

Manipulation of AS/NZS 4020 Testing Results for Plastic Pipes and Fittings

by PPN Editor

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There is a serious flaw in the application of the AS/NZS 4020 standard for testing products such as plastic pipe and fittings in contact with drinking water that is being exploited by some manufacturers.

This loophole allows manufacturers to potentially circumvent safety standards, putting public health at risk. The issue centres around the misuse of scaling factors in the testing process.

AS/NZS 4020 is a critical standard that ensures the safety of plastic pipe and fittings used in drinking water (potable water) systems. It requires testing at surface area-to-volume ratios that reflect real-world usage. However, a provision allowing for scaling factors (or dilution factors) has become a tool for manipulation.

Here's how the system is being exploited:

1. Initial Failure: A product fails the water quality testing at a given surface area-to-volume ratio.
2. Repeated Submissions: Instead of improving the product, manufacturers resubmit for testing using different scaling factors.
3. Manipulation of Results: By adjusting the scaling factor, companies can effectively "shop" for a passing result without actually addressing the underlying quality issues.
4. Eventual Pass: Through this process of trial and error, a passing result is eventually obtained, even if the product fundamentally fails to meet safety standards.

This practice undermines the entire purpose of the AS/NZS 4020 standard.

It allows potentially unsafe products to receive WaterMark™ certification, which is supposed to guarantee safety and quality in plumbing and water supply products.

The consequences of this manipulation are far-reaching:

- Public Health Risk: Unsafe products may enter the drinking water system, potentially exposing millions to harmful contaminants.
- Erosion of Trust: The integrity of the WaterMark™ certification is compromised, undermining public confidence in water safety standards.
- Unfair Competition: Ethical manufacturers who invest in truly safe products are at a disadvantage against those who exploit this loophole.

Immediate action is needed to close this loophole. Recommendations include:

1. Revising the standard to limit the use of scaling factors or implementing stricter controls on their application.
2. Requiring full disclosure of all test attempts, including failed results, when seeking certification.

3. Implementing more rigorous oversight of the testing process to prevent manipulation.

As industry professionals and regulatory bodies, we have a responsibility to ensure the safety of our drinking water.

This article calls for an urgent review of the AS/NZS 4020 testing procedures and a commitment to closing this dangerous loophole.

The public's health and trust are at stake. It's time to act and restore integrity to our water safety standards.

What are Scaling Factors?

A scaling factor (field exposure to test exposure) can be applied to AS/NZS 4020 results to compensate for a greater surface area-to-volume ratio used for test extractions, when compared to the worst-case scenario in end-use. The requirement for products to be tested at surface area-to-volume ratios that are not less than those in the intended end-use exposure (with the exception of the test for growth of aquatic micro-organisms). Where there is a difference between test and end-use exposures, a provision can be made for a scaling factor to be applied to the test result.

