

Mechanical Engineering Department MEC1405
Marcet Boiler

Object:

To obtain the relationship between pressure and temperature of saturated steam and compare it with that deduced from steam table values.

Apparatus:

Norwood electrically operated Marcet Boiler; thermometer (range 0-350°C); barometer.

Method:

Pour about 1 liter of water into the boiler through the filler port and thus half fill the boiler. (it is advisable to use hot water if available). Check that the thermometer pocket is filled with oil. Switch on and boil the water with the filler port open. When the air has been driven out, i.e. steam issues from the port, close the port. CAUTION Keep your hands clear of the steam! Now heat the boiler and tabulate values of the gauge pressure and temperature up to about 10 bar. Switch off and while cooling down record values of pressure and temperatures. Observe the barometric pressure.

Results:

Convert the gauge pressures to absolute and plot the absolute pressure against the temperature for both heating and cooling. On the same graph plot values obtained from steam tables.

Conclusion:

Compare your graphs and comment on any differences between them.

DIAGRAM :
THE MARCET BOILER

