is at least 10 millimetres in diameter, and the rope shall be kept taut by a turnbuckle or other device.

2. The outward deflection of the top rail and intermediate rail resulting from the loads specified in subsection (5) shall not extend beyond the edge of a work surface.

3. The system shall have vertical separators at intervals of not more than 2.4 metres and horizontal supports at intervals of not more than 9 metres.

26.4 (1) A travel restraint system shall consist of a full body harness with adequate attachment points or a safety belt. O. Reg. 145/00, s. 14.

(2) The full body harness or safety belt shall be attached by a lifeline or lanyard to a fixed support that meets the requirements of section 26.7. O. Reg. 145/00, s. 14.

(3) The travel restraint system shall be inspected by a competent worker before each use. O. Reg. 145/00, s. 14.

(4) If a component of the travel restraint system is found to be defective on inspection, the defective component shall immediately be taken out of service. O. Reg. 145/00, s. 14.

26.5 (1) A fall restricting system that is not designed for use in wood pole climbing shall consist of an assembly of components that is,


(a) attached to an independent fixed support that meets the requirements of section 26.7; and

(b) designed and arranged in accordance with the manufacturer's instructions and so that a worker's free fall distance does not exceed 0.6 metres. O. Reg. 85/04, s. 6.

(2) A fall restricting system that is designed for use in wood pole climbing,

(a) shall consist of an assembly of components that is designed and arranged in accordance with the manufacturer's instructions; and

(b) shall not allow pole slippage in excess of the distances set out in the applicable National Standards of Canada standard referred to in subsection 26.1 (3). O. Reg. 85/04, s. 6.

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(3) A fall restricting system shall be inspected by a competent worker before each use. O. Reg. 85/04, s. 6.

(4) If a component of the fall restricting system is found to be defective on inspection, the component shall be taken out of service immediately. O. Reg. 85/04, s. 6.

(5) If a worker who is using the fall restricting system falls or slips more than the distance determined under clause (1) (b) or (2) (b), as the case may be, the system shall be taken out of service immediately and shall not be used again by a worker unless all components of the system have been certified by the manufacturer as being safe for reuse. O. Reg. 85/04, s. 6.

26.6 (1) A fall arrest system shall consist of a full body harness with adequate attachment points and a lanyard equipped with a shock absorber or similar device. O. Reg. 145/00, s. 14.

(2) The fall arrest system shall be attached by a lifeline or by the lanyard to an independent fixed support that meets the requirements of section 26.7. O. Reg. 145/00, s. 14.

(3) The fall arrest system shall be arranged so that a worker cannot hit the ground or an object or level below the work. O. Reg. 145/00, s. 14.

(4) Despite subsection (1), the fall arrest system shall not include a shock absorber if wearing or using one could cause a worker to hit the ground or an object or level below the work. O. Reg. 145/00, s. 14.

(5) The fall arrest system shall not subject a worker who falls to a peak fall arrest force greater than 8 kilonewtons. O. Reg. 145/00, s. 14.

(6) The fall arrest system shall be inspected by a competent worker before each use. O. Reg. 145/00, s. 14.

(7) If a component of the fall arrest system is found to be defective on inspection, the defective component shall immediately be taken out of service. O. Reg. 145/00, s. 14.

(8) If a worker who is using the fall arrest system falls, the system shall be immediately removed from service and shall not be used again by a worker unless all components of the system have been certified by the manufacturer as being safe for re-use. O. Reg. 145/00, s. 14.


(9) Subsections (1) to (8) do not apply to fall restricting systems designed for use in wood pole climbing. O. Reg. 85/04, s. 7.

26.7 (1) A permanent anchor system shall be used as the fixed support in a fall arrest system, fall restricting system or travel restraint system if the following conditions are met:

1. The anchor system has been installed according to the *Building Code*.
2. It is safe and practical to use the anchor system as the fixed support. O. Reg. 145/00, s. 14.

