

Structural Collapse Specialist 1 and 2

(NFPA 1006: Structural Collapse Rescue Awareness/Operations/Technician)

Curriculum Training Standards Guide (2021)



California Department of Forestry and Fire Protection
Office of the State Fire Marshal
State Fire Training

Structural Collapse Specialist 1 and 2

Curriculum Training Standards Guide (2021)

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This CTS guide utilizes the following NFPA standards to provide the qualifications for State Fire Training's Structural Collapse Specialist 1 and 2 (2021) program:

- NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)

State Fire Training coordinated the development of this CTS guide. Before its publication, the Statewide Training and Education Advisory Committee (STEAC) and the State Board of Fire Services (SBFS) recommended this CTS guide for adoption by the Office of the State Fire Marshal (OSFM).

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This curriculum is dedicated to all first responders.

Published by State Fire Training.

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How to Read a CTS Guide

Overview

A curriculum training standard (CTS) guide lists the requisite knowledge, skills, and job performance requirements an individual must complete to become proficient in a specific job function.

It also documents and justifies the OSFM-approved revisions to the NFPA standard and identifies where each curriculum training standard is taught (course plan), tested (skill sheets), and validated (task book).

Individuals aspiring to meet State Fire Training's curriculum training standards must do so in accordance with the codes, standards, regulations, policies, and standard operating procedures applicable within their own agency or jurisdiction.

Format

Each curriculum training standard is comprised of eight sections.

Section Heading

Training standards are grouped by section headings that describe a general category. For example, the Fire Fighter 1 CTS guide includes the following section headings: NFPA Requirements, Fire Department Communications, Fireground Operations, and Preparedness and Maintenance.

Training Standard Title

The training standard title provides a general description of the performance requirement contained within the individual standard.

Authority

The CTS guide references each individual standard with one or more paragraphs of the corresponding National Fire Protection Association (NFPA) Professional Qualifications. This ensures that each fire service function within California's curriculum system meets or exceeds NFPA standards.

When California requirements exceed the NFPA standard, the CTS guide cites the Office of the State Fire Marshal as the authority and prints the corresponding information in *italics*.

Job Performance Requirements

This segment includes a written statement that describes a specific job-related task, the items an individual needs to complete the task, and measurable or observable outcomes.

Requisite Knowledge

This segment lists the knowledge that an individual must acquire to accomplish the job performance requirement.

Requisite Skills

This segment lists the skills that an individual must acquire to accomplish the job performance requirement.

Content Modification

This table documents and justifies any revisions to the NFPA standard that the development or validation cadres make during the development of a CTS guide.

Cross Reference

This table documents where each training standard is taught (course plan), tested (skill sheets), and validated (task book).

Structural Collapse Specialist 1

Section 1: Awareness

1-1: Identifying Incident Hazards

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.1.1

Job Performance Requirement

Identify incident hazards, given a specific type of collapse incident, so that construction type is determined, all associated hazards are identified, and rescue time constraints are taken into account.

Requisite Knowledge

1. *Describe* resource capabilities and limitations
2. *Describe* types and nature of incident hazards
3. *Define* isolation terminology
4. *Describe* methods and equipment
5. *Describe* implementation techniques
6. *Describe* operational requirement concerns
7. *Describe* common risks in collapse incidents
8. *Describe* risk/benefit analysis methods and practices
9. *Identify* construction types and collapse characteristics
10. *Identify* 13 building collapse types
11. *Describe* subsequent collapse potential and causes
12. *Identify* associated types of technical references

Requisite Skills

1. Identify resource capabilities and limitations
2. Identify incident hazards based on construction type
3. Identify collapse zones
4. Assess victim viability based on collapse type and access (risk/benefit)
5. Utilize technical references
6. Operate control and mitigation equipment

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Record	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none">• Topic 1-2• Topic 4-2	SCS1 Training Record (2021) <ul style="list-style-type: none">• 2	SCS1 Instructor (2021) <ul style="list-style-type: none">• JPR 2

1-2: Initiating a Search**Authority**

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.1.2

Job Performance Requirement

Initiate a search, given PPE, an incident location, and victim investigative information, so that search parameters are established and include surface and nonentry void search, the information found is updated and relayed to command, the personnel assignments match their expertise, all victims are located as quickly as possible, risks to searchers are minimized, and accountability is achieved.

Requisite Knowledge

1. *Identify AHJ policies and procedures*
2. *Describe basic sight and hailing search techniques*
3. *Describe operational techniques necessary to operate in the search environment*

Requisite Skills

1. Use hailing techniques, PPE, and triangulation methods
2. Provide for and perform self-escape/self-rescue

Content Modification

Block	Modification	Justification
RK1	Changed "local" to "AHJ".	AHJ makes more sense when students will come from a variety of locations. NFPA has transitioned to AHJ in other updates. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none"> • Topic 1-6 • Topic 4-6 	SCS1 Training Record (2021) <ul style="list-style-type: none"> • 6 	SCS1 Instructor (2021) <ul style="list-style-type: none"> • JPR 6

1-3: Applying a Building Marking System

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.1.3

Job Performance Requirement

Apply the building marking system, given a structural collapse incident, so that the search phase of the floor or structure is marked, victim locations and condition are applied to the area, hazards are noted on the structure, and the access and egress points are marked.

Requisite Knowledge

1. *Identify* FEMA and United Nations International Search and Rescue Advisory Group (INSARAG) search marking systems
2. *Describe* victim marking systems
3. *Describe* structural marking systems
4. *Identify* location criteria for application of each system

Requisite Skills

1. Use marking materials
2. Recognize hazards

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none"> • Topic 1-4 • Topic 4-4 	SCS1 Training Record (2021) <ul style="list-style-type: none"> • 4 	SCS1 Instructor (2021) <ul style="list-style-type: none"> • JPR 4

1-4: Moving a Victim

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.1.4

Job Performance Requirement

Move a victim, given victim transport equipment, litters, other specialized equipment, and victim removal systems specific to the rescue environment, so that the victim is moved without further injuries, risks to rescuers are minimized, the victim is secured to the transfer device, and the victim is removed from the hazard.

Requisite Knowledge

1. *Identify* types of transport equipment and removal systems
2. *Describe* selection factors with regard to specific rescue environments
3. *Describe* methods to reduce and prevent further injuries
4. *Describe* types of risks to rescuers
5. *Describe* ways to secure the victim to transport devices
6. *Describe* transport techniques

Requisite Skills

1. Secure a victim to transport equipment
2. Assemble and operate environment-specific victim removal systems
3. Choose an incident-specific transport device

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none"> • Topic 1-7 • Topic 4-7 	SCS1 Training Record (2021) <ul style="list-style-type: none"> • 7 	SCS1 Instructor (2021) <ul style="list-style-type: none"> • JPR 7

1-5: Performing Collapse Support Operations

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.1.5

Job Performance Requirement

Perform collapse support operations at a rescue incident, given an assignment and available resources, so that scene lighting is provided for the tasks to be undertaken, environmental concerns are addressed, personnel rehabilitation is facilitated, and the support operations facilitate rescue operational objectives.

Requisite Knowledge

1. *Identify* resource management protocols
2. *Describe* principles for establishing lighting
3. *Describe* environmental control methods
4. *Describe* rescuer rehabilitation protocols

Requisite Skills

1. Access resources
2. Set up lights
3. Initiate environmental controls
4. Set up rehabilitation for rescuers

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none"> • Topic 1-5 • Topic 4-5 	SCS1 Training Record (2021) <ul style="list-style-type: none"> • 5 	SCS1 Instructor (2021) <ul style="list-style-type: none"> • JPR 5

1-6: Sizing Up a Structural Collapse Incident

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.1.6

Job Performance Requirement

Size up a structural collapse rescue incident, given background information and applicable reference materials, so that the scope of the rescue is determined, the number of victims is identified, the last reported location of all the victims is established, witnesses and reporting parties are identified and interviewed, resource needs are assessed, primary search parameters are identified, and the information required to develop an initial incident action plan is obtained.

