

	<b>PERSONAL PROTECTIVE EQUIPMENT</b> ALL-HSE-SPC-643	Retention Code: CG01-CA
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## 1.0 Scope

This specification applies to employees or contractors wherever a specific Personal Protective Equipment (PPE) requirement is posted, in any process area, or as their job task(s) requires as determined by a hazard assessment. Escorted visitors may not require full PPE depending upon the area and hazard assessment.

## 2.0 Hazards

- Physical hazards (e.g. hot and cold surfaces, noise, overhead hazards, temperature, etc.).
- Chemical hazards (e.g. acids, caustics, flammable and combustible liquids, gases, etc.).
- Biological hazards (e.g. molds, hantaviruses, etc.).
- Environmental hazards.

## 3.0 Roles and Responsibilities

### 3.1. Supervisors

- Ensure PPE is readily available, appropriate for the potential hazards the worker may be exposed to, is being properly used and maintained in a sanitary manner.
- Ensure employees receive training in the selection, use and maintenance of the PPE and its limitations.
- Ensure PPE usage in itself does not endanger or create a hazard to the worker.

### 3.2. Workers

- Properly select and use PPE according to the task hazards.
- Use and maintain PPE in accordance with this process and the applicable manufacturer's instructions.
- Wear properly fitting PPE.
- Inspect PPE prior to usage, remove any non-functioning PPE from service and obtain a replacement as necessary.
- Report PPE malfunctions or failures to their supervisors.

## 4.0 General PPE Guidelines

- All personnel must consider PPE as the last defense to protect workers as it does not prevent incidents or eliminate hazards. It should be used in conjunction with other defenses such as engineering controls or work practices and administrative controls.
- The minimum PPE required to be worn on ConocoPhillips Canada (CPC) worksites include:
  - Hard hat.
  - Safety glasses.
  - Steel toed boots.
  - Protective clothing/coveralls.
- Each site may determine additional PPE as part of the minimum requirements depending on specific hazards at each location.
- PPE selection must consider the job task being performed and the hazards the worker will or may be exposed to.
  - Selection must consider, but is not limited to, the immediate job task as well as other hazards that may be introduced at a later time, duration of the job task, toxicity of the immediate contaminants and by-products, location of the job, ambient conditions including oxygen and LEL levels, temperature, etc.
  - Use Material Safety Data Sheets (MSDSs) when selecting PPE.
- Jewelry must not be worn when performing any work or task where the potential for the jewelry to get caught in, on or between objects exists.
  - Medic Alert bracelets are the only form of dangling jewelry allowed on any ConocoPhillips Canada worksite. This jewelry must be secured to prevent it from becoming caught in machinery.
  - Facial piercings/jewelry that may interfere with respiratory protective equipment are prohibited.
  - If you perform electrical work, you cannot wear any type of jewelry, including watches, rings, necklaces, nose and eyebrow piercings, etc.
- Manufacturer instructions must be readily available for all PPE used at a worksite.
- All PPE must be inspected prior to use in accordance with the manufacturer's specifications and any specific requirements of this document.

### 4.1. Eye and Face Protection

- Protective eyewear must meet the requirements of the most current version of CAN/CSA-Z94.3<sup>†</sup> or ANSI Z87.1.
  - Prescription safety eyewear having glass lenses must not be used unless worn behind equipment safety eyewear meeting the above standards.
- Safety or prescription glasses with side shields, as a minimum, and conforming to the CPC Occupational Vision Care standard, must be worn when performing job task(s) outside of the office area, control rooms, break rooms and living quarters.
- Contact lenses must not be worn where a hazardous substance or condition could adversely affect the worker unless the worker is advised of the hazards and adequate precautions are taken.

