



Seaspan Vancouver Shipyards Outfitting Pier Extension

Appendix F CONSTRUCTION FIRE SAFETY PLAN

CONSTRUCTION FIRE SAFETY PLAN

Outfitting Pier Extension Project

10 Pemberton Ave



Prepared by:

George Geatros

Manager, Special Projects | Seaspan ULC

Office: 604-990-1847 | Mobile: 604-992-3541

November 19, 2020

TABLE OF CONTENTS

DEFINITIONS	1
INTRODUCTION.....	5
INSTRUCTIONS TO OCCUPANTS.....	6
EMERGENCY RESPONSE	7
EMERGENCY CONTACT NUMBERS.....	8
FIRE SAFETY PLAN.....	9
SITE PLAN	10
FIRE SAFETY PERSONNEL, DUTIES & RESPONSIBILITIES	11
FIRE SAFETY DUTIES DURING AN EMERGENCY EVACUATION.....	13
GENERAL RESPONSIBILITIES FOR FIRE PREVENTION	13
INSPECTION AND MAINTENANCE OF FIRE SAFETY EQUIPMENT	14
PROJECT CONTACTS	15
FIRE SUPPRESSION EQUIPMENT OPERATION	16
FIRE SAFETY PLANNING	19
HOT WORK ACTIVITIES	20
FIRE WATCH PROCEDURE.....	23
FIRE DEPARTMENT ACCESS.....	24
STORAGE OF FLAMMABLE OR COMBUSTIBLE LIQUIDS.....	25
CONCLUSION	28

DEFINITIONS

ACCESS TO EXIT: part of a means of egress within a floor area that provides access to an exit serving the floor area.

ALARM SIGNAL: an audible signal transmitted throughout a zone or zones or throughout a building to advise occupants that a fire emergency exists.

ALERT SIGNAL: an audible signal to advise designated persons of a fire emergency.

APPROVED: approved by the authority having jurisdiction.

AREA OF REFUGE: a space that facilitates a safe delay in egress, is sufficiently protected from fire conditions developing in the floor area, and provides direct access to an exit or fire fighters' elevator.

AUTHORITY HAVING JURISDICTION: the fire commissioner, inspectors and local assistants to the fire commissioner.

BUILDING: any structure used or intended for supporting, or sheltering any use or occupancy.

BUILDING HEIGHT: the overall height of a building from the first storey to the roof. **CLASS**

"A" FIRE: a fire involving combustible materials such as wood, cloth or paper. **CLASS "B"**

FIRE: a fire involving a flammable liquid or combustible liquid, fat or grease. **CLASS "C"**

FIRE: a fire involving energized electrical equipment.

CLASS "D" FIRE: a fire involving a combustible metal.

CLASS "K" FIRE: a fire involving fryers and cooking appliances that involve combustible cooking media, vegetable or animal oils and fat.

CLOSURE: a device or assembly for closing an opening through a fire separation or an exterior wall, such as a door, shutter, wired glass or glass block, and includes all components such as hardware, closing devices, frames and anchors.

COMBUSTIBLE CONSTRUCTION: that type of construction that does not meet the requirements for non-combustible construction.

COMBUSTIBLE LIQUID: a liquid having a flash point at or above 37.8 degrees Celsius and below degrees Celsius.

CSO: designation from the ASTTB, abbreviation for Construction Safety Officer, a person designated to oversee safety on the project site

DEPUTY FIRE SAFETY DIRECTOR (DFSD): The person designated to assist the FSD or fulfil his or her duties in his or her absence

ELECTRICAL SERVICE ROOM: a room or space provided in a building to accommodate building electrical service equipment and constructed in accordance with the British Columbia Building Code.

ELECTRICAL SERVICE VAULT: an isolated enclosure either above or below ground, with fire resisting walls, ceilings and floors for the purpose of housing transformers and other electrical equipment.

EXIT: that part of a means of egress, including doorways, that leads from the floor area it serves, to a separate building, an open public thoroughfare, or an exterior open space protected from fire exposure from the building and having access to an open public thoroughfare.

FIRE ALARM SYSTEM: a device or combination of devices designed to warn occupants of a building of a fire or other emergency.

FIRE CHIEF: the person appointed by the council as officer in charge of the fire department and includes deputy fire chief and the assistant chief, Fire Prevention.

FIRE COMMISSIONER: the person appointed as fire commissioner pursuant to the Fire Services Act of British Columbia.

FIRE DAMPER: a closure which consists of a damper installed in an air distribution system or a wall or floor assembly, which is normally held open but designed to close automatically in the event of a fire in order to maintain the integrity of a fire separation.

FIRE DETECTOR: a device which detects a fire condition and automatically initiates an electrical signal to actuate an alert signal or an alarm signal and includes heat detectors and smoke detectors.

FIRE SAFETY DIRECTOR: the person designated to implement and maintain the fire safety plan.

FIRE SEPARATION: a construction assembly that acts as a barrier against the spread of fire.

FIRE SUPPRESSION SYSTEM: a device or combination of devices designed to extinguish or support extinguishment of fire.

FIRE WATCH: a procedure where a person is responsible to patrol a building or site and to sound an alarm in case of fire, or conduct such duties as required by the fire chief.

FIREWALL: a type of fire separation of non-combustible construction which subdivides a building or separates adjoining buildings to resist the spread of fire and which has a fire resistance rating as prescribed in the BC Building Code and has structural stability to remain intact under fire conditions for the required fire-rated time.

