



## Safe work at height and rope rescue team typing guidance

### General

This guidance has been developed by the NFCC Safe Work At Height group. It recommends the minimum requirements for each identified level of operational response for working at height, from individuals working safely at height to teams conducting complex rescue operations. The overall objective of 'team typing' is to improve personnel safety and enable better use of scarce assets.

This document is intended to:

- Provide a standard framework of competencies for operations at height to support local risk management
- Provide a framework against which assessment and assurance can be carried out
- Support standardisation
- Improve responder safety
- Help resolve incidents more quickly
- Provide a framework of standards to support the development of line rescue assets as a national or regional resource
- Provide guidance for fire and rescue services to help incident resolution

Classifying safe work at height and rope rescue as an identifiable level or 'team type' asset and declaring this can improve resilience and cross-border working.

National team typing systems explain what should be included in standard resource packages. While not intended to be definitive, this guidance outlines the potential range of capabilities available for resolving operation incidents. It provides the basis for robust and safe systems of work across all fire and rescue services.

This guidance should be considered alongside National Operational Guidance on [Height, structures and confined spaces](#).

## **Principles of Safe Work at Height and Rope Rescue Team Typing**

In all cases, personnel working at height must have competent supervision.

The Work at Height Regulations have specific provisions for emergencies and rescue. A rescue plan and adequate resources must be in place when work at height is carried out. The ability to recover people from suspension must be provided within a safe system of work. However, this provision may be met by the mobilisation of a further team with additional skills and equipment.

At each level, personnel must have received the appropriate training and must maintain their competence to continue to undertake such operations.

Teams declaring availability for mobilisation should be able to carry out the required task self-sufficiently. The personnel of the requesting fire and rescue service may support these teams by undertaking supplementary tasks assisting with, but not including, the specific operation.

Each level detailed below requires competence at lower levels, except for those skills specific to the urban search and rescue (USAR) and line access and casualty extrication (LACE) capability.

### **(Level 1) Safe Work at Height**

This is the minimum standard recommended to provide a safe system of work for personnel working at height to resolve an incident.

Personnel will be able to identify and use a selection of appropriate work restraint and fall arrest equipment to work safely at height.

### **(Level 2) Twin Rope Access and Stabilisation**

Personnel will be able to create a safe system of work and identify and use suitable anchors to create rope access and egress systems. This enables individuals to be raised or lowered vertically and to traverse structures primarily to access and stabilise casualties.

Personnel at this level should be able to meet most access and rescue requirements. A twin-rope system can create a safe system of work in order to access casualties for stabilisation and vertical rescue. Personnel descending and then the lowering of a casualty, referred to as 'Down and Down', is the preferred rescue option, but it may be necessary to haul up in an emergency and exceptional circumstances.

### **(Level 3) Technical Rope Rescue**

Personnel will be able to identify, create and use suitable anchors and to construct access and egress systems. These skills enable both individuals and teams to ascend, descend and traverse while accessing and transporting casualties.

This capability is required to meet the specific demands of a complex rescue. This may include, but is not restricted to, incidents involving extreme height, lack of obvious anchor points or difficult access.

### **USAR line access and casualty extrication (LACE)**

USAR personnel will be able to identify, use and provide specific wire and rope access systems to respond to a range of hazards found within the USAR environment and can support operations at all levels.

*NOTE: USAR LACE equipment and training to meet the specific hazards found in a USAR environment has been provided nationally. This provision should not be considered technical rope rescue.*

### **Rope tactical advisers (TacAds)**

Fire and rescue services may consider identifying and developing personnel to fulfil the role of rope TacAd. These personnel are trained and experienced individuals who can provide advice and support to any incident irrespective of location. A rope TacAd will provide detailed, tactical, capability-relevant advice to the incident commander and support for the rope team leaders.

TacAds should not take command of an incident; they are there to advise and assist. They should ensure they understand the aims and objectives of the incident commander and that any advice they provide is understood and, if appropriate, recorded.