- When selecting safety eyewear and face protection, consider task hazards such as impact, heat, lens fogging/condensation potential, chemicals, dust, flying particles, light and arc flash.
  - Safety glasses protect against impacts of solid objects.
  - Use splash goggles for protection against liquid splashes.
  - Polycarbonate lenses provide the best impact protection but are easily scratched.
- Face shields are used to protect the face especially where corrosive liquids are used. They must be used in conjunction with splash goggles (for liquids) or safety glasses (for solid impacts).
  - All-in-one goggle/face shield combinations may also be used.
  - Full face respirators are useful when work requires both respiratory and eye protection due to chemical vapors, dusts, mists or liquid splashes.
- Goggles or safety glasses that provide a tight seal around the eye area must be worn when safety glasses with side shields are not adequate to protect the eyes when performing tasks such as, but not limited to, overhead work, working in windy conditions, grinding and where splashing or vapors may occur.
  - Face shields must be worn when performing activities that may generate flying particles or chips, splashes from hazardous chemicals (e.g. acids, caustics, and solvents), hot slag or molten metal, welding glare, etc.
    - A face shield may not be worn without other eye protection unless addressed in a hazard assessment.
- Shaded glasses/goggles/hood must be used to perform a job task(s) that involves welding or lasers.
  - Personnel who are not performing the actual task but are required to be in the immediate work area, e.g. welder's helper, must use eye protection or be protected by a suitable screen.
- Safety glasses with side shields are recommended when operating or riding in vehicles on gravel surfaces.

## 4.2. Foot Protection

- Protective footwear must meet the requirements of the most current version of CAN/CSA-Z195<sup>†</sup> (minimum CSA Grade I - green triangle) or ANSI Z41.
  - Where the risk of electrical shock exists, electrical shock resistant footwear must be worn (identified by the orange omega symbol).
- When selecting foot protection, consider task hazards such as uneven terrain, slipping, weather, impact and crush potential, chemicals, hot fluids, steam, electrical shock and objects piercing the soles.
  - Leather boots are permeable to oil/gas streams and solvents. Impervious knee-length boots in natural rubber, neoprene, urethane, urethane/vinyl composite, PVC and Hazmax (Bata) are permitted.
    - PVC and natural rubber hip and chest waders are also permitted.

- When selecting work boots, the boot must provide sufficient ankle support for the worker to prevent ankle injury.
- Boot covers and overboots can be used for temporary work in contaminated areas. Overboots are available in butyl rubber, nitrile, neoprene, Hazmax (Bata), PVC, polyethylene and natural rubber.
- Safety-toed running shoes are prohibited.
- When using pressure washing equipment, proper footwear selection must include metatarsal protection to prevent injuries resulting from contact with pressurized fluid streams.
- Foot traction devices/stabilizers, e.g. cleats, are recommended for icy winter conditions.
  - Area Supervisors may require the use of foot traction devices.

### **4.3. Head Protection**

- Hard hats must meet the requirements of the most current version of CAN/CSA- Z94.1<sup>†</sup> or ANSI Z89.1.
  - Metal hard hats are not allowed.
- When selecting head protection, consider task hazards such as falling objects, flying or thrown objects, overhead obstacles and side impact potential.
  - Hard hats must be worn as designed and may not be worn backwards unless the design specifically permits it.
  - Hats, toques, hoods and other headwear that interferes with the protective properties of the hard hat must not be worn beneath the suspension of hard hats. Other products designed to work in conjunction with the hard hat may be used.
    - Hard hat liners must be made of flame resistant materials and installed as recommended by the manufacturer.
- All components, including shell, suspension, headband, sweatband and any accessories should be visually inspected daily for signs of dents, cracks, penetration or any other damage that might reduce the degree of safety originally provided.
  - A hard hat or suspension which shows any indication of deterioration or has been subject to impact will be removed from service immediately.
  - Replace the hard hat's suspension every 12months, regardless of appearance.
  - Replace the hard hat after five years of use.
  - Do not store a hard hat where it is subject to direct sunlight and heat.
  - Hard hats must not be altered in any way, such as drilling holes, painting, cutting, carving, etc.

**Note:** In British Columbia, chin straps or other equally effective means of retention must be used on safety headgear when climbing or working from a height exceeding 10 feet or are exposed to high winds or other conditions that may cause loss of the headgear.

#### **4.3.1. Bicycles**

- When riding bicycles within a specific location, a hard hat may be worn if:

- Speeds do not exceed 20 km/h.
  - A chin strap is worn with the hard hat.
- If the above conditions cannot be met, safety headgear must meet the requirements of one of the following standards:
  - CAN/CSA-D113.2<sup>†</sup>.
  - Snell Memorial Foundation N-94.
  - Snell Memorial Foundation B-90A.
  - Snell Memorial Foundation B-95A.

#### 4.3.2. All-Terrain Vehicle and Snowmobiles

- When riding all-terrain vehicles or snowmobiles, safety headgear must be worn that meet one of the following standards:
  - U.S.A. Federal Motor Vehicle Safety Standard FMVSS 218 (*DOT*).
  - Snell Memorial Foundation Standard M2005.
  - BSI Standard BS 6658: 05.
  - CSA CAN3-D230-M85 (*British Columbia Only*).
- When safety headgear is worn while working in cold conditions, use a suitable liner and cold weather face guard.