Requisite Knowledge

1. *Identify* types of reference materials and their uses
2. *Identify* availability and capability of the resources
3. *Describe* elements of an incident action plan and related information
4. *Describe* relationship of the size-up to the incident management system
5. *Describe* information gathering techniques and how that information is used in the size-up process
6. *Describe* basic search criteria for structural collapse rescue incidents

Requisite Skills

1. Read technical rescue reference materials
2. Gather information
3. Use interview techniques
4. Relay information
5. Use information-gathering sources

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none"> • Topic 1-1 • Topic 4-1 	SCS1 Training Record (2021) <ul style="list-style-type: none"> • 1 	SCS1 Instructor (2021) <ul style="list-style-type: none"> • JPR 1

1-7: Recognizing the Need for Technical Resources

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.1.7

Job Performance Requirement

Recognize the need for technical rescue resources at an operations- or technician-level incident, given AHJ guidelines, so that the need for additional resources is identified, the response system is initiated, the scene is secured and rendered safe until additional resources arrive, and awareness-level personnel are incorporated into the operational plan.

Requisite Knowledge

1. *Identify* operational protocols
2. *Identify* specific planning forms
3. *Describe* types of incidents common to the AHJ
4. Recognize hazards
5. *Describe* incident support operations and resources
6. *Describe* safety measures

Requisite Skills

1. Read technical rescue reference materials
2. Gather information
3. Use interview techniques
4. Relay information
5. Use information-gathering sources

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none"> • Topic 1-3 • Topic 4-3 	SCS1 Training Record (2021) <ul style="list-style-type: none"> • 3 	SCS1 Instructor (2021) <ul style="list-style-type: none"> • JPR 3

Section 2: Operations

2-1: Conducting a Size-up of a Light Frame or URM Collapsed Structure

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.2.1

Job Performance Requirement

Conduct a size-up of a light frame or unreinforced masonry (URM) collapsed structure, given an incident and specific incident information, so that existing and potential conditions within the structure and the immediate periphery are evaluated, needed resources are defined, hazards are identified, construction and occupancy types are determined, collapse type is identified if possible, the need for rescue is assessed, a scene security perimeter is established, and the size-up is conducted within the scope of the incident management system.

Requisite Knowledge

1. *Identify* light frame and URM construction types
2. *Identify* characteristics and probable occupant locations
3. *Describe* methods to assess rescue needs
4. *Describe* expected behavior of light frame and URM construction in a structural collapse incident
5. *Describe* causes and associated effects of structural collapses
6. *Describe* types and capabilities of resources
7. *Identify* general hazards associated with structural collapse and size-up
8. *Describe* procedures for implementing site control and scene management

Requisite Skills

1. Categorize light frame and URM construction types
2. Evaluate structural stability and hazards
3. Implement resource and security (scene management) protocols

Content Modification

Block	Modification	Justification
RK1	Changed "Identification of" to "Identify".	Adjusted to improve grammar and readability. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none"> • Topic 2-3 • Topic 5-3 	SCS1 Training Record (2021) <ul style="list-style-type: none"> • 10 	SCS1 Instructor (2021) <ul style="list-style-type: none"> • JPR 10

2-2: Determining Potential Victim Locations

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.2.2

Job Performance Requirement

Determine potential victim locations in light frame and URM construction collapse incidents, given size-up information, a structural collapse tool *cache*, the type of construction and occupancy, time of day, and collapse pattern, so that search areas are established and victims can be located.

Requisite Knowledge

1. *Describe* capabilities and limitations of search instruments and resources
2. *Identify* types of building construction
3. *Describe* occupancy classifications
4. *Identify* collapse patterns
5. *Describe* victim behavior
6. *Recognize* potential areas of survivability

Requisite Skills

1. Use size-up information
2. Use occupancy classification information
3. Use search devices
4. Assess and categorize type of collapse

Content Modification

Block	Modification	Justification
JPR	Changed “kit” to “cache”.	A kit is a subset of a larger cache, which is more appropriate for this JPR. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none"> • Topic 2-6 • Topic 5-6 	SCS1 Training Record (2021) <ul style="list-style-type: none"> • 13 	SCS1 Instructor (2021) <ul style="list-style-type: none"> • JPR 13

2-3: Developing a Collapse Rescue Incident Action Plan

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.2.3

Job Performance Requirement

Develop a collapse rescue incident action plan, given size-up information and a light frame and URM construction collapsed structure, so that initial size-up information is utilized, an incident management system is incorporated, existing and potential conditions within the structure and the immediate periphery are included, specialized resource needs are identified, work perimeters are determined, collapse type/category and associated hazards are identified, construction and occupancy types are determined, incident objectives are established, and scene security measures are addressed.

Requisite Knowledge

1. *Describe* incident-specific size-up information
2. *Describe* incident management system components
3. *Describe* dynamics of incident conditions and peripheral areas
4. *Identify* incident-specific resources in a given geographical area
5. *Describe* construction and occupancy types
6. *Describe* scene security requirements
7. *Identify* personnel needs and limitations
8. *Identify* rescue scene operational priorities

Requisite Skills

1. Utilize size-up information
2. Implement an incident management system
3. Monitor changing conditions specific to the incident
4. Identify potential specialized resources
5. Determine construction and occupancy types
6. Identify specific incident security requirements
7. Create written documentation

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none">• Topic 2-4• Topic 5-4	SCS1 Training Record (2021) <ul style="list-style-type: none">• 11	SCS1 Instructor (2021) <ul style="list-style-type: none">• JPR 11

2-4: Implementing a Collapse Rescue Incident Action Plan

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.2.4

Job Performance Requirement

Implement a collapse rescue incident action plan, given an action plan and a light frame and URM construction collapsed structure, so that pertinent information is used, an incident management system is established and implemented, monitoring of dynamic conditions internally and externally is established, specialized resources are requested, hazards are mitigated, victim rescue and extraction techniques are consistent with collapse and construction type, and perimeter security measures are established.

Requisite Knowledge

1. *Describe* components of an action plan specific to collapse incidents
2. *Describe* incident management systems
3. *Identify* dynamics of incident conditions and peripheral areas
4. *Identify* specialized resource lists
5. Recognize hazards
6. *Describe* rescue and extrication techniques consistent with each collapse and construction type
7. *Describe* perimeter security measures
8. *Identify* personnel needs and limitations

Requisite Skills

1. Implement the components of an action plan in a collapse incident
2. Implement an incident management system
3. Initiate hazard mitigation objectives
4. Request specialized resources
5. Initiate rescue objectives
6. Demonstrate perimeter security measures

Content Modification

Block	Modification	Justification
RK4	Changed "identification of" to "identify".	Adjusted for grammar and readability. (2021)
RK5	Changed "hazard identification" to "Recognize hazards".	Adjusted for grammar and readability. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none">• Topic 2-5• Topic 5-5	SCS1 Training Record (2021) <ul style="list-style-type: none">• 12	SCS1 Instructor (2021) <ul style="list-style-type: none">• JPR 12

2-5: Searching a Collapsed Structure

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.2.5

Job Performance Requirement

Search a light frame and URM construction collapsed structure, given PPE, the structural collapse tool *cache*, an assignment, operational protocols, and size-up information, so that all victim locations and potential hazards are identified, marked, and reported; protocols are followed; the mode of operation can be determined; and rescuer safety is maintained.