## Capability overview

	Level 1	Level 2	Level 3	LACE
	<b>Safe Work at Height Team</b>	<b>Twin-Rope Access &amp; Stabilisation Team</b>	<b>Technical Rope Rescue Team</b>	<b>USAR - Line Access Casualty Extrication Team</b>
<b>Capability overview</b>	<p>Knowledge, skills and equipment necessary to work safely at height in order to carry out operational duties.</p> <p>Knowledge of and skills relevant to the systems, practices and equipment required to implement safe systems of work when work restraint and fall arrest are required.</p> <p><b>This is not technical rope rescue.</b></p>	<p>Knowledge, skills and equipment necessary to access and stabilise casualties at height when lowering or raising in a vertical situation is required.</p> <p><b>This is not technical rope rescue.</b></p>	<p>Knowledge of and skills relevant to the systems, practices and equipment required to initiate complex rope access and rescue systems, including:</p> <ul style="list-style-type: none"> <li>• Work in suspension, lowering and descending</li> <li>• Raising, ascending, traversing structures and landscapes both vertically and non-vertically by deviation or cableway</li> </ul> <p><b>Full technical rope rescue capability.</b></p>	<p>USAR-trained personnel operating specific USAR wire rope-based systems and ability to create artificial rated anchors (eye bolts).</p> <p><b>This provides a capability for a specific operational environment but does not meet the full criteria for technical rope rescue.</b></p>
<b>Safe system of work</b> To include sector-competent supervisor and the ability to recover team members from suspension	<ul style="list-style-type: none"> <li>• Work restraint</li> <li>• Fall arrest</li> </ul>	<ul style="list-style-type: none"> <li>• Work restraint</li> <li>• Work positioning</li> <li>• Low angle life lining</li> <li>• Fall arrest</li> <li>• Twin rope working</li> </ul>	<ul style="list-style-type: none"> <li>• Work restraint</li> <li>• Work positioning</li> <li>• Fall arrest</li> <li>• Twin rope working</li> <li>• Rope access techniques</li> <li>• Self-rescue</li> </ul>	<ul style="list-style-type: none"> <li>• Work restraint</li> <li>• Work positioning</li> <li>• Fall arrest</li> <li>• Twin rope working</li> <li>• Wire rope systems</li> </ul>

## **Rope Rescue Team typing criteria**

### **Team typing categories**

- Level 1 - Safe Working at Height
- Level 1 - Safe Working at Height Team Leader
- Level 2 - Rope Technician
- Level 2 - Rope Technician Team Leader
- Level 3 - Rope Rescue Technician
- Level 3 - Rope Rescue Technician Team Leader
- USAR LACE - Technician
- USAR LACE - Technician Team Leader
- Rope Rescue Tactical Advisor

### **Personal protective equipment**

- Clothing appropriate for task plus helmet
- Fall arrest harness and lanyard
- Work restraint system plus rope access equipment appropriate to the level of the operative
- Integral whistle
- Eye protection (separate or part of helmet)
- Radio

**Level 1 - Safe Working at Height****Description**

Personnel will be able to identify and use a selection of appropriate work restraint and fall arrest equipment to work safely at height.

**Training****Requisite****Recommended**

Safe Working at Height

**X**

Basic first aid

**X**

Incident Command and Co-ordination Awareness

**X**

Health and safety awareness

**X****Medical criteria**

Individual Fire and Rescue Services will determine the levels of fitness required for responders

**X****Personal protective equipment**

Fall arrest harness and lanyard; work restraint system plus rope equipment appropriate to the level of the operative

**X**

Clothing appropriate for the environment and task

**X****Personal lighting**

Personal location lighting (yellow glow stick)

**X**

<b>Level 1 - Safe Working at Height Team Leader</b>		
<b>Description</b> The team leader will supervise a safe working at height team at an operational level and is responsible for the team's tasking, health and safety, monitoring and welfare.		
<b>Training</b>	<b>Requisite</b>	<b>Recommended</b>
Safe Working at Height course	X	
Basic first aid		X
Incident command and co-ordination competent	X	
Health and safety awareness	X	
<b>Medical criteria</b>		
Individual FRS will determine the levels of fitness required for responders	X	
<b>Personal protective equipment</b>		
Fall arrest harness and lanyard; work restraint system plus rope equipment appropriate to the level of the operative	X	
Clothing appropriate to the environment and task	X	
<b>Personal lighting</b>		
Personal location lighting (yellow glow stick)	X	