FLAMMABLE LIQUID: a liquid having a flash point below 37.8 degrees Celsius and having a vapour pressure not more than 275.8 kPa (absolute) at 37.8 degrees Celsius as determined by ASTM D 323, "Vapour Pressure of Petroleum Products (Reid Method)." See Subsection 4.1.2.

FLASH POINT: the minimum temperature at which a liquid within a container gives off vapour in sufficient concentration to form an ignitable mixture with air near the surface of the liquid. (See Subsection 4.1.3.)

FLOOR AREA: the space on any storey of a building between exterior walls and required firewalls, including the space occupied by interior walls and partitions, but not including exits, vertical service spaces, and their enclosing assemblies.

FLUE: an enclosed passageway for conveying flue gases.

FLOOR OF ACTIVATION: the floor from which the fire alarm system was activated.

HAZARDOUS MATERIAL: a product, substance or organism that is designated as dangerous in the Transportation of Dangerous Goods Act (Canada), but shall not include a quantity of such product, substance or organism that if accidentally spilled is insufficient to cause danger to lives or the environment.

INSPECTOR: an inspector with the Office of the Fire Commissioner.

LOCK (KEY) BOX: a container in a form acceptable to the fire chief which is designed to hold building or premises access keys and is attached to a building (typically adjacent to main entrance).

MEANS OF EGRESS: a continuous path of travel provided for the escape of persons from any point in a building or contained open space to a separate building, an open public thoroughfare, or an exterior open space protected from fire exposure from the building and having access to an open public thoroughfare. Means of egress includes exits and access to exits.

NONCOMBUSTIBLE CONSTRUCTION: that type of construction in which a degree of fire safety is attained by the use of non-combustible materials for structural members and other building assemblies.

OPERATIONS BOX: a container in which diagrams showing the type, location, and operation of the fire protection system are kept (typically adjacent to main entrance).

PRIME CONTRACTOR: a prime contractor is responsible for the day-to-day oversight of a construction site, management of vendors and trades and communication of information to involved parties through the course of building a project.

PROJECT SUPERINTENDENT: person responsible for overseeing the coordination of all site activities on behalf of the prime contractor.

SITE HSE COORDINATOR: person responsible for overseeing and coordinating Seaspan ULC's health, safety and environment program in conjunction with the Project Superintendent.

SUITE: a single room or series of rooms of complementary use, operated under a single tenancy, and includes dwelling units, individual guest rooms in motels, hotels, boarding houses, rooming houses, and dormitories as well as individual stores and individual or complementary rooms for business and personal service occupancies.

SUPERVISORY STAFF: those occupants of a building who have some delegated responsibility for the fire safety of other occupants under the fire safety plan (i.e. fire safety director and deputy fire safety director).

ZONE: an area of a building designated as part of a fire alarm system or sprinkler system.

ABBREVIATIONS

CSA: Canadian Standards Association (55 Scarsdale Road, Don Mills, Ontario M3B 2R3)

NFPA: National Fire Protection Association (Batterymarch Park, Quincy, Massachusetts 02269 U.S.A.)

ULC: Underwriter's Laboratories of Canada (7 Crouse Road, Scarborough, Ontario MIR 3A9)

INTRODUCTION

Seaspan ULC has developed this fire safety plan to outline the company's commitment to fire prevention on our project sites as well, to protect the health and safety of our workers and our project neighbours. Seaspan ULC's partners, managers and employees are dedicated to deliver the highest quality services and buildings for our customers while maintaining a safe, healthy environment for our workers, subcontractors, suppliers, consultants and clients to work in.

There has been significant construction activity at the Vancouver Shipyard over the past 5 years. This document has been prepared by Seaspan based on that experience.

When a Contractor has been selected, one of their first duties will be to review this plan and complete it by inserting their personnel where appropriate and signing off on the document.

INSTRUCTIONS TO OCCUPANTS

IF YOU DISCOVER A FIRE

1. Activate the air horn (one long blast) to signal an evacuation
2. Contact the fire department without delay by dialing 9-1-1
3. Contact VSY Security (Seaspan Security) at 604.990.3371 to clear Fire Department & EMS access to the project and ensure trains are not blocking the project's access
4. Fight the fire if you are trained and the fire is small - make sure you are between the fire and exit at all times
5. Leave the building through the nearest safe exit while alerting other's as you're exiting the building
6. Report details to the site Fire Safety Director or Deputy Fire Safety Director immediately

WHEN YOU HEAR AN AIR HORN – ONE CONTINUOUS BLAST

1. Leave the building immediately through the nearest safe exit while conducting a brief sweep of the building on your way out if safe
2. Notify all personnel to evacuate the project immediately to the muster point or upwind of the fire if the muster point is downwind of the fire for a head count
3. Notify the Fire Safety Director or Deputy Fire Safety Director without delay
4. Go to the muster point and wait for a headcount to be conducted
5. Do not go back into the building for any reason

THE DESIGNATED ASSEMBLY AREA FOR THE CONSTRUCTION SITE IS:

At the northwest corner of the project in the project's parking area.

