# Optimum design parameters for Screened Overflow or Warning Pipe Fittings

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**The screening mesh, which must not have apertures greater than 0.65 mm (Regulation 16.2), is available in a variety of materials and as it is with the unit's casing, requires to be of WRAS approved materials.**

**The basics are simple enough. The selected Warning Pipe or Overflow Fitting requires to be appropriately sized and incorporate suitable screening that ensures flow through it is unrestricted.**

Generally, for the smaller sizes, say 15 mm to 54 mm dia., the **McAlpine** range of fittings constructed from plastic materials, will be satisfactory for the majority of cistern and tank installations and are available at low cost. It could be said however the 54mm size is not as well thought through as it is for the smaller sizes in the range. This size being a concoction of two bellmouth fittings with the screen sandwiched between.

This 'inline' screen is out of step with the other 'right angle' designed models and is easily incorrectly horizontally installed and no means of inspecting the screen is available without dismantling the unit from the pipeline. A further critisim is the fact the screening area is much reduced proportionately when compared with the other sizes in the range.

In the smaller sizes the simple action of lifting the dust cover lid enables rapid, visual inspection of the screen and as necessary, its removal for cleaning.

Given Overflows require to be sized at **2 x the inlet diameter**, it is common on larger tanks that 80, 100, 150 or 200 mm dia. sizes are required.

When the need arises these larger Overflow units can be fabricated from PVC pipe incorporating a st. st. 0.65 mm screen mesh.

Generally available, this mesh provides in the order of 40% free area for flow passage. Therefore the total screen area requires being 2.5 x larger than the Overflow nominal bore area. An 80mm unit requires a minimum mesh area of 12570 sq. mm. i.e. A flat, circular screen would require to be 130 mm in

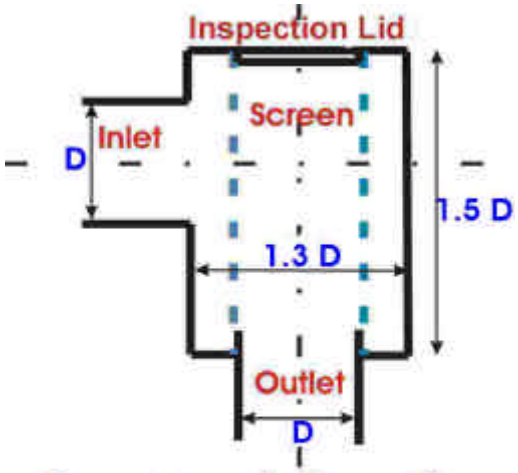
diameter to provide the area necessary with no safety margin. (250mm dia. for a 150mm unit).

It is standard practice for any screen to incorporate 100% additional area for operational safety reasons and these units should be no different. Though I believe the McAlpine Fittings fall short in this regard.

Therefore, to restrict the size envelope of these larger units the practical approach is for the screen to take the form a cylinder, located centrally within a casing.

The sketch opposite advises the general format and proportions necessary to achieve an appropriately designed Screened Overflow Fitting.

It goes without saying these bespoke units, even if batch processed, will be relatively costly to produce which is reflected in purchase price.




**Screened Overflow Fitting**

**Note:** the information advised is offered for guidance only