<b>Level 2: Rope Technician</b>		
<b>Description</b> A rope team at this level of skill would be capable of meeting most access and rescue requirements. With a twin rope capability, the team can implement a safe system of work to access casualties for stabilisation and vertical rescue.		
<b>Training</b>	<b>Requisite</b>	<b>Recommended</b>
Level 2 Rope Technician Course	X	
Basic first aid	X	
Advanced first aid		X
Confined space awareness	X	
Confined space operator		X
Incident command and co-ordination competent	X	
Health and safety awareness	X	
<b>Medical criteria</b>		
Individual FRS will determine the levels of fitness required for responders	X	
<b>Personal protective equipment</b>		
Fall arrest harness and lanyard; work restraint system plus rope equipment appropriate to the level of the operative	X	
Clothing appropriate to the environment and task	X	
Red helmet and/or clearly identifiable as level 2 rope technician		X
<b>Personal lighting</b>		
Personal location lighting (red glow stick)	X	



<b>Level 2: Rope Technician Team Leader</b>		
<b>Description</b> The team leader will supervise a team of level 2 rope technicians at an operational level and is responsible for the team's tasking, health and safety, monitoring and welfare.		
<b>Training</b>	<b>Requisite</b>	<b>Recommended</b>
Level 2 Rope Technician Course	X	
Basic first aid	X	
Advanced first aid		X
Confined space awareness	X	
Confined space operator		X
Incident command and co-ordination competent	X	
Health and safety awareness	X	
<b>Medical criteria</b>		
Individual FRS will determine the levels of fitness required for responders	X	
<b>Personal protective equipment</b>		
Fall arrest harness and lanyard; work restraint system plus rope equipment appropriate to the level of the operative	X	
Clothing appropriate to the environment and task	X	
Red helmet and/or clearly identifiable as level 2 rope technician team leader		X
<b>Personal lighting</b>		
Personal location lighting (red glow stick)	X	

<b>Level 3: Rope Rescue Technician</b>		
<b>Description</b> Personnel are capable of undertaking technical rope rescue operations.		
<b>Training</b>	<b>Requisite</b>	<b>Recommended</b>
Level 3 Rope rescue technician course	X	
Basic first aid	X	
Advanced first aid		X
Confined space awareness	X	
Confined space operator		X
Incident command and co-ordination awareness	X	
Health and safety awareness	X	
<b>Medical criteria</b>		
Individual FRS will determine the levels of fitness required for responders	X	
<b>Personal protective equipment</b>		
Work positioning harness; work restraint system plus rope equipment appropriate to the level of the operative	X	
Clothing appropriate to the environment and task	X	
Red helmet and/or clearly identifiable as level 3 rope rescue technician		X
<b>Personal lighting</b>		
Personal location lighting (red glow stick)	X	

<b>Level 3: Rope Rescue Technician Team Leader</b>		
<b>Description</b> The team leader will supervise a team of level 3 rope rescue technicians at an operational level and is responsible for the team's tasking, health and safety, monitoring and welfare.		
<b>Training</b>	<b>Requisite</b>	<b>Recommended</b>
Level 3 Rope Rescue Technician course	X	
Basic first aid	X	
Advanced first aid		X
Confined space awareness	X	
Confined space operator		X
Incident command and co-ordination competent	X	
Health and safety awareness	X	
<b>Medical criteria</b>		
Individual FRS will determine the levels of fitness required for responders	X	
<b>Personal protective equipment</b>		
Work positioning harness; work restraint system plus rope equipment appropriate to the level of the operative	X	
Clothing appropriate to the environment and task	X	
White helmet and/or clearly identifiable as level 3 rope technician team leader		X
<b>Personal lighting</b>		
Personal location lighting (white glow stick)	X	

**USAR LACE: Technician****Contents****Description**

Selected USAR personnel will be able to identify, use and provide specific wire and rope access systems to respond to a range of hazards found in the USAR environment and can support operations at levels 1, 2 and 3.

**Training**

In line with the National Resilience USAR concept of operations.

**USAR LACE: Team leader****Contents****Description**

The team leader will supervise a team of LACE technicians at an operational level and is responsible for the team's tasking, health and safety, monitoring and welfare.

**Training**

In line with the National Resilience USAR concept of operations.

