


# STANDARD OPERATING PROCEDURE

<b>Operation of Paint Gun &amp; Paint Bay Systems</b>		Document Number: 960C-SOP-603
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## OPERATION OF PAINT GUN & PAINT BAY SYSTEMS

2	APP	APR 13, 2022	Approved	Andre Brule	Lisa Norris	 Tammy Siver
<b>Rev</b>	<b>Status</b>	<b>Rev. Date</b>	<b>Status Description</b>	<b>Prepared by</b>	<b>Reviewed by</b>	<b>Approved by</b>

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*The following is a step-by-step procedure on how to complete a specific task or meet a facility specific requirement. Standard Operating Procedures (SOPs) are written for all identified critical tasks. By virtue of the hazard or complexity associated with critical tasks it is paramount that the SOP be followed as written. SOPs contain a listing of high-level hazards associated with the task, for detailed hazard analysis reference the applicable Task Hazard Assessments. SOPs do not replace the requirements contained in the company Standards, Codes, and Processes nor does it replace the need to comply with required legislation. Section 8.0 references documentation that the worker shall understand before work commences.*

## 1.0 PURPOSE

- To establish a company standard to safely and effectively carry out work as it applies to operating paint guns and paint bay systems.

## 2.0 SCOPE AND APPLICATION

- This document applies to all company Heavy Construction Mining operations. Ensure all site-specific requirements are being met or exceeded before performing the task.

## 3.0 HAZARDS AND CONTROLS

- Fire and/or explosion, resulting in property damage and/or injury.
  - All ignition sources shall be removed from the paint area. Use intrinsically safe equipment (fans, air movers etc.) if one is needed.
  - Ground all equipment, parts, and components to be painted.
  - Spray in well-ventilated areas with good air movement.
  - Keep the work area free of debris that could contribute to a fire such as open or empty paint cans, solvent, paint thinners, brake clean, rags (especially used ones), paper etc.
- Exposure to solvent and vapors that may result in several health-related issues affecting the central nervous system, irritation of eye, skin, and respiratory system.
  - Read and understand the safety data sheets (SDS) on solvents used in painting operations.
  - Only company approved full face respirator with proper cartridge and filters will be used during painting operations. The worker must be fit tested and trained prior to using the full-face respirator (refer to 950C-C-050 PPE - Respiratory Protection Code).
  - The worker must be clean shaven when using the respirator. If the face and/or neck seal can't be maintained, the respirator shall not be worn.
  - Respirators shall be cleaned and disinfected as often as necessary; workers are responsible to change the filters as needed or as directed by the manufacturer.

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- Respiratory protective equipment shall be stored in a manner that protects from dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals.
- The worker will wear the following personal protective equipment (PPE) when performing painting activities; standard PPE as well as full face respirator, hearing protection, hooded paint suit (be aware of any areas not covered by the suit wrists & ankles) and additional specialized PPE as identified in the SDS for the solvents being used.
- Keep product containers tightly sealed and ensure unused solvent containers are placed back in the fireproof cabinet when not in use.
- Ensure unprotected workers are clear of the area prior to using solvents.
- Noise exposure.
  - Hearing protection must be worn during painting operation. Discuss with supervision if unsure on the type of hearing protection to be worn.
- Heavy lifting, awkward position and slips, trips and fall hazards resulting in musculoskeletal injuries (sprains/strains) and personal injury.
  - Stretch before and during the task. Take micro breaks as needed.
  - Use good ergonomics and proper lifting techniques when handling heavy awkward objects. Anything over 50lbs requires assistance.
  - Ensure a safe and hazard free work site is maintained throughout the entire shift. Keep hoses, and other equipment organized on the ground and be aware of the location. Make sure the travel path is clear prior to painting.
  - Worker is responsible to position cables, hoses, and ground wires out of the line of fire. Inspect the walking path prior to painting.
  - Ensure hoses lie flat and do not have any kinks, twists, or loops.
  - Prior to painting, ensure the full-face respirator is clean and clear.
- Falling from elevations resulting in personal injury.
  - Work from approved platforms or equipment landings, wear fall protection equipment when working over 6 feet at an unguarded edge.
  - Only competent personnel shall operate elevated work platforms. Ensure hoses and supplied air lines are not fastened to the handrail while it is being raised. Use rope to pull hoses and supplied air lines up to elevation.

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- Spray from the paint gun, leaks or ruptured air lines/components resulting in injection injury (fluid and/or air injected through the skin and into the body).
  - Relieve fluid pressure when cleaning or servicing any part of the equipment. To relieve pressure, shut off the sprayer, trigger the gun, and open the pressure drain valve. Follow the instructions in the operator's manual for flushing methods.
  - Never point paint sprayers or other high pressure air devices at yourself or others.
  - Ensure hoses are rated for pressure. Inspect clamps and fittings for damage, wear, and tear, and ensure the connections are secure prior to painting.
- Equipment, parts, and other components falling or shifting off stands, blocks or pallets resulting in property damage and/or injury.
  - Inspect stands before use and confirm annual certification is current.
  - Ensure the load limit of the stands/jacks meets or exceeds the load being placed/set.
  - Place adequate supports (jack, stands or blocks) in appropriate places, ensure the load is balanced and stable prior to painting operations. Consult supervision if unsure of the stability.
- Personnel unaware of emergencies or unable to report if they are injured or fallen during painting activities.
  - Supervisor or designate must physically check on worker during painting activities. Check-in intervals will not exceed two (2) hours (follow 962C-SOP-006 - Working Alone).
  - In the event of a building evacuation supervisor or designated person must notify the paint bay operator.