Requisite Knowledge

1. *Describe* concepts and operation of the incident management system as applied to the search function
2. *Describe how to apply* specialty tools and locating devices
3. *Describe how to apply* recognized marking systems
4. *Describe* voice-sounding techniques
5. *Identify* potential victim locations as related to the type of structure and occupancy
6. *Identify* building construction type
7. *Describe* collapse types and their influence on the search function
8. *Describe* operational search protocols
9. *Recognize* various hazards

Requisite Skills

1. Implement an incident management system
2. Apply search techniques
3. Use marking systems
4. Identify and mitigate hazards
5. Select and use victim locating devices

Content Modification

Block	Modification	Justification
JPR	Changed “kit” to “cache”.	A kit is a subset of a larger cache, which is more appropriate for this JPR. (2021)
RK2	Changed “application of” to “how to apply”.	Adjusted for grammar and readability. (2021)
RK3	Changed “application of” to “how to apply”.	Adjusted for grammar and readability. (2021)
RK6	Added “type”.	You need to know the construction type because you approach different types in different ways. (2021)
RK8	Added “search”.	Added to narrow scope of “protocols.” (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none">• Topic 2-7• Topic 5-7	SCS1 Training Record (2021) <ul style="list-style-type: none">• 14	SCS1 Instructor (2021) <ul style="list-style-type: none">• JPR 14

2-6: Stabilizing a Collapsed Structure as a Member of a Team

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.2.6

Job Performance Requirement

Stabilize a collapsed light frame and URM construction structure as a member of a team, given size-up information, a specific pattern of collapse, a basic structural collapse tool *cache*, and an assignment, so that strategies to effectively minimize the movement of structural components are identified and implemented; hazard warning systems are established and understood by participating personnel; hazard-specific PPE is identified, provided, and utilized; physical hazards are identified; confinement, containment, and avoidance measures are discussed; and a rapid intervention team is established and staged.

Requisite Knowledge

1. Identify appropriate PPE
2. Describe PPE care and maintenance requirements
3. Describe confinement, containment, and avoidance measures
4. *Describe* structural load calculations for shoring system requirements
5. *Describe* shoring systems for stabilization
6. *Identify* specific hazards associated with light frame and URM construction structural collapse
7. *Describe* strategic planning for collapse incidents
8. *Describe* communications and safety protocols
9. *Identify* atmospheric monitoring equipment needs
10. *Identify* characteristics, expected behavior, type, causes, and associated effects of light frame and URM construction structural collapses
11. *Recognize* potential for, and signs of, impending secondary collapse

Requisite Skills

1. Select and construct shoring systems for collapses in light frame and URM construction structures
2. Use PPE
3. Perform structural load calculations
4. Determine resource needs
5. Select and operate basic and specialized tools and equipment
6. Implement communications and safety protocols
7. Mitigate specific hazards associated with shoring tasks

Content Modification

Block	Modification	Justification
JPR	Changed “kit” to “cache”.	A kit is a subset of a larger cache, which is more appropriate for this JPR. (2021)
RK1	Split “identification and care of required PPE” into two separate knowledge items.	Needed to separate appropriate PPE selection and PPE care and maintenance. (2021)
RK2	Split “identification and care of required PPE” into two separate knowledge items.	Needed to separate appropriate PPE selection and PPE care and maintenance. (2021)
RK3	Added new RK item.	This is a standard for the JPR but not addressed in the requisite knowledge. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none"> • Topic 2-11 • Topic 5-11 	SCS1 Training Record (2021) <ul style="list-style-type: none"> • 18 	SCS1 Instructor (2021) <ul style="list-style-type: none"> • JPR 18

2-7: Releasing a Victim from Entrapment

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.2.7

Job Performance Requirement

Release a victim from entrapment by components of a light frame and URM construction collapsed structure, given PPE and resources for breaching, breaking, lifting, prying, shoring, and/or otherwise moving or penetrating the offending structural component, so that hazards to rescue personnel and victims are minimized, considerations are given to compartment syndrome due to crush injuries, techniques enhance patient survivability, tasks are accomplished within projected time frames, and techniques do not compromise the integrity of the existing structure or structural support systems.

Requisite Knowledge

1. Identify appropriate PPE
2. Describe PPE care and maintenance requirements
3. *Identify* general hazards associated with each type of structural collapse
4. *Describe* methods of evaluating structural integrity
5. *Describe* compartment syndrome protocols
6. *Identify* construction types and collapse characteristics of light frame and URM construction structures
7. *Describe* causes and associated effects of structural collapses
8. *Identify* potential signs of impending secondary collapse
9. *Describe how to* select and apply rescue tools and resources
10. *Describe* risk/benefit assessment techniques for extrication methods and time constraints

Requisite Skills

1. Select, use, and care for PPE
2. Operate rescue tools and stabilization systems
3. Recognize compartment syndrome indicators
4. Complete risk/benefit assessments for selected methods of rescue and time constraints

Content Modification

Block	Modification	Justification
RK1	Split “identification, utilization, and required care of PPE” into two separate knowledge items.	Needed to separate appropriate PPE selection and PPE care and maintenance. (2021)
RK2	Split “identification, utilization, and required care of PPE” into two separate knowledge items.	Needed to separate appropriate PPE selection and PPE care and maintenance. (2021)

Structural Collapse Specialist 1 (2021)

Section 2: Operations

RK6	Changed “identification of” to “Identify” and “light-frame” to “light frame”.	Adjusted for grammar, readability, and consistency. (2021)
RK8	Changed “selection and application of” to “how to select and apply”.	Adjusted for grammar and readability. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none">• Topic 2-13• Topic 5-13	SCS1 Training Record (2021) <ul style="list-style-type: none">• 20	SCS1 Instructor (2021) <ul style="list-style-type: none">• JPR 20

2-8: Removing a Victim from a Collapse Incident

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.2.8

Job Performance Requirement

Remove a victim from a light frame and URM construction collapse incident, given a disentangled victim, a basic first aid kit, and victim packaging resources, so that basic life functions are supported as required, victim is evaluated for signs of compartment syndrome due to crush injuries, advanced life support is called if needed, methods and packaging devices selected are compatible with intended routes of transfer, universal precautions are employed to protect personnel from bloodborne pathogens, and extraction times meet time constraints for medical management.

Requisite Knowledge

1. Identify appropriate PPE
2. Describe PPE care and maintenance requirements
3. *Identify* general hazards associated with structural collapse
4. *Identify* light frame and URM construction types
5. *Describe* characteristics and expected behavior of each type in a structural collapse incident
6. *Describe* causes and associated effects of structural collapses
7. *Recognize* potential for and signs of impending secondary collapse
8. *Describe* characteristic mechanisms of compartment syndrome due to crush injuries and basic life support
9. *Describe* patient packaging principles

Requisite Skills

1. Select, use, and care for PPE
2. *Perform* basic prehospital care *and treatment* of soft-tissue injuries
3. *Stabilize* fractures
4. *Perform* airway maintenance techniques and cardiopulmonary resuscitation
5. Identify signs and symptoms of compartment syndrome
6. Select and use patient packaging equipment

Content Modification

Block	Modification	Justification
JPR	Changed “light-frame” to “light frame”.	Adjusted for consistency. (2021)
RK1	Split “identification, utilization, and required care of PPE resources for structural collapse incidents” into two separate knowledge items.	Needed to separate appropriate PPE selection and PPE care and maintenance. (2021)

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RK2	Split “identification, utilization, and required care of PPE resources for structural collapse incidents” into two separate knowledge items.	Needed to separate appropriate PPE selection and PPE care and maintenance. (2021)
RK4	Changed “identification of” to “Identify” and “light-frame” to “light frame”.	Adjusted for grammar, consistency, and readability. (2021)
RK7	Changed “recognition of” to “recognize”.	Adjusted for grammar and readability. (2021)
RS2	Added “perform” and “and treatment”.	NFPA did not provide a verb. (2021)
RS3	Changed “Fracture stabilization” to “Stabilize fractures”.	Adjusted for grammar and readability. (2021)
RS4	Added “Perform” and made “technique” plural.	NFPA did not provide a verb. There is more than one technique. (2021)
RS5	Added new RK item.	This can occur in light frame and URM construction collapses as well as in heavy construction collapses. Should be addressed at this level too. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none"> • Topic 2-14 • Topic 5-14 	SCS1 Training Record (2021) <ul style="list-style-type: none"> • 21 	SCS1 Instructor (2021) <ul style="list-style-type: none"> • JPR 21

2-9: Lifting a Heavy Load as a Team Member

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.2.9

Job Performance Requirement

Lift a heavy load as a team member, given a structural collapse tool *cache* and a load to be lifted, so that the load is lifted; control and stabilization are maintained before, during, and after the lift; and access can be gained.