EMERGENCY RESPONSE

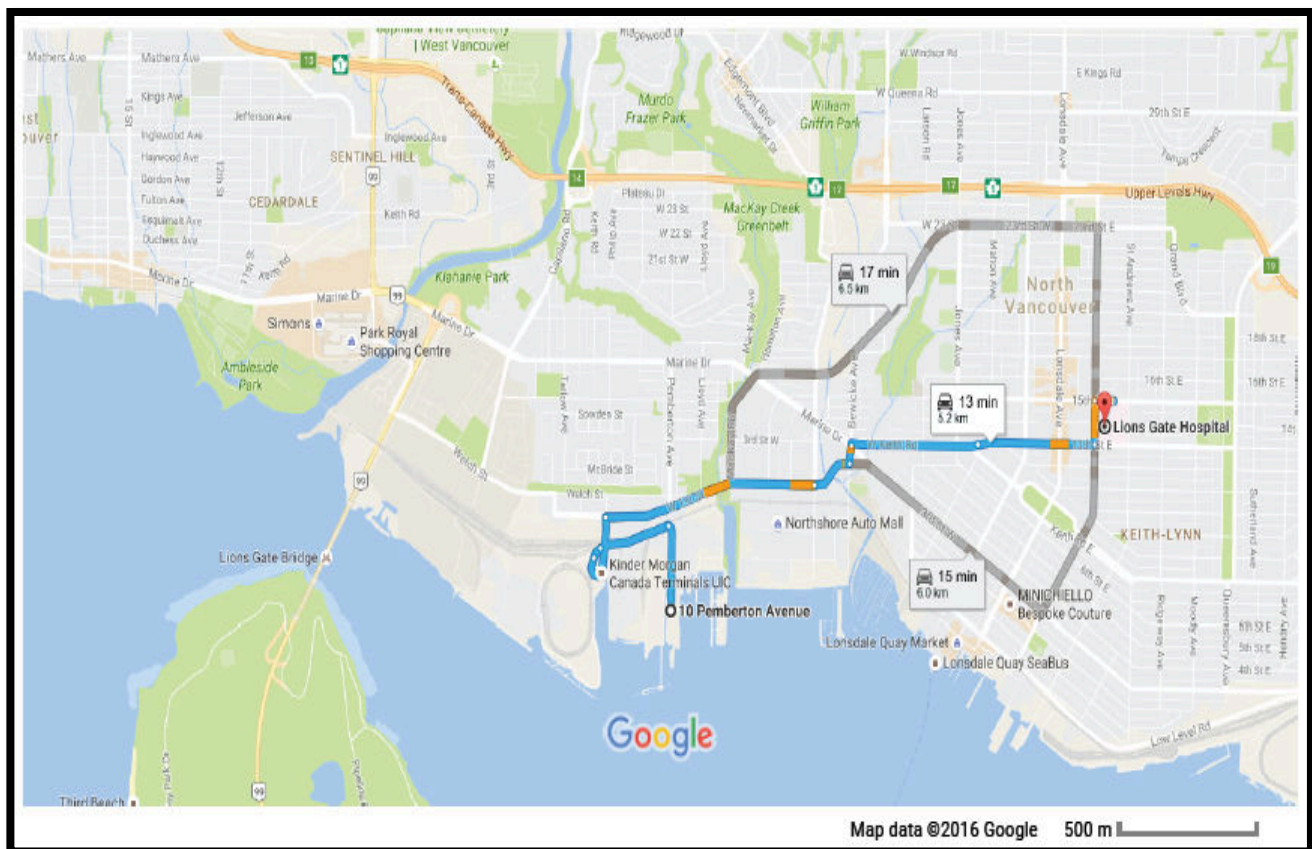
NEAREST HOSPITAL

The nearest hospital to the jobsite is Lions Gate Hospital located at 231 15th St E, North Vancouver, BC

LIONS GATE HOSPITAL

231 East 15th Street North Vancouver, BC 604.988.3131

Emergency Department Access on St. Georges Ave.



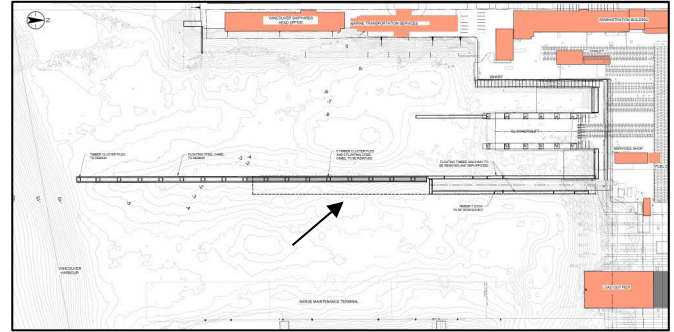
EMERGENCY CONTACT NUMBERS

	Emergency Contact Number
North Vancouver Fire Department	9-1-1
North Vancouver RCMP	9-1-1
BC Ambulance	9-1-1
Fortis BC	1-800-663-9911
BC Hydro	1-888-769-3766
Seaspan Security Dispatch	604-990-3371

FIRE SAFETY PLAN

PROJECT DESCRIPTION

STRUCTURE OVERVIEW: Construction of a new outfitting pier above the water surface with an area of approximately 272 m in length and 19.2 m in width extending from the north shore within the general location of the existing wooden outfitting pier.



FIRE DEPARTMENT ACCESS (SEE PAGE 11 FOR DRAWING)

SITE ACCESS: Pemberton Avenue via W 1st Street

AFTER-HOURS ACCESS: VSY Security can be contacted at 604.990.3371 to gain access to the project site after hours in the event of an emergency

FIRE HYDRANT LOCATIONS

A fire hydrant is located at the north-west corner of the maintenance shop which is located immediately south of the project– refer to map on page 11.

FIRE EXTINGUISHERS

LOCATIONS: At each access and egress point throughout the structure and at each level at the stairwell access.

EXTINGUISHER TYPE: 10lb. ABC multi-use dry chemical.

See section 4 for instructions on the proper use of fire extinguishers.

