Fall Protection – Canadian Legislation for Anchor Strength



What does legislation state regarding anchor strength?

Employers are required by law to provide an appropriate anchor to support workers when using personal fall protection equipment. Below is a table for guidance purposes that lists the requirements of the anchor strengths that are used for fall protection by jurisdiction.

NOTE that other requirements may be listed in different sections, regulations, or Acts that are not listed in this table. For more details, consult the legislation directly.

Always consult the legislation that applies in your situation, and with your jurisdiction for complete information.

Table 1
Legislation regarding Anchor Strength

Jurisdiction	Act, regulations, etc.	General requirement excerpts (For more details, consult the legislation directly.)

Federal (Canada)	**Regulations, SOR/86-304, Sections 12.09**	**No specific details are given and referenced to follow CSA standards.** **Protection Equipment and Procedures** **Section 12.09 Fall protection** **12.09 (1) If there is a risk of injury due to falling in a work place and the fall-protection plan requires that a personal fall-protection system be used, the employer must provide such a system to every person — other than a person who is installing or dismantling a fall-protection system — who is granted access to the work place.** **(2) A personal fall-protection system must meet the requirements set out in the following CSA Group standards:** **(a) Z259.16 , *Design of active fall-protection systems;* and** **(b) Z259.17 , *Selection and use of active fall-protection equipment and systems.*** **(3) The components of a personal fall-protection system must meet the requirements set out in the following CSA Group standards:** **(a) Z259.1 , *Body belts and saddles for work positioning and travel restraint*;** **(b) Z259.2.2 , *Self-retracting devices*;** **(c) Z259.2.3 , *Descent devices*;** **(d) Z259.2.4 , *Fall arresters and vertical rigid rails*;** **(e) Z259.2.5 , *Fall arresters and vertical lifelines*;** **(f) Z259.10 , *Full body harnesses*;** **(g) Z259.11 , *Personal energy absorbers and lanyards*;** **(h) Z259.12 , *Connecting components for personal fall arrest systems (PFAS)*;** **(i) Z259.13 , *Manufactured horizontal lifeline systems*;** **(j) Z259.14 , *Fall restrict equipment for wood pole climbing*; and** **(k) Z259.15 , *Anchorage connectors*.**
British Columbia	**Occupational Health and Safety Regulations, B.C. Reg. 296/97 Part 11, Fall Protection, Section 11.6**	**Section 11.6 Anchors** **11.6 (1) In a temporary fall restraint system, an anchor for a personal fall protection system, must have an ultimate load capacity in any direction in which a load may be applied of at least** **(a) 3.5 kN (800 lbs), or** **(b) four times the weight of the worker to be connected to the system.** **(2) Each personal fall protection system that is connected to an anchor must be secured to an independent attachment point.** **(3) In a temporary fall arrest system, an anchor for a personal fall protection system must have an ultimate load capacity in any direction required to resist a fall of at least** **(a) 22 kN (5 000 lbs), or** **(b) two times the maximum arrest force.** **(4) A permanent anchor for a personal fall protection system must have an ultimate load capacity in any direction required to resist a fall of at least 22 kN (5 000 lbs).**

Alberta	**Occupational Health and Safety Code, 2009** **Part 9, Fall Protection** **Sections 152 and 152.1**	**Anchors** **Section 152 Anchor strength – permanent** **152. (1) An employer must ensure that a permanent anchor is capable of safely withstanding the impact forces applied to it and has a minimum breaking strength per attached worker of 16 kilonewtons or two times the maximum arresting force in any direction in which the load may be applied.** **152. (2) Subsection (1) does not apply to anchors installed before July 1, 2009.** **152. (3) Subsection (1) does not apply to the anchors of flexible horizontal lifeline systems that must meet the requirements of subsection 153(1).** **152. (4) The employer must ensure that an anchor rated at two times the maximum arresting force is designed, installed and used in accordance with** **(a) the manufacturer’s specifications, or** **(b) specifications certified by a professional engineer.** **Section 152.1 Anchor strength – temporary** **152.1. (1) An employer must ensure that a temporary anchor used in a travel restraint system** **(a) has a minimum breaking strength in any direction in which the load may be applied of at least 3.5 kilonewtons per worker attached,** **(b) is installed, used and removed according to the manufacturer’s specifications or specifications certified by a professional engineer,** **(c) is permanently marked as being for travel restraint only, and** **(d) is removed from use on the earliest of** **(i) the date on which the work project for which it is intended is completed, or** **(ii) the time specified by the manufacturer or professional engineer.** **152.1. (2) An employer must ensure that a temporary anchor used in a personal fall arrest system** **(a) has a minimum breaking strength in any direction in which the load may be applied of at least 16 kilonewtons or two times the maximum arresting force per worker attached,** **(b) is installed, used and removed according to the manufacturer’s specifications or specifications certified by a professional engineer, and,** **(c) is removed from use on the earliest of** **(i) the date on which the work project for which it is intended is completed, or** **(ii) the time specified by the manufacturer or professional engineer.**

