PRESIDING REGULATORY AUTHORITY REFERENCE

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Notes for Use:

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1. Purpose, Scope, and Exceptions

1.1. Purpose

1.1.1. The purpose of this document is to provide a resource to assist conducting work involving rope access and other forms of fall protection in accordance with the presiding regulatory authority.

1.1.2. This document is intended for use by:

1.1.2.1. ***Employers*** managing a fall protection program that may include the use of rope access.

1.1.2.2. ***Rope access technicians*** that use ***rope access systems*** and other fall protection systems.

1.2. Scope

1.2.1. This document provides an overview of the presiding regulatory authority structure and regulations as they pertain to rope access and other forms of fall protection.

1.2.2. System and component requirement values and references for rope access and other fall protection systems are provided when referenced within regulations.

1.3. Exceptions

1.3.1. This document is not a substitute for consulting a ***presiding regulatory authority*** regarding the regulations that may be applicable where work is conducted using ***rope access systems*** or other fall protection systems.

1.3.2. This document does not provide interpretations of values or other regulatory information.

2. Australia

2.1. General Information

2.1.1. Regulatory Structure

2.1.1.1. Safe Work Australia develops model regulations and codes of practice for adoption by the various Australian presiding regulatory authorities.

2.1.1.1.1. Model WHS regulations

2.1.1.1.2. Model codes of practice

2.1.1.1.2.1. Managing the Risk of Falls at Workplaces (MRFW)

2.1.1.2. These model WHS regulations and codes of practice must be adopted by a presiding regulatory authority to become enforceable.

2.1.2. Relevant Standards Development Organization

2.1.2.1. Standards Australia/Standards New Zealand (AS/NZ) develops standards related to work at height.

2.1.2.2. Model codes of practice reference these standards for compliance.

2.1.3. General Regulatory References

2.1.3.1. Commonwealth – Legislation

2.1.3.2. New South Wales – Legislation

2.1.3.3. Northern Territory – Legislation

2.1.3.4. Queensland – Legislation

2.1.3.5. South Australia – Legislation

2.1.3.6. Tasmania – Legislation

2.1.3.7. Victoria – Legislation

2.1.3.8. Western Australia – Legislation

2.2. Australia – (Safe Work Australia)

2.2.1. General References

Category	Reference	Notes
Overview	Model WHS, MRFW	Section 4.4 of Model WHS - Falls
General Duty	MRFW 1.1	
Rope Access	MRFW, AS4488 (ISO 22846)	AS4488 superseded by ISO 22846
Fall Protection	MRFW	
Platforms	MRFW	
Rope descent systems	*No reference*	
Training	MRFW	

2.2.2. System Requirements

Category	Value	Reference	Notes
Trigger height for fall protection	*None*	MRFW	"reasonably likely to cause injury"
Allowable free fall distance	2 m (6.5 ft)	MRFW 6.3	
Distance from unprotected edge	3 m	MRFW 6.2, 2.2	If using rope access. None for risk assessment
Maximum arrest force (MAF)	6 kN	AS1891.4(2.1.2)	
Maximum deceleration distance	1.7 m	MRFW Figure 21	Energy absorber deployment
Rescue	Procedures	MRFW 9	

2.2.3. Component Requirements

Category	Values	Reference	Notes
Anchorages			
Rope access	12kN	AS1891.4, AS4488(ISO 22846)	AS4488 superseded by ISO 22846 Recommended 15 kN
Fall arrest	12 kN – limited 15 kN – free-fall 21 kN – 2-person	AS1891.4	Limited free-fall-arrest is less than 600 mm. Free-fall-arrest is greater than 600 mm
Positioning	*No reference*		AS1891.4 refers to rope access
Travel restraint	12 kN or 15 kN	AS1891.4(3)	
Rope descent systems	*No reference*		
Harness	Full body	MRFW 5.1	
Dorsal	☒ Yes ☐ No	AS1891.1(3.2)	Free-fall-arrest only
Sternal	☒ Yes ☐ No	AS1891.1(3.2)	Free-fall-arrest and limited free-fall-arrest
Ventral	☒ Yes ☐ No	AS1891.1(3.2)	Free-fall-arrest and limited free-fall-arrest
Connectors	20 kN	AS1891.1 (ISO 10333-5)	Carabiners self-closing, with lock. (15kN acceptable in some assemblies)
Energy absorbing lanyards	Ref standards	AS1891.4	
Self-retracting devices	Ref standards	AS1891.3	
Vertical lifelines	Ref standards	AS1891.3, AS 4142	
Horizontal lifelines	12kN or 15kN	AS1891.2	'equivalent strength'
Personal protective equipment			
Inspection requirements	Pre-use Detailed – 6 months	AS1891.4(9)	*MRFW* refers to 'detailed' inspections. See Table 9.1 in AS1891.4

3. Canada

3.1. General Information

3.1.1. Regulatory Structure

3.1.1.1. Regulations for worksite safety is generally of provincial jurisdiction.

3.1.1.2. National worksite safety laws apply only to activities that could be carried out in several provinces during the same work day.

3.1.1.3. The Canadian Centre for Occupational Health and Safety (CCOHS) provides a reference for fall protection available at: https://www.ccohs.ca/oshanswers/hsprograms/fall/fall_protection_legislation.html

3.1.1.4. Maritime Occupational Health and Safety Regulations are available at:

https://laws-lois.justice.gc.ca/eng/regulations/sor-2010-120/index.html

3.1.2. Relevant Standards Development Organization

3.1.2.1. The Canadian Standard Association (CSA) publishes standards relative to worksite safety for application in Canada.