Requisite Knowledge

1. Describe how to apply levers
2. *Describe* classes of levers
3. *Describe* principles of leverage, gravity, and load balance
4. *Describe* resistance force
5. *Describe* mechanics of load stabilization
6. *Describe* mechanics of load lifting
7. *Describe how to* apply pneumatic, hydraulic, mechanical, and manual lifting tools
8. *Describe* how to calculate the weight of the load
9. *Describe* safety protocols
10. *Describe* stabilization systems

Requisite Skills

1. Evaluate and estimate the weight of the load
2. Operate lifting tools
3. Apply a lever
4. Application load stabilization systems

Content Modification

Block	Modification	Justification
JPR	Changed “kit” to “cache”.	A kit is a subset of a larger cache, which is more appropriate for this JPR. (2021)
RK1	Changed “application of” to “how to apply”.	Adjusted for grammar and readability. (2021)
RK7	Changed “application of” to “how to apply”.	Adjusted for grammar and readability. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none">• Topic 2-9• Topic 5-9	SCS1 Training Record (2021) <ul style="list-style-type: none">• 16	SCS1 Instructor (2021) <ul style="list-style-type: none">• JPR 16

2-10: Moving a Heavy Load as a Team Member

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.2.10

Job Performance Requirement

Move a heavy load as a team member, given a structural collapse tool *cache*, so that the load is moved the required distance to gain access and so that control is constantly maintained.

Requisite Knowledge

1. *Describe how to apply rigging systems*
2. *Describe how to apply levers*
3. *Describe classes of levers*
4. *Describe how to apply rollers*
5. *Describe inclined planes*
6. *Describe gravity, center of gravity, and load balance*
7. *Describe friction*
8. *Describe mechanics of load stabilization and load lifting*
9. *Describe capabilities and limitations of lifting tools*
10. *Describe how to calculate the weight of the load*
11. *Describe safety protocols*

Requisite Skills

1. Evaluate and estimate the weight of the load
2. Operate required tools
3. Construct and use levers, *rollers*, and *inclined planes*
4. Utilize rigging systems
5. Stabilize the load

Content Modification

Block	Modification	Justification
JPR	Changed “kit” to “cache”.	A kit is a subset of a larger cache, which is more appropriate for this JPR. (2021)
RK1	Changed “application of” to “how to apply”.	Adjusted for grammar and readability. (2021)
RK2	Changed “application of” to “how to apply”.	Adjusted for grammar and readability. (2021)
RK4	Added new RK item.	This tool was missed in the list but is noted in the Annex materials. (2021)
RK6	Added “center of gravity”.	This term is more common in the fire service than “gravity and load balance”. (2021)

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RS3	Added “rollers” and changed “incline” to “inclined”.	Added “rollers” to correspond to RK 4. “Incline” is incorrect term. (2021)
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Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none">• Topic 2-10• Topic 5-10	SCS1 Training Record (2021) <ul style="list-style-type: none">• 17	SCS1 Instructor (2021) <ul style="list-style-type: none">• JPR 17

2-11: Breaching Structural Components

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.2.11

Job Performance Requirement

Breach light frame and URM construction structural components, given an assignment, PPE, various types of construction materials, and a structural collapse tool *cache*, so that the opening supports the rescue objectives, the necessary tools are selected, structural stability is maintained, and the methods utilized are safe and efficient.

Requisite Knowledge

1. *Describe* effective breaching techniques
2. *Describe* types of building construction and characteristics of materials used in each
3. *Describe* the selection, capabilities, and limitations of tools
4. *Describe* safety protocols for breaching operations
5. *Describe how to* calculate weight
6. *Describe how to* anticipate material movement during breaching and stabilization techniques

Requisite Skills

1. Select and use breaching tools
2. Implement breaching techniques based on *light* frame and URM construction types
3. Use PPE
4. Apply stabilization where required

Content Modification

Block	Modification	Justification
JPR	Changed “kit” to “cache”.	A kit is a subset of a larger cache, which is more appropriate for this JPR. (2021)
RK5	Changed “calculation of” to “how to calculate”.	Adjusted for grammar and readability. (2021)
RK6	Changed “anticipation of” to “how to anticipate”.	Adjusted for grammar and readability. (2021)
RS2	Changed “building” to “light”.	Adjusted to match other uses of the term. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none"> • Topic 2-12 • Topic 5-12 	SCS1 Training Record (2021) <ul style="list-style-type: none"> • 19 	SCS1 Instructor (2021) <ul style="list-style-type: none"> • JPR 19

2-12: Constructing Cribbing Systems

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.2.12

Job Performance Requirement

Construct cribbing systems, given an assignment, PPE, a structural collapse tool *cache*, various lengths and dimensions of lumber, wedges, and shims, so that the cribbing system will safely support the load, the system is stable, and the assignment is completed.

Requisite Knowledge

1. *Describe* different types of cribbing systems and their construction methods
2. *Describe* limitations of construction lumber
3. *Describe* load calculations
4. *Describe* principles of and applications for cribbing
5. *Describe* safety protocols

Requisite Skills

1. Select and construct cribbing systems
2. Evaluate the structural integrity of the system
3. Determine stability
4. Calculate loads

Content Modification

Block	Modification	Justification
JPR	Changed “kit” to “cache”.	A kit is a subset of a larger cache, which is more appropriate for this JPR. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none"> • Topic 2-8 • Topic 5-8 	SCS1 Training Record (2021) <ul style="list-style-type: none"> • 15 	SCS1 Instructor (2021) <ul style="list-style-type: none"> • JPR 15

2-13: Maintaining Hazard-specific PPE

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.2.13

Job Performance Requirement

Maintain hazard-specific PPE, given clothing or equipment for the protection of the rescuers, including respiratory protection, cleaning and sanitation supplies, maintenance logs or records, inspection procedures, and such tools and resources as are indicated by the manufacturer's guidelines for assembly or disassembly of components during repair or maintenance, so that damage, defects, and wear are identified and reported or repaired; equipment functions as designed; and preventive maintenance has been performed and documented consistent with the manufacturer's recommendations.