<b>Rope rescue Tactical Advisor (TacAd)</b>		
<b>Description</b> TacAds will provide detailed, tactical, capability-relevant advice to the incident commander at tactical and/or operational levels. TacAds can provide technical advice, but they cannot assume command while providing support for rope team leaders.		
<b>Training</b>	<b>Requisite</b>	<b>Recommended</b>
Competent at levels in which they are providing advice	<b>X</b>	
Operational and tactical command operations awareness training	<b>X</b>	
<b>Medical criteria</b>		
Individual FRS will determine the levels of fitness required for responders	<b>X</b>	
<b>Personal protective equipment</b>		
Clothing appropriate to the environment and task	<b>X</b>	
White helmet and/or clearly identifiable as rope TacAd		<b>X</b>
<b>Personal lighting</b>		
Personal location lighting (white glow stick)	<b>X</b>	

## Team typing matrix

<b>TEAM TYPE LEVEL 1 – SWaH TEAM Capability</b>	<b>Logistics (minimum requirements for response outside service area)</b>	<b>Team structure (minimum five people)</b>	<b>Competencies of personnel (minimum number required)</b>	<b>Incident command system (ICS)</b>
<p>Knowledge, skills and fall protection equipment necessary to work safely at height to carry out operational duties</p>	<p>Be available 24 hours a day</p> <p>Facility for financing supplies and consumables when mobile or on-scene (for example, credit card or team manager)</p> <p>Team to be sustainable with rations for 24 hours</p> <p>Team to be available for up to four days on-scene</p>	<p>Five team members including team leader One welfare and liaison officer*</p> <p>*Welfare and liaison officer is for support and welfare considerations at protracted incidents, not for tactical command as required by the agency</p>	<p>Safe work at height: all First aid qualified: all*</p> <p>*Up-to-date training refers to current training that has been refreshed within the last three years; skills must have been demonstrated within previous three months</p>	<p>All team members to be trained to the current ICS in operation for rope incidents</p>
<b>Equipment</b>				
<p><b>Transport</b> Vehicle(s) suitable to carry personnel and equipment</p>	<p><b>Communications</b> Handheld communications for all team members, spare batteries and charger (waterproofed) Smart phone with team leader and manager (waterproofed)</p>	<p><b>Medical</b> Basic life support, Immediate Emergency Care (IEC) pack Oxygen cylinder x2</p>	<p><b>Decontamination</b> Anti-bacterial hand gel Anti-bacterial face wipes Anti-bacterial equipment spray Full cleaning facilities available at base station</p>	<p><b>Navigation</b> Handheld GPS system with street mapping facility</p>
<p><b>Equipment</b> Additional equipment: lighting, marker boards, mapping, aide-memoires Scene lighting Search lighting</p>		<p><b>PPE</b> Full PPE for all team members spare: Helmet Footwear Gloves Knife Whistle Personal lighting</p>	<p><b>Technical equipment</b> Fall arrest harness and lanyard Work restraint system (50m line)</p>	<p><b>Testing</b> All equipment should be suitably tested, maintained and certified in accordance with manufacturers' guidelines and relevant regulations</p>