Saskatchewan	**Occupational Health and Safety Regulations, 1996, R.R.S., C. O-1.1, R. 1 Sections 101, 102 and 116.3**	**Section 101 Lifelines** **101. (1) Unless otherwise specifically provided, an employer, contractor or owner shall ensure that a lifeline:** **(f) is fastened to a secure anchor point that:** **(i) has a breaking strength of at least 22.2 kilonewtons; and** **(ii) is not used to suspend any platform or other load;** **Section 102 Personal fall arrest systems** **102. (1) An employer or contractor shall ensure that a personal fall arrest system and connecting linkage required by these regulations are approved and maintained.** **(2) An employer or contractor shall ensure that a personal fall arrest system required by these regulations:** **(a) prevents a worker from falling more than 1.2 metres without a shock absorber;** **(b) where a shock absorber is used, prevents a worker from falling more than two metres or the limit specified in the manufacturer’s specifications, whichever is less;** **(c) applies a peak fall-arrest force not greater than eight kilonewtons to a worker; and** **(d) is fastened to a lifeline or to a secure anchor point that has a breaking strength of at least 22.2 kilonewtons.** **Section 116.3 Anchor Points and Anchor Plates** **116.3 (1) Where a worker uses a personal fall arrest system or a travel restraint system, an employer, contractor or owner shall ensure that an anchor point or anchor plate that meets the requirements of this section is used as part of that system.** **(2) An employer, contractor or owner shall ensure that a temporary anchor point used in a travel restraint system:** **(a) has an ultimate load capacity of at least 3.5 kilonewtons (800 pounds-force) per worker attached in any direction in which the load may be applied;** **(b) is installed and used according to the manufacturer’s specifications;** **(c) is permanently marked as being for travel restraint only; and** **(d) is removed by the last worker from use on the earlier of:** **(i) the date the work project for which it is intended is completed; and** **(ii) the time specified by the manufacturer.** **(3) An employer, contractor or owner shall ensure that a permanent anchor point used in a travel restraint system associated with any new construction project on or after the date this section comes into force:** **(a) has an ultimate load capacity of at least 8.75 kilonewtons (2 000 pounds-force) per worker attached in any direction in which the load may be applied;** **(b) is installed and used according to the manufacturer’s specifications; and** **(c) is permanently marked as being for travel restraint only.** **(4) In the case of a personal fall arrest system installed on or after one year after the date this section comes into force, an employer, contractor, owner or supplier shall ensure that anchor points to which the personal fall arrest system is attached have an ultimate load capacity of at least 22.2 kilonewtons (5000 pounds-force) per worker attached in any direction in which the load may be applied.**

Manitoba	**Workplace Safety and Health Regulation, Man. Reg. 217/2006 Part 14, Fall Protection, Sections 14.14**	**Section 14.14 Fixed support system requirements** **14.14 (1) The owner of a building or structure must ensure that a permanent anchorage system used as the fixed support in a travel restraint system or fall arrest system for that building meets the following requirements:** **(a) the anchor has an ultimate capacity of at least 22.2 kN in any direction in which the load may be applied for each worker attached;** **(b) the anchorage system is certified by a professional engineer as having the required load capacity;** **(c) where the anchorage system is used in conjunction with a suspended work platform, the system is designed, constructed and used in accordance with CAN/CSA Standard-Z91-02 *Health and Safety Code for Suspended Equipment Operations* and CAN/CSA-Z271-10 (R15) *Safety code for suspended platforms.*** **(2) When a permanent anchorage system cannot be used at a workplace, an employer must ensure that the temporary fixed support in a travel restraint system or fall arrest system meets the following requirements:** **(a) when a fall arrest system without a shock absorber is used, a support used in a fall arrest system must be capable of supporting a static force of at least 8 kN without exceeding the allowable unit stress for each material used in the fabrication of the anchor point;** **(b) when a shock absorber is used in a fall arrest system, the support must be capable of supporting a static force of at least 6 kN without exceeding the allowable unit stress for each material used in the fabrication of the anchor point;** **(c) a support used in a travel restraint system must be capable of supporting a static force of at least 2 kN without exceeding the allowable unit stress for each material used in the fabrication of the anchor point.**