Requisite Knowledge

1. *Describe* functions, construction, and operation of PPE
2. *Describe how to* use record-keeping systems of the AHJ
3. *Describe* requirements and procedures for cleaning, sanitizing, and infectious disease control
4. *Describe how to* use provided assembly and disassembly tools
5. *Identify* manufacturer and department recommendations
6. *Describe* pre-use inspection procedures
7. *Describe how to* determine operational readiness

Requisite Skills

1. Identify wear and damage indicators for PPE
2. Evaluate operational readiness of PPE
3. Complete logs and records
4. Use cleaning equipment, supplies, and reference materials
5. Select and use tools specific to the task

Content Modification

Block	Modification	Justification
RK2	Changed "use of" to "how to use".	Adjusted for grammar and readability. (2021)
RK4	Changed "use of" to "how to use".	Adjusted for grammar and readability. (2021)
RK6	Changed "preuse" to "pre-use".	Adjusted for grammar and readability. (2021)
RK7	Changed "ways" to "how".	Adjusted for grammar and readability. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none"> • Topic 2-1 • Topic 5-1 SCS2: Technician (2021) <ul style="list-style-type: none"> • Topic 1-1 • Topic 3-1 	SCS1 Training Record (2021) <ul style="list-style-type: none"> • 8 SCS2 Training Record (2021) <ul style="list-style-type: none"> • 1 	SCS1 Instructor (2021) <ul style="list-style-type: none"> • JPR 8 SCS2 Instructor (2021) <ul style="list-style-type: none"> • JRP 1

2-14: Maintaining Rescue Equipment

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.2.14

Job Performance Requirement

Maintain rescue equipment, given maintenance logs and records, tools, and resources as indicated by the manufacturer's guidelines, inspection procedures, equipment replacement protocol, and organizational standard operating procedure, so that the operational status of equipment is verified and documented, all components are checked for operation, deficiencies are repaired or reported as indicated by standard operating procedure, and items subject to replacement are correctly disposed of and changed out.

Requisite Knowledge

1. *Describe* functions and operations of rescue equipment
2. *Describe how to* use record-keeping systems
3. *Describe* manufacturer and organizational care and maintenance requirements
4. *Describe how to* select and use maintenance tools
5. *Describe* replacement protocol and procedures
6. *Describe* disposal methods
7. *Describe AHJ* standard operating procedures

Requisite Skills

1. Identify wear and damage indicators for rescue equipment
2. Evaluate *operational* readiness of equipment
3. Complete logs and records
4. Select and use maintenance tools

Content Modification

Block	Modification	Justification
RK2	Changed "use of" to "how to use".	Adjusted for grammar and readability. (2021)
RK4	Changed "selection and use of" to "how to select and use".	Adjusted for grammar and readability. (2021)
RK7	Changed "organizational" to "AHJ".	Adjusted for consistency. (2021)
RS2	Changed "operation" to "operational".	Incorrect word used. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none">• Topic 2-2• Topic 5-2	SCS1 Training Record (2021) <ul style="list-style-type: none">• 9	SCS1 Instructor (2021) <ul style="list-style-type: none">• JPR 9
SCS2: Technician (2021) <ul style="list-style-type: none">• Topic 1-2• Topic 3-2	SCS2 Training Record (2021) <ul style="list-style-type: none">• 2	SCS2 Instructor (2021) <ul style="list-style-type: none">• JPR 2

2-15: Terminating an Incident

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.2.15

Job Performance Requirement

Terminate an incident, given PPE specific to the incident, isolation barriers, and tool *cache*, so that rescuers and bystanders are protected and accounted for during termination operations; the party responsible is notified of any modification or damage created during the operational period; documentation of loss or material use is accounted for, scene documentation is performed, scene control is transferred to a responsible party; potential or existing hazards are communicated to that responsible party; debriefing and post-incident analysis and critique are considered, and command is terminated.

Requisite Knowledge

1. *Identify* PPE characteristics
2. *Identify* hazards and risks
3. *Describe* isolation techniques
4. *Recognize* statutory requirements identifying responsible parties
5. *Describe how to use an* accountability system
6. *Describe* reporting methods
7. *Describe* post-incident analysis techniques

Requisite Skills

1. Select and use hazard-specific PPE
2. *Identify and perform* decontamination
3. Use barrier protection techniques
4. Collect data
5. *Follow* record-keeping/reporting protocol
6. *Complete* post-incident analysis activities

Content Modification

Block	Modification	Justification
JPR	Changed “kit” to “cache”.	A kit is a subset of a larger cache, which is more appropriate for this JPR. (2021)
RK2	Changed “identification” to “Identify”.	Adjusted for grammar and readability. (2021)
RK5	Changed “use” to “how to use an”.	Adjusted for grammar and readability. (2021)
RS2	Added “Identify and perform.”	NFPA did not provide a verb. (2021)

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RS5	Added "Follow".	NFPA did not provide a verb. (2021)
RS6	Added "Complete".	NFPA did not provide a verb. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS1: Operations (2021) <ul style="list-style-type: none">• Topic 2-15• Topic 5-15	SCS1 Training Record (2021) <ul style="list-style-type: none">• 22	SCS1 Instructor (2021) <ul style="list-style-type: none">• JPR 22

Structural Collapse Specialist 2

Section 3: Technician

3-1: Conducting a Size-up of a Collapsed Heavy Construction-type Structure

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.3.1

Job Performance Requirement

Conduct a size-up of a collapsed heavy construction–type structure, given an incident and specific incident information, so that existing and potential conditions within the structure and the immediate periphery are evaluated, needed resources are defined, hazards are identified, construction and occupancy types are determined, collapse type is identified if possible, the need for rescue is assessed, a scene security perimeter is established, and the size-up is conducted within the scope of the incident management system.

Requisite Knowledge

1. *Identify* heavy construction types
2. *Identify* characteristics, and probable occupant locations
3. *Describe* methods to assess rescue needs
4. *Describe* expected behavior of heavy construction in a structural collapse incident
5. *Describe* causes and associated effects of structural collapses
6. *Describe* types and capabilities of resources
7. *Identify* general hazards associated with structural collapse and size-up
8. *Describe* procedures for implementing site control and scene management

Requisite Skills

1. Categorize heavy construction types
2. Evaluate structural stability and hazards
3. Implement resource and security (scene management) protocols

Content Modification

Block	Modification	Justification
RK1	Changed “Identification of” to “Identify”.	Adjusted to for grammar and readability. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS2: Technician (2021) <ul style="list-style-type: none">• Topic 1-3• Topic 4-1	SCS2 Training Record (2021) <ul style="list-style-type: none">• 3	SCS2 Instructor (2021) <ul style="list-style-type: none">• JPR 3

3-2: Determining Potential Victim Locations

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.3.2

Job Performance Requirement

Determine potential victim locations in a heavy construction–type incident, given size-up information, a structural collapse tool *cache*, the type of construction and occupancy, time of day, and collapse pattern, so that search areas are established and victims can be located.

Requisite Knowledge

1. *Describe* capabilities and limitation of search instruments and resources
2. *Identify* types of building construction
3. *Describe* occupancy classifications
4. *Identify* collapse patterns
5. *Describe* victim behavior
6. *Recognize* potential areas of survivability

Requisite Skills

1. Use size-up information
2. Use occupancy classification information
3. Use search devices
4. Assess and categorize type of collapse

Content Modification

Block	Modification	Justification
JPR	Changed “kit” to “cache”.	A kit is a subset of a larger cache, which is more appropriate for this JPR. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS2: Technician (2021) <ul style="list-style-type: none"> • Topic 1-6 • Topic 4-4 	SCS2 Training Record (2021) <ul style="list-style-type: none"> • 6 	SCS2 Instructor (2021) <ul style="list-style-type: none"> • JPR 6

3-3: Developing a Collapse Rescue Incident Action Plan

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.3.3

Job Performance Requirement

Develop a collapse rescue incident action plan, given size-up information and a heavy collapsed structure, so that initial size-up information is utilized, an incident management system is incorporated, existing and potential conditions within the structure and the immediate periphery are included, specialized resource needs are identified, work perimeters are determined, collapse type/category and associated hazards are identified, construction and occupancy types are determined, incident objectives are established, and scene security measures are addressed.