**Note:** In Alberta and Saskatchewan, using safety headgear meeting the above requirement does not apply if the vehicle is equipped with rollover protective structures and seatbelts or restraining devices that comply with the code. ***This is only applicable when travelling on flat terrain within the confines of facility leases.***

**Note:** In Alberta, the safety headgear worn while operating an all-terrain vehicle or snowmobile may be worn in lieu of a hard hat while working at a remote worksite if the work is for a short time duration and the work does not subject the worker to energized electrical sources.

#### 4.4. Hand, Arm and Leg Protection

- When selecting hand, arm and leg protection, consider task hazards such as pinch points, skin absorption of harmful substances, cuts or lacerations, abrasions, punctures, chemical burns, thermal burns, harmful temperature extremes; electrical shock and bloodborne pathogens.
- Gloves **MUST** be worn when entering the work environment and during all work-related activities when there is a potential for exposure to chemical, hot/cold material or surfaces, prolonged water exposure, and for added protection against cuts and abrasions to the skin.
  - Appropriate gloves (e.g. impact resistant, cut resistant, electrical resistant, etc.) for the specific job task must be worn until that task is completed.
  - Leather and cloth gloves are permeable to water and solvents and are not suitable for protection against chemicals, solvents or oil/gas process streams. Other glove materials provide varying degrees of protection depending on the type of chemical and the thickness of the glove (generally, the thicker the better).

- Gloves for use with liquid oil/gas streams and chemicals must not have any stitched seams as these will allow penetration.
- Gloves **MUST NOT** be used while working on moving machinery (e.g. vertical drill machine, rotary saw machine).
- Safety pants or chaps must be used when using a chainsaw or performing other tasks where there is a risk of a cut, puncture, irritation or abrasion to the lower body.

**Note:** In British Columbia, the leg protective devices must meet the standards of the WorkSafeBC Standard – Leg Protective Devices.

#### 4.5. Flame Resistant Clothing (FRC)

FRC may be single layer apparel (e.g. shirts, pants, and summer coveralls) or multilayer apparel (e.g. parkas, jackets, rain wear, insulated coveralls, bib overalls, hooded garments) as well as hard hat liners and balaclavas.

Where FRC is required, it must be worn as the outermost layer of clothing and must be worn as directed by manufacturer instructions. It is unacceptable to disable FR clothing by rolling up sleeves or leaving zippers or other closures improperly closed. Synthetic underclothing must not be worn under FRC.

##### 4.5.1. Levels of Protection

- Employees and contractors working in a hazard risk category (HRC) 0 or 1, as defined by legislation (CSA Z462-2012<sup>†</sup> or NFPA 70E) must use a FR textile with a minimum incident energy rating of 4 cal/cm<sup>2</sup>. HRC 0 or 1 activities may include functioning of electrical breakers up to 600v enclosed within a properly closed and maintained breaker cubicle.
- Employees and contractors working in HRC 2 environments must use a FR textile with a minimum incident energy rating of 8 cal/cm<sup>2</sup>. HRC 2 activities may include the functioning of electrical breakers up to 600v in open cubicles as well as troubleshooting live circuits.
- For HRC areas 3 and 4, workers must wear additional outerwear (flash suits) rated for the known flash hazards to provide protection in such instances.

##### 4.5.2. Welding and Molten Metal Exposure

- Where the potential exists for exposure to molten metals, the FR product selected must be rated for protection from molten metals.
- Where FRC is required when welding, leather gauntlets for arms, legs and upper torso may be necessary to aid in further protection and extend the life of the FRC.

##### 4.5.3. CPC Employee and Contractor FRC requirements

CPC employees and full-time equivalent workers:

FR work wear **must only** be purchased through the single source CPC approved vendor (Acklands Grainger Canada) and will meet the following criteria listed below:

- Entire garment must be certified as FRC and include an external tag to indicate FR compliance.



- Arc flash protection at HRC-2 with a minimum arc rating of 8.0 cal/cm<sup>2</sup> or greater in a single layer garment.

**Note: Employees and full-time equivalent workers are only approved to wear the FRC outlined in the Acklands Grainger Order Form shown [here](#).**

If you work in a HRC 2 or higher environment, you need to ensure your FRC is rated for the work activities.

