IPS ★ ITCS

Industrial Performance Services | Industrial Tubular Catalyst Services

# PUREFLO PF60 ESM HELMET INSPECTION PROCEDURE

V:2023.1

Industrial Performance Services ★ Industrial Tubular Catalyst Services

# Pureflo PF60 ESM Helmet Inspection Procedure

January 2023

## Hazard Evaluation and Suitability

This respirator must be used strictly in accordance with these instructions.

Do not use this respirator for protection against unknown atmospheric contaminants, when concentrations of contaminants are unknown, in atmospheres immediately dangerous to life or health (IDLH), or in atmospheres with less than 19.5% oxygen. It may be used in a confined space when continuous monitoring is employed, and a good ventilation plan is in place.

The Pureflo Helmet will protect against catalyst dust or welding fumes that are in line with what the filter is designed to protect the wearer from.

Do not use when there are hydrocarbons or other gases, and vapors are present.

*Typical uses of the Pureflo Helmet:*

- Catalyst unloading
- Catalyst loading
- Decanting of catalyst material for loading.
- Screening of catalyst
- Welding and Cutting (with approved welding shield in place)

This respirator is only for use by trained, competent personnel.

Only use this respirator with the parts and accessories listed in these instructions.

Continue wearing the respirator and leave the contaminated area immediately if any of the following conditions apply:

- An audible tone sounds.
- A RED LED appears on the chin bar (see table in the section: "Chin bar LED display").
- Any part of the respirator becomes damaged (the unit is still operating).
- Airflow into the respirator decreases.
- The user tastes or smells contaminants.

Remove the respirator and leave the contaminated area immediately if:

- The blower stops.
- Breathing becomes difficult.
- Dizziness or other physical distress or irritation occurs.

Transportation - Use the carry bag provided to transport and protect the unit from physical or chemical damage.

## Training Requirements

Appropriate training and instructions in the proper use of the Pureflo Helmet shall be provided by the HSEQT Manager. Respirator users and their supervisors will receive training on the Pureflo Helmet and the contents of the IPS★ITCS Respiratory Protection Program and their responsibilities under it. They will be trained on the proper selection and use, as well as the limitations of the Pureflo Helmet. Training also covers how to ensure a proper fit before use and how to determine when a respirator is no longer providing the protection intended.

The HSEQT Manager provides training of Pureflo Helmet wearers in the use, maintenance, capabilities, and limitations of the helmet. Retraining is given annually thereafter and only upon successful completion of the medical evaluation.

Pureflo Helmet training will be properly documented and will include the type and model of Helmet for which the individual has been trained.

This training will include, but not be limited to:

- Nature and degree of respiratory hazard
- Respirator selection, based on the hazard and respirator capabilities and limitations
- Donning procedures including hands-on practice to ensure effective use.
- Actual handling of the respirator and wearing it for a period in a test atmosphere.
- A discussion of respirators construction, operating principles, and limitations.
- Care of the respirator, e.g., need for cleaning, maintenance, storage, and/or replacement.
- Instruction on the nature of the hazard, including information on its physical properties, possible concentrations, modes of physiological action and means of detection.
- Use and limitations of respirator
- Discussions of maintenance and inspection procedures.

## Facial Hair Policy

While the Pureflo Helmet will work adequately with facial hair we do not permit this. The wearer must be clean shaven or shaven in accordance with the site-specific facial hair policy or the IPS★ITCS facial hair policy.

## Function and Helmet Test Process

Each time that the Pureflo Helmet is used by a wearer, the process of starting, donning and checks must be performed. This will ensure that the unit will perform properly and provide the necessary level of protection to the wearer on each occasion.

**Chin bar LED display -** Three, steady green LEDs indicate a new or lightly used filter and fully charged battery packs. As the filters become clogged, the number of green LEDs goes from three to two to one to zero green at which time the red LED illuminates. The illumination of the red LED will be accompanied by a repeating audible tone. Leave the contaminated area if a red LED illuminates or if a repeating audible tone sounds and then remove the respirator.

If less than two LEDs are illuminated, you must consider whether the filter has sufficient life for the planned time in the work environment. (Refer to tables below) The following represents the helmet function and LED Indication during **normal operation**:

| Condition | Red LED | Green LED (left) | Green LED (center) | Green LED (right) | Audible tone |
|---|---|---|---|---|---|
| Switching on (LED briefly on) | ● | ● | ● | ● | (🔔) |
| Maximum Filter life remaining, filter is new or slightly used [1] | | ● | ● | (●) | |
| Acceptable Filter life remaining [1] | | ● | ● | | |
| Approaching the end of filter life. | | ● | | | |
| End of filter life.[2] | ● | | | | 🔔 [2] |
| Airflow boost mode | (●)[3] | (●)[3] | (●)[3] | ☼ | (🔔) |