3.1.2.2. When incorporated into regulation, these standards are publicly available at https://community.csagroup.org/login.jspa?

3.1.3. General References

3.1.3.1. Alberta

3.1.3.2. British Columbia

3.1.3.3. Manitoba

3.1.3.4. New Brunswick

3.1.3.5. Newfoundland and Labrador

3.1.3.6. Nova Scotia

3.1.3.7. Ontario

3.1.3.8. Prince Edward Island

3.1.3.9. Quebec

3.1.3.10. Saskatchewan

3.1.3.11. Northwest Territories and Nunavut,

3.1.3.12. Yukon

3.2. Alberta – (Occupational Health and Safety - OHS)

3.2.1. General References

Category	Reference	Notes
Overview	OHS Code	Explanation guide (superseded)
Rope Access	Part 41	
Fall Protection	Part 9	
Platforms	Part 23	
Rope descent systems	Part 9	
Training	Part 9 Section 141 Part 41 Section 812, 826	

3.2.2. System Requirements

Category	Value	Reference	Notes
Trigger height for fall protection	3m	Part 9 Section 139 Part 41 Section 808	See sub-clauses for details
Allowable free fall distance	No maximum, 1.2 m – no energy absorber	Part 9 Section 151	See sub-clauses for details
Distance from unprotected edge	2 m	Part 9 Section 161	See sub-clauses for control zone details
Maximum arrest force (MAF)	6 kN, 8kN if E6 used	Part 9 Section 151 Part 41 Section 828	8kN allowance only in Part 9
Maximum deceleration distance	*No reference*		See Part 9 Section 151
Rescue	Plan and procedures	Part 7 Part 9 Section 140 Part 41 Section 811, 821, 822	Part of emergency response and fall protection plan

3.2.3. Component Requirements

Category	Values	Reference	Notes
Anchorages			
Rope access	16 kN or 2x MAF	Part 41 Section 829	Per worker attached.
Fall arrest	16 kN or 2x MAF	Part 9 Section 152	See sub-clauses for temporary and permanent anchorage details
Positioning	*No reference*		
Travel restraint	3.5 kN	Part 9 Section 152.1	Temporary only
Rope descent systems	16 kN or 2x MAF	Part 41 Section 829	Per worker attached.
Harness	Full body	Part 9 Section 142 Part 41 Section 834	Body belt allowed for travel restraint
Dorsal	*No reference*		
Sternal	☒ Yes ☐ No	Part 41 Section 830(4)	
Ventral	*No reference*		
Connectors	Ref standards	Part 9 Section 143 Part 41 Section 835	
Energy absorbing lanyards	Ref standards	Part 9 Section 142.2, 142.3	
Self-retracting devices	Ref standards	Part 9 Section 145	
Vertical lifelines	Ref standards	Part 9 Section 144, 147 Part 41 Section 838	
Horizontal lifelines	Ref standards	Part 9 Section 153	
Personal protective equipment		Part 18	
Inspection requirements	Before use	Part 9 150.1	

3.3. British Columbia – (WorkSafe BC)

Category	Reference	Notes
Overview	OHS Code	OHS Guidelines
General Duty	Part 2.2	
Rope Access	Part 34	
Fall Protection	Part 4 Part 11	
Platforms	Part 13	
Rope descent systems	*No reference*	See Part 13
Training	Part 34.4	See also G11.2(6)-1

3.3.1. System Requirements

Category	Value	Reference	Notes
Trigger height for fall protection	3m (10')	Part 11.2 (1) (a)	Part 34.2 refers to Part 11.2
Allowable free fall distance	2 m (6.5 ft) - energy absorber 1.2 m (4 ft) - no energy absorber	G11.5-3	Guidelines only See also G11.2-3
Distance from unprotected edge	2m (6.5')	G11.2(5)-1	Guidelines only: Safety monitor system
Maximum arrest force (MAF)	Part 34 - 6kN	Part 34.15(2)(a)	No MAF in Part 11
Maximum deceleration distance	*No reference*		
Rescue	Prompt	Part 34.8	See also Part 32

3.3.2. Component Requirements

Category	Values	Reference	Notes
Anchorages			
Rope access	22kN (5000 lbf) permanent 12kN (2700lbf) temporary	Parts 34.12, 34.13	See sub-clauses
Fall arrest	22kN (5000 lbf) or 2x MAF	Part 11.6	See sub-clauses. 2x MAF for temporary only
Positioning	*No reference*		
Travel restraint	3.5kN (800lbf) or 4x worker weight	Part 11.6(1)(a)(b)	Temporary only
Rope descent systems	*No reference*		Part 13 references Part 11 for fall protection
Harness	Full body	Parts 11.4, 11.5(c) Schedule 34-A	See subclauses
Dorsal	*No reference*		
Sternal	*No reference*		
Ventral	*No reference*		
Connectors	Ref standards	Part 11.5(c) Schedule 34-A	
Energy absorbing lanyards	Ref standards	Part 11.5(c) Schedule 34-A	
Self-retracting devices	Ref standards	11.5(c)	None
Vertical lifelines	Ref standards	Part 11.5(c)	See G11.5.2
Horizontal lifelines	Ref manufacturer or engineer	Parts 11.7, 11.8	
Personal protective equipment		Part 8	
Inspection requirements	Before use	Part 11.9 Part 34.10	See also Part 32.4. 32.5, and guidelines

3.4. Manitoba – (Workplace Safety and Health)

3.4.1. General References

Category	Reference	Notes
Overview	Workplace Safety and Health Act	Consolidated
General Duty	Part 2	
Rope Access	Part 28.1	
Fall Protection	Part 14	
Platforms	Part 28.21-32	
Rope descent systems	*No reference*	
Training	Part 14.11, Part 28.1.5(1)	