Requisite Knowledge

1. *Describe* incident-specific size-up information
2. *Describe* incident management system components
3. *Describe* dynamics of incident conditions and peripheral areas
4. *Identify* incident-specific resources in a given geographical area
5. *Describe* construction and occupancy types
6. *Describe* scene security requirements
7. *Identify* personnel needs and limitations
8. *Identify* rescue scene operational priorities

Requisite Skills

1. Utilize size-up information
2. Implement an incident management system
3. Monitor changing conditions specific to the incident
4. Identify potential specialized resources
5. Determine construction and occupancy types
6. Identify specific incident security requirements
7. Create written documentation

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Records	Task Book
SCS2: Technician (2021) <ul style="list-style-type: none">• Topic 1-4• Topic 4-2	SCS2 Training Record (2021) <ul style="list-style-type: none">• 4	SCS2 Instructor (2021) <ul style="list-style-type: none">• JPR 4

3-4: Implementing a Collapse Rescue Incident Action Plan

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.3.4

Job Performance Requirement

Implement a collapse rescue incident action plan, given an action plan and a heavy construction–type collapsed structure, so that pertinent information is used, an incident management system is established and implemented, monitoring of dynamic conditions internally and externally is established, specialized resources are requested, hazards are mitigated, victim rescue and extraction techniques are consistent with collapse and construction type, and perimeter security measures are established.

Requisite Knowledge

1. *Describe* components of an action plan specific to collapse incidents
2. *Describe* incident management systems
3. *Identify* dynamics of incident conditions and peripheral areas
4. *Identify* specialized resource lists
5. Recognize hazards
6. *Describe* rescue and extrication techniques consistent with each collapse and construction type
7. *Describe* perimeter security measures
8. *Identify* personnel needs and limitations

Requisite Skills

1. Implement the components of an action plan in a collapse incident
2. Implement an incident management system
3. Initiate hazard mitigation objectives
4. Request specialized resources
5. Initiate rescue objectives
6. Demonstrate perimeter security measures

Content Modification

Block	Modification	Justification
RK4	Changed “identification of” to “Identify”.	Adjusted for grammar and readability. (2021)
RK5	Changed “identification of” to “Recognize”.	Adjusted for grammar and readability. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS2: Technician (2021) <ul style="list-style-type: none">• Topic 1-5• Topic 4-3	SCS2 Training Record (2021) <ul style="list-style-type: none">• 5	SCS2 Instructor (2021) <ul style="list-style-type: none">• JPR 5

3-5: Searching a Collapsed Structure

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.3.5

Job Performance Requirement

Search a heavy construction–type collapsed structure, given PPE, the structural collapse tool *cache*, an assignment, operational protocols, and size-up information, so that all victim locations and potential hazards are identified, marked, and reported; protocols are followed; the mode of operation can be determined; and rescuer safety is maintained.

Requisite Knowledge

1. *Describe* concepts and operation of the incident management system as applied to the search function
2. *Describe how to* apply specialty tools and locating devices
3. *Describe how to* apply recognized marking systems
4. *Describe* voice-sounding techniques
5. *Identify* potential victim locations as related to the type of structure and occupancy
6. *Identify* building construction type
7. *Describe* collapse types and their influence on the search function
8. *Describe* operational search protocols
9. *Recognize* various hazards

Requisite Skills

1. Implement an incident management system
2. Apply search techniques
3. Use marking systems
4. Identify and mitigate hazards
5. Select and use victim locating devices

Content Modification

Block	Modification	Justification
JPR	Changed “kit” to “cache”.	A kit is a subset of a larger cache, which is more appropriate for this JPR. (2021)
RK2	Changed “application of” to “how to apply”.	Adjusted for grammar and readability. (2021)
RK3	Changed “application of” to “how to apply”.	Adjusted for grammar and readability. (2021)
RK6	Added “type”.	Added for context. (2021)
RK8	Added “search”.	Added to narrow scope of protocols.

RK9	Changed “and their recognition” to “Recognize”.	Adjusted for grammar and readability. (2021)
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Cross Reference

Course Plan	Training Records	Task Book
SCS2: Technician (2021) <ul style="list-style-type: none"> • Topic 1-7 • Topic 4-5 	SCS2 Training Record (2021) <ul style="list-style-type: none"> • 7 	SCS2 Instructor (2021) <ul style="list-style-type: none"> • JPR 7

3-6: Stabilizing a Collapsed Structure Using Timber Shoring Systems

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.3.6

Job Performance Requirement

Stabilize a collapsed heavy construction–type structure *using timber shoring systems* as a member of a team, given size-up information, a specific pattern of collapse, a basic structural collapse tool *cache*, and an assignment, so that strategies to effectively minimize the movement of structural components are identified and implemented; hazard warning systems are established and understood by participating personnel; hazard-specific PPE is identified, provided, and utilized; physical hazards are identified; confinement, containment, and avoidance measures are discussed; and a rapid intervention team is established and staged.

Requisite Knowledge

1. *Identify appropriate PPE*
2. *Describe PPE care and maintenance requirements*
3. *Describe confinement, containment, and avoidance measures*
4. *Describe structural load calculations for shoring system requirements*
5. *Describe shoring systems for stabilization*
6. *Describe specific hazards associated with heavy structural collapse*
7. *Describe strategic planning for collapse incidents*
8. *Describe communications and safety protocols*
9. *Identify atmospheric monitoring equipment needs*
10. *Identify characteristics, expected behavior, type, causes, and associated effects of heavy structural collapses*
11. *Recognize potential for and signs of impending secondary collapse*

Requisite Skills

1. Select and construct shoring systems for collapses in heavy structures
2. Use PPE
3. Perform structural load calculations
4. Determine resource needs
5. Select and operate basic and specialized tools and equipment
6. Implement communications and safety protocols
7. Mitigate specific hazards associated with shoring tasks

Content Modification

Block	Modification	Justification
JPR	Added “using timber shoring systems”	Added to distinguish between NFPA paragraph 6.3.6 and 6.3.13. Same task using different materials. (2021)
JPR	Changed “kit” to “cache”.	A kit is a subset of a larger cache, which is more appropriate for this JPR. (2021)
RK1	Split “identification and required care of PPE” into two separate knowledge items.	Needed to separate appropriate PPE selection and PPE care and maintenance. (2021)
RK2	Split “identification and required care of PPE” into two separate knowledge items.	Needed to separate appropriate PPE selection and PPE care and maintenance. (2021)
RK3	Added new RK item.	This is a standard for the JPR but not addressed in the requisite knowledge. (2021)
RK10	Changed “identification” to “Identify”.	Adjusted for grammar and readability. (2021)
RK11	Changed “recognition of” to “Recognize”.	Adjusted for grammar and readability. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS2: Technician (2021) <ul style="list-style-type: none"> • Topic 1-11 • Topic 4-9 	SCS2 Training Record (2021) <ul style="list-style-type: none"> • 11 	SCS2 Instructor (2021) <ul style="list-style-type: none"> • JPR 11

3-7: Releasing a Victim from Entrapment

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.3.7

Job Performance Requirement

Release a victim from entrapment by components of a heavy construction–type collapsed structure, given PPE and resources for breaching, breaking, lifting, prying, shoring, and/or otherwise moving or penetrating the offending structural component, so that hazards to rescue personnel and victims are minimized, considerations are given to compartment syndrome due to crush injuries, techniques enhance patient survivability, tasks are accomplished within projected time frames, and techniques do not compromise the integrity of the existing structure or structural support systems.

