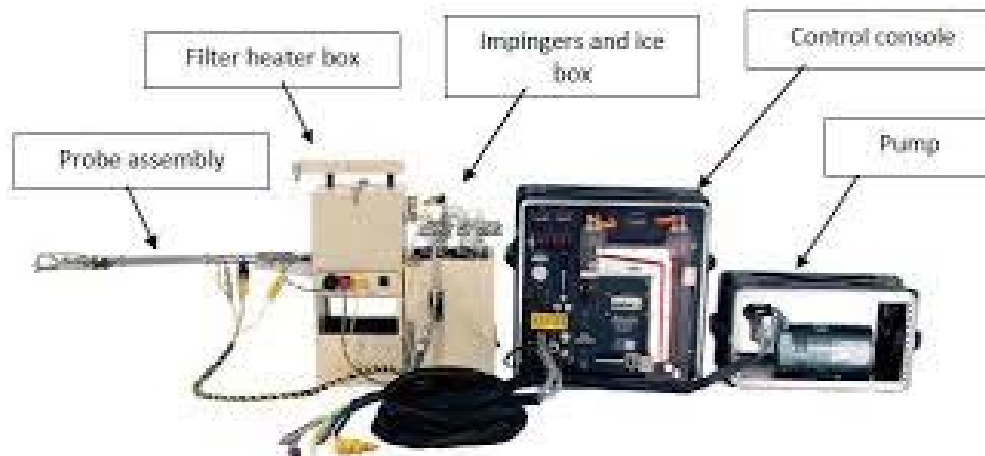


CLIENTS GUIDANCE ON PLATFORMS

The accurate monitoring of source emissions is technically demanding and sometimes physically difficult. A well-chosen sample location, with good access and a correct platform arrangement makes the project run smoothly; it delivers good quality data and is key to the safety of the engineers. Generally difficult platforms mean that the standard reference methods used for stack testing are compromised and personnel cannot easily do the job required.

Sample equipment for measuring most plants is physically large and heavy. It needs to be supported on the access platforms in most cases. The typical sample train example:



Sample location (sample plane)

The location chosen should be easily accessible and enable sampling of emissions that are representative of the final emissions to atmosphere. The key document for determining the location is Environment Agency Document M1 – available online: (<http://publications.environment-agency.gov.uk/pdf/GEHO1105BJXX-e-e.pdf>) or we can email a pdf copy if you require.

Sample platform

The European particulate monitoring standard EN 13284-1 forms the basis of “representative” monitoring not only for dust but dioxins, metals and PAH. A normative Annex (a section to be complied with) summarises the platform and utility requirements:

EN 13284-1:2001(E)

Annex A (normative)

Requirements related to the working platform

For safety reasons, the permanent and temporary working platform:

- a) shall have an adequate working area, normally not less than 5m²;
- b) shall be able to bear at least 400kg point load;
- c) shall have handrails (approximately 0,5m and 1 m high) and vertical base boards (approximately 0,25m);
- d) shall have handrails with removable chains across the top of the ladders or self-closing gates;
- e) electrical sockets, plugs and equipment shall be waterproof if they are to be exposed to the weather;

For practical and quality reasons, the working platform:

- a) shall be positioned relative to the access ports in such a way that the handrail will be clear of the apparatus to be used and shall be free from obstructions that would hamper insertion and removal of the sampling equipment (the length of which exceed 4 m for large ducts);
- b) shall have a minimum length in front of the access port of 2 m or the length of the probe (which includes nozzles, suction/support tubes and associated filter holders) plus 1 m, which ever is the greater and a minimum width of 2 m.

The measuring site shall have artificial lighting and be ventilated. Provisions shall be made for requisite electric power, at request also water and compressed air, etc.. Hoists for raising and lowering of equipment may be needed.

Suitable protection shall also be considered for personal and equipment if the platform is exposed to weather.

