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## Plumbing information sheet No.5b

# Cold Water Pipe Sizing

## Introduction

This technical solution follows on from plumbing information sheet 5a. The example in this document uses the calculation information from sheet 5a.

The aim of this technical solution is to clarify the requirements for sizing of a cold water plumbing installation.

Note: Appendix C is cited in G12/VM1 1.0.1 a). In AS/NZS 3500.1 Appendix C is an 'informative' appendix, however, it is included in G12 as a verification method. Appendix D is an 'informative' appendix and is not cited in G12.

## AS/NZS 3500.1:2018 Appendix D – Sizing of piping for dwellings

Following from the plumbing information sheet 5a we have:

1. A sketch of the installation (with pipe loading units and sections identified
2. Determined the index length
3. Determined the available pressure
4. Determined the pressure drop.

Following from here the next steps are as follows:

5. Draw a table with the headings:

- Pipe section
- Loading units
- Probable simultaneous flow rate (PSFR) L/s
- Nominal pipe size DN.

See figure 1 below.

6. For each section of pipe within the dwelling determine the PSFR.

- If the section supplies only one fixture outlet use Table 3.2.1 of 3500.1
- If the section supplies more than one fixture outlet use Table 3.2.4 of 3500.1.

7. Once the estimated PSFR has been added to the table the pipe size can be obtained from Table C1, Appendix C, 3500.1. Make sure you use the correct table for the pressure drop.

See the example on the following page.

| Index length= 50m | | Pressure available = 35m head (343 kPa) | |
|---|---|---|---|
| **Pipe Section** | **Loading units** | **PSFR** | **Nominal Pipe Size (DN)** |
| A-B | 41 | 0.55 | 20 |
| B-C | 37 | 0.52 | 20 |
| C-D | 31 | 0.48 | 20 |
| D-E | 23 | 0.41 | 20 |
| E-F | 12 | 0.29 | 18 |
| F-G | 10 | 0.26 | 18 |
| G-H | 4* | 0.20 | 18 |
| B-I | 4* | 0.20 | 18 |
| C-K | 6 | 0.20 | 18 |
| K-L | 3* | 0.20 | 18 |
| K-J | 3* | 0.12 | 15 |
| D-M | 8* | 0.20 | 18 |
| E-N | 11 | 0.28 | 18 |
| N-V | 1* | 0.10 | 15 |
| N-O | 10 | 0.26 | 18 |
| O-U | 2* | 0.10 | 15 |
| O-P | 8* | 0.30 | 18 |
| F-Q | 2* | 0.10 | 15 |
| G-R | 6 | 0.20 | 18 |
| R-S | 3* | 0.20 | 18 |
| R-T | 3* | 0.12 | 15 |

** denotes sections supplying one outlet*

Figure 1: Typical installation

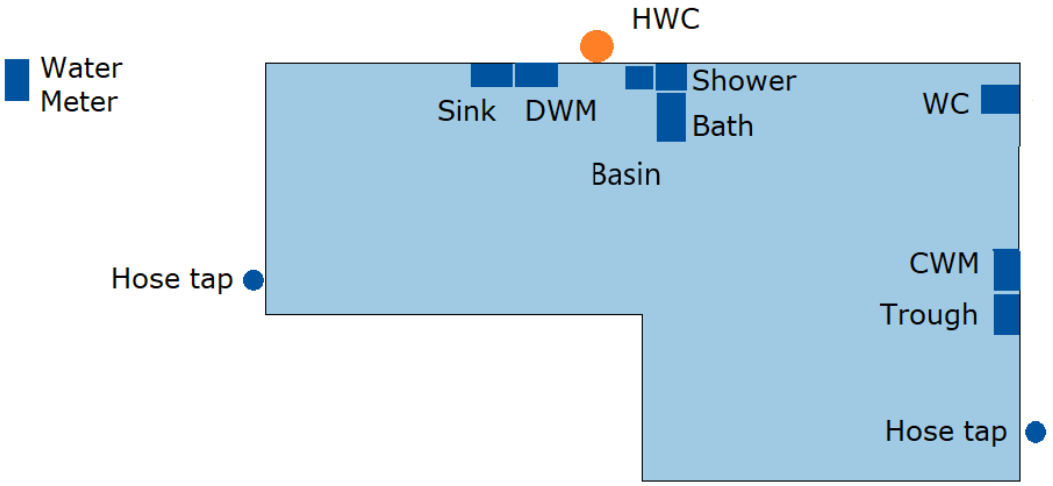



Figure 2: Sketch of the installation