Requisite Knowledge

1. *Identify appropriate PPE*
2. *Describe PPE care and maintenance requirements*
3. *Identify general hazards associated with each type of structural collapse*
4. *Describe methods of evaluating structural integrity*
5. *Describe compartment syndrome protocols*
6. *Identify construction types and collapse characteristics of heavy construction–type structures*
7. *Describe causes and associated effects of structural collapses*
8. *Identify potential signs of impending secondary collapse*
9. *Describe how to select and apply rescue tools and resources*
10. *Describe risk/benefit assessment techniques for extrication methods and time constraints*

Requisite Skills

1. Select, use, and care for PPE
2. Operate rescue tools and stabilization systems
3. Recognize compartment syndrome signs and symptoms
4. Complete risk/benefit assessments for selected methods of rescue and time constraints

Content Modification

Block	Modification	Justification
RK1	Changed “identification, utilization, and required care of PPE” into two separate items.	Needed to separate appropriate PPE selection and PPE care and maintenance. (2021)
RK2	Changed “identification, utilization, and required care of PPE” into two separate items.	Needed to separate appropriate PPE selection and PPE care and maintenance. (2021)

Structural Collapse Specialist 2 (2021)

Section 3: Technician

RK6	Changed “identification of” to “Identify”.	Adjusted for grammar and readability. (2021)
RK9	Changed “selection and application of” to “how to select and apply”.	Adjusted for grammar and readability. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS2: Technician (2021) <ul style="list-style-type: none">• Topic 1-16• Topic 4-14	SCS2 Training Record (2021) <ul style="list-style-type: none">• 16	SCS2 Instructor (2021) <ul style="list-style-type: none">• JPR 16

3-8: Removing a Victim from a Collapse Incident

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.3.8

Job Performance Requirement

Remove a victim from a heavy construction–type collapse incident, given a disentangled victim, a basic first aid kit, and victim packaging resources, so that basic life functions are supported as required, victim is evaluated for signs of compartment syndrome, advanced life support is called if needed, methods and packaging devices selected are compatible with intended routes of transfer, universal precautions are employed to protect personnel from bloodborne pathogens, and extraction times meet time constraints for medical management.

Requisite Knowledge

1. *Identify appropriate PPE*
2. *Describe PPE care and maintenance requirements*
3. *Identify general hazards associated with structural collapse*
4. *Identify heavy construction types*
5. *Describe characteristics and expected behavior of each type in a structural collapse incident*
6. *Describe causes and associated effects of structural collapses*
7. *Recognize potential for, and signs of, impending secondary collapse*
8. *Describe characteristic mechanisms of injury and basic life support*
9. *Describe patient packaging principles*

Requisite Skills

1. Select, use, and care for PPE
2. *Perform* basic prehospital care *and treatment* of soft-tissue injuries
3. *Stabilize* fractures
4. *Perform* airway maintenance techniques and cardiopulmonary resuscitation
5. *Identify* signs and symptoms of compartment syndrome
6. Select and use of patient packaging equipment

Content Modification

Block	Modification	Justification
RK1	Split “identification, utilization, and required care of PPE resources for structural collapse incidents” into two separate knowledge items.	Needed to separate appropriate PPE selection and PPE care and maintenance. (2021)
RK2	Split “identification, utilization, and required care of PPE resources for structural collapse incidents” into two separate knowledge items.	Needed to separate appropriate PPE selection and PPE care and maintenance. (2021)
RK4	Changed “identification of” to “Identify”.	Adjusted for grammar and readability. (2021)

Structural Collapse Specialist 2 (2021)

Section 3: Technician

RK7	Changed “recognition of” to “Recognize”.	Adjusted for grammar and readability. (2021)
RS2	Added “Perform” and “and treatment”.	NFPA did not provide a verb. (2021)
RS3	Changed “fracture stabilization” to “stabilize fractures”.	Adjusted for grammar and readability. (2021)
RS4	Added “Perform”.	NFPA did not provide a verb. (2021)
RS5	Added “Identify”.	NFPA did not provide a verb. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS2: Technician (2021) <ul style="list-style-type: none">• Topic 1-17• Topic 4-15	SCS2 Training Record (2021) <ul style="list-style-type: none">• 17	SCS2 Instructor (2021) <ul style="list-style-type: none">• JPR 17

3-9: Lifting a Heavy Load as a Team Member

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.3.9

Job Performance Requirement

Lift a heavy load as a team member, given a structural collapse tool *cache* and a load to be lifted, so that the load is lifted; control and stabilization are maintained before, during, and after the lift; and access can be gained.

Requisite Knowledge

1. *Describe how to* apply levers
2. *Describe* classes of levers
3. *Describe* principles of leverage, gravity, and load balance
4. *Describe* resistance force
5. *Describe* mechanics of load stabilization
6. *Describe* mechanics of load lifting
7. *Describe how to* apply pneumatic, hydraulic, mechanical, and manual lifting tools
8. *Describe* how to calculate the weight of the load
9. *Describe* safety protocols
10. *Describe* stabilization systems

Requisite Skills

1. Evaluate and estimate the weight of the load
2. Operate lifting tools
3. Apply a lever
4. Apply and load stabilization systems

Content Modification

Block	Modification	Justification
JPR	Changed “kit” to “cache”.	A kit is a subset of a larger cache, which is more appropriate for this JPR. (2021)
RK1	Changed “application of” to “how to apply”.	Adjusted for grammar and readability. (2021)
RK7	Changed “application of” to “how to apply”.	Adjusted for grammar and readability. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS2: Technician (2021) <ul style="list-style-type: none">• Topic 1-9• Topic 4-7	SCS2 Training Record (2021) <ul style="list-style-type: none">• 9	SCS2 Instructor (2021) <ul style="list-style-type: none">• JPR 9

3-10: Moving a Heavy Load as a Team Member

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.3.10

Job Performance Requirement

Move a heavy load as a team member, given a structural collapse tool *cache*, so that the load is moved the required distance to gain access and so that control is constantly maintained.

Requisite Knowledge

1. *Describe how to apply of rigging systems*
2. *Describe how to apply levers*
3. *Describe classes of levers*
4. *Describe how to apply rollers*
5. *Describe inclined planes*
6. *Describe gravity, center of gravity, and load balance*
7. *Describe friction*
8. *Describe mechanics of load stabilization and load lifting*
9. *Describe capabilities and limitations of lifting tools*
10. *Describe how to calculate the weight of the load*
11. *Describe safety protocols*

Requisite Skills

1. Evaluate and estimate the weight of the load
2. Operate required tools
3. Construct and use levers, *rollers*, and incline planes
4. Utilize rigging systems
5. Stabilize the load

Content Modification

Block	Modification	Justification
JPR	Changed “kit” to “cache”.	A kit is a subset of a larger cache, which is more appropriate for this JPR. (2021)
RK1	Changed “application of” to “how to apply”.	Adjusted for grammar and readability. (2021)
RK2	Changed “application of” to “how to apply”.	Adjusted for grammar and readability. (2021)
RK4	Added new RK item.	This tool was missed in the list but is noted in the Annex materials. (2021)
RK6	Added “center of gravity”.	This term is more common in the fire service than “gravity and load balance”. (2021)

Structural Collapse Specialist 2 (2021)

Section 3: Technician

RS3	Added “rollers” and changed “incline” to “inclined”.	Added “rollers” to correspond to RK 4. “Incline” is incorrect term. (2021)
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Cross Reference

Course Plan	Training Records	Task Book
SCS2: Technician (2021) <ul style="list-style-type: none">• Topic 1-10• Topic 4-8	SCS2 Training Record (2021) <ul style="list-style-type: none">• 10	SCS2 Instructor (2021) <ul style="list-style-type: none">• JPR 10

3-11: Breaching Heavy Structural Components

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.3.11

Job Performance Requirement

Breach heavy structural components, given an assignment, PPE, various types of construction materials, and a structural collapse tool *cache*, so that the opening supports the rescue objectives, the necessary tools are selected, structural stability is maintained, and the methods utilized are safe and efficient.