3.4.2. System Requirements

Category	Value	Reference	Notes
Trigger height for fall protection	0 m - 3 m	Part 14.1(1)	
Allowable free fall distance	1.2 m	Part 14.13(1)(d)	
Distance from unprotected edge	*No reference*		See Part 14.1(1)
Maximum arrest force (MAF)	8 kN	Part 14.13(4)	
Maximum deceleration distance	*No reference*		
Rescue	In procedures	Part 14.2(3)(c), Part 28.1.4(a)	

3.4.3. Component Requirements

Category	Values	Reference	Notes
Anchorages			
Rope access	*No reference*	Part 28.1	
Fall arrest	Permanent: 22.2 kN Temporary: 8 kN -no energy absorber 6 kN – with energy absorber	Part 14.14(1) Part 14.14(2)	
Positioning			
Travel restraint	Permanent: 22.2 kN Temporary: 2 kN	Part 14.14(1) Part 14.14(2)	
Rope descent systems	*No reference*		
Harness	Full body Sit or full-body	Part 14.18, Part 14.7(1)(v) Part 28.1.8(a)	
Dorsal	*No reference*		
Sternal	*No reference*		
Ventral	*No reference*		
Connectors	Ref standards	Part 14.7(1)(vii)	
Energy absorbing lanyards	Ref standards	Part 14.7(1)(vi)	
Self-retracting devices	Ref standards	Part 14.7(1)(iii)	
Vertical lifelines	Ref standards	Part 14.7(1)(ii) Part 14.20-21	
Horizontal lifelines	Ref standards	Part 14.7(1)(vii, ix) Part 14.20,22	
Personal protective equipment		Part 6	
Inspection requirements	Before use	Part 14.8-9	

3.5. Newfoundland & Labrador – (Service NL)

3.5.1. General References

Category	Reference	Notes
Overview	Regulation 5/12	
General Duty	Section 14	
Rope Access	*No reference*	See Section 141(h)
Fall Protection	Part X	
Platforms	Part XI	
Rope descent systems	*No reference*	
Training	Part X Section 139	

3.5.2. System Requirements

Category	Value	Reference	Notes
Trigger height for fall protection	3m (10')	Section 141(a)	
Allowable free fall distance	1.44 m (4 ft) - no 'shock absorption system'	Section 142(c)	See sub-clauses
Distance from unprotected edge	2 m (6.6 ft)	Section 29(1)	See sub-clauses. Roof less than 3/12 grade.
Maximum arrest force (MAF)	*No reference*		
Maximum deceleration distance	*No reference*		
Rescue	Plan and procedures	Section 38 Section 142(10)(b)	

3.5.3. Component Requirements

Category	Values	Reference	Notes
Anchorages			
Rope access	*No reference*		
Fall arrest	22.2 kN (5000 lbf)	Section 142	Horizontal lifelines only
Positioning	*No reference*		
Travel restraint	*No reference*		
Rope descent systems	*No reference*		
Harness	Full body, Z259.10	Section 142(d)(iii)	
Dorsal	*No reference*		
Sternal	*No reference*		
Ventral	*No reference*		
Connectors	*No reference*		
Energy absorbing lanyards	CSA Z259.11		
Self-retracting devices	*No reference*		
Vertical lifelines	CSA Z259.2.1	Section 142 (2)&(4)	
Horizontal lifelines			Static line
Personal protective equipment		Part VII	
Inspection requirements	Before use	Section 142(5)	

3.6. Ontario – (Ministry of Labor – Health and Safety)

3.6.1. General References

Category	Reference	Notes
Overview	OHS Act RSO	
General Duty		
Rope Access	MOL Guidance	Not in regulation See 859/90|3 (Window Cleaning)
Fall Protection	213|91 – Construction 851|90 - Industrial	
Platforms	213/91|126-136.0.1	
Rope descent systems	213/91|125,136.1-142.06 859/90 (Window Cleaning)	
Training	213/91}26.2 297/13	

3.6.2. System Requirements

Category	Value	Reference	Notes
Trigger height for fall protection	3 m	213/91|26, 26.3 851/90|85	See clauses for details. 2.4 m for 26.3
Allowable free fall distance	1.5 m	851/90|85(a) 859/90|10 (Window Cleaning)	
Distance from unprotected edge	*No reference*		
Maximum arrest force (MAF)	8 kN	213/91|26.6(5) 851/90|85(b)(ii)	
Maximum deceleration distance	*No reference*		Ref standards
Rescue	Procedures	213/91|26.1(4)	

3.6.3. Component Requirements

Category	Values	Reference	Notes
Anchorages			
Rope access	*No reference*		
Fall arrest	213 - 8 kN – static 851 - 2x load	213/91/26.7 851/90|85(b)	213 - Permanent only. See subclause. 851 – 'fall arrest system.' See subclauses.
Positioning			
Travel restraint	2kN - static	213/91/26.7(2)5	Permanent only. See subclause.
Rope descent systems	2x support lines	859/90|29(2)	Window Cleaning
Harness	CSA Z259.10	213/91|26.1(3)5	
Dorsal	☒ Yes ☐ No	213/91|1	Full body harness definition
Sternal	*No reference*		
Ventral	*No reference*		
Connectors	CSA Z259.12	213/91|26.1(3)7	
Energy absorbing lanyards	CSA Z259.11	213/91|26.1(3)6	See also 859/90|10(5)
Self-retracting devices	CSA Z259.2.2	213/91|26.1(3)3	
Vertical lifelines	CSAZ259.2.5	213/91|26.1(3)2	See also 859/90|10(6)
Horizontal lifelines	Engineered	213/91|26.9(8)	
Personal protective equipment		213/91|21-27 851/90|79-86	
Inspection requirements	Before use	213/926.6(6)	