PLAN DISTRIBUTION

A copy of these fire emergency procedures will be posted on site in a conspicuous area visible to all workers on the jobsite. All site supervisory personnel will be given a copy of this plan to review and for educating their workers on the site-specific plan.

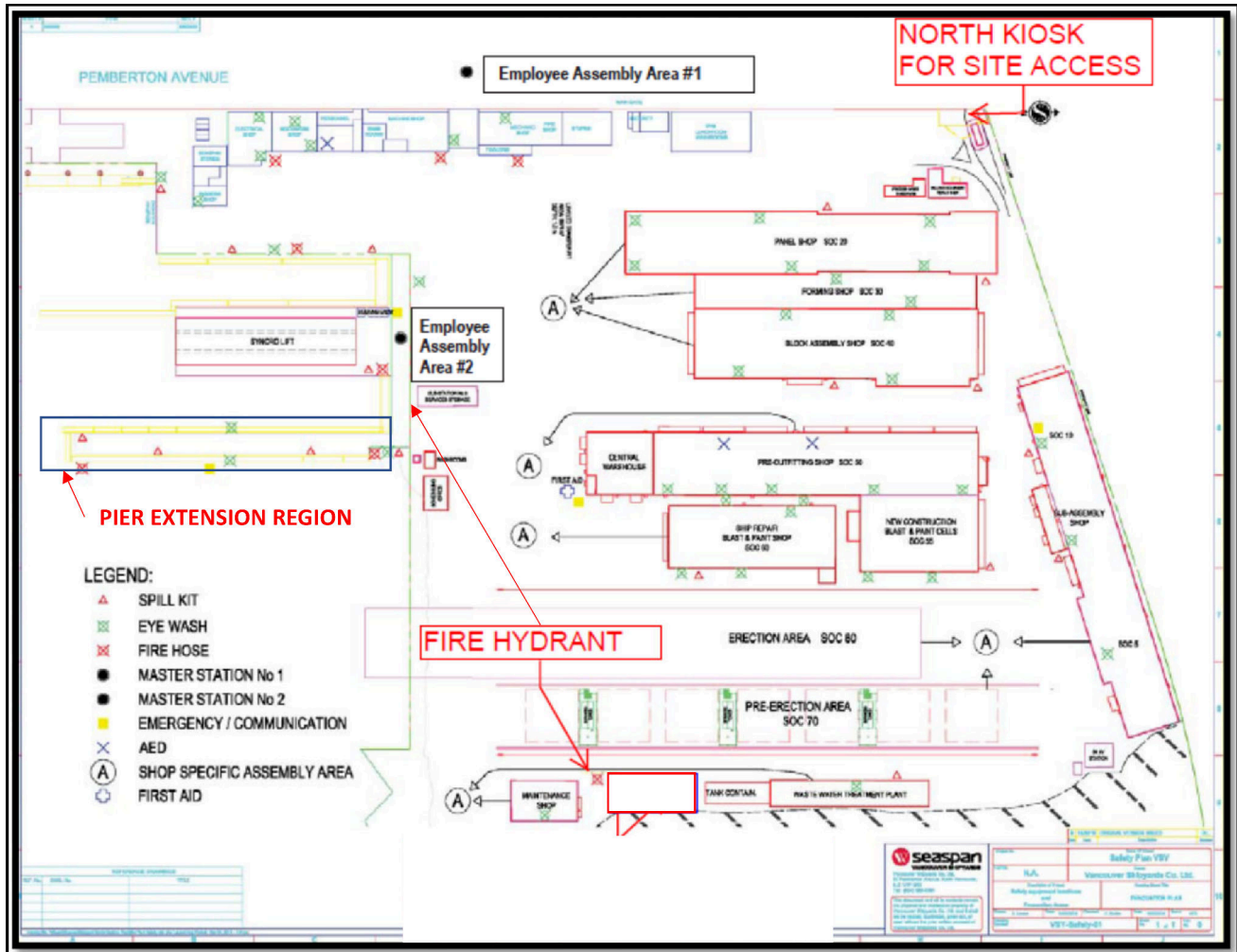
FIRE SAFETY PLAN TRAINING

Emergency procedures outlined in this fire safety plan will be covered in the project safety orientation with all workers, visitors and consultants prior to accessing the project.

COMMUNICATION

In the event of a fire or other emergency originating from the confines of the construction site the Fire Safety Director will immediately notify VSY security of the event and indicate whether an evacuation of the adjacent work site is required. In the event of an evacuation, protocols and procedures for evacuation will be instituted.

SITE PLAN



FIRE SAFETY PERSONNEL, DUTIES & RESPONSIBILITIES

FIRE SAFETY DIRECTOR

Fire Safety Director:	TBD
Days & Hours:	24h/day
Tel:	TBD
Position:	TBD

GENERAL DUTIES OF THE FIRE SAFETY DIRECTOR

- Responsible for the administration and maintenance of the fire safety plan
- Be familiar with the BC Fire Safety Code
- Be familiar with Seaspan ULC's Hot Work program
- Responsible for training the deputy and other key personnel to perform their duties in the areas of fire prevention and emergency evacuation.
- Keep records of equipment maintenance, plans and fire incidents, the Fire Safety Director must also keep a record of all meetings which relate to fire safety.
- The fire safety director should also consider other emergency situations that could affect the building site such as hazardous chemical spills, earthquake, etc. when planning for emergency response.
- Ensure the building is kept clear of unnecessary accumulations of combustible materials
- Manage the storage of hazardous and flammable material storage to minimize risk to workers and emergency response personnel
- Ensure the project is kept safe for emergency response personnel – holes are guarded and guard rails are in place to prevent falls from elevations
- Provide information regarding the location of hazardous materials during a fire

