where

a is the area of the bore of the coil, or element tube, or area of the primary hot water supply pipe, whichever is the less, (in mm^2);

p_1 is the primary pressure (in N/mm^2);

p is the design pressure of the shell (in N/mm^2).

10.2.2.2 *Discharge pipe*

Each bursting disc shall be provided with means for being connected to a discharge pipe of adequate size. The size and provision of the discharge pipe shall be the responsibility of the installer.

10.2.3 ***Vented systems***

Where the secondary system is open to atmosphere, there shall be an open vent pipe fitted to the calorifier or from the draw-off pipe immediately adjacent to the calorifier.

The vent pipe shall have an unrestricted bore not less than the appropriate size given in table 6.

Table 6. Sizes of vent pipes

Rated output of calorifier	Minimum bore
kW	mm
Up to 60	25
Over 60 up to 150	32
Over 150 up to 300	38
Over 300 up to 600	50
Over 600	63

10.3 Stop valves

Calorifiers heated by steam shall be provided with a stop valve at the steam inlet and calorifiers heated by hot water shall be provided with a stop valve on both the inlet and outlet connections to the battery.

10.4 Pressure gauges

Each steam heated calorifier shall be fitted with a pressure gauge with syphon and cock on the steam side. A pressure gauge shall be fitted on the primary side adjacent to each calorifier heated by high pressure hot water.

10.5 Thermometers

Provision shall be made for the fitting of a thermometer on the secondary side to measure the temperature at or near the outlet from the calorifier. The thermometer shall be arranged so that it is easily readable, and the scale shall be calibrated in degrees Celsius.

NOTE. The thermometers should be of such a type and fitted so that it may be replaced readily without emptying the calorifier.

10.6 Drains

Each calorifier or storage vessel shall have an emptying valve or cock fitted at the lowest practical point in the shell.

10.7 Vacuum breaker valve

A vacuum breaker valve shall be fitted to the secondary side of copper lined calorifiers and storage vessels.

NOTE. It is recommended that a vacuum breaker valve is fitted on the secondary side of copper calorifiers and storage vessels.

The minimum aggregate area of the orifices through the seats of the anti-vacuum valves fitted to each copper lined calorifier or storage vessel shall not be less than $0.25\,A_c$, where A_c, is the cross-sectional area of the largest secondary connection or drain on the shell (in mm^2).

11 Inspection, testing, marking and manufacturer's certificate

11.1 Inspection and testing

Calorifers and storage vessels shall be subject to independent inspection as required by the purchaser (see appendix A item (t)).

11.2 Hydraulic test

Before despatch from the manufacturer's works, each calorifer or storage vessel shall be hydraulically tested. This testing is to be carried out in the presence of a representative of the manufacturer or the inspecting authority as required by the purchaser and advised at the time of order (see item (s) of appendix A).

The shell, and tubes where applicable, shall be hydraulically pressure tested to 1.5 times their design pressures.

In all cases the hydraulic test pressure shall be maintained for a period of not less than 30 min, during which time there shall be no signs of leakage.

NABIC

FIG 568 & 568SS
ANTI VACUUM VALVES

THREAD SIZE	FLOW AREA
DN 15	25mm²
DN 20	76mm²
DN 25	142mm²
DN 32	323mm²
DN 40	531mm²
DN 50	908mm²

Acc: BS 853: 1990 ;

The minimum aggregate area of the orifices through the seats of the anti vacuum valves fitted to each copper lined calorifier or storage vessel shall not be less than 0.25Ac where Ac is the cross sectional area of the largest secondary secondary connection or drain on the shell (in mm²).