

Guiding the construction of Australian infrastructure.

BUILDING & CONSTRUCTION CASE STUDY

AS/NZS 5100:2017, *Bridge Design*



From kilometres of roadways connecting hectares of farmland; to thousands of trains and buses connecting millions to their workplaces, Australia is a country of moving parts. Industries rely on freight roads to be able to move products, and the general public relies on railways and major roads to connect the suburbs to the cities. Joining the dots of this societal puzzle are the bridges of Australia.

While not everyone crosses the Sydney Harbour Bridge as part of their daily routine, most Australians will appreciate the impact of this type of vital connection and its economic and social contribution. However, not to be forgotten are the many road and railway bridges connecting some of the most remote towns across Australia.

Bridges big and small

Whether travelling across the Bowen Bridge in Tasmania to get to work, or crossing the Diamantina River outside Birdsville in Queensland there are any number of different types of bridges constructed with different materials and in very different shapes and sizes.

Despite their differences the one common theme across the bridge sector is the Bridge Code 2017. As the Australian standard, the Code seeks to provide the best practices to be used in bridge design, maintenance and construction.

AS/NZS 5100:2017 series, *Bridge design*, or the Bridge Code 2017, sets out requirements for the design, assessment and alteration of new and existing bridge structures.

Details in design

This standard provides guidance on the design of new road, rail, light rail, pedestrian and cyclist path bridges, as well as the assessment of the load capacity of existing bridges and methods to strengthen and rehabilitate them. The standard also covers other structures, such as road sign and lighting structures, noise barriers and protection screens.

This 9 part Australian Bridge Code reflects a number of changes since its 2004 edition; it was revised in response to changes in the Australian climate and bridge design. New bridge design loads for light rail, fire, ship impact and loads from natural disasters including urban flooding form

part of this standard which seeks to adjust to the needs of bridge designers. Importantly,

as well as responding to changes in the Australian climate and industry needs, the Bridge Code has placed Australia at the forefront of modern bridge design.

Supporting Australians everywhere

Bridges are everywhere. Connecting Australia's biggest metropolitan cities with its smaller outer suburbs; enabling farmers to get livestock or produce to the ports for international markets;

even the tourism sector relies on effective and efficient bridges with the Mossman Gorge in far North Queensland and Sydney's Darling Harbour being difficult to cross by foot without the use of a bridge.

The Bridge Code is not just a guideline for bridge designers to check off while constructing this vital infrastructure. Across the country, bridges have vast economic, social influence and benefits for the entire Australian community. The small list above of the variety of bridges serving a range of purposes is a reminder of how fundamental bridges are to Australian life. Bridge design experts, having rigorously developed these series of standards that seek to provide safety and durability requirements for bridge developers, extending to show it is the Australian community as a whole that benefits most.