3.7. Quebec - CNESST (Commission des Normes, de l'Équité et de la Santé et Sécurité au Travail)

3.7.1. General References

Category	Reference	Notes
Overview	RSST c.s-2.1, r.13 (ENG)	
General Duty	LSST c.s-2.1 (ENG)	
Rope Access	*No reference*	
Fall Protection	RSST c.s-2.1, r.13 art. 346-354.1 (ENG)	
Platforms	RSST c.s-2.1, r.13 art. 31.-33 (ENG)	
Rope descent systems	*No reference*	
Training	RSST c.s-2.1, r.13 art. 338 (ENG)	

3.7.2. System Requirements

Category	Value	Reference	Notes
Trigger height for fall protection	3 m (10 ft)	RSST c.s-2.1, r.13 art. 33.1 (ENG)	
Allowable free fall distance	1.8 m (6 ft)	RSST c.s-2.1, r.13 art. 347 (ENG)	
Distance from unprotected edge	2 m (6.6 ft)	RSST c.s-2.1, r.13 art. 354.1 (ENG)	Warning line
Maximum arrest force (MAF)	6 kN	RSST c.s-2.1, r.13 art. 347 (ENG)	
Maximum deceleration distance	Ref standard		Refers to CSA Z259.11
Rescue	*No reference*		

3.7.3. Component Requirements

Category	Values	Reference	Notes
Anchorages			
Rope access	*No reference*		
Fall arrest	18 kN	RSST c.s-2.1, r.13 art. 349 (ENG)	Refers to CSA Z259.16
Positioning	*No reference*		
Travel restraint	*No reference*		
Rope descent systems	*No reference*		
Harness	Full body	RSST c.s-2.1, r.13 art. 347 (ENG)	Refers to CSA Z259.10
Dorsal	☒ Yes ☐ No	RSST c.s-2.1, r.13 art. 348 (ENG)	
Sternal	☒ Yes ☐ No	RSST c.s-2.1, r.13 art. 348 (ENG)	Limited use, refers to CSA Z259.2.5, Z259.2.4
Ventral	*No reference*		
Connectors	5000 lbf (22.2kN) (tensile) 3600 lbf (16 kN) (proof, gate)	RSST c.s-2.1, r.13 art. 348 (ENG)	Refers to CSA Z259.12
Energy absorbing lanyards	Max length 2 m	RSST c.s-2.1, r.13 art. 348 (ENG)	Refers to CSA Z259.11
Self-retracting devices		RSST c.s-2.1, r.13 art. 348 (ENG)	Refers to CSA Z259.2.2
Vertical lifelines	Max length 90 m	RSST c.s-2.1, r.13 art. 348 (ENG)	Refers to CSA Z259.2.5, Z259.2.4
Horizontal lifelines	90 kN, 12 m max span	RSST c.s-2.1, r.13 art. 349 (ENG)	Refers to CSA Z259.13
Personal protective equipment			
Inspection requirements	Anchorages	RSST c.s-2.1, r.13 art. 349 (ENG)	Prior to initial use - Refers to CSA Z259.16

4. Germany

4.1. General Information

4.1.1. Regulatory structure

4.1.1.1. General law for safety at work (ArbSchG)

4.1.1.2. Worksite safety: ASR, the specification of the general law in relation to technical regulations BAuA - Technischer Arbeitsschutz (inkl. Technische Regeln) - Bundesanstalt für Arbeitsschutz und Arbeitsmedizin

4.1.1.3. Specific Technical regulation for rope access and fall protection TRBS 2121-3

4.1.2. Relevant Standards Development Organization

4.1.2.1. European Norm (EN).

4.2. References

4.2.1. General References

Category	Reference	Notes
Overview	ASR A2.1	Germany, Austria, Switzerland
General Duty	ASR A2.1	Germany, Austria, Switzerland
Rope Access	TRBS 2121-3	Germany
Fall Protection	TRBS 2121-3	Germany
Platforms	TRBS-2121-4	Germany
Rope descent systems	*No reference*	
Training	TRBS 2121-3 Part 4.3.2.2	

4.2.2. System Requirements

Category	Value	Reference	Notes
Trigger height for fall protection	>1m	ASR A2.1 Part 4.1	General duty
Allowable free fall distance	*No reference*		
Distance from unprotected edge	*2m*		
Maximum arrest force (MAF)	6 kN	EN 355	
Maximum deceleration distance	1.75 m	EN 355	Max deceleration of fall arrest lanyard
Rescue	Prompt		

4.2.3. Component Requirements

Category	Values	Reference	Notes
Anchorages	12 kN	TRBS 2121-3 Part 4.1	EN 795
Rope access	Min. 10kN	DGUV-I 212-001 5.1.1	Information of the German professional association referring to EN 795 Standard
Fall arrest	12 kN	EN 795	Per person, additional person +1 kN
Positioning	*No reference*		
Travel restraint	12 kN		Same as fall arrest system
Rope descent systems	*No reference*		
Harness		EN 361	Full body
Dorsal	15 kN		
Sternal	15 kN		
Ventral	15 kN		
Connectors	20 kn	EN 362 locking mechanism	
Energy absorbing lanyards	$F_{max} \leq 6$ kN	EN 355	MBS 15 kN, maximum length 2 m
Self-retracting devices		EN 360	
Vertical lifelines		EN 353-2	
Horizontal lifelines		EN 795 Type B	
Personal protective equipment			
Inspection requirements	Before use, ≥ 1x year by competent person	TRBS 2121-3 Part 5.1	

5. Mexico

5.1. General Information

5.1.1. Regulatory structure

5.1.1.1. Secretaría del Trabajo y Previsión Social (https://www.gob.mx/stps) governs worksite safety.

5.1.1.2. Normas Oficiales Mexicanas (NOM), published in the Diario Oficial de la Federación (https://dof.gob.mx/), are mandatory requirements.