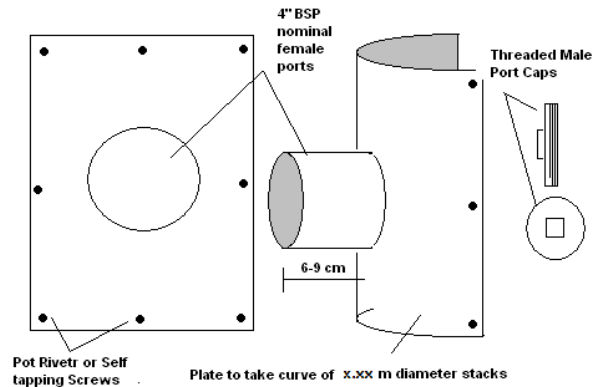
NOTE An European Standard in four parts is under preparation (see [1] to [4]).

Powered Access Platforms (Cherry Pickers)

It has been ruled by the Environment Agency and the STA that these are unacceptable for source emission monitoring – (*HSGN Document Appendix to this Guide*). However, for simple testing such as VOCs where access to ports is only used to place probes and the monitoring team work from ground level they are accepted under some circumstances.

Sample Ports

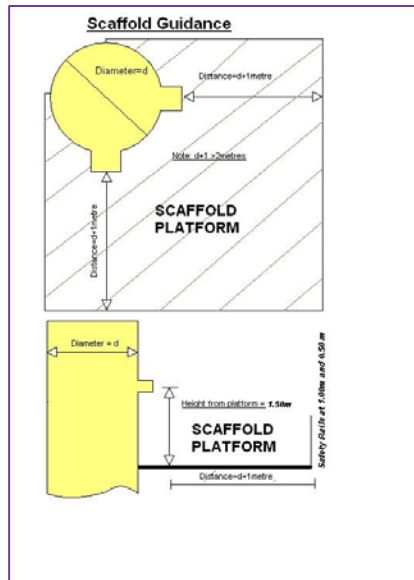
Most stacks in the UK have the 4" (nominal) BSP thread female ports. These can be used with out too much difficulty unless particulate sizing is required. The European particulate monitoring standard EN 13284-1 suggests in informative Annex D that 125mm ports are recommended. The STA has also suggested the use of 125mm ports – (*Copy on page 3 of this Guide*). However, 4"BSP are universally used and preferred by site teams as the equipment is from the US where they are also the norm.



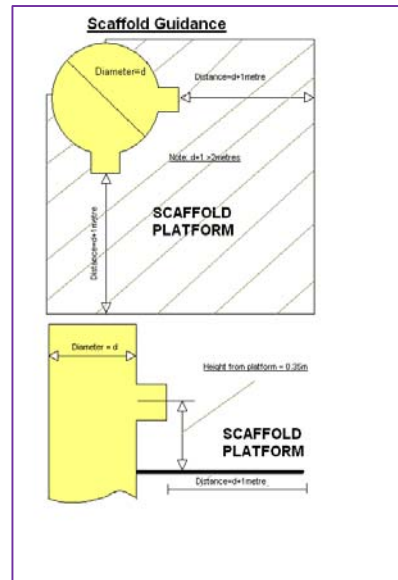
EMCo Sample platform

Generally, monorail systems used to support equipment are not available on UK platforms. It is therefore easiest to support the weight of the sampling train on the platform itself. Two types of monitoring occur: **A** when the filter is inside the stack and **B** when the filter is outside the stack. The principal difference being the height above the scaffold platform the ports are situated. Typical platform arrangements are shown below (these should be the requirements of the Annex A given above):

A. In-Stack Monitoring



B. Out-of-Stack Monitoring





APPENDIX 1

Health & Safety Guidance Note HSGN 019

Why Mobile Elevating Working Platforms are unsuitable for Emission Monitoring:

Issue Date: August 2006, supersedes None

Mobile elevating working platforms (MEWPs), sometimes called 'cherry pickers', can have an important role in industry when they are used for activities for which they are appropriate.

However, stack-emission monitoring is one of the activities where this type of access is **not** fit for purpose.

