

# sureclean

CONFINED SPACE ENTRY

## Confined space entry



**Sureclean is a technology led, problem solving company that can safely and efficiently undertake vessel and confined space entry.**

Recognising the hazardous nature of confined space entry Sureclean has developed a range of technologies and methods to remotely clean tanks and vessels. However, in many cases when muds, brines, sludges, sand, scale, waxes, sediment and other such deposits need removal human intervention is necessary.

### Highly Trained Operatives & Proven Procedures

Sureclean's specially trained teams utilise proven procedures to manage the risks associated with tank cleaning and confined space entry. This, combined with Sureclean's permit system, ensures all projects are safely and successfully completed.

The 'Attendant' at the point of entry to a confined space permanently monitors the 'Entrants' working inside and communications are continually checked to ensure that the best working practices are followed.

### Specialist Equipment

An integrated range of specialist equipment has been assembled to maximise efficiency and minimise risk. Sureclean uses the latest

technology in gas monitors, including the 'Impact Pro' portable multi-gas meter to monitor and display up to four gases simultaneously. Typically the carbon dioxide (CO<sub>2</sub>) and hydrogen sulphide (H<sub>2</sub>S) toxic sensors are used, but these can be changed in the event that a specific risk assessment identifies the potential of an alternative toxic hazard.

Added safety features in this system include ultra bright alarm lights and a powerful audible alarm, which coupled with a periodic green flash and bleep provide users with the confidence that monitoring is always in operation and alarms are never missed.

In the case of noisy environments vibrating alarms are used. The 'Safelink' option allows two instruments to be connected together to facilitate direct communication between team members.

Our air purification units are used to treat compressed air and bring it up to breathing air quality. In operation, an air purity analyser is deployed to verify that air quality is kept within specification.

### Safety First

Sureclean has invested heavily in breathing apparatus and equipment to ensure an absolute 'fail safe' operational methodology. The integrity of the primary air supply is constantly monitored by the standby man via the purification unit and/or breathing apparatus trolley. In the unlikely event that both of these systems failed the entrant is also equipped with a ten minute escape set to ensure safe exit from the situation.

### Explosion Proof (Ex) Lighting

Specialist low voltage (24v) Ex area lighting is deployed to enhance safety and operational efficiency. The package includes flood lighting, stick lights and powerful hand held lamps.

**Safety is as non-negotiable as quality, both have top priority in everything we do.**



# Technical Specification

A special feature of the monitors we use is their ability to be calibrated in house to ensure operational integrity, irrespective of the conditions in which they are deployed.

Air purification unit. Innovative filtration process converts compressed air to high quality breathing air.

Lights, transformers and cables. The multi-component Ex low voltage lighting system offers operational flexibility and enhanced safety.

Consistent air supply is provided by a three stage back up system. Main air umbilical, trolley mounted cylinders and an escape set worn by the operator.



### Gas Monitors

The "Impact Pro" portable multi-gas meters are able to monitor and display up to four gases simultaneously. These include flammable, oxygen and two toxic gases.

#### Dimensions

Width	136mm	Height	49mm
Depth	84mm	Weight	520g

(weight includes re-chargeable battery and pump)

#### Hook Up and Interface Requirements

None - Self contained (Re-chargeable batteries)

#### Transportation Box

Monitors provided in robust protective carry case complete with charger and single pump.

#### Monitor Details

The Impact Pro Monitor uses high specification sensors that are continually checked using patented technology to ensure safe, accurate and reliable measurements are always made. It is ideal for use in confined spaces where entry and exit typically is difficult. Gas checks prior to entering a confined space can be carried out using drop line, hand aspirator or via the built-in pump.

#### Other Features

Enforcer calibration tool enables in-house testing and calibration of the Impact Pro Monitors in full compliance with current regulations. Calibration results are recorded for printing via the PC software included with the equipment.

### Air Purification Unit

Fully pneumatic desiccant type purification system used to treat compressed air and bring it up to breathing air quality in excess of the requirements stipulated in all relevant international standards,

including BS 4275:1997. Our most popular unit, described here, is capable of supporting up to three operators simultaneously providing output flow of 35m<sup>3</sup>/hr (20cfm) at 7bar (100psi) and 35°C. If larger teams are to be deployed other models are available.

#### Dimensions

Width	670mm	Height	1230mm
Depth	460mm	Weight	120kg

#### Hook Up and Interface Requirements

Inlet air supply for purification  
 - Min pressure 4.0bar (58psi)  
 - Max pressure 16.0 bar (232psi)  
 - Flow 42m<sup>3</sup>/hr (24cfm)  
 - Unit terminates in 1/2" connection with various adapters available compatible with standard air hose ends.

#### Frame Details

The unit is mounted within a robust lifting frame which incorporates a certified lifting point. The frame is also designed to accommodate both forklift and manual handling.

#### Other Features

The Air Purification Unit is an adsorption dryer with alternating adsorption and regeneration phases i.e. the medium is alternately dried in one of the adsorbers while the other adsorber is being regenerated. This procedure ensures continuous operation.

### Air Purity Analyser

(illustrated top left overleaf)

Battery powered, portable, breathing air purity tester. Accurately checks for carbon monoxide, carbon dioxide, oil (synthetic or mineral), water (cylinder or airline) and temperature (airline and ambient).

#### Dimensions

Width	360mm	Height	150mm
Depth	270mm	Weight	3kg

#### Hook up and interface requirements.

None. Self-contained (re-chargeable nickel cadmium batteries).

#### Analyser Unit

The air purity analyser is designed to allow the testing of the flow and purity of compressed air respiratory breathing systems. Results pertaining to CO, CO<sub>2</sub>, oil and H<sub>2</sub>O are obtained through the use of standard Draeger Test Tubes.

#### Other Features

Re-chargeable from the mains or in-car adapter. Re-calibration is automatically indicated.

### Breathing Air Trolley Set

Portable airline system that can supply medium pressure breathable quality air to two sets of breathing apparatus.

Trolley based system with 2 or 4 cylinder frame, pneumatics, 60m hose reel complete with adaptor to accommodate external medium pressure breathable air supply. An integral regulator reduces pressure at point of delivery to between 6 and 9 bar (84 and 126psi). Two or four cylinders each with a capacity of 2200 litres (45 minutes). Charging pressure 200 bar (2900psi).

#### Other features

Air filter unit (AFU). Medium pressure warning whistle. Low pressure warning alarm.

### Ten Minute Escape Set

Compressed airline, positive pressure breathing apparatus with integral air cylinder.

The apparatus comprises a full face mask, a demand valve and a pig-tail with CEN connector for attaching to the supply airline. Also incorporates a harness held 'back-up' cylinder which can be used in the event of an emergency evacuation. Cylinder capacity of 400 litres (10 minutes). Charging pressure 200 bar (2900psi).

#### Other features

The set, complete with all certification, is self contained in a robust carry case for secure transportation and storage.

Lights (Ex)	Tripod mounted flood light	Light stick ('sabre')	Hand lamp
Watt	150w	8w	60w
Volt	24v	24v	24v
Height/Length	520mm	500mm	415mm
Width/Diameter	470mm	50mm dia	141mm dia
Depth	280mm	n/a	n/a
Weight	12kg	1kg	2.4kg

### Transformers (Ex)

Step down transformers 110v AC input to 24v AC output. Load capacity = 1.2kva. Maximum load output at 24v AC = 40amps. Each transformer has four socket outlets and can power up to four 24v lights simultaneously.

Length	1.0m	Height	0.5m
Width	0.4m	Weight	35kg

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