Ontario	**Construction Projects Regulation, O. Reg. 213/91 Sections 26.7**	**Section 26.7** **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.** **(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.** **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.** **(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.**

Quebec	**Regulation respecting occupational health and safety, O.C. 885-2001 Division XXX, Means and Equipment for Individual and Group Protection Section 349 And Safety Code for the Construction Industry, CQLR c. S-2.1, r. 4. Section 2.10.15**	**Regulation respecting occupational health and safety:** **Section 349 Securing to an anchorage system:** **The fall arrest connecting device of a full body harness shall be secured to one of the following anchorage systems:** **(1) a single point of anchorage with one of the following characteristics:** **(a) have a breaking strength of at least 18 kN;** **(b) be designed and installed in accordance with an engineer’s plan in compliance with CSA Standard Z259.16 Design of Active Fall-Protection Systems, and** **i. have a strength equal to twice the maximum arrest force as certified by an engineer; or** **ii. be certified in accordance with EN 795 Personal Protective Equipment against Falls – Anchor devices – published by the European Committee for Standardization or with CAN/CSA Standard Z259.15 Anchorage Connectors;** **(2) a flexible continuous anchorage system (horizontal lifeline) with one of the following characteristics:** **(a) be in compliance with the following minimum standards:** **i. have a steel cable of a minimum diameter of 12 mm slackened to a minimum angle of 1 vertical to 12 horizontal, or 5° from horizontal;** **ii. have a maximum distance of 12 m between the end anchors;** **iii. have end anchors with a breaking strength of at least 90 kN;** **Safety Code for the Construction Industry** **Section 2.10.15. Anchorage system:** **The fall arrest connecting device of a safety harness must be secured to** **(1) a single point of anchorage with one of the following characteristics:** **(a) a breaking strength of at least 18 kN; or** **(b) designed and installed in accordance with an engineer’s plan in compliance with CSA Standard Z259.16 Design of Active Fall-Protection Systems, and having one of the following characteristics:** **(i) a strength equal to twice the maximum fall arrest force as certified by an engineer; or** **(ii) certified in accordance with EN 795 Personal Protective Equipment against Falls – Anchor devices – published by the European Committee for Standardization or with CAN/CSA Standard Z259.15 Anchorage Connectors;** **(2) a flexible continuous anchorage system (horizontal life line) with one of the following characteristics:** **(a) in compliance with the following minimum standards:** **(i) a steel cable of a minimum diameter of 12 mm slackened to a minimum angle of 1 vertical to 12 horizontal, or 5° from horizontal;** **(ii) a maximum distance of 12 m between the end anchors;** **(iii) end anchors with a breaking strength of at least 90 kN;** **(iv) not to be used by more than 2 workers at a time.**