● = LED illuminated ☼ = LED flashing 🔔 = Audible tone sounding. (🔔) = Brief, single tone

(●) = May or may not be illuminated

**Warning Indications:** Leave the contaminated area immediately if any warning indications are given.

| Condition | Red LED | Green LED (left) | Green LED (center) | Green LED (right) | Audible tone |
|---|---|---|---|---|---|
| Air filter ready for replacement. Airflow cannot be maintained. An audible tone will begin sounding 40 to 50 seconds after the red LED illuminates. (normal warning) | ● | | | | 🔔 [2] |
| Low battery - Charge batteries (normal warning) | ☼ | ☼ | ☼ | ☼ | 🔔 |
| Battery over-discharge (fan is turned off) **abnormal warning** | ☼ | | | | |
| System fault **abnormal warning** | | ☼ | ☼ | ☼ | |
| Current limit (faulty motor circuit) **abnormal warning** | ☼ | | | | 🔔 |

**Boost mode**

During use, the respirator airflow can be increased by a nominal 20 liters/minute by pressing the boost switch on the chin bar. The button must be pressed through the neck cape. Do not open the visor or loosen the neck cape in the work environment.

1. Press the boost button firmly through the neck cape and keep it depressed for approximately one second. The unit will register that the switch has been depressed with a short audible tone.

2. Release the switch. The green LED light furthest to the right flashes continuously to indicate that the respirator is operating in Boost Mode.

In boost mode the battery packs will operate with a reduced duration.

## Pureflo Helmet Routine Maintenance

### 1. CLEANING AND SANITIZING

The helmet assembly should be thoroughly cleaned inside and out after use with respirator wipes. A soft cloth or sponge with a dampened amount of soap and water solution should be used for scrubbing a heavily soiled helmet. **CARE SHOULD BE TAKEN NOT TO IMMERSE THE HELMET IN LIQUIDS.**

After careful washing, the helmet interior can be sanitized by rubbing the surfaces with a cloth dampened with isopropyl alcohol.

## Pureflo Helmet General Requirements

The Occupational Safety and Health Act, requires the following maintenance and care of respirators:

All helmets shall be inspected routinely before and after each use. A helmet that is not routinely used but is kept ready for emergency use shall be inspected after each use and at least monthly to assure that it is in satisfactory working condition.

Helmet inspection shall include a check of the tightness of any connections and the condition of the headbands, and movable parts. Rubber or elastomer parts shall be inspected for pliability and signs of deterioration.

Routinely used helmets shall be collected, cleaned and disinfected as frequently as necessary to ensure that proper protection is provided for the wearer. Each worker should be briefed on the cleaning procedure and be assured that he will always receive a clean and disinfected helmet. Such assurances are of greatest significance when respirators are not individually assigned to workers. Helmets maintained for emergency use shall be cleaned and disinfected after each use.

Replacement or repairs shall be done only by experienced persons with parts designed for the helmet. No attempts shall be made to replace components or to make adjustment or repairs beyond the manufacturer's recommendations. Reducing or admission valves shall be returned to the manufacturer or to a trained technician for adjustment or repair.

After inspection, cleaning and necessary repair, helmets shall be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals.

## 2. INSPECTION

After cleaning and sanitizing, the helmet assembly should undergo a thorough inspection to assure that the helmet is free of excessive wear or damage. If damage or excessive wear is apparent, the face piece should be replaced.

## 3. HELMET LENS

The helmet lens is moulded of polycarbonate plastic for impact protection. If deep scratches develop after extended use, the helmet lens should be replaced.

**THE USE OF HIGHLY ABRASIVE CLEANERS OR CHEMICAL SOLVENTS SHOULD BE AVOIDED.**

## 4. LENS HINGE AND LATCH ASSEMBLY

Inspect the helmet lens hinge for wear, free movement, or loose screws. Examine the helmet lens latch assembly for firm fit. Engage the latch bayonet into the latch body and inspect for positive latching of the assembly.

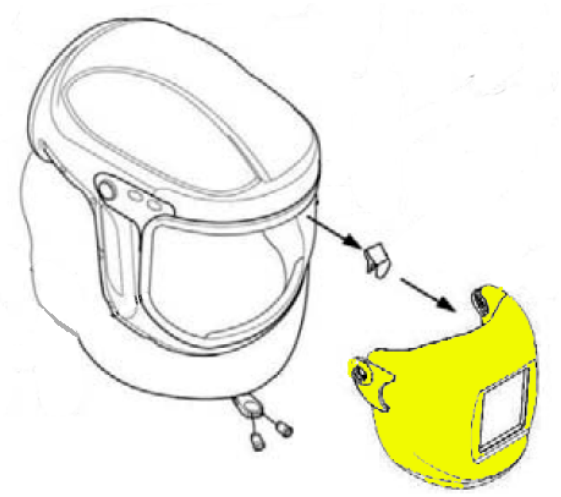
## 5. EXHALATION VALVE

On the neck cape, inspect the exhalation valve for any signs of loose fit in its mounting.