(2) If the conditions set out in subsection (1) are not met, a temporary fixed support shall be used that meets the following requirements:

1. Subject to paragraph 2, a support used in a fall arrest system shall be capable of supporting a static force of at least 8 kilonewtons without exceeding the allowable unit stress for each material used.
 2. If a shock absorber is also used in the fall arrest system, the support shall be capable of supporting a static force of at least 6 kilonewtons without exceeding the allowable unit stress for each material used.
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3. Subject to paragraph 4, a support used in a fall restricting system must be capable of supporting a static force of at least 6 kilonewtons without exceeding the allowable unit stress for each material used.
4. Paragraph 3 does not apply to a support that is used in accordance with the manufacturer's written instructions and is adequate to protect a worker.
5. A support used in a travel restraint system shall be capable of supporting a static force of at least 2 kilonewtons without exceeding the allowable unit stress for each material used. O. Reg. 145/00, s. 14.

(3) Despite the requirements listed in subsection (2), the support capacity of a temporary fixed support used in a fall protection system may be determined by dynamic testing in accordance with good engineering practice to ensure that the temporary fixed support has adequate capacity to arrest a worker's fall. O. Reg. 145/00, s. 14.

(4) A fixed support shall not have any sharp edges that could cut, chafe or abrade the connection between it and another component of the system. O. Reg. 145/00, s. 14.

(5) Subsections (1) to (4) do not apply to fall restricting systems designed for use in wood pole climbing. O. Reg. 85/04, s. 8.

26.8 (1) A safety net shall be designed, tested and installed in accordance with ANSI Standard 10.11-1989, Personnel and Debris Nets for Construction and Demolition Operations. O. Reg. 145/00, s. 14.

(2) The safety net shall be installed by a competent worker. O. Reg. 145/00, s. 14.

(3) A professional engineer or a competent person under the engineer's supervision shall inspect and test the installation of the safety net before it is put in service. O. Reg. 145/00, s. 14.

(4) The engineer shall document the inspection and testing of the safety net. O. Reg. 145/00, s. 14; O. Reg. 85/04, s. 9.

(5) A copy of the document shall be kept at the project while the safety net is in service. O. Reg. 145/00, s. 14.

26.9 (1) This section applies to a lanyard or lifeline that is part of a travel restraint system or a fall arrest system. O. Reg. 145/00, s. 14.

(2) The following requirements apply to a lanyard or a lifeline:


1. It shall not be used in such a way that it is likely to be cut, chafed or abraded.
2. It shall not be subjected to extreme temperature, flame, abrasive or corrosive materials or other hazards that may damage it.
3. The free end of the lanyard or lifeline shall be kept clear of equipment and machinery. O. Reg. 145/00, s. 14.

(3) Only one person at a time may use a lanyard. O. Reg. 145/00, s. 14.

(4) The connecting ends of a lanyard shall be wrapped around a protective thimble and securely fastened with a swaged fitting or eye splice supplied by the manufacturer of the lanyard. O. Reg. 145/00, s. 14.

(5) A horizontal or vertical lifeline shall be kept free from splices or knots, except knots used to connect it to a fixed support. O. Reg. 145/00, s. 14.

(6) Only one person at a time may use a vertical lifeline. O. Reg. 145/00, s. 14.


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- (7) A vertical lifeline shall,
- (a) extend to the ground; or
 - (b) have a positive stop that prevents the rope grab or other similar device from running off the end of the lifeline. O. Reg. 145/00, s. 14.
- (8) The following requirements apply to a horizontal lifeline system:
1. It shall be designed by a professional engineer in accordance with good engineering practice.
 2. The design may be a standard design or a custom design.
 3. The design shall,
 - i. show the arrangement of the system including the anchorage or fixed support system,
 - ii. indicate the components used,
 - iii. state the number of workers that can safely be attached to it,
 - iv. set out instructions for installation or erection, and
 - v. show the design loads for the system.
 4. The system shall be installed or erected, and maintained, in accordance with the professional engineer's design.
 5. Before each use, the system shall be inspected by a professional engineer or a competent worker designated by a supervisor.
 6. The constructor shall keep the design at the project while the system is in use. O. Reg. 145/00, s. 14.