Contractors working on CPC sites:

Must only wear Flame Resistant Clothing (FRC) that meets the following criteria:

- Entire garment must be certified as FRC as defined by legislation (CGSB 155.20 or NFPA 2112) and include an external tag to indicate FR compliance.
- Those contractors exposed to arc flash hazards must wear FRC appropriate to the hazard risk category (HRC-2) as defined by legislation (CSA Z462-2012<sup>†</sup> or NFPA 70E) and include an external tag to indicate arc flash compliance.
- Garment stripes/bands must be compliant with CSA Z96<sup>†</sup> Class 1, Level 2 and be labelled in accordance to CSA Z96 and the stripes/bands shall include compliant retro-reflective trims meeting the CSA Z96-09 standard.

#### **4.5.4. FRC Care**

- Follow the manufacturer's laundry recommendations.
- Garment cleanliness is of extreme importance as any contamination of the fabric will continue to burn (e.g. grease, oil residues and hydrocarbons). Wash heavily soiled garments using hot water temperature settings to help with the cleaning of heavily soiled garments.
- Garments with lesser degrees of soil can be laundered with lower water temperatures which also will be beneficial in retaining garment color.
- All garments must be maintained in their original condition. Rips, tears and abrasions to the fabric are normal consequences of use and they should be repaired as soon as possible with the appropriate FR materials.
- Laundry products such as chlorine bleach, fabric softeners and starch should not be used during the cleaning process as they affect the textiles flame resistance.

#### **4.6. Disposable Protective Garments**

- When selecting disposable protective garments, consideration must be given to FR requirements, nature of contamination (e.g. asbestos, refractory ceramic fibers, lead, NORMs, etc.), sizing and disposal requirements.

#### **4.7. Aprons, Rain Suits and Specialized Protective Suits**

- Aprons and rain suits in PVC, neoprene, nitrile, nylon/polyurethane and natural rubber are permitted. They provide protection against liquid splashes and sprays to the body. FR rain suits are available (a blend of neoprene and Nomex).
- Specialized protective suits are used for better protection than rain suits. Different materials are available depending on the chemical and the type of operation to be performed. Some types



have room for a self-contained breathing apparatus (SCBA). Their selection requires specialized knowledge. Heat stress may be a risk when using these suits because they restrict airflow (see OHOP on heat stress).

- Verify that all protective body coverings comply with the FR clothing standards.

#### **4.7.1. Hot Fluid Sampling – Oil Sands Business Unit**

- In addition to standard PPE, when working with hot fluid, steam or piping in the following temperature ranges, the additional PPE indicated must be worn.
- **60°C - 88°C**
  - Face Shield
  - Chemical / temperature resistant gloves
  - Chemical resistant FRC Coat
- **89°C and above**
  - Face Shield
  - Chemical / temperature resistant gloves
  - Chemical resistant FRC Suit including coat and bib overalls

#### **4.8. Immersion Devices and Personal Flotation Devices**

- Personal flotation devices or lifejackets must be worn when personnel are working from a boat or barge, or in an area where a fall into water could result.
- Personal floatation devices must meet Canadian General Standards Board specification CAN/CGSB-65.11.
- Lifejackets must meet Canadian General Standards Board specification CAN/CGSB-65.7.
- Immersion suits must meet the standards of TC Marine – CAN/CGSB 65.16.
- Rescue equipment must be available when workers are wearing lifejackets or immersion devices.
- Additional safety equipment such as cold water immersion suits, ice rescue picks, safety harnesses and a 30 meter polypropylene lifeline must be used when on ice or near cold, fast-moving water.

#### **4.9. Hearing Protection**

- Hearing protection must be used in areas where noise levels meet or exceed 82 dBA (80 dBA in Saskatchewan). Double hearing protection is required where noise levels meet or exceed 100 dBA.
- Hearing protection must meet or exceed specifications in CSA Z94.2<sup>†</sup>.
- Refer to the CPC Hearing Conservation Program (CPC-ALL-HSE-PGM-144) for specific requirements related to the selection, use and maintenance of hearing protection equipment.

#### **4.10. Personal Gas Detection**

- All workers must have a personal-style four head gas detection monitor (properly calibrated and bump tested) readily available on all sweet and sour facilities, pipelines and well sites. The gas detection monitor must be able to detect LEL, O<sub>2</sub>, H<sub>2</sub>S, and CO as a minimum.
- Refer to the CPC Gas Detection Safe Operating Practice (SOP) (CPC-ALL-HSE-PRC-170) for specific requirements related to the selection, use and maintenance of personal gas detection equipment.
- All contractors must provide their workers with adequate personal gas detection equipment.