5.1.2. Relevant Standards Development Organization

5.1.2.1. Normas Mexicanas (NMX) are promoted by the Secretaría de Economía and private companies and are not mandatory.

5.2. References

5.2.1. General References

Category	Reference	Notes
Overview	NOM-009-STPS	
General Duty		
Rope Access	*No reference*	
Fall Protection	NOM-009-STPS 8	
Platforms	NOM-009-STPS 11	
Rope descent systems	NOM-009-STPS 8.3	
Training	NOM-009-STPS 6.1, 16	

5.2.2. System Requirements

Category	Value	Reference	Notes
Trigger height for fall protection	1.8 m	NOM-009-STPS 4.33	
Allowable free fall distance	1.8 m or 3.5 m	NOM-009-STPS 8.4.3n	Depends on energy absorber
Distance from unprotected edge	*No reference*		
Maximum arrest force (MAF)	*No reference*		
Maximum deceleration distance	*No reference*		
Rescue	Pre-planned	NOM-009-STPS 15	

5.2.3. Component Requirements

Category	Values	Reference	Notes
Anchorages	Support arrest force	NOM-009-STPS 8.4.3	Manufacturer, minimize potential fall
Rope access	*No reference*		
Fall arrest	*No values*	NOM-009-STPS 8.4	
Positioning	*No values*	NOM-009-STPS 8.3	
Travel restraint	1.2 m	NOM-009-STPS 8.2	Worker no closer to edge than 1.2 m
Rope descent systems	*No values*	NOM-009-STPS 8.3	
Harness	Full body, 15 kN	NOM-009-STPS 8.4.2 NMX-S-058/1-SCFI	NMX: 15 kN static strength
Dorsal	*No reference*		
Sternal	*No reference*		
Ventral	*No reference*		
Connectors	22 kN	NMX-S-058/5-SCFI	NMX: 22kN, for one person up to 100 kg. Does not apply to rope access or rescue
Energy absorbing lanyards	*No values*		
Self-retracting devices	*No values*	NOM-009-STPS 8.4.6	
Vertical lifelines	*No values*	NOM-009-STPS 8.4.5	
Horizontal lifelines	*No values*	NOM-009-STPS 8.4.5	
Personal protective equipment		NOM-017-STPS-2008	
Inspection requirements	Annually, or per manufacturer	NOM-009-STPS 7.14	

6. Switzerland

6.1. General Information

6.1.1. Regulatory structure

6.1.1.1. Regulations on health and safety in the workplace are contained in the Employment Act (ArG), the Accident Insurance Act (UVG), and the Construction Work Ordinance (BauAV).

6.1.1.2. Compliance with these regulations is monitored at cantonal level by the labor inspectorate and Swiss National Accident Insurance Institution (SUVA), which publishes information and factsheets, which are recognized as the technical state of the art.

6.1.2. Relevant Standards Development Organizations

6.1.3. Federal Coordination Commission for Occupational Safety (EKAS), SUVA, and European Norm (EN).

6.2. References

6.2.1. General References

Category	Reference	Notes
Overview	ArG, BauAV, SUVA	
General Duty	UVG Art. 82 ARG Art. 6 VUV Art. 5 / VUV Art. 8	The general obligations are set out in several mutually supporting legal texts (non-exhaustive list)
Rope Access	BauAV Art. 118	Rope access and positioning procedure
Fall Protection	BauAV Art. 29 / Absturzrisiko.ch	
Platforms	*No reference*	
Rope descent systems	*No reference*	
Training	Training institutes	

6.2.2. System Requirements

Category	Value	Reference	Notes
Trigger height for fall protection	2m / 3m	BauAV	Location, duration and condition dependent
Allowable free fall distance	< 2 m / < 3 m		
Distance from unprotected edge	2 m	Gebäudehülle Schweiz: Factsheet "Safety measures on flat roofs"	SUVA : Factsheet "Planning anchor points on flat roofs"
Maximum arrest force (MAF)	$F_{max} \leq 6$ kN	EN 355	
Maximum deceleration distance	1.75 m	EN 355	
Rescue	Ensure Capability	BauAV Art. 8	

6.2.3. Component Requirements

Category	Values	Reference	Notes
Anchorages			
Rope access	12 kN	Manufacturer information EN 795 State of the art	The state of the art is defined in particular by training institutes, SUVA and branch representation
Fall arrest	12 kN		
Positioning	12 kN		
Travel restraint	12 kN		
Rope descent systems	12 kN		
Harness	Usually full body	Manufacturer information State of the art	The state of the art is defined in particular by training institutes, SUVA and branch representation
Dorsal	☒ Yes ☐ No		
Sternal	☒ Yes ☐ No		
Ventral	☒ Yes ☐ No		
Connectors		EN 362	20 kN (B, M, T, A), 25 kN (Q)
Energy absorbing lanyards		EN 355	$F_{max} \leq 6$kN, MBS 15 kN, maximum length 2 m
Self-retracting devices		EN 360	MBS 15 kN (Textile), 12 kN (Wire rope)
Vertical lifelines		EN 353.2	
Horizontal lifelines		EN 795, State of the art	≥ 12 kN
Personal protective equipment			
Inspection requirements	Before use, ≥ 1x year by a qualified person	Manufacturer information EN 365, State of the art	

7. United States

7.1. General Information

7.1.1. Regulatory Structure

7.1.1.1. Worksite safety is managed federally by the Occupational Safety and Health Administration (OSHA).

7.1.1.2. Federal regulations are applicable in any US state or territory that does not have an OSHA-approved State Plan.

7.1.1.3. Federal regulations are divided mainly into General Industry (29 CFR Part 1910) and Construction (29 CFR Part 1926).