## 4.0 CHECKLIST

- Attend all preparatory meetings (IE: daily PSI; job scope; review of JSA's and SOP's for the job)
- Complete FLRA cards before starting the work.
- Ensure all personnel involved in the task are aware of the hazards and the controls to be used, as identified in the SOP's; JSA's; and FLRA's.
- Conduct a pre-job inspection of all equipment to be worked on and tools to be used.
- Standard of Training required for working on this job: On-the job training.**

## 5.0 DEFINITIONS

### 5.1 Company

Means North American Construction Group Ltd. (NACG) and all directly or indirectly owned subsidiary companies, including joint ventures.

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## 5.2 Company Personnel

Includes the Company's employees, officers, directors, agents, associates, consultants/contractors, temporary employees, and third-party processors.

## 5.3 Explosive Limits

The Lower Explosive Limit (LEL) is the minimum concentration of a flammable vapor in air that will burn. Below the LEL, the mixture is too "lean" to burn (too little fuel). The Upper Explosive Limit (UEL) is the maximum concentration of a flammable vapor in air that will burn. Above the UEL, the mixture is too "rich" to burn (not enough oxygen).

## 5.4 HSE

Refers to the Health, Safety & Environment department.

## 5.5 Intrinsically Safe

Equipment and wiring which is incapable of releasing sufficient electrical or thermal energy under normal or abnormal conditions to cause ignition of a specific hazardous atmospheric mixture in its most easily ignited concentration.

## 5.6 Safety Data Sheets (SDS)

Documents that provide information about the hazards of a product and advice about safety precautions.

## 5.7 Solvent

A liquid chemical that dissolves a solid, liquid or gas, creating a solution. The most common solvent is water. At worksites, the most frequently used solvents are organic (carbon containing) chemicals. They are usually clear, colourless liquids and many have a strong odor. Some examples of solvents include xylene, toluene, kerosene, ethanol, methanol, acetone, turpentine, and mineral spirits.

## 6.0 PROCEDURE

- 1) Read and understand all warnings and instructions in the owner's manual. Review the safety data sheet (SDS) and manufacturer's instructions for the recommended personal protective equipment (PPE) when operating and/or servicing. Inspect PPE prior to use.
- 2) Complete hazard assessment (i.e. FLRA) for task. Notify supervision if unsure of task and if there are any hazards outside of the worker's control.
- 3) Inspect all equipment and tools prior to use. Tagout and remove from service and damaged or defective equipment or tools. Notify supervision.
- 4) Bring equipment or components to be painted into the paint area or paint bay, utilizing a spotter if necessary.
- 5) Place adequate supports (jack, stands or blocks) in appropriate places, ensure the load is balanced and stable prior to painting operations. Consult the supervisor and/or lead hand if unsure of the stability.
- 6) Place signage to prevent unauthorized entry to area where painting is to take place.

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- 7) Isolate hazardous energy on equipment (lock out/tag-out). Ensure all equipment, parts and components have been grounded.
- 8) Open paint lid and stir the pail with a large enough stir-stick. The paint must be a consistent texture and color before painting. If there is a skin on top of the paint, remove it with a stir stick, and discard properly.
- 9) Turn on ventilation towers, ensure they are functional and that filters are in acceptable condition.
- 10) Paint object using even strokes, at a consistent distance.
- 11) Give the equipment and/or parts time to dry prior to moving.
- 12) Conduct general cleanup of the painting area, ensure all equipment used during painting operations is cleaned out.
  - (a) Relieve fluid pressure when cleaning or servicing any part of the equipment. To relieve pressure, shut off the sprayer, trigger the gun, and open the pressure drain valve. Follow the instructions in the operator's manual for flushing methods.
  - (b) Run paint thinner through the gun until all paint is removed, and the thinner is clear with no visible trace of paint residue. This must also be done into a proper paint disposal barrel.
  - (c) Seal paint cans, and store them in approved, marked, and ventilated storage cupboards only.

## 7.0 NOTES

If this task is to be done by a method different than described in this SOP, the work must **STOP**, and the alternate method must be **DOCUMENTED** with an adequate hazard assessment tool such as a JSA. The document must be **APPROVED** by a supervisor before such procedures are implemented.

