

HEATBASE Ltd FACTSHEET 35

Oil Supply line and associated components

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If your Installation has been marked as N.C.S. "Not to Current Standards" or any part of the Installation has been marked as "Fail" or a warning sticker has been issued or you have been informed that there is either a potential or immediate risk, please read the following:

An Oil tank installation and oil supply line should contain some (or all) of the following components:

Oil Tank

Overflow protection device: The oil tank should contain an overfill protection device fitted within the 2" fill point of the tank. Similar to the methods incorporated at a car fuel station, in the event the tank is full, the device will cause the fuel tanker pump to shut off, thus preventing the tank from over filling. If a tank does not incorporate an overfill device, Fail (N.C.S.) and also a Potential Environmental Risk.

Anti-syphon device: Top outlet oil tanks should have an anti-syphon device fitted at the oil tank, to reduce the possibility of fuel being syphoned from the tank if damage is caused to the fuel supply line. If a top outlet tank does not incorporate an anti-syphon device, Fail (N.C.S.) and also Potential Environmental Risk.

Working, compliant and correctly installed contents gauge: If a sight tube is fitted its tube should be in good condition have a cap enclosing the open end of the tube, be securely supported and must have either a spring-loaded isolation valve or be left in closed position for the supply to the tube which should prevent the loss of fuel if the gauge becomes damaged. (Integrally bunded oil tanks must not have external sight tubes fitted). Fail (N.C.S.) and Potential Environmental Risk if not fitted, fitted incorrectly or not working.

Tank isolation valve: Fail (N.C.S.) and Potential Environmental Risk if not fitted or does not turn off.

Tank Oil filter: The preferred method of installation is to install an oil filter close to the outlet of the oil tank to ensure a clean supply of fuel and also to prevent the possibility of the oil supply line becoming blocked or restricted before the fuel can be cleaned at an oil filter fitted away from the Oil tank. It must be positioned in a manner to allow the removal of the bowl for cleaning or replacement of the filter. It should have a filtration rate of no more than 50 micron, but if it is the only filter in the supply line, then it may require an even lower filtration rate of 10-15 micron, depending on the appliance manufacturers instructions. If the bowl cannot be removed due to the isolation valve not turning off, or there is insufficient space beneath it, or if the bowl is seized into place, or if the bowl is partially buried or touching the base or ground it is a Fail (N.C.S.) and a Potential Environmental Risk.

Oil supply lines

If more than 1 appliance is fed from a single Oil tank, each appliance should have its own separate oil supply line from the tank to the appliance, which includes its own dedicated Isolation valve and filter at the Oil tank. Where a single filter is shared by a Pressure Jet appliance and a vapourising appliance (whether they share on oil supply line or not) It is deemed as a Fail, N.C.S. and a Potential Safety Risk; as in the event of a restriction or blockage in the filter, the Pressure Jet appliance can draw fuel away from the vapourising appliance, which could go out and then self-ignite, which could have catastrophic consequences.

Each Oil line should also be in accordance with the following:

Oil supply lines should be located and constructed so they are reasonably protected from fires which may occur in buildings or beyond boundaries. They are normally run in plastic coated annealed copper and some approved types of plastic pipe. The preferred method of installation is to install the oil line above ground and not to bury it. Soft soldered fittings must not be used, nor should galvanised fittings as they can cause electrolytic corrosion of dissimilar metals.

Exposed oil lines should be fixed to a permanent rigid structure such as brick walls **and not to non-permanent structures** such as fences and sheds. Uncoated copper and screwed steel pipe should be secured to hold the pipe work and components away from the corrosive elements of the structure e.g. Mortar and masonry. Buried pipe work must be installed in compliance with OFTEC guidelines. **Approved plastic oil line** is only approved for use if it is installed below ground as it is not UV stable, is easily damaged and is not resistant to fire (even if installed within a protective sleeve). Therefore, any buried pipework that is not installed to OFTEC standards or any visible exposed section of pipe that does not meet the above criteria will be classed as a Fail (N.C.S.) and also as a Potential Safety and/or Environmental Risk. **BS5410-part1:2019 states that any joints that are fitted underground, should be located in an inspection chamber (to**

allow inspection and access to replace or re-seal any damaged or leaking connections). In addition, they also state that if any part of the oil supply line is buried, hidden or inaccessible, the Homeowner should have the oil supply line pressure tested at least every 5 years to ensure its integrity and sooner if a leak is suspected.

