Hot and Cold Water Supply

THIRD EDITION

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BRITISH STANDARDS INSTITUTION



WILEY-BLACKWELL

BSi
British Standards

Table 5.4 Maximum recommended flow velocities

Water temperature °C	Flow velocity	
	Pipes readily accessible m/s	Pipes not readily accessible m/s
10	3.0	2.0
50	3.0	1.5
70	2.5	1.3
90	2.0	1.0

Note Flow velocities should be limited to reduce system noise.

5.2 Tabular method of pipe sizing

Pipe sizing in larger and more complicated buildings is perhaps best done by using a simplified tabular procedure. BS 6700 gives examples of this but for more detailed data readers should refer to the Institute of Plumbing's *Plumbing Engineering Services Design Guide.*

The data used in the tabular method that follows are taken from BS 6700 but the author has simplified the method compared with that given in the standard.

The tabular method uses a work sheet which can be completed as each of the steps is followed in the pipe sizing procedure. An example of the method follows with some explanation of each step.

Explanation of the tabular method

Pipework diagram

(1) Make a diagram of the pipeline or system to be considered (see figure 5.10).
(2) Number the pipes beginning at the point of least head, numbering the main pipe run first, then the branch pipes.
(3) Make a table to show the loading units and flow rates for each stage of the main run. Calculate and enter loading units and flow rates; see figure 5.10.

Calculate flow demand

(1) Calculate maximum demand (see figure 5.10):
- add up loading units for each stage (each floor level);
- convert loading units to flow rates;
- add up flow rates for each stage.

(2) Calculate probable demand (see figure 5.10):
- add up loading units for all stages;
- convert total loading units to flow rate.

(3) Calculate percentage demand (number of stages for which frictional resistances need be allowed). See figure 5.12.