## 6. WELDING SHIELD (WHEN APPLICABLE)

The Pureflo Helmet has a welding hood accessory (PN: PRO2000-SHL-**X**1A).

Inspect all pieces to the welding shield to ensure adequate protection. The welding shield has both a passive lens or a Jackson NexGen Auto-Darkening Filter option. If the NexGen option is used, ensure Lithium batteries are checked to allow for proper auto-darkening while in use.



## 7. REPLACEABLE PARTS WARNING

**! WARNING !**

**DO NOT REPLACE COMPONENTS OR MAKE REPAIRS NOT COVERED BY THE PUREFLO PF60 ESM MANUAL.**

# HELMET INSPECTION SHEET

**Description:** _____ **Model #:** _____

**Serial#:** _____ **Date of Manufacture:** _____

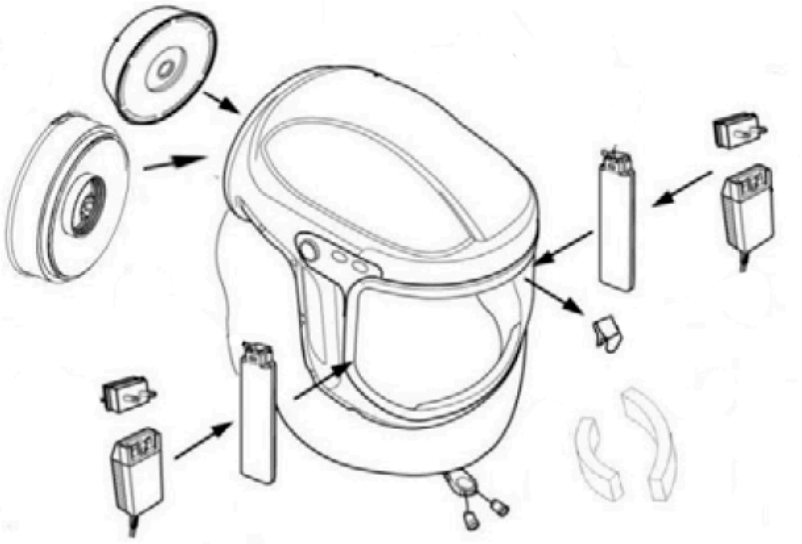
**Inspector:** _____ **Date Inspected:** _____

**X Fail:** ❑ Initial: _____ ✓ **Pass:** ❑ Initial: _____

**REMOVE FROM SERVICE FOR REPAIR**

**RETURN TO SERVICE**

| | Inspection Item | Pass | Fail |
|---|---|---|---|
| 1 | Helmet Integrety | | |
| 2 | Filter Inlet | | |
| 3 | Left & Right Battery | | |
| 4 | Blower Motor | | |
| 5 | Lens | | |
| 6 | Lense Lock | | |
| 7 | Neck Cape | | |
| 8 | Exhalation Valve | | |



**NOTE: Ensure to perform helmet function test prior to "Return to Service"!**

# Competency Assessment

The wearer is to go through the process of donning, starting up and wearing the helmet in accordance with the procedures.

**Sample Questions:**

1. The Pureflo Helmet with the P-100 Filter may be used in IDLH Atmospheres?

**True** **False**

2. If the Red light on the LED Chin Bar is on, what does this mean?
   a. The batteries are low and you must change out batteries
   b. The filter life is low and should replace filters
   c. The blower motor is malfunctioning
   d. None of the above

3. The neck cape must be attached for the helmet to offer adequate protection?

**True** **False**

4. To sanitize the helmet, you should?
   a. Submerge helmet in a solution of water and bleach
   b. Spray helmet with a hose or sprayer to wash out debris
   c. Wipe the helmet with a cloth using isopropyl alcohol
   d. All of the above



(Please tick appropriate box)

| | |
|---|---|
| This employee is competent in performing the job. | |
| This employee has not attained the competency level. | * |

* *If the employee has not attained all competency levels, the Safety/Training Manager must assess the action to be taken, provide an extension of training or alternative action as listed below.*

Alternate action to be taken: _____

Signed By Employee: _____ Date: _____

Trainer: _____ Date: _____

# Revision History

| Rev | Rev Date | Rev By | Approved By | Description |
|---|---|---|---|---|
| 1.0 | 1.3.2022 | Shayne Torrans | Shayne Torrans | Initial Procedure Document |
| 1.1 | 12.5.2022 | Shayne Torrans | Shayne Torrans | Format Revision |
| | | | | |
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**Approvals:**