- Provide an update of the status and nature of the fire if possible during an emergency
- Assist the fire department with building access and be available after hours to respond to the building in the event of a fire and provide assistance to the fire department

DEPUTY FIRE SAFETY DIRECTOR

Deputy Fire
Safety Director: TBD

Days & Hours: 24h/day

Tel: TBD

Position: TBD

GENERAL DUTIES OF THE DEPUTY FIRE SAFETY DIRECTOR

- Responsible for the administration and maintenance of the fire safety plan
- Be familiar with the BC Fire Safety Code
- Be familiar with Seaspan ULC's Hot Work program
- Assume the responsibilities of the Fire Safety Director in their absence.
- Consider other emergency situations that could affect the building site such as hazardous chemical spills, earthquake, etc. when planning for emergency response.
- Assist the fire department with building access
- Provide information regarding the location of hazardous materials during a fire
- Provide an update of the status and nature of the fire if possible during an emergency
- Be available after hours to respond to the building in the event of a fire and provide assistance to the fire department.
- Notify the adjacent building of any emergency originating from the construction site.

FIRE SAFETY DUTIES DURING AN EMERGENCY EVACUATION

IF YOU DISCOVER A FIRE

1. Fight the fire if you are trained and the fire is small - make sure you are between the fire and exit at all times
2. Activate the air horn (one long blast)
3. Leave the area alerting other's as you're exiting the building
4. Report details to the site Fire Safety Director or Deputy Fire Safety Director immediately

WHEN YOU HEAR AN AIR HORN – ONE CONTINUOUS BLAST

1. Remain calm
2. Notify the Fire Safety Director or Deputy Fire Safety Director without delay
3. Leave the building immediately through the nearest exit while conducting a brief sweep of the building on your way out if safe
4. Notify all personnel to evacuate the project immediately to the muster point or upwind of the fire if the muster point is downwind of the fire for a head count
5. Go to the muster point and wait for a headcount to be conducted
6. Do not go back into the building for any reason

GENERAL RESPONSIBILITIES FOR FIRE PREVENTION

GENERAL DUTIES OF WORKERS

All workers on the jobsite share in the responsibility to both prevent fires from occurring and reduce damage and harm when a fire occurs if safe to do so.

- Be familiar with the fire safety plan
- Conduct regular housekeeping to maintain a safe and clean work area
- Maintain clear access and egress paths when conducting work activities
- Ensure accumulation of flammable materials is minimized inside the structure
- Adhere to Seaspan ULC's hot work program

- Review and become familiar with section 4 of this plan regarding the use of fire extinguishers
- Report any fire hazards to the Project Superintendents or Site HSE Coordinator immediately
- Remedy any noted fire hazards as soon as possible
- Ensure compressed gasses are stored appropriately in accordance with this plan.

INSPECTION AND MAINTENANCE OF FIRE SAFETY EQUIPMENT

The Fire Safety Director is responsible to ensure the required inspection and testing of the safety equipment is performed on time by qualified personnel and to ensure appropriate records are available for viewing by the fire inspector.

DAILY INSPECTIONS

- Ensure all means of egress shall be maintained in good repair and free of obstructions
- Ensure fire extinguishers and air horns are in their appropriate place
- Ensure fire extinguishers have not been discharged
- Ensure holes and leading edges are guarded for emergency response personnel

MONTHLY INSPECTIONS

- Check all fire extinguishers for annual inspection and ensure they have not been discharged or damaged
- Test air horns

ADDITIONAL DUTIES

- Ensure all fire extinguishers are serviced by a qualified person at least annually or after discharge, whichever occurs first

PROJECT CONTACTS

	COMPANY NAME	CONTACT	PHONE
General Contractor	TBD	TBD	TBD
Owner	Seaspan ULC	Chris Hext	604-984-1645 604-788-1913
Owner's Rep	Seaspan	George Geatros(Seaspan))	604-990-1847
Structural Engineer	Stantec	Chuck Rosner	604-235-1877

FIRE SUPPRESSION EQUIPMENT OPERATION

THE ABCD'S OF PORTABLE FIRE EXTINGUISHERS

A fire extinguisher is a storage container for a fire suppression agent such as water, gas or chemicals; they are designed to put out a small fire, not a large one.

Extinguishers are labelled A, B, C or D according to the fire type which it is to be used on however, the most common type of extinguisher used in construction for the type of fires most commonly encountered is an ABC extinguisher.

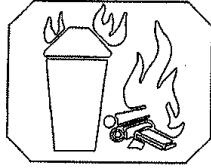
FIRE EXTINGUISHER TRAINING

Workers will be instructed on the proper use of fire extinguishing equipment during the site safety orientation

BUYING AND MAINTAINING AND EXTINGUISHERS

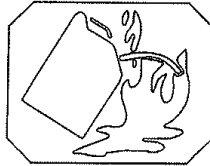
1. Extinguishers come in dry chemical, foam, carbon dioxide, and water types. All fire extinguishers purchased must be labelled by a nationally recognized testing laboratory.
2. General fire extinguishers for construction projects should be ABC type extinguishers with a minimum 10lb. rating, unless there is an unusual fire hazard on the project which warrants the use of a type D or K extinguisher.
3. Service and recertify fire extinguishers at least annually through a fire equipment supply centre.
4. Recharge fire extinguishers after any use or damage.
5. Extinguishers should be installed away from potential fire hazards and near an escape route.