#### **4.11. Respiratory Protection**

- Respiratory protective equipment must be worn whenever the worker might be exposed to any airborne hazard including dust, fumes, mists or chemicals as well as those identified in the hazard assessment.
- Refer to the CPC Respiratory Protection Code of Practice (COP) (CPC-ALL-HSE-PRC-151) for specific requirements relating to the selection, use and maintenance of respiratory protective equipment.
- All contractors must provide their workers with adequate respiratory protection as required.

#### **4.12. Fall Protection**

- Fall protection equipment must be worn whenever the worker may fall:
  - A vertical distance of 3 meters (10 feet) or more.
  - A vertical distance of less than 3 meters (10 feet) if there is an unusual possibility of injury.
  - Into or onto a hazardous substance or object or through an opening in a work surface.
- Refer to the CPC Fall Protection SOP (CPC-ALL-HSE-PRC-188) for specific requirements relating to the selection, use and maintenance of fall protection equipment.
- All contractors must provide their workers with adequate fall protective equipment as required.

#### **4.13. Other PPE**

- The following PPE may be required, depending on the hazards identified during the hazard assessment process:
  - Cold weather gear appropriate for the ambient weather conditions must be used or be immediately available to travel to and from work and while performing outside job tasks. Such gear includes, but is not limited to, jacket or parka, bib coveralls, boots, gloves, face mask and hard hat liner or balaclava.
  - High-visibility clothing as determined by hazard assessment including, but not limited to, when working near vehicles or mobile equipment.
  - Personal locator beacons (PLBs) must be utilized when required by the Journey Management Plan or by corporate requirements.
  - PLBs must be an ACR COBHAM ResQLink 406 GPS PLB (or newer ACR COBHAM model with equivalent or better capabilities).

## Appendix A – ConocoPhillips Canada Flame Resistant Clothing (FRC) Procurement Specifications

- Garment must provide arc flash protection at HRC-2 with a minimum arc rating of 8.0 cal/cm<sup>2</sup> or greater in a single layer garment (CSA Z462<sup>†</sup> or NFPA 70E).
- FR protection against hydrocarbon flash fire, with proven independent test results indicating a body burn of less than 25% in using ASTM F1930 and must meet the requirements of CGSB 155.20 or NFPA 2112.
- Garment snaps, enclosures, zippers are to be covered with FR material so as not to attract electrical arc and to not contact the skin of the wearer.
- Lay flat collar or safety collar with Velcro closure.
- FRC stripes/bands are to be in a distinctive standardized pattern including the following detail:
  - Symmetric 'X' on the back extending from the shoulders to the waist.
  - Two vertical stripes on the front passing over the shoulders and down to the waist.
  - A continuous 360 degree waist-level horizontal band extending around the bottom intersecting stripes 'X' on the back and along the bottom of the front vertical stripes.
  - Bands encircling both arms and both legs are required and must be at least 50 mm (1.96") away from the edge of a garment, sleeve or pant leg.
  - The total width of stripes/bands must be at least 50 mm (1.96") throughout.
  - Stripes/bands must be made up entirely of combined-performance or retro-reflective material in accordance to CSA Z96 Class 1, Level FR.
- All labeling must be in accordance with CGSB 155.20, NFPA 2112, ASTM 1506, & CSA Z96-09<sup>†</sup> and will include the following at a minimum:
  - Name, trade mark or other means of identifying the manufacturer or representative.
  - Designation of product type, commercial name, or code.
  - Garment size.
  - Description of FR fabric of the background material.
  - Compliance to CSA Z96-09<sup>†</sup> along with class and level of compliance.
  - Compliance to CSA Z462-2012<sup>†</sup>.
  - Arc Rating (ATPV) in accordance with ASTM 1506.
  - FR designation.
  - Label must state CGSB listing number in accordance with CGSB 155.20.
  - Laundering instructions.

**Appendix B – Revision Record**

Page#	August 13, 2018	Previous Information	Risk Assessment
ALL	New document	None	Low
8	Clarification of FRC requirements	Required clarification	Low

<sup>†</sup>To request a copy of this Standard, please send an email to RSC:HSE Management System.