New Brunswick	**General Regulation – N.B. Reg. 91-191 Part VII, Protective Equipment, Sections 49.2, 49.7 and 105**	**Section 49.2** **49.2 (1) An owner of a place of employment, an employer and a contractor shall each ensure that any fall-arresting system consists of the following:** **(a) a full body harness that is designed and rated by the manufacturer for the employee's body type and adjusted to fit the employee;** **(b) a self-retracting lanyard, an energy absorbing lanyard or a lanyard and energy absorber that is rated by the manufacturer for the employee;** **(c) unless it is a horizontal life line, an anchor point that is capable of withstanding a 22 kN force or, if used under the direction of a competent person, four times the maximum load that may be generated in the fall-arresting system.** **(2) An owner of a place of employment, an employer and a contractor shall each ensure that a fall-arresting system limits;** **(a) free falls to the shortest distance possible, which distance cannot exceed 1.8 m or a shock level on the body of 8 kN, and** **(b) the total fall distance to an amount less than the distance from the work area to any safe level, water or obstruction below.** **Section 49.7** **49.7 (1) When a horizontal life line system is used which is neither designed nor certified by an engineer and is not a pre-engineered system, an owner of a place of employment, an employer and a contractor shall each ensure it meets the following requirements:** **(a) the wire rope must have a diameter of a minimum of 13 mm with a breaking strength specified by the manufacturer of at least 89 kN;** **(b) connecting hardware such as shackles and turnbuckles must have an ultimate load capacity of at least 71 kN;** **(c) end anchor points shall have a load capacity of at least 71 kN;** **Section 105 Roofs** **105 (8) The owner of a place of employment, employer and contractor shall each ensure a travel restraint system** **(a) is rigged to prevent the employee from reaching an unguarded edge,** **(b) is, subject to paragraph (c), attached to an anchor point capable of supporting two times the maximum load likely to be applied to it, or** **(c) when it is used on a roof with a slope greater than 3 in 12, is attached to an anchor point that is capable of withstanding a 22 kN force or, if used under the direction of a competent person, four times the maximum load that may be generated in the fall-arresting system.**
Nova Scotia	**Workplace Health and Safety Regulations, N.S. Reg. 52/2013 Part 21, Fall Protection, Sections 21.15**	**Fall-Protection Systems** **Section 21.15 Anchorages** **21.15 An employer must ensure that all anchorages used as components of a fall-protection system are capable of withstanding the following forces in any direction in which the force may be applied:** **(a) 22 kN, for non-engineered anchorage;** **(b) 2 times the maximum arresting force anticipated, for an engineered anchorage.**

Prince Edward Island	**Fall Protection Regulations, EC2004-633 Section 3**	**Section 3 Fall arrest systems** **3. (1) A fall arrest system that is provided, in accordance with subsection 2(1), to a worker at a work area as a means of fall protection shall** **(a) be adequately secured to** **(i) an anchor point, or** **(ii) a lifeline that is** **(A) securely fastened to an anchor point, or** **(B) attached to a static line that is securely fastened to an anchor point that is capable of withstanding either the maximum load likely to be imposed on the anchor point or a load of 17.8 kN, whichever is greater;** **(b) include a lanyard** **(i) that is attached to an anchor point or lifeline, where practicable, above the shoulder of the worker, and** **(ii) that complies with CSA Standard Z259.1-95 Safety Belts and Lanyards;** **(c) prevent a free fall greater than 1.22 m where** **(i) the fall arrest system is not equipped with a shock absorption system that complies with CSA Standard Z259.11-M92 Shock Absorbers for Personal Fall-Arrest Systems and that reduces the shock level of any fall to less than 4 kN, or** **(ii) the combined free fall and shock absorbed deceleration distance exceeds the distance between the work area and a safe surface; and** **(d) include a full body harness that** **(i) is attached to a lanyard,** **(ii) is adjusted to fit the user of the harness, and** **(iii) complies with CSA Standard Z259.10-M90 Full Body Harnesses.**
Newfoundland and Labrador	**Occupational Health and Safety Regulations, 2012, N.L.R. 5/12 Part X, Fall Protection, Section 142**	**Section 142 Fall arrest system** **142. (1) A fall arrest system that is provided in accordance with section 141 shall** **(a) be adequately secured to** **(i) an anchorage point, or** **(ii) a lifeline that is** **(A) securely fastened to anchor points, or** **(B) attached to a static line that is securely fastened to anchorage points and that is capable of withstanding either the maximum load likely to be imposed on the anchorage point or a load of 22.2 kilonewtons, whichever is the greater;** **(b) include a lanyard** **(i) that is attached to an anchorage point or lifeline, where practicable, above the shoulder of the worker, and** **(ii) that complies with CSA Standard Z259.11 “Energy Absorbers and Lanyards”;** **142.(9) Where a fall arrest system is provided to an arborist, the fall arrest system shall** **(a) include a tree climbing or tree trimming harness or saddle;** **(b) be adequately secured to** **(i) an anchorage point, or** **(ii) a lifeline that is** **(A) securely fastened to anchorage points, or** **(B) attached to a static line that is securely fastened to anchorage points;** **(c) include a climbing rope or safety strap;** **(d) where practicable, include a second climbing rope or safety strap that** **(i) provides additional stability, and** **(ii) back-up fall protection; and** **(e) be capable of withstanding either the maximum load likely to be imposed or a load of 22.2 kilonewtons, whichever is the greater.**