7.1.1.3.1. Additional regulations exist for specific industries.

7.1.1.4. State Plans may cover private and state/local government workplaces, or only state/local government workers.

7.1.2. Relevant Standards Development Organization

7.1.2.1. The American National Standards Institute (ANSI) publishes standards relative to worksite safety for application in United States.

7.1.2.2. These voluntary standards can be used to assist in ensuring regulatory compliance but are regulations only if incorporated with regulation.

7.1.2.2.1. The National Institute of Standards and Technology (NIST) manages a searchable database of standards incorporated into regulation by reference (https://sibr.nist.gov/).

7.1.3. General References

7.1.3.1. Federal OSHA resources

7.1.3.2. State OSHA resources

7.1.3.2.1. Arizona

7.1.3.2.2. California

7.1.3.2.3. Hawaii

7.1.3.2.4. Indiana

7.1.3.2.5. Iowa

7.1.3.2.6. Kentucky

7.1.3.2.7. Maryland

7.1.3.2.8. Michigan

7.1.3.2.9. Minnesota

7.1.3.2.10. Nevada

7.1.3.2.11. New Mexico

7.1.3.2.12. North Carolina

7.1.3.2.13. Oregon

7.1.3.2.14. Puerto Rico

7.1.3.2.15. South Carolina

7.1.3.2.16. Tennessee

7.1.3.2.17. Utah

7.1.3.2.18. Vermont

7.1.3.2.19. Virginia

7.1.3.2.20. Washington

7.1.3.2.21. Wyoming

7.2. OSHA 1910 (29 CFR Part 1910 Occupational Safety and Health Standards)

7.2.1. General References

Category	Reference	Notes
Overview	29 CFR 1910 Subpart D 29 CFR 1910 Subpart I	Subpart D – Walking Working Surfaces Subpart I – Personal Protective Equipment
General Duty	29 U.S.C. § 654, 5 (a) (1)	
Rope Access	*No reference*	Must meet 1910.28 - Letter of interpretation (Federal Register Vol. 81, No. 223 page 82569)
Fall Protection	1910.28, 1910.29, 1910.140	1910 Sub part I App C – guidelines
Platforms	1910.66	
Rope descent systems	1910.27	RDS and rope access - LOI
Training	1910.9, 1910.30	

7.2.2. System Requirements

Category	Value	Reference	Notes
Trigger height for fall protection	4 ft (1.2 m)	1910.28(b)(1)(i)	
Allowable free fall distance	6 ft (1.8 m)	1910.140(d)(2)(ii)	Higher value permissible if certain conditions are met.
Distance from unprotected edge	*No reference*		See 1926 Construction for letters of interpretation
Maximum arrest force (MAF)	1800 lbf (8 kN)	1910.140(d)(1)(i)	
Maximum deceleration distance	3.5 ft (1.1 m)	1910.140(d)(1)(ii)	
Rescue	"prompt"	1910.140(c)(21)	Letter of interpretation

7.2.3. Component Requirements

Category	Values	Reference	Notes
Anchorages			
Rope access **Fall arrest** **Positioning** **Travel restraint**	5000 lbf (22.2kN), or Safety factor of 2	1910.140(c)(13)	Safety factor of 2 requires design, install, and use under direction of qualified person. See 1910.140(c)(12) – anchorage independence
Rope descent systems	5000 lbf (22.2kN)	1910.27(b)(1)(i)	Anchorage enforcement guidance - LOI Anchorage testing - LOI
Harness	Full body	1910.140(c)(19) 1910.140(c)(20)	
Dorsal	☒ Yes ☐ No	1910.140(c)(22)	
Sternal	☒ Yes ☐ No	1910.140(c)(22)	If free fall distance less than 2 ft (0.6 m)
Ventral	☐ Yes ☒ No	*No reference*	
Connectors	5000 lbf (22.2kN) (tensile) 3600 lbf (16 kN) (proof, gate) Auto-lock, (min 2-stage)	1910.140(c)(7) 1910.140(c)(8) 1910.140(c)(9)	See also: 1910.140(c)(1) 1910.140(c)(2) 1910.140(c)(10)
Energy absorbing lanyards	5000 lbf (22.2kN)	1910.140(c)(6)	
Self-retracting devices	Max free fall of 2 ft (0.6 m)	1910.140(c)(5)	Minimum tensile load of 3,000 lbf (13.3 kN)
Vertical lifelines	5000 lbf (22.2kN)	1910.140(c)(4)	1910.140(c)(3) – one worker per lifeline 1910.140(c)(15) – synthetic requirement
Horizontal lifelines	Safety factor of 2	1910.140(c)(11)	1910.140(c)(15) – synthetic requirement
Personal protective equipment		1910.132	1910 Subpart I App B – Selection guidance
Inspection requirements	Before use	1910.140(c)(18)	"before initial use during each workshift"