## 8.0 REFERENCES

- Alberta Occupational Health and Safety Act, Regulation and Code - {Part 10, Fire & Explosion Hazards}
- 950C-C-016 - Fall Protection Code
- 950C-C-018 - Fire and Explosion Code
- 950C-C-020 - Flammables & Combustibles Storage and Handling Code
- 950C-C-022 - General Housekeeping Code
- 950C-C-047 - PPE - Eye and Face Protection Code
- 950C-C-049 - PPE - General Code
- 950C-C-050 - PPE - Respiratory Protection Code
- 960C-SOP-001 - Elevated Work Platform-Safe Use of
- 960C-SOP-004 - Flagging Tagging and Barricading Hazardous Areas
- 960C-SOP-006 - Ladder Use
- 960C-SOP-112 - Compressed Air and Air Hoses
- 960C-SOP-019 - Slip Trip and Fall Hazard Prevention
- 962C-SOP-006 - Working Alone
- 962C-SOP-009 - Manual Lifting and Carrying Heavy Objects

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- 962C-SOP-008 - Signaling Equipment

## 9.0 APPENDICES

- Appendix A – Paint Booth & Mixing/Cleaning Room
- Appendix B – 999C-F-066 - Paint Booth Operator Daily Checklist
- Appendix C – 999C-F-067 Paint Booth Operator Monthly / Bi - Monthly Checklist

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## Appendix A Paint Booth & Mixing/Cleaning Room



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*CFS Paint Booth*



*CFS Paint Booth*



*CFS Paint Booth – Mixing/Cleaning Room*



*CFS Paint Booth – Filter System*



*Ground cable - CFS Paint Booth*

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## Appendix B Paint Booth Operator Daily Checklist

<b>Paint Booth Operator Daily Checklist</b>		Document Number: 999C-F-067
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Key	Inspection Description	Needs Repair	OK
<b>Pre-Operational Checks</b>			
	<b>Power OFF, LOTO</b>		
1	Has the Monthly Checklist Been Completed		
2	Perform Daily Compressor Checks.		
3	Check the Manometer reading with the booths air system OFF, Manometer should read ZERO (0) on the gauge. Record the reading on this sheet.		
4	Inspect Intake Air Filters and Exhaust Air Filters. Refer to the GFS U105827-A Job Specific LECD Service - Operations Manual Page 19. Located in the Paint Booth Shop.		
5	Check Air Hoses for Cracks, Wear, Damage, Check Air Couplings for Damage and Wear		
6	Check Respiratory Breathing Mask for correct face seal, Check mask filters for no air restriction when breathing. Keep masks stored in their plastic storage bag when not in use.		
7	Sweep Out Paint Bay and Dispose of Debris in Trash Receptacles. Then Blow Out Paint Bay		
8	Empty All Trash Receptacles.		
<b>Operational Checks</b>			
	<b>Power ON, Turn Air System ON</b>		
1	Check the Manometer reading with the booths air system ON, Manometer should NOT read above 0.5 in/H <sub>2</sub> O on the gauge. If at 0.5 in/H <sub>2</sub> O the exhaust filters must be changed. Record the reading on this sheet		
2	Check the Booths Compressed Air Supply Shut Off valve for correct operation, use an air blower in the paint booth and open one of the man doors, as soon as the door opens the air supply should shut off.		

Concerns:


**Inspector:** \_\_\_\_\_  
First Name

\_\_\_\_\_ Last Name

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

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## Appendix C Paint Booth Operator Monthly / Bi-Monthly Checklist

<b>Paint Booth Operator Monthly / Bi-Monthly Checklist</b>		Document Number: 999C-F-067
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Key	Inspection Description	Needs Repair	OK
<b>Pre-Operational Checks</b>			
<b>Power OFF, LOTO</b>			
1	Has the Daily Checklist Been Completed		
2	MONTHLY - Test Paint Booth Manometer Gauge for Accuracy. See the Dwyer Mark II Manometer Operation Instructions for Details.		
3	MONTHLY - AMU - Air Makeup Unit - Inspect and Clean Intake and Exhaust Ductwork, as necessary. Refer to: GFS- Large Equipment - Cross Draft Booth - Service and Operations Manual Pg 25. NOTE: Maintenance Contractor Responsibility.		
4	MONTHLY - AMU - Air Makeup Unit - Inspect and Clean Intake and Exhaust Plenum, as necessary. Refer to: GFS- Large Equipment - Cross Draft Booth - Service and Operations Manual Pg 25. NOTE: Maintenance Contractor Responsibility.		
5	MONTHLY - Clean the Paint Booth Control Panel Intake and Exhaust Filters. Extreme caution must be used when cleaning the filters. The filters must be blown out with compressed air from the inside of the control cabinet. NOTE: Maintenance Contractor Responsibility.		
6	Bi-MONTHLY - Replace the AMU Pre-Filters. NOTE: Maintenance Contractor responsibility.		
7	Bi-MONTHLY - Replace the Paint Mixing Room Intake and Exhaust Filters.		

Concerns:


**Inspector:** \_\_\_\_\_  
First Name

\_\_\_\_\_ Last Name

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_