Regulations and Standards

Most permits or process authorisations issued by the regulators have a clause stating that the emission point must have 'safe and permanent access' to enable emission monitoring to be carried out.

The [Work at Height Regulations section 7](#) specifies the Selection of work equipment for work at height.

Environment Agency Technical Guidance Note M1 (monitoring)

EA TGN M1 includes the following stipulation:

*All platforms, whether permanent or temporary, should meet the minimum weight criteria required for sampling. This is defined as 400kg point load in BS EN 13284-1:2002 and for permanent platforms is achievable. However, temporary, scaffold platforms cannot be constructed to this specification and must, instead, be constructed to a specific minimum "scafftag" category of "heavy duty" or meet the requirements stated in the monitoring standard, whichever is the greater. Temporary platforms must also be tied to, or supported by, a permanent structure. **Sampling from mobile access platforms, "cherry pickers" or ladders is unacceptable.** Sampling from roofs or the tops of arrestment equipment, vessels and ducts is unacceptable unless they have been assessed as being suitable by meeting the requirements for platforms described in this Note and the Work at Height Regulations 2005.*

BS EN 13284-1:2002

Some European standards for stack-emission monitoring have a normative (ie mandatory) reference to platform requirements; for example, BS EN 13284-1:2002.

BS EN 13284-1:2002 is the primary reference document for performing isokinetic particulate sampling and it is cross referenced in all other isokinetic standards (eg BS EN 1948, BS EN 14385, BS EN 13211 etc). It can also be used for measuring flow in ducts and stacks.

BS EN13284-1 contains the following requirements related to the working platform:

For safety reasons, the permanent and temporary working platform:

- *shall have on adequate working area, normally not less than 5 m²;*
- *shall be able to bear at least 400 kg point load;*
- *shall have handrails (approximately 0,5 m and 1 m high) and vertical base boards (approximately 0,25 m);*
- *shall have handrails with removable chains across the top of the ladders or self-closing gates;*
- *electrical sockets, plugs and equipment shall be waterproof if they are to be exposed to the weather.*

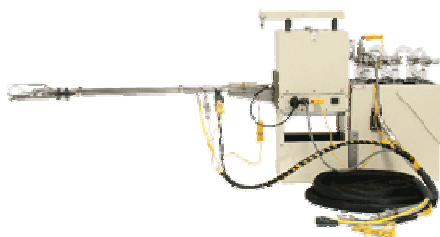
APPENDIX 1

Health & Safety Guidance Note: HSGN 019

For practical and quality reasons, the working platform:

- shall be positioned relative to the access ports in such a way that the handrail will be clear of the apparatus to be used and shall be free from obstructions that would hamper insertion and removal of the sampling equipment (the length of which may exceed 4m for large ducts).
- shall have a minimum length in front of the access port of 2 m or the length of the probe (which includes nozzles, suction/support tubes and associated filter holders) plus 1m, whichever is greater, and a minimum width of 2m.
- The measuring site shall have artificial lighting and be ventilated. Provisions shall be made for requisite electric power, at request also water and compressed air, etc.. Hoists for raising and lowering of equipment may be needed.
- Suitable protection shall also be considered for personal and equipment if the platform is exposed to weather.

Technical and Health & Safety Considerations.



Sample trains that are used in stack emission monitoring can be of a complex configuration. When the sample train is in operation it is required to be traversed across the stack on at least two sampling lines at various pre-determined points within the stack. The train has various hazardous components that require adequate space to operate safely.



Generally, for safety reasons, two personnel are required at the sample location. Other factors that have to be considered are that the sample train operates with;

- A sample probe at a temperature of greater than 160° C.
- A system that operates at high vacuum.
- Glassware that can contain hazardous substances (eg. nitric acid).
- A weight of the system and control box of up to 60kg.

The STA is committed in providing technical and health and safety assistance and guidance to its members. Our aim is for our members to be able to carry out emission monitoring to the best standards in a safe manner.

If you have any questions please contact the STA at the following address;

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