Requisite Knowledge

1. *Describe* effective breaching techniques
2. *Describe* types of building construction and characteristics of materials used in each
3. *Describe* the selection, capabilities, and limitations of tools
4. *Describe* safety protocols for breaching operations
5. *Describe how to* calculate weight
6. *Describe how to* anticipate material movement during breaching and stabilization techniques

Requisite Skills

1. Select and use breaching tools
2. Implement breaching techniques based on *heavy* construction type
3. Use PPE
4. Apply stabilization where required

Content Modification

Block	Modification	Justification
JPR	Changed “kit” to “cache”.	A kit is a subset of a larger cache, which is more appropriate for this JPR. (2021)
RK5	Changed “calculation of” to “how to calculate”.	Adjusted for grammar and readability. (2021)
RK6	Changed “anticipation of” to “how to anticipate”.	Adjusted for grammar and readability. (2021)
RS2	Added “heavy”.	Added for consistency. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS2: Technician (2021) <ul style="list-style-type: none"> • Topic 1-13 • Topic 4-11 	SCS2 Training Record (2021) <ul style="list-style-type: none"> • 13 	SCS2 Instructor (2021) <ul style="list-style-type: none"> • JPR 13

3-12: Constructing Cribbing Systems

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.3.12

Job Performance Requirement

Construct cribbing systems, given an assignment, PPE, a structural collapse tool *cache*, various lengths and dimensions of lumber, wedges, and shims, so that the cribbing system will safely support the load, the system is stable, and the assignment is completed.

Requisite Knowledge

1. *Describe* different types of cribbing systems and their construction methods
2. *Describe* limitations of construction lumber
3. *Describe* load calculations
4. *Describe* principles of and applications for cribbing
5. *Describe* safety protocols

Requisite Skills

1. Select and construct cribbing systems
2. Evaluate the structural integrity of the system
3. Determine stability
4. Calculate loads

Content Modification

Block	Modification	Justification
JPR	Changed “kit” to “cache”.	A kit is a subset of a larger cache, which is more appropriate for this JPR. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS2: Technician (2021) <ul style="list-style-type: none"> • Topic 1-8 • Topic 4-6 	SCS2 Training Record (2021) <ul style="list-style-type: none"> • 8 	SCS2 Instructor (2021) <ul style="list-style-type: none"> • JPR 8

3-13: Stabilizing a Collapsed Structure Using Mechanical Shoring Systems

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.3.13

Job Performance Requirement

Stabilize a collapsed heavy construction–type structure *using mechanical shoring systems* as a member of a team, given size-up information, hazard-specific PPE, an assignment, a specific pattern of collapse, a structural collapse tool *cache*, specialized equipment necessary to complete the task, and engineering resources if needed, so that hazard warning systems are established and understanding by team members is verified, all unstable structural components that can impact the work and egress routes are identified, alternative egress routes are established when possible, expert resource needs are determined and communicated to command, load estimates are calculated for support system requirements, all shoring systems meet or exceed load-bearing demands, shoring systems are monitored continuously for integrity, safety protocols are followed, a rapid intervention crew (RIC) is established and staged to aid search and rescue personnel in the event of entrapment, an accountability system is established, atmospheric monitoring is ongoing, and progress is communicated as required.

Requisite Knowledge

1. *Identify appropriate PPE*
2. *Describe PPE care and maintenance requirements*
3. *Describe how to evaluate structural load calculations for shoring system requirements*
4. *Describe how to select shoring systems for stabilization*
5. *Describe specific hazards associated with heavy structural collapse*
6. *Describe hazard warning systems*
7. *Recognize and describe specialized resource and equipment needs*
8. *Describe communications and rescuer safety protocols*
9. *Describe atmospheric monitoring equipment needs*
10. *Identify construction types*
11. *Describe characteristics and expected behavior of heavy construction in a structural collapse incident*
12. *Identify causes and associated effects of structural collapses*
13. *Recognize potential for and signs of impending secondary collapse*

Requisite Skills

1. Select and construct shoring systems for heavy construction–type collapses
2. Use PPE
3. Perform structural load calculations
4. Determine resource needs
5. Select and operate basic and specialized tools and equipment
6. Implement communications and rescuer safety protocol

7. Mitigate specific hazards associated with shoring tasks

Content Modification

Block	Modification	Justification
JPR	Added “using mechanical shoring systems”.	Added to distinguish between NFPA paragraph 6.3.6 and 6.3.13. Same task using different materials. (2021)
JPR	Changed “kit” to “cache”.	A kit is a subset of a larger cache, which is more appropriate for this JPR. (2021)
RK1	Split “identification and required care of PPE” into two separate knowledge items.	Needed to separate appropriate PPE selection and PPE care and maintenance. (2021)
RK2	Split “identification and required care of PPE” into two separate knowledge items.	Needed to separate appropriate PPE selection and PPE care and maintenance. (2021)
RK10	Changed “identification of” to “Identify”.	Adjusted for grammar and readability. (2021)
RK11	Added “heavy construction”.	Added for consistency. (2021)
RK13	Added “recognition of” to “Recognize”.	Added for grammar and readability. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS2: Technician (2021) <ul style="list-style-type: none"> • Topic 1-12 • Topic 4-10 	SCS2 Training Record (2021) <ul style="list-style-type: none"> • 12 	SCS2 Instructor (2021) <ul style="list-style-type: none"> • JPR 12

3-14: Cutting Through Structural Steel

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.3.14

Job Performance Requirement

Cut through structural steel, given a structural collapse tool *cache*, PPE, and an assignment, so that the steel is efficiently cut, the victim and rescuer are protected, fire control measures are in place, and the objective is accomplished.

Requisite Knowledge

1. *Describe* safety considerations
2. *Describe* the selection, capabilities, and limitations of steel-cutting tools
3. *Identify* cutting tool applications
4. *Identify* types of potential and actual hazards and mitigation techniques
5. *Describe* characteristics of steel used in building construction

Requisite Skills

1. Assess tool needs
2. Use cutting tools
3. Implement necessary extinguishment techniques
4. Mitigate hazards
5. Stabilize heavy loads

Content Modification

Block	Modification	Justification
JPR	Changed “kit” to “cache”.	A kit is a subset of a larger cache, which is more appropriate for this JPR. (2021)

Cross Reference

Course Plan	Training Records	Task Book
SCS2: Technician (2021) <ul style="list-style-type: none"> • Topic 1-14 • Topic 4-12 	SCS2 Training Record (2021) <ul style="list-style-type: none"> • 14 	SCS2 Instructor (2021) <ul style="list-style-type: none"> • JPR 14

3-15: Coordinating Heavy Equipment Use

Authority

1. NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)
 - Paragraph 6.3.15

Job Performance Requirement

Coordinate the use of heavy equipment, given PPE, means of communication, equipment and operator, and an assignment, so that common communications are established, equipment usage supports the operational objective, hazards are avoided, and rescuer and operator safety protocols are followed.

Requisite Knowledge

1. *Describe* types of heavy equipment, capabilities, application, and hazards of heavy equipment and rigging
2. *Describe* safety protocols
3. *Describe* types and methods of communication

Requisite Skills

1. Use hand signals and radio equipment
2. Recognize hazards
3. Assess for operator and rescuer safety
4. Use PPE

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Training Records	Task Book
SCS2: Technician (2021) <ul style="list-style-type: none"> • Topic 1-15 • Topic 4-13 	SCS2 Training Record (2021) <ul style="list-style-type: none"> • 15 	SCS2 Instructor (2021) <ul style="list-style-type: none"> • JPR 15