

# Specifying Concrete Pipe for 100 Years

The concrete industry in Australia and New Zealand demand that benchmarks be set to achieve consistency and quality performance. They lead the way in setting and achieving benchmarks for this purpose!

The technical standards for concrete structures that are developed by Standards Australia and Standards New Zealand for the construction industry set out to define conditions under which a structure will provide the service life that is expected of it, preferably without any undue maintenance. **Reinforced concrete pipe** is no different to any other concrete product in this respect. The guidelines under which this quality is achieved differ quite markedly from those set for other concrete products, as steel reinforced concrete pipe is manufactured using unique production methods, and is placed in underground conditions not typical of the exposure conditions expected for above ground elements.

The reinforced concrete pipe industry is guided by two standards on this basis for manufacture, durability, design and installation:

**AS/NZS 4058 “Precast concrete pipes - pressure and non-pressure”** outlines the minimum requirements for materials and manufacture of precast reinforced concrete pipes. It classifies pipes on the basis of size, strength and application, and sets minimum requirements for sampling and testing. The Standard is the benchmark for concrete pipe manufacturers. This document is also essential for designers and specifiers to ensure that the correct product is selected for each application.

**AS/NZS 3725 “Design for installation of buried concrete pipes”** sets out the methods and data required for calculating working loads on buried concrete pipe, relating this to the correct selection of reinforced concrete pipe and specifying details of the installation. The Standard nominates design and installation criteria to ensure a serviceable asset.

The Standards are derived from extensive experience in manufacturing, research, development and service. In their current form, they focus on manufacturing materials and conditions, selection of appropriate class of pipe, and durability, to maximise the potential of the designed pipeline. Durability provisions include minimum covers required in normal and marine environments, and concentration limits for potentially aggressive agents in the buried environment. When reinforced concrete pipe is manufactured in accordance with AS/NZS 4058 and installed in accordance with AS/NZS 3725, the product can be expected to be in service, without undue maintenance, for in excess of **100 years**. The CPAA design software, PipeClass, available at [www.concpipe.asn.au](http://www.concpipe.asn.au), is available to the industry to assist with design, and has recently been revised to align with the new Standards.

To ensure confidence and long term performance, reinforced concrete pipeline specification should always be in accordance to **AS/NZS4058 and AS/NZS3725**.