The ABCD's Of Portable Fire Extinguishers - cont'd

A

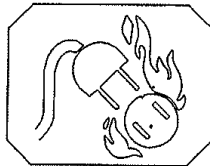
Ordinary Combustibles

Fires in wood, paper, cloth, trash, drapes, upholstery and other ordinary materials require an extinguisher labelled A.

B

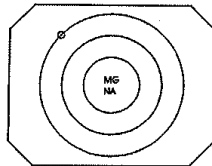
Flammable Liquids & Gases

Fires in gasoline, oils, paints, lacquer, tar and other flammable liquids require an extinguisher labelled B.

C

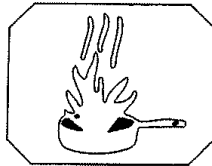
Live Electrical Equipment

Fires started in wiring, overheated fuse boxes, conductors, and other live electrical sources require an extinguisher labelled C.

D

Combustible Metals or Combustible Metal Alloys

Certain metals such as magnesium and sodium require special dry powder extinguishants labelled D. The star is coloured yellow.

K

Commercial Kitchen Use

Fires & cooking appliances that involve combustible cooking media, vegetable or animal oils and fat require an extinguisher labelled K.

OPERATION OF PORTABLE FIRE EXTINGUISHERS

1. Only attempt to extinguish small fires
2. Do not try to fight the fire if you have any doubt as to whether or not you should
3. Get yourself to a safe area and call 9-1-1 and report the fire
4. A small fire can easily become a large fire if it is not extinguished properly, ensure you know how to use your fire extinguisher

DIRECTIONS FOR USE

READ THE DIRECTIONS ON YOUR FIRE EXTINGUISHER AS TYPES VARY.

P

Pull: Pull the pin.

A

Aim: Always aim at the base of the fire using the nozzle provided.

S

Squeeze: Activate the fire extinguisher by squeezing the handle.

S

Sweep: Move from side to side in a sweeping motion, watching to make sure flames don't start up again. Breakup any clumps of burnt materials to ensure the fire is fully extinguished.

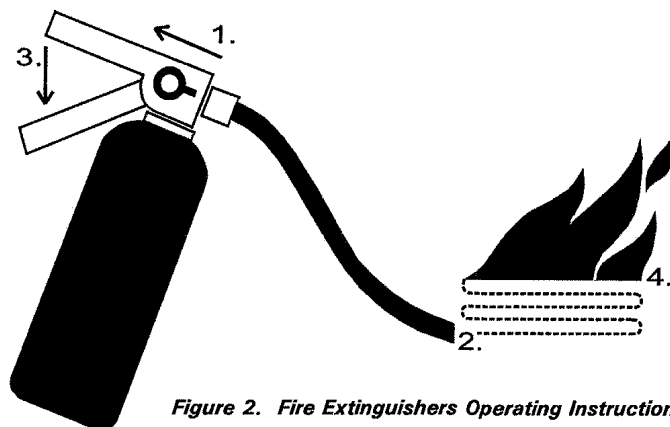


Figure 2. Fire Extinguishers Operating Instructions

FIRE SAFETY PLANNING

Fire safety planning during construction has 3 objectives:

- **FIRE HAZARD CONTROL**
- **FIRE PROTECTION EQUIPMENT MAINTENANCE**
- **EMERGENCY EVACUATION**

THE FOLLOWING OBJECTIVES WILL BE IMPLEMENTED TO MINIMIZE THE RISK OF FIRE DURING CONSTRUCTION:

- Good housekeeping will be maintained to prevent an excessive build-up of flammable materials and to maintain safe access and egress through the project.
- Installation of fire extinguishers throughout the project.
- Smoking will not be permitted within the building footprint. Air horns will be placed throughout the structure in conjunction with fire extinguishing equipment to sound an evacuation.
- Use of a hot work permit system.

HOT WORK ACTIVITIES

Hot work activities pose a high risk for fire ignition and therefore, must be given ample consideration before executing any work activities which include hot work.

DEFINITION

Hot work includes any work involving open flames or which produces heat or sparks. Specific hot work activities commonly undertaken on construction sites include, but are not limited to:

- Cutting
- Welding
- Soldering
- Brazing
- Grinding
- Open flame heater use
- Roof tarring operations
- Torch-on roofing
- The process whereby one or more parts are heated above their melting point

Hot work activities may only be undertaken by personnel trained in the use of fire extinguishers, hot work safety procedures and this fire safety plan.

OPEN FLAME HEATERS

Open flame heaters are not to be used on this project.

EQUIPMENT

Hot work equipment must be inspected prior to use for leaks, damage or defects which would affect the safe use of the equipment, any leaks or defects found on hot work equipment must be repaired before being put into use.

When hot work equipment is not in use all valves must be closed, gas lines bled and electric hot work equipment must be de-energized.

HOT WORK PERMIT SYSTEM

The hot work permit on the page 24 must be signed out by the person conducting the hot work activities through the Project Superintendent or Site Safety Designate prior to initiating hot work. The Project Superintendent or Site Safety Designate must ensure that all components of the hot work permit system are complied with and adequately

documented on the attached form.

