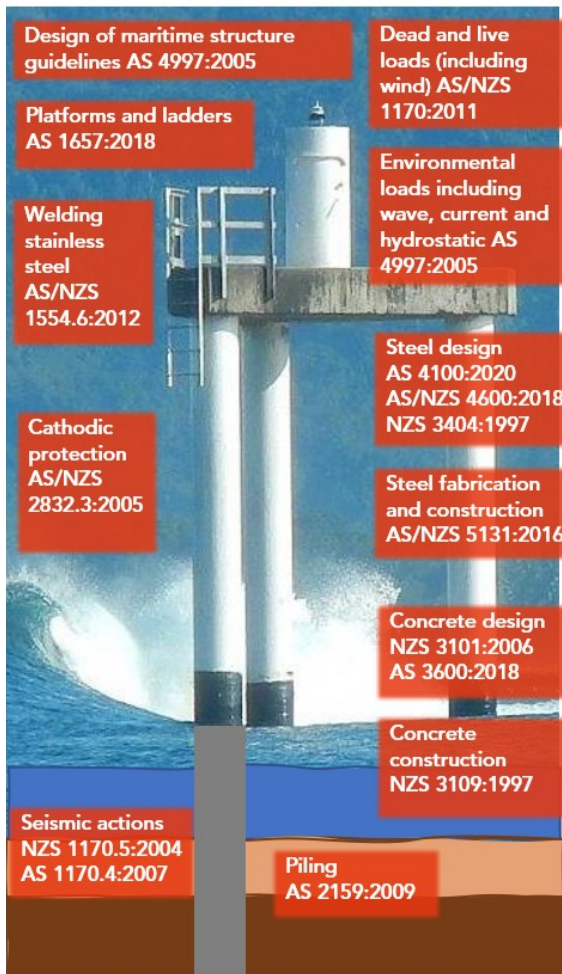


For marine based AtoN, AS4997:2005 is a regional guideline that brings together many elements of structural design including relevant design loads.

Typical structural design standards referred to in the Southern Pacific islands for marine based AtoN



Base image with kind permission of Australian Maritime Safety Authority (AMSA)

Useful regional information sources

tcoutlook.com - annual prediction of regional cyclonic events

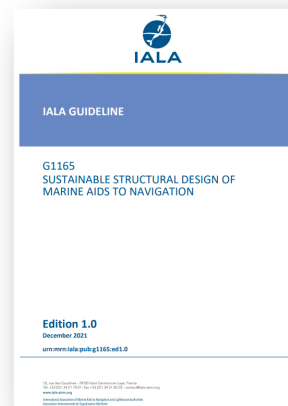
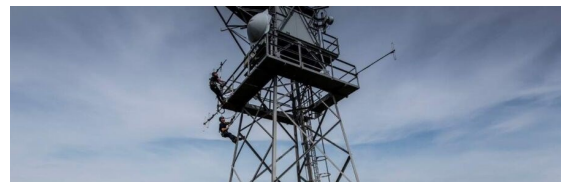
<https://www.pacificclimatefutures.net> - regional climate change predictions

<http://oceanportal.spc.int/portal/app.html#climate> - nation specific 7 day and seasonal wind and waves

www.engineersaustralia.org.au

www.theprif.org - national building code updates

www.iala-aism.org - for related Standard, Recommendation and guidelines



This leaflet should be read together with IALA Guideline **G1165 Sustainable Structural design of Marine Aids to Navigation**, which, with other relevant AtoN design documents can be found at the IALA website listed above.



IALA Guideline G1165 Sustainable Structural Design of Marine Aids to Navigation Supplementary regional information



This leaflet supplements the information in IALA Guideline **G1165 Sustainable Structural Design of Marine Aids to Navigation**, and lists commonly used structural design standards for designing or assessing fixed **Marine Aids to Navigation (AtoN)** in the **Southern Pacific islands**. This leaflet also provides further sources of regional engineering and environmental guidance.



Regional design load considerations

Typical design loads used in structural design standards are described in G1165. Sustainable structural AtoN design in the Southern Pacific islands should in particular, consider:

- **Extreme winds** experienced during the annual cyclone season November to April.
- **Seasonal increased wave height** due to cyclonic activity in the region, and in adjacent regions.
- **Sea level rise** leading to increased tidal water and wave heights.
- **Seismic activity** associated with regional earthquakes.
- **Extreme tsunami waves** associated with regional seismic and volcanic activity.

Designing AtoN structures to withstand all potential environmental conditions may not prove economically viable, but the Basis of Design should state clearly the loadings assumed.

Reminder – What is the Basis of Design?
The Basis of Design is a record of the AtoN manager’s requirements and site information, together with the designer’s confirmation that those requirements have been incorporated in the design. The designer also confirms the key design parameters and values.



Image