



WHY IS WATER PRESSURE TESTING SO IMPORTANT?

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With every job The Plumbing & Electrical Doctor completes we offer you a free home inspection to help you identify possible problems that might arise.

One of the issues that we look at is the amount of Water pressure (kPa) flowing through your pipes. In this fact sheet we hope to explain why checking your water pressure can save you time, money and stress in the future.

Did You Know?

Did you know that if the water pressure in your pipes is too high, then it may void the warranty for items such as your hot water system, your washing machine, or even your toilet? As well as this it increases the risk of leaking or burst pipes which can cause severe water damage to your home.

What to Look Out For?

The most common symptom of high water pressure is a leak. They may only appear intermittently - like a dripping pipe at night, or toilets running occasionally without being used, but they will gradually become worse if not addressed.

What Can I Do?

You need to ensure that your water pressure is kept within the optimal operating range for your home. If you find that it is too high then The Plumbing & Electrical Doctor can install a special valve at your water meter that will restrict the water pressure coming in to your building.

A pressure limiting valve (PLV) for each property ensures that the pressure coming from the municipal supply is reduced to a safe pressure. If the PLV is placed at the meter, instead of just at the entrance to the building, then the PLV will also act to protect the supply line to the house, the hot water heater, dishwasher, inside and outside taps and the many parts of the property including any irrigation system.

What Else?

Excessive water pressure can also be a result of thermal expansion of the water within the home, even when the pressure entering the water supply is within the desired range. Your home's plumbing spends most of its time as a closed container. Then, as the water heater heats the water, it expands slightly causing an increase in pressure. A thermal expansion tank within the home's water system absorbs these slight volume changes and prevents pressure fluctuations that can cause system damage.

It's also important to understand that water is a dynamic fluid with mass. When it is stopped suddenly, the mass of the water has a "hammer" effect that greatly increases the force of the water over that of its static pressure. Just like a 1kg hammer exerts a much greater force when it comes to a sudden stop at the top of a nail; the force of the water hammer effect may cause pipe joints to break, valves to leak, and over time and repeated occurrences, parts to succumb to the force of the water.

FAQ's

Q: I like the pressure from my shower, what impact will this change have?

A: 500 kPa should be more than enough to run your home, and you are unlikely to see any impact on the performance of your shower. Even if you were to run two showers at the same time, the change should be barely noticeable.



Q: What happens if I don't do anything?

A: In a best case scenario nothing may happen. But even if nothing does happen, if for some reason an appliance connected to your water supply should stop working then the manufacturer may void the warranty because the water pressure is too high.

Q: What is Water Pressure?

A: Water pressure is the flow strength of water within your water pipes. It can be measured in PSI (pounds per square inch) or the more widely accepted method of kPa (Kilopascals).

If you think about a balloon, how much pressure should you put in it? If your pressure is too low then the balloon will be limp, but if the pressure is too high then – POP!

Similarly, if the water pressure in your pipes is too low then you aren't going to be getting the best performance from your shower, taps, toilets – basically anything connected to your taps. Worse though is if your water pressure is too high – because then you run the risk of something going POP! And you don't want that to happen in your home.

Q: What causes high water pressure?

A: The most common source of excessive water pressure is the municipal water supplier. The water company sets the pressure to meet their own needs, such as delivering water to fire hydrants, higher volume of residences, high elevation buildings (or tall ones), and other reasons. This water pressure is often well over 800kPa, and too often over 1000 kPa. However, the maximum recommended pressure for a residence is 500 kPa which is a requirement to meet the Australian Standards AS/NZS 3500 2003.

This recommendation is also what manufacturers require as the maximum pressure to meet warranty requirements. Also to be considered is that water pressures increase during the night when water demand is reduced. So if your water pressure reading is over 500kPa during the day, in the lower non-peak water usage times it is going to be significantly higher. This is why a lot of water leaks appear overnight.

Q: I already have a PLV, but I am seeing the symptoms – why is this?

A: Unfortunately, PLV's - like any mechanical device - don't last forever. If think you are experiencing symptoms of high water pressure and you already have a PLV, it's worth having us test your water pressure, to see if the PLV is operating properly.

Note: Below is taken from the Australian Standards AS/NZS 3500 200 and the Plumbing Code of Australia:

Plumbing Note 23 - Water supply pressure requirements

General

This Plumbing Note has been developed (and must be read) in conjunction with Australian Standards AS/NZS 3500 2003 and the Plumbing Code of Australia. Water Services 2003 Part 1 Section 3 (3.3, 3.3.4). This note sets out the water pressure requirements for the design, construction, and installation, of a water services within a building. Provision shall be made to ensure that the maximum operating pressure at any outlet within a building, other than a fire service outlet, does not exceed 500 kPa.

- This plumbing note will only apply to a new building and new extension work to existing buildings (Commercial and Residential).
- Maintenance or replacement of existing outlets (no new pipework installed) compliance with this Plumbing Note will not be required.

What is required?

A pressure reduction or limiting valve will be required to be fitted on the water service line feeding water outlets so the water pressure does not exceed 500 kPa at the tap outlet. The pressure reduction or limiting valve must be located in an area that maintenance and replacement can easily be provided.

Where can I install a pressure reduction device?

A pressure reduction or limiting valve may be installed:

- Under the floor with physical access,
- In a wall cavity with an access panel,
- In a ceiling with access,
- Water meter box with access, (only if the valve is a right angle model)
- Below ground in an access box at the building line,
- Under a fixture with access, or
- In any location with access for maintenance or replacement.

Note:

- A pressure reduction device must not be buried in the ground.
- All pressure reduction devices must be protected from freezing.
- Heated water storage tanks, inlet-pressure-control valves must be installed to AS/NZS 3500 2003 Part 4 clause 5.9 (5.9.2) and manufacturer's instructions with reference to Table 5.2 and in a manner appropriate to the type of water heater being installed.