

BS 9251:2005 (BS DD 251) and FHC

The FHC program will correctly calculate systems designed to BS 9251 (DD 251) for both residential and domestic occupancies. However it is important to insure that the following instructions are followed.

Project data In the '*Project and design area information*' window
(Edit/Project Data [Ctrl+P]) enter the following information.

Design Authority: BS DD251:2000
Welded elbows above mm: 0
Pipe types data file: <see bellow>

Pipe Types and fittings The BS 9251 standard specifies in Annex 'B' equivalent lengths to be used for Copper, Steel and CPVC pipework and the 'C' value to be used for those materials in the Hazen-Williams equation. Because of the differences between the BS 9251 and BS5306 part 2, Canute have developed a set of pipe data table (PDT) for each pipe type. By using the correct PDT you will insure that the correct equivalent lengths are been used.

The following PDT files are available:

bs9251_copper.pdt (Copper pipe table X with C factor of 140)
bs9251_steel.pdt (Steel pipe BS1387 with C factor of 120)
bs9251_cpvc.pdt (CPVC pipe with C factor of 150)

In the '*Project and design area information*' window under the heading 'Pipe types data file' enter the file name for PDT you wish to use.

Tees When calculating systems designed to BS 9251 you have to include an equivalent length through a running tee. FHC cannot know were about this type of tee is in the systems, it is therefore up to the designer to include a node point at each running tee and manual include the equivalent length '*running tee*'.

In the FHC program select the '*Edit*' [Ctrl+E] command and then select the pipe where you wish to add the equivalent length for the running tee. You will now have opened the '*Edit Pipe*' dialog window, select the '*valve type*' combo box and look through the list of valves and fittings until you find the correct one. This will normal be something like '*Copper tee run*'. Select the fitting and FHC will now include the correct equivalent length.

Basic Design Information

We have included some basic Design information for domestic and Residential sprinkler installations, however this is not a design manual and anyone involved with the design of a system should be suitably qualified.

Sprinkler Heads A minimum operating pressure is 0.5 bar is required with a maximum area 15m^2 per sprinkler. Remember residential sprinkler can have a wide range of K-factors from 40 to 80 this will have an affect the water discharge from the sprinkler and you may have to set up new head codes in the FHC program.

You must check the manufactures data sheet for each type of sprinkler you are going to use. The manufacture may well specify diffract minimum pressures from the standard!

Flow Rate You design must prove 60l/min through one sprinkler and a minimum of 42l/min thought two sprinklers for a domestic occupancy and four sprinklers for a residential occupancy. However you must remember that this is a minimum requirement and you many require more flow through each sprinkler depending on the manufactures data sheet for the sprinkler head been used.

Pumped system If the installation is to be feed from a pump an tank then you must carry out calculations for Most Favourable area of operation and the Most Unfavourable area of operation. You must then balance the two areas before you can determine the capacity of the water storage tank.

Water Supply If the water supply is not dedicated to the sprinkler installation them you must and 25l/min for a domestic occupancy and 50l/min for a residential occupancy. This allowance must be added to the source flow from your calculations.