Support and fixing of pipework

This technical note has been issued to clarify the current support and fixing requirements in the deemed to satisfy provisions of the Plumbing Code of Australia. These are listed in AS/NZS 3500:2018, Parts 1, 2 and 4 for the installation of cold and heated water supply as well as sanitary pipework installed above ground.

**Water service pipework**

AS/NZS 3500:2018, parts 1 and 4 for cold and heated water services have similar provisions for the support and fixings of pipework that must be fit for purpose. Support and fixing for above-ground pipe work in these standards state that brackets, clips and hangers shall be —

► formed from a suitable material compatible with the pipe;
► securely attached to the building structure and not any other service;
► designed to withstand the applied loads;
► protected against corrosion, where exposed to a corrosive environment;
► of like material or lined with a non-abrasive, inert material for that section where contact with the piping may occur;
► clamped securely to prevent movement, unless designed to allow for thermal movement;
► restrained to prevent lateral movement; and;
► installed so that no movement can occur while a valve is being operated and that the weight of the valve is not transferred to the pipework.

**Support of valves**

Support of in-line valves, for example testable backflow prevention devices, it is a requirement that valves can be operated or serviced without moving the pipework and that they are totally supported so no weight is transferred to the pipework.

Licensed plumbing contractors should make themselves aware of any literature provided by the manufacturer of the piping system. It may contain additional support requirements over and above the plumbing standards.
**Limitations of pipe supports**

The method of supporting or spacing of pipes by means of brazing or welding a short section of any material to the surface of each pipe is not permitted.

**Holes in frame work**

Where holes are formed in the framework to accommodate pipework, they shall be sized to allow free longitudinal movement of the pipework without affecting the structural integrity of the framework. These requirements are set out in AS/NZS 3500.1:2018, clause 5.4.2.1 and AS/NZS 3500.4:2018, clause 4.5.1.1.

**Separation of water services**

The provisions of water services and their proximity from other services are listed in AS/NZS 3500.1:2018, clause 5.2 and for heated water in AS/NZS 3500.4:2018, clause 4.2 that set out minimum distances that water service pipes must be separated from other services.

These conditions vary for below and above-ground pipework. It should be noted that AS/NZS 3500.4:2018, clause 4.2.2.2 states that pipework associated with heated water services shall not be installed within 100 mm of electrical cables, gas pipes or other services. Other services do not include cold water pipes serving plumbing fixtures as common plumbing practice, where pipes cross over, would not make it possible to comply with this provision. Cold and heated water pipes must not be in contact with one another and separated by approximately 10 mm.

**Sanitary system pipework**

The requirements for brackets, clips and hangers for supporting pipework in sanitary plumbing and drainage are listed in AS/NZS 3500.2:2018, clause 10.2.1. Supports shall be spaced at intervals as specified in table 10.2.1 and shall be—

► securely attached to the building structure and not to any other service;
► designed to withstand the applied loads;
► protected against corrosion, where exposed to a corrosive environment;
► made from compatible materials;
► clamped securely to prevent movement, unless designed to allow for thermal movement;
► restrained to prevent lateral movement; and;
► designed so that pipes and fittings are supported with minimal load being taken by the joints.

Brackets, clips and hangers shall be fit for purpose, which means the material used to construct the clip must be designed to withstand the applied loads.

The Plumbers Licensing and Plumbing Standards Regulations 2000, regulation 52 states that the installation specifications of the manufacturer must be complied with for water supply, sanitary and drainage pipework. This means that the manufacturer cannot set lower standards but may have conditions over and above the plumbing standards that must be considered.

Plastic pipes shall be protected from any metallic material that may cause abrasion due to expansion and contraction as per diagram 1 shown on page 3.

**Pipe supports**

Pipes shall not be supported by brazing or welding short sections of any material to the pipe surface, nor by clamping, brazing or welding to adjacent pipes.

Brackets, clips and hangers incorporating PVC shall not be used in contact with stainless steel pipes.
Notes
The technical note series is issued by the Plumbers Licensing Board to assist the plumbing industry to comply with the Plumbers Licensing and Plumbing Standards Regulations 2000 (the Regulations) applicable to plumbing work in Western Australia.

Each technical note is to be read in conjunction with Part 6 of the Regulations that currently adopt the Plumbing Code of Australia (PCA) and the deemed to satisfy provisions of AS/NZS 3500:2018, parts 0, 1, 2 and 4 but modified in certain matters to suit the State’s building approach and other local conditions.

Feedback
The Plumbers Licensing Board welcomes your feedback. If you have any questions on this technical note or any suggestions on any areas of plumbing work that the technical notes should cover, please contact the Board’s Senior Technical Officer on (08) 6251 1377.

Copies
Technical notes are published at www.dmirs.wa.gov.au/building-and-energy Printed copies may be made available on request by telephone (08) 6251 1377 or email plumbers.admin@dmirs.wa.gov.au

Disclaimer
The material published by the Department of Mines, Industry Regulation and Safety (Plumbers Licensing Board) is provided voluntarily as a service to the plumbing industry. The information and advice provided is made available in good faith and is derived from sources believed to be reliable and accurate at the time of publication. The information is provided solely on the basis that readers will be responsible for making their own assessment of the matters discussed therein and are advised to verify all relevant representations, statements and information. Changes in circumstances after a document has been published may impact on the accuracy of the information. No assurance is given as to the accuracy of any information or advice contained after publication. This publication may be reproduced or copied without charge for research and educational purposes with due acknowledgement of the source.

© May 2019 Department of Mines, Industry Regulation and Safety

Notes:

1. Copper and copper alloy pipes require additional provision for expansion and shall be installed in accordance with AS/NZS 3500.2:2018, clause 10.6.

2. In addition to the provisions listed in AS/NZS 3500.2:2018, PVC-U pipes shall be installed in accordance with AS/NZS 2032.

3. In addition to the provisions listed in AS/NZS 3500.2:2018, PE-HD piping systems shall be installed in accordance with AS/NZS 2033 and, when passing through concrete footings, PE-HD pipes and fittings shall be wrapped with an impermeable flexible sheath not less than 6 mm thick.


Diagram 1: Strapping or hoop iron used to support and clip PVC-U or other plastic pipes.

Strapping (hoop iron) without protection between strap and pipe. Pipe not supported vertically.

Strapping (hoop iron) without protection between strap and pipe.

Strapping (hoop iron) with protection between strap and pipe.