PREVENTION OF FIRES

- Whenever possible, hot work should be carried out in areas free of combustible and flammable contents
- If it is not practicable to conduct hot work activities in an area free of combustible and flammable materials within 15m (50ft.) of hot work, all combustible and flammable materials must be protected against ignition by wetting the material or covering with approved fire blankets
- If it is possible for sparks to leak into openings in floors, walls or ceilings, the areas must be covered or closed to prevent the passage of sparks into such areas
- A formal inspection of the hot work area must be conducted 4 hours after the completion of hot work

FIRE SUPPRESSION EQUIPMENT FOR HOT WORK ACTIVITIES

The fire watch person must be adequately trained in the use of fire extinguishers and the fire hoses in the stairwells; the worker must have at least one fully charged and inspected 10lb. ABC fire extinguisher present within 3m (10ft.) of hot work activities at all times in addition to the fire hose in the stairwells and fire extinguishers provided in the fire extinguisher and alarm stations located throughout the project.



HOT WORK PERMIT

Project:	Job #	Control Trade:
Hot Work to be Performed: <input type="checkbox"/> Zip Cut <input type="checkbox"/> Grind <input type="checkbox"/> Heat <input type="checkbox"/> Braise <input type="checkbox"/> Plasma Cut <input type="checkbox"/> Burn <input type="checkbox"/> Gouge <input type="checkbox"/> Weld: <input type="checkbox"/> Stick <input type="checkbox"/> Wire <input type="checkbox"/> Tig <input type="checkbox"/> Clad		
Required to:		
Location of Hot Work:		

YOU MUST KNOW WHAT IS ON THE OTHER SIDE OF THE HOTWORK!

CONTROL MEASURES FOR MACHINERY/EQUIPMENT or IMMEDIATE AND SURROUNDING AREAS. ALL COATINGS MUST BE REMOVED BEFORE HOTWORK BEGINS	Initials of Competent/Qualified Person	
1. The Machinery/Equipment is removed or has been protected from hot work?	N/A	Yes
2. If Lock out of Machinery/Equipment is needed, is it in place?	N/A	Yes
3. Lock out Box Number: _____ Lock Out Coordinator: _____		
4. The area is safely lit.	N/A	Yes
5. All Dangerous and/or Combustible Material(s) in the immediate area have been removed.	N/A	Yes
6. What is on the other side of the Hot work? _____ BULKHEAD OR HOLLOW STRUCTURE HAS BEEN EXAMINED AND TESTED AND IS FREE OF DANGEROUS/COMBUSTIBLES?	N/A	Yes
7. The area below where sparks or materials may fall is effectively cordoned off or safe.	N/A	Yes
8. Electrical cables or wire ways are protected with sheet metal and/or fire cloth.	N/A	Yes
9. Fire Watch Requirements: <input type="checkbox"/> Designated <input type="checkbox"/> Trade(s) doing hot work <input type="checkbox"/> Vessel Crew Member Location(s): <input type="checkbox"/> Immediate Area <input type="checkbox"/> Deck above <input type="checkbox"/> Deck below <input type="checkbox"/> Adjacent bulkhead	Required and in Place	
10. Cool Down Period – Fire Watch to remain <input type="checkbox"/> 5 <input type="checkbox"/> 10 <input type="checkbox"/> 15 <input type="checkbox"/> 30minutes after hot work stops.	N/A	Required
11. Fire Extinguisher(s) needed <input type="checkbox"/> CO ₂ _____ <input type="checkbox"/> Dry Chemical _____ <input type="checkbox"/> Water _____	Required and in Place	
12. Fire Hose: <input type="checkbox"/> Immediate Area <input type="checkbox"/> Deck above <input type="checkbox"/> Deck below <input type="checkbox"/> Adjacent bulkhead	N/A	Required
13. Fire suppression system(s) <input type="checkbox"/> CO ₂ <input type="checkbox"/> Halon are disabled and/or locked out	N/A	Yes
14. Smoke and/or Heat Sensors _____ N/A _____	Active	Disabled
15. VENTILATION REQUIREMENTS (To be running continuously)		
<input type="checkbox"/> NATURAL <input type="checkbox"/> L.E.V <input type="checkbox"/> POSITIVE <input type="checkbox"/> NEGATIVE PRESSURE	N/A	Required
16. ADDITIONAL CONTROL MEASURES (specify if required)		
	Required _____	
	Required _____	

This permit is invalid if conditions at the time of certification change in any manner. If so, contact the Safety Dept. All Personnel responsible for the Hot Work are to initial the permit each shift.

ALL CONTROL MEASURES AND VENTILATION indicated above MUST be maintained by SUPERVISORS AND WORKERS prior to, during the hot work operation, including cool down period, and ensure that all foreseeable precautions are taken.

Competent or Qualified Person	Date	Date	Date	Date	Date	Date	Date
	Time	Time	Time	Time	Time	Time	Time
	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL
Gas Detector							
Supervisor or Charge hand	Date	Date	Date	Date	Date	Date	Date
	Time	Time	Time	Time	Time	Time	Time
	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL
Welder							
Assisting Trade							
Fire Watch							
Sub-Contractor or vessel crew							

Signature Date Extension

Competent or Qualified Person	Date	Date	Date	Date	Date	Date	Date
	Time	Time	Time	Time	Time	Time	Time
	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL
Gas Detector							
Supervisor or Charge hand	Date	Date	Date	Date	Date	Date	Date
	Time	Time	Time	Time	Time	Time	Time
	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL	INITIAL
Welder							
Assisting Trade							
Fire Watch							
Sub-Contractor or vessel crew							

FIRE WATCH PROCEDURE

The worker(s) conducting the hot work activities which are trained in the use of fire suppression equipment (fire extinguisher and/or fire hose) must not leave the work area during hot work activities or for a period of at least 60 minutes following hot work activities, this includes breaks. A final inspection of the work area is to be conducted 4 hours after the completion of the hot work activities for a final sign off on the hot work permit.