Procedure Owner

_____ _____

Print Name Date

_____

Signature

# Competency Assessment

| No. | Questionnaire | C/NYC |
|---|---|---|
| Q1 | | |
| A1 | | |
| Q2 | | |
| A2 | | |
| Q3 | | |
| A3 | | |
| Q4 | | |
| A4 | | |
| Q5 | | |
| A5 | | |

| Enclosed Attachments | |
|---|---|
| Risk Assessment | ☑ |
| Environmental Aspect and Impact | ☑ |
| Training and Competency | ☑ |
| Measure and Evaluation Tools | ☑ |

# Competency Checklist

To be filled out by Trainer and signed by Employee, Assessor and Supervisor before being returned to the HSEQT Manager for recording purposes.

| Procedure | Competency | Date | Competent YES / NO | Employee Signature |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

(Please tick appropriate box)

This employee is competent in performing the job. ☐

This employee has not attained the competency level. ☐ *

* *If the employee has not attained all competency levels, the General Manager must assess the action to be taken, provide an extension of training or alternative action as listed below.*

Alternate action to be taken: _____

Signed By Employee: _____ Date: _____

Trainer: _____ Date: _____

Assessor: _____ Date: _____

Regional Manager: _____ Date: _____

# Environmental Aspects and Impacts

## Identified Environmental Aspects and Impacts

The following table is a summary of the likely environmental aspects and impacts that may be identified during site inspections. The significance of each impact needs to be assessed using the Risk Assessment Model.

| Activity | Aspect | Impact |
|---|---|---|
| **Purchasing & Administrative Work** | Consumption of goods | Conservation of natural resources |
| | Consumption of energy (eg. Electrical equipment and facilities) | Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Habitat loss |
| | Generation of waste (eg. Paper) | Consumption of space for waste disposal; Habitat loss |
| **Climate Control** | Consumption of energy | Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Habitat loss |
| | Generation of noise | Disturbance to community; Habitat loss |
| **Cleaning of – offices / vehicles** | Storage, use and release of chemicals | Contamination of air, water or soil; Risk to human health |
| **Transport (Fleet vehicles / staff travel)** | Consumption of energy | Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Loss of habitat at all stages of generation; Light pollution |
| | Consumption of goods (eg. Oil) | Consumption of natural resources; Generation of waste; Habitat loss; Biodiversity impacts |
| | Generation of waste (eg. Oil) | Consumption of space for waste disposal; Potential contamination of water or soil; Habitat loss |
| | Exhaust emission | Release of greenhouse gases and atmospheric pollution |
| | Use of dangerous goods (eg. Batteries) | Potential contamination of air, water or soil; Risk to human health |
| | Generation of noise | Disturbance to community; Habitat degradation |
| **Operations** | | |
| | | |
| | | |

# Risk Assessment

| Risk Assessment // insert name here | | | | | |
|---|---|---|---|---|---|
| **Step No:** Logical sequence | **Sequence of Basic Job Steps documented in the Procedure, Work Instruction and project plans. Break down Job into steps.**<br><br>Each step should be logical and accomplish a major task. | **Potential Safety & Environmental Hazards/Impacts at the site of the Job**<br><br>Identify the actual and potential health and safety hazards and the environmental impacts associated with each step of the job. | **Risk Rating**<br><br>Refer to the risk matrix or HSEQT.PRO. Risk Mgt | **Recommended Corrective Action or Procedure**<br>***Determine the corrective actions necessary to reduce the risk to as low as reasonably practical (ALARP) refer to HSEQ.PRO.Risk Mgt. The risk must be rediced or controlled to ALARP before work commences.***<br>Document who is responsible for implementing the controls to manage each hazard identified. | **Risk Rating** refer to the risk matrix or HSEQT.PRO.Risk Mgt |
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |

# Audit

| | | |
|---|---|---|
| **Process**: insert//<br>**Procedure**: Insert // | Date: | Audited by: |
| | Location of Audit: | Area Mgr/Supervisor: |

| Item | Question | Evidence Sited | Comments | Conformance Score 0,3,5 |
|---|---|---|---|---|
| **1.** | | | | |
| **2.** | | | | |
| **3.** | | | | |
| **4.** | | | | |
| **5.** | | | | |
| **6.** | | | | |
| **7.** | | | | |

| | | |
|---|---|---|
| AUDITOR'S SIGNATURE: | CONFORMANCE SCORE: / 25 | 0 – Non-Conformance<br>3 – Continuous Improvement Opportunity |
| SAFETY REP'S SIGNATURE: | CONFORMANCE %: | 5 – Total Conformance |