<b>TEAM TYPE LEVEL 2 – ROPE RESCUE TEAM Capability</b>	<b>Logistics (minimum requirements for response outside service area)</b>	<b>Team structure (minimum five people)</b>	<b>Competencies of personnel (minimum number required)</b>	<b>Incident command system (ICS)</b>
<p>Knowledge, skills and equipment necessary to access and stabilise casualties</p> <p>Lowering and raising capability</p> <p>Vertical only</p>	<p>Be available 24 hours a day</p> <p>Facility for financing supplies and consumables when mobile or on-scene (for example, credit card or team manager)</p> <p>Team to be sustainable with rations for 24 hours</p> <p>Team to be available for up to four days on-scene</p>	<p>Five team members including team leader</p> <p>One welfare and liaison officer*</p> <p>*Welfare and liaison officer is for support and welfare considerations at protracted incidents, not for tactical command as required by the agency</p>	<p>SWaH - All</p> <p>Level 2 technician: all</p> <p>First aid qualified: all*</p> <p>*Up-to-date training refers to current training that has been refreshed within the last three years; skills must have been demonstrated within previous three months</p>	<p>All team members to be trained to the current ICS in operation for rope incidents</p>
<b>Equipment</b>				
<p><b>Transport</b></p> <p>Vehicle(s) suitable to carry personnel and equipment</p>	<p><b>Communications</b></p> <p>Handheld communications for all team members, spare batteries and charger (waterproofed)</p> <p>Smart phone with team leader and manager (waterproofed)</p>	<p><b>Medical</b></p> <p>Basic life support IEC pack</p> <p>Oxygen cylinder x2</p> <p>Resuscitation equipment</p> <p>Long board</p> <p>Blankets</p> <p>Basket stretcher</p>	<p><b>Decontamination</b></p> <p>Anti-bacterial hand gel</p> <p>Anti-bacterial face wipes</p> <p>Anti-bacterial equipment spray</p> <p>Full cleaning facilities available at base station</p>	<p><b>Navigation</b></p> <p>Handheld GPS system with street mapping facility</p>
<p><b>Equipment</b></p> <p>Additional equipment: lighting, marker boards, mapping, aide-memoires</p> <p>Scene lighting</p> <p>Search lighting</p>	<p><b>PPE</b></p> <p>Full PPE for all team members plus spare:</p> <p>Helmet</p> <p>Footwear</p> <p>Gloves</p> <p>Knife</p> <p>Whistle</p> <p>Personal lighting</p>	<p><b>Technical equipment</b></p> <p>Low stretch Kernmantle rope, minimum 50m, x2</p> <p>Rope control devices x2</p> <p>Rope capture device</p> <p>Selection of slings and strops</p> <p>Selection of connectors and pulleys</p>	<p><b>Testing</b></p> <p>All equipment should be suitably tested, maintained and certified in accordance with manufacturers' guidelines and relevant regulations</p>	

<b>TEAM TYPE LEVEL 3 – ROPE RESCUE TEAM Capability</b>	<b>Logistics (minimum requirements for response outside service area)</b>	<b>Team structure (minimum five people)</b>	<b>Competencies of personnel (minimum number required)</b>	<b>Incident command system (ICS)</b>
Knowledge, skills and equipment necessary to rig complex rope access and rescue systems, to include rope access work in suspension, lowering, descending, raising, ascending and traversing non-vertically by deviation/cableway	Be available 24 hours a day Facility for financing supplies and consumables when mobile or on-scene (for example. credit card or team manager) Team to be sustainable with rations for 24 hours Team to be available for up to four days on-scene	Five team members including team leader One welfare and liaison officer*  *Welfare and liaison officer is for support and welfare considerations at protracted incidents, not for tactical command as required by the agency	Safe work at height: all Level 3 technician: all First aid qualified: all*  *Up-to-date training refers to current training that has been refreshed within the last three years; skills must have been demonstrated within previous three months	All team members to be trained to the current ICS in operation for rope incidents
<b>Equipment</b>				
<b>Transport</b> Vehicle(s) suitable to carry personnel and equipment	<b>Communications</b> Handheld communications for all team members, spare batteries and charger (waterproofed) Smart phone with team leader and manager (waterproofed)	<b>Medical</b> Basic life support IEC pack Oxygen cylinder x2 Resuscitation equipment Long board Blankets Basket stretcher	<b>Decontamination</b> Anti-bacterial hand gel Anti-bacterial face wipes Anti-bacterial equipment spray Full cleaning facilities available at base station	<b>Navigation</b> Handheld GPS system with street mapping facility
<b>Equipment</b> Additional equipment: lighting, marker boards, mapping, aide-memoires Scene lighting Search lighting		<b>PPE</b> Full PPE for all team members plus spare: Helmet Footwear Gloves Knife Whistle Personal lighting	<b>Technical equipment</b> Low stretch Kernmantle rope, minimum 100m, x5 Rope access equipment to allow access at height and work in suspension; this may require equipment including dynamic rope, tripod/quadpod/frame, stretcher	<b>Testing</b> All equipment should be suitably tested, maintained and certified in accordance with manufacturers' guidelines and relevant regulations
<b>TEAM TYPE – USAR LACE rescue team capability</b>	<b>Logistics</b>	<b>Team structure</b>	<b>Competencies of personnel</b>	<b>Incident command system (ICS)</b>
In line with National Resilience USAR concept of operations				