Hot Work Completed



60 Minute Watch – Remain in Immediate Area



Trained Worker or Security Guard Conducts Final Check 4 Hours Following Completion of Hot Work and Signs off Fire Watch

FIRE DEPARTMENT ACCESS

The project's address is prominently posted at the site entrance to the project to ensure easy identification by emergency personnel; the only site access route is available via Pemberton Ave. which is wide enough to accommodate a fire engine. Normal project hours are Monday to Friday, 7am to 3:30pm, if an emergency occurs outside of the project's hours of operation the site will be accessible by calling VSY Security (Seaspan Security) at 604.990.3371.

Access to the site and throughout the duration of the project; areas which could pose unnecessary risk to fire fighters and other emergency personnel will be clearly identified and controlled where possible..

All access routes, stairwells will be maintained throughout construction activities as long as work activities allow.

The project address is clearly marked at the entrance to the project to ensure easy identification by emergency personnel.

STORAGE OF FLAMMABLE OR COMBUSTIBLE LIQUIDS

Below is an overview of the requirements for the storage of flammable or combustible liquids on this project:

- Flammable liquids or combustible liquids shall not be stored in or adjacent to exits, elevators or principal routes that provide access to exits
- An outside storage area of flammable liquids or combustible liquids shall be fenced or barricaded in an acceptable manner where necessary to prevent the entry of unauthorized personnel or inadvertent contact from vehicles or mobile equipment
- Flammable liquids and combustible liquids shall be separated from other dangerous goods
- 'No Smoking' signage will be prominently posted in any areas directly involved in the storage, handling and use of flammable liquids and combustible liquids.

SAFE STORAGE OF HARMFUL SUBSTANCES

Flammable, unstable, highly reactive, or corrosive substances shall meet the following requirements:

- Such substances shall be stored only in an separate room, building, or other enclosure isolated from areas frequented by workers
- Such substances shall be stored in a manner and in a location which will prevent the exposure of these substances to conditions, such as excessive temperature, shock or vibration, which could significantly reduce the stability or significantly increase the stability or significantly increase the potential for hazard of any such substance
- Any two or more such substances which, when combined, produce toxic, corrosive or explosive reaction products shall not be stored in the same area
- Containers of such substances shall bear clear, legible labels
- Containers shall be of such material, design, construction and condition as to ensure secure containment of their contents
- Containers shall be inert to their contents and reasonably resistant to other substances to which they may be exposed
- Containers shall be stored in such manner as will ensure that they will not readily

fall, become dislodged or suffer damage

- Containers shall be kept sealed or covered whenever possible
- Storage areas shall be provided with adequate ventilation

SAFE USE AND STORAGE OF PROPANE AT CONSTRUCTION SITES

A propane cylinder not connected for use shall be stored outdoors wherever possible. The propane cylinder storage area shall meet the requirements stated below except that fencing is not mandatory provided:

- The cylinder is stored in a secure area free from tampering, and
- the cylinder is stored in an area free of vehicular or mobile equipment travel, or protected by barriers or equivalent.

CYLINDER STORAGE AREA

- All cylinders are 7.5 m (25ft.) from any other building, property line or point of assembly;
- the total quantity of propane stored does not exceed 450 kg (1000lbs.) in one area;
- the relief valve on any cylinder is not less than 1 m (3ft.) horizontally from any building opening that is below the level of the relief valve discharge; and,
- the relief valve discharge is not less than 3 m (10ft.) on a horizontal plane from the air intake of any appliance or air moving equipment.

Each cylinder on a construction site shall be equipped with a collar designed to protect the cylinder valve when in use. A cylinder shall not be filled on a construction site unless either:

- it is permanently installed, or
- filled at a location that meets the installation and clearance requirements of the Gas Safety Code

A cylinder may be used indoors in the construction, repair, or improvements of a building or structure, including its fixtures and equipment, provided:

- a pressure regulator is employed and directly connected to the appliance or cylinder valve or located on a manifold which is connected to the cylinder valve;

- the total capacity of cylinders connected together shall not exceed 135kg (300lbs.) of propane and not more than one such manifold of cylinders may be located in the same floor area unless separated by a distance of at least 15m (50ft.);
- any cylinder having a capacity greater than 0.5kg (1lb.) of propane is equipped with an excess flow valve. The excess flow valve shall be either integral with the cylinder valve or in the connection to the cylinder valve outlet. In either case, it shall be installed in such a manner that undue strain beyond the excess flow valve will not cause breakage between the cylinder and the valve.
- the cylinder regulating equipment and manifold are not located where they are subject to damage or to temperatures in excess of 50°C (125°F);
- when repair work is being carried out in a building not under construction and occupied, any cylinder used in the repair work is under the supervision of the operator at all times; and
- each cylinder is provided with a protective collar.

Note: Storage of propane cylinders is not permitted within the building; propane cylinders may only be located inside the structure when being utilized in a working state.

Quantities of propane will vary greatly depending on weather and phases of construction however; propane quantities will be kept at a minimum wherever possible to reduce risks.

SHIPPING CONTAINERS (SEA-CANS)

Flammable or combustible liquids are not to be stored in shipping containers as vapours may accumulate and cause an explosion.

CONCLUSION

This fire safety plan has been completed to address fire safety concerns for the Ground Water Treatment Plan. The plan will be reviewed and updated once the prime contractor has been selected. And on a regularly basis as site conditions change or as site requirements dictate, at intervals not exceeding one month.