Yukon	**Occupational Health and Safety Regulation, O.I.C. 2006/178 Roofing, Section 10.13**	**Section 10.13 Fall arrest** **10.13 (1) Where a fall arrest system is used, it shall conform to the requirements of Part 1 – General.** **(2) Where a fall restraint system is used, it shall be** **(a) rigged to allow the movement of workers only as far as the edge of the roof, and** **(b) attached to a secure anchor capable of supporting the loads that may be applied to it.** **(3) Any fall restraint system shall be installed and used in conformance with CSA Standard *Z259.1-05, Body Belts and Saddles for Work Positioning and Travel Restraint*, or other similar standard acceptable to the director.** **Section 10.75 Natural anchors** **10.75 (1) Each rappel line and fall arrest lifeline tied to a natural anchor such as a tree, stump or rock outcrop shall also be tied to a second anchor of an equal load capacity.** **(2) The ultimate load capacity of an anchor for a rappelling or fall protection line shall be at least 22 kN (5000 lbs.).**
Northwest Territories	**Occupational Health and Safety Regulations, R-039-2015 Part 9 Safeguards, storage, warning signs and signals, Sections 122**	**Section 122 Anchor points and anchor plates** **122. (1) If a worker uses a personal fall arrest system or a travel restraint system, an employer shall ensure that an anchor point or anchor plate meeting the requirements of this section is used as part of that system.** **(2) An employer shall ensure that a temporary anchor point used in a travel restraint system** **(a) has an ultimate load capacity of not less than 3.5 kN per worker attached in any direction that a load could be applied;** **(b) is installed and used according to the manufacturer’s specifications;** **(c) is permanently marked as being for travel restraint only; and** **(d) is removed from use on the earlier of** **(i) the date the work project for which it is intended is completed, and** **(ii) the time specified by the manufacturer.** **(3) An employer shall ensure that a permanent anchor point used in a travel restraint system** **(a) has an ultimate load capacity of not less than 22.5 kN per worker attached in any direction that a load could be applied;** **(b) is installed and used according to the manufacturer’s specifications; and** **(c) is permanently marked as being for travel restraint only.** **(4) If a personal fall arrest system is installed on or after one year after the date this section comes into force, an employer or supplier shall ensure that anchor points to which the personal fall arrest system is attached have an ultimate load capacity of not less than 8.75 kN per worker attached in any direction that a load could be applied.**

Nunavut	**General Safety Regulations, R.R.N.W.T. 1990, c. S-1, Part 7 Part 9 Safeguards, storage, warning signs and signals, Section 122**	**Section 122 Anchor points and anchor plates** **122. (1) If a worker uses a personal fall arrest system or a travel restraint system, an employer shall ensure that an anchor point or anchor plate meeting the requirements of this section is used as part of that system.** **(2) An employer shall ensure that a temporary anchor point used in a travel restraint system** **(a) has an ultimate load capacity of not less than 3.5 kN per worker attached in any direction that a load could be applied;** **(b) is installed and used according to the manufacturer’s specifications;** **(c) is permanently marked as being for travel restraint only; and** **(d) is removed from use on the earlier of** **(i) the date the work project for which it is intended is completed, and** **(ii) the time specified by the manufacturer.** **(3) An employer shall ensure that a permanent anchor point used in a travel restraint system** **(a) has an ultimate load capacity of not less than 22.5 kN per worker attached in any direction that a load could be applied;** **(b) is installed and used according to the manufacturer’s specifications; and** **(c) is permanently marked as being for travel restraint only.** **(4) If a personal fall arrest system is installed on or after one year after the date this section comes into force, an employer or supplier shall ensure that anchor points to which the personal fall arrest system is attached have an ultimate load capacity of not less than 8.75 kN per worker attached in any direction that a load could be applied.**

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