7.3. OSHA 1926 (29 CFR Part 1926 Safety and Health Regulations for Construction)

7.3.1. General References

Category	Reference	Notes
Overview	1926 Subpart M – Fall Protection	
General Duty	1926.20	
Rope Access	*No reference*	
Fall Protection	1926.501, 1926.502	1926 Sub M App C - guidelines
Platforms	1926 Subpart L	
Rope descent systems	*No reference*	
Training	1926.21, 1926.503	

7.3.2. System Requirements

Category	Value	Reference	Notes
Trigger height for fall protection	6 ft	1926.501(b)(1)	
Allowable free fall distance	6 ft	1926.502(d)(16)(iii)	Higher free fall potential –LOI-1, LOI-2
Distance from unprotected edge	15 ft	LOI	Requires warning lines and other policies
Maximum arrest force (MAF)	1800 lbf	1926.502(d)(16)(ii)	
Maximum deceleration distance	3.5 ft (1.07 m)	1926.502(d)(16)(iv)	
Rescue		1926.35(b)(4) 1926.502(d)(20)	

7.3.3. Component Requirements

Category	Values	Reference	Notes
Anchorages			
Rope access	*No reference*		
Fall arrest	5000 lbf, or Safety factor of 2	1926.502(d)(15)	Per person See sub-clauses
Positioning	3000 lbf or 2x impact of fall	1926.502(e)(2)	"whichever is greater" 1926.502(e)(1) - free fall ≤ 2 ft (0.6 m)
Travel restraint	*No reference*		
Rope descent systems	*No reference*		
Harness			
Dorsal	☒ Yes ☐ No	1926.502(d)(17)	
Sternal	☐ Yes ☒ No	*No reference*	
Ventral	☐ Yes ☒ No	*No reference*	
Connectors	5000 lbf MBS 3600 lbf proof	1926.502(d)(3) 1926.502(d)(4)	
Energy absorbing lanyards	5000 lbf MBS	1926.502(d)(9)	
Self-retracting devices	5000 lbf MBS	1926.502(d)(13)	
Vertical lifelines	5000 lbf MBS	1926.502(d)(9)	
Horizontal lifelines	Safety factor of 2	1926.502(d)(8)	
Personal protective equipment		1926.28 1926.95	1926 Sub E
Inspection requirements	Before use	1926.502(d)(21)	"Prior to each use"

7.4. California – (Cal-OSHA)

7.4.1. General References

Category	Reference	Notes
Overview	Title 8 Regulations	Title 8 Searchable Index Construction (CSO) and General Industry (GISO) primarily referenced here. See other subchapters for industry-specific regulation
General Duty	GISO 3203 - IIPP	Injury and Illness Prevention Program
Rope Access	GISO 3270.1	
Fall Protection	CSO, Article 24	CSO §1670.
Platforms	GISO, Article 24 GISO, Article 6 App C	
Rope descent systems	GISO §3286	
Training	GISO 3270.1(c,h) GISO §3203(a)(7) CSO §1510	

7.4.2. System Requirements

Category	Value	Reference	Notes
Trigger height for fall protection	7.5 ft	CSO §1670(a)	See clause for details and references
Allowable free fall distance	6 ft	CSO §1670(b)(11)(B)	
Distance from unprotected edge	6 ft	GISO 3212(d-e)	
Maximum arrest force (MAF)	1800 lb	CSO §1670(b)(11)(A)	
Maximum deceleration distance	3.5 ft	CSO §1670(b)(11)(C)	
Rescue	Prompt, self-rescue	CSO §1670(b)(14) GISO 3270.1(i)	

7.4.3. Component Requirements

Category	Values	Reference	Notes
Anchorages			
Rope access	2x dynamic load	GISO 3270.1(e)	
Fall arrest	5000 lb or safety factor of 2	CSO §1670(b)(10)	
Positioning	3000 lb or 2x load	CSO §1670(c)(4)	Whichever is greater
Travel restraint	4x load	CSO §1670(d)(3)	
Rope descent systems	5000 lb or safety factor of 2	GISO, Article 6 App C (I)(c)(5)	
Harness	Full body Body belt ANSI Z359.1	CSO §1670(b)(12, 13) CSO §1670(d) CSO §1670(k)	
Dorsal	☒ Yes ☐ No	CSO §1670(b)(12)	
Sternal	*No reference*	See GISO 3270.1(c)(1)	
Ventral	*No reference*		
Connectors	ANSI Z359.1	CSO §1670(l) GISO, Article 6 App C (I)(c)(1-2)	
Energy absorbing lanyards	5000 lb ANSI Z359.1	CSO §1670(b)(3) CSO §1670(l)	
Self-retracting devices	3-5000lb ANSI Z359.1	CSO §1670(b)(7, 8) CSO §1670(l)	3000 lb for <2 ft free fall distance 5000 lb for >2 ft free fall distance
Vertical lifelines	5000 lb ANSI Z359.1	CSO §1670(b)(3) CSO §1670(l)	
Horizontal lifelines	Safety factor of 2	CSO §1670(b)(2)	Qualified person. GISO, Article 6 App C requires CA engineer
Personal protective equipment		GISO §3380	
Inspection requirements	Before use Twice annually	CSO §1670(b)(15) CSO §1670(b)(19)	Twice annually by competent person

7.5. Oregon (Oregon OSHA)

7.5.1. General References

Category	Reference	Notes
Overview	Chapter 437	
General Duty	437-001-0760(1)	
Rope Access	437-002-2027	"Rope Descent & Rope Access Systems"
Fall Protection	437 Sub D, 437 Sub I	Adopted
Platforms	437 Sub F	Adopted
Rope descent systems	437-002-2027	"Rope Descent & Rope Access Systems"
Training	1910.30	Adopted