Additional/Component Isolation Valve: An additional isolation valve should be fitted to the oil line prior to any combination of or any secondary oil filter, remote sensing fire valve or De-aerator to reduce the possibility of oil spillage. Fail (N.C.S.) if not fitted and Potential Environmental Risk.

Additional/Secondary fuel filter: Any secondary filter must be fitted correctly and be accessible. Whether there is no tank filter, or the filter at the tank has a 50-micron filtration rate, then the additional filter should have a filtration rate as specified by the appliance manufacturer, usually between 10-15 micron. Even if a 10-15 micron filter is installed at the tank, an additional secondary filter of 10-15 micron is still advisable to ensure particles less than 10-15 micron which have passed through the tank filter, which may bind together within the fuel supply line, do not reach the sensitive parts of the appliance burner. Fail (N.C.S.) if fitted incorrectly, touching masonry, buried in ground or inaccessible, this would also constitute a Potential Environmental Risk.

Remote sensing fire valve: Any Oil-Fired Appliance fitted after 1st April 2002 must incorporate a remote sensing fire valve to shut off the oil supply outside the building (or occasionally (if the original fuel supply line only rises above ground inside of the building or structure where the appliance is located) inside, immediately where the oil line enters) in the event of a fire. It should have a separate "sleeve" through wall, so a faulty unit can be replaced. External boilers also require a remote sensing fire valve and it should be fitted/installed in such a manner that the oil shuts off outside of the appliance casing and possibly 1 metre away, depending upon appliance manufacturers instructions. Fail (N.C.S.) and Potential Safety Risk if not fitted, not working, or fitted incorrectly; or if the owner declines testing of the fire valve. If an electronic fire valve is used and is fitted to a vaporising appliance; Fail (N.C.S.) and Potential Safety Risk. See Factsheet 36 Fire Valves for more information.

Oil lifter: Usually fitted with vapourising appliances when there is insufficient head of pressure from the tank. They should be fitted externally in a weather proof compartment, or internally in a sealed heat resistant compartment which is vented to the outside of the building and should incorporate a remote sensing fire valve with the sensor above the oil lifter and the body located external to the building. An additional fire valve should also be fitted after the oil lifter with the sensor at the burner. Fail (N.C.S.) if not fitted to specifications and Potential Safety Risk.

De-aerator: Fitted to boilers if the oil tank is lower than the burner, a "two-pipe system" was used prior to the production of de-aerators. BS 5410 part 1 2019 states that all de-aerators, whether fitted internally or externally must be constructed of non-combustible material i.e. of the metallic type. If a non-metallic de-aerator is fitted in any location, or a metallic de-aerator or the vent from an approved internal de-aerator terminates within 500mm of a flue terminal or any distance directly above the flue terminal, Fail (N.C.S.) and also Potential Safety Risk.

Burner Isolation valve: An additional isolation valve should be fitted near to or within the appliance casing to allow fuel to be turned off when replacing oil related burner components. Fail (N.C.S.) if not fitted or not operating.

Flexible Oil lines: 1 or 2 fitted to a Pressure Jet burner so it can be removed for service or repair without disconnecting the main oil lines. Oil supply pipe(s) connections to flexi oil lines should (be inside the boiler casing where applicable and be positioned above an oil drip tray. Fail (N.C.S.) if solid oil lines used. Fail (N.C.S.) and Potential Safety Risk if flexi protrudes from casing where applicable or if the connections to the flexi lines are inaccessible to allow replacement.

Although any Domestic oil fired appliance or Domestic oil tank of 3500 litres or less installed prior to 1st April 2002 was not governed by Building Regulations; therefore, the owner cannot be forced to bring their Installations in line with the current regulations or standards until they either move or replace the Oil tank or appliance; it is strongly recommended that they check with their Insurance companies as there may be a clause to void any insurance claim if the system is not compliant with Current Standards. This factsheet is designed only to give a basic guide to the legality of installations both before and after the introduction of Building Regulations Approved Document J, it should only be used as a guide, for full details please see the Building Regulations Approved Document J, BS5410 parts 1, 2, 3 and OFTEC Technical Book 3.