26.10, 26.11 Revoked: O. Reg. 85/04, s. 10.

207. (1) If a built-up roof is being constructed, repaired or resurfaced, a barrier shall be placed in the immediate work area at least two metres from the perimeter of the roof. O. Reg. 213/91, s. 207 (1).

(2) The barrier shall consist of portable weighted posts supporting a taut chain, cable or rope that is located 1.1 metres above the roof level. O. Reg. 213/91, s. 207 (2).

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Appendix B

Ten Essential Principles for Users of Fall Arrest Systems (FAS) (i)

1. Inspect your equipment before every use (e.g. The full harness should be inspected to determine such faults as cut or damaged webbing, bent rivets, worn or broken stitching, broken or improperly functioning hardware, and if necessary, repairs should be made or complete harness units should be replaced. Such repairs should be made by the manufacturer or her/his authorized agent.
2. Don and adjust your harness properly.
3. Use shock absorber or your shock absorbing lanyard whenever possible.
4. Connect all components of your FAS using only compatible connecting hardware.
5. Attach your FAS only to a suitable anchorage point.
6. Keep your fall distance to a minimum.
7. Consider the conditions of your workplace when choosing equipment.
8. Care for your equipment as you would care for yourself.
9. Know the rescue procedure and equipment in case you should fall.
10. Be properly trained to use fall any fall protection equipment.

Strategies to Eliminate the Risk of Falls from Heights

- Remove the reason for work at heights;
- Move the task to floor or ground level;
- Ensure that the elevated workplace is capable of supporting your weight;
- Install permanent safe access to the elevated workplace;
- Build safe work platforms or use a cage or lift;
- Enclose the elevated workplace;
- Install permanent rigid covers over openings and/or erect barriers or guardrails;
- Select anchorage points carefully for fall restraint and fall arrest systems.

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Appendix C.

**SAMPLE EMERGENCY RESCUE PROCEDURE FOR FACILITY SERVICES
WORKERS USING FALL ARREST SYSTEMS**

1. Workers to carry cellular phone/radio at all times when using fall arrest systems.
 2. Spotter at ground level to carry cellular phone/radio at all times during hours of duty.
 3. Workers using fall arrest systems and spotters are to liaison before start of work.
 4. Daily, before work begins, complete a cellular/radio check with Security and give both call back numbers.
 5. Before starting work assesses what rescue equipment may be needed in case of emergency i.e. aerial ladder truck, scissor lift, etc.
 6. Report state of injured/ill worker to contact/supervisor
 7. Contact numbers to call:
 - Facility Service Desk – Ext. 24740
 - Security (Non-Emergency) – Ext 24281
 - Security (Emergency)-88
 8. This procedure must be placed in a conspicuous place at the work site and carried by both the worker(s) and spotter(s).
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Appendix D.

Metric Conversion Table

| Metric | Imperial Equivalent |
|-----------------|---------------------|
| .6 Metres | 2 ft |
| .9 Metres | 3 ft. |
| 1.2 Metres | 3 ft 11 ins |
| 2.4 Metres | 7 ft 10 ins |
| 3 Metres | 9ft 10 ins |
| 9 Metres | 29 ft 6 ins |
| 10 Millimetres | 0.4 ins |
| 38 Millimetres | 1.5 ins |
| 89 Millimetres | 3.5 ins |
| 100 Millimetres | 4 ins |
| 300 Millimetres | 11.8 ins |
| 225 Newtons | 50.6 lbs. force |
| 450 Newtons | 101.16 lbs. force |
| 650 Newtons | 146.13 lbs. force |
| 6.0 KiloNewtons | 1344.8 lbs. force |
| 8.0 KiloNewtons | 1798.5 lbs. force |