7.5.2. System Requirements

Category	Value	Reference	Notes
Trigger height for fall protection	4 ft (1.2 m)	1910.28(b)(1)(i)	Adopted
Allowable free fall distance	6 ft (1.8 m)	1910.140(d)(2)(ii)	Adopted
Distance from unprotected edge	*No reference*		
Maximum arrest force (MAF)	1800 lbf (8 kN)	1910.140(d)(1)(i)	Adopted
Maximum deceleration distance	3.5 ft (1.1 m)	1910.140(d)(1)(ii)	
Rescue	"rompt"	1910.140(c)(21)	

7.5.3. Component Requirements

Category	Values	Reference	Notes
Anchorages			
Rope access	5000 lbf or safety factor of 2*	437-002-2027	Safety factor of 2 requires design, install, and use under direction of qualified person. See 437-002-2027(4)(b)
Fall arrest	5000 lbf or safety factor of 2*	1910.140(c)(13)	Adopted. Safety factor of 2 requires design, install, and use under direction of qualified person
Positioning	5000 lbf or safety factor of 2*	1910.140(c)(13)	Adopted. Safety factor of 2 requires design, install, and use under direction of qualified person
Travel restraint	3000 lbf (13.34 kN) or safety factor of 2*	437-002-0134(5)(b)	Safety factor of 2 requires design, install, and use under direction of qualified person.
Rope descent systems	5000 lbf or safety factor of 2*	437-002-2027	Safety factor of 2 requires design, install, and use under direction of qualified person. See 437-002-2027(4)(b)
Harness	Full body	1910.140(c)(19) 1910.140(c)(20)	Adopted
Dorsal	☒ Yes ☐ No	1910.140(c)(22)	
Sternal	☒ Yes ☐ No	1910.140(c)(22)	If free fall distance less than 2 ft (0.6 m)
Ventral	☐ Yes ☒ No	*No reference*	
Connectors	5000 lbf (22.2kN) (tensile) 3600 lbf (16 kN) (proof, gate) Auto-lock	1910.140(c)(7) 1910.140(c)(8) 1910.140(c)(9)	Adopted. See also: 1910.140(c)(1) 1910.140(c)(2) 1910.140(c)(10)
Energy absorbing lanyards	*No reference*		
Self-retracting devices	Limit free to 2ft.	1910.140(c)(5)	Adopted. Minimum tensile load of 3000 lbf (13.3 kN)
Vertical lifelines	5000 lbf (22.2kN)	1910.140(c)(4)	Adopted. 1910.140(c)(3) – one worker per lifeline 1910.140(c)(15) – synthetic requirement
Horizontal lifelines	Safety factor of 2	1910.140(c)(11)	Adopted. 1910.140(c)(15) – synthetic requirement
Personal protective equipment		1910.132	Adopted. 1910 Subpart I App B – Selection guidance
Inspection requirements	Before use	1910.140(c)(18)	"before initial use during each workshift"

7.6. Washington (Department of Labor & Industries)

7.6.1. General References

Category	Reference	Notes
Overview	296-880	
General Duty	296-800-110	
Rope Access	*No reference*	
Fall Protection	296-880	Effective October 1st, 2020
Platforms	296-880-(30015-30030)	
Rope descent systems	296-880-30025	Window Cleaning (296-878)
Training	296-880-10015	

7.6.2. System Requirements

Category	Value	Reference	Notes
Trigger height for fall protection	0 ft - 10 ft	296-880-090	Industry and location dependent
Allowable free fall distance	6 ft	296-880-40020(3)(a)	Higher value permissible if certain conditions are met
Distance from unprotected edge	15 ft	296-880-40040	Warning lines
Maximum arrest force (MAF)	1800 lbf	296-880-40020(3)(b)	
Maximum deceleration distance	3.5 ft (1.07 m)	296-880-40020(3)(c)	
Rescue	"prompt"	296-880-10005	

7.6.3. Component Requirements

Category	Values	Reference	Notes
Anchorages			
Rope access	*No reference*		
Fall arrest	3000 lbf 5000 lbf (22.2 kN), or safety factor of 2	296-880-40020(2)	3000 lbf requires self-retracting lifeline or energy absorbing lanyard with MAF <900lbf Safety factor of 2 requires supervision of qualified person.
Positioning	2x impact from fall or 3000 lbf	296-880-40030(3)	whichever is greater
Travel restraint	4x intended load	296-880-40025(5)	See 296-880-40025(6) regarding rope grabs
Rope descent systems	*No reference*		
Harness	Full body	296-880-40020(1)(a)	
Dorsal	☒ Yes ☐ No	296-880-40020(1)(b)	
Sternal	☐ Yes ☒ No	296-880-40020(1)(b)	
Ventral	☐ Yes ☒ No	296-880-40020(1)(b)	
Connectors	5000 lbf MBS 3600 lbf proof	296-880-40020	
Energy absorbing lanyards	5000 lbf MBS	296-880-40020(c)	
Self-retracting devices	3000 lbf (13.3 kN)	296-880-40020(1)(k)	Free fall limited to less than 2 ft (0.6 m)
Vertical lifelines	5000 lbf (22.2kN)	296-880-40020(1)(k)	one worker per line
Horizontal lifelines	Safety factor of 2	296-880-40020(1)(k)	Designed, installed, and used, under supervision of a qualified person
Personal protective equipment		206-800-160	
Inspection requirements	Regularly	296-880-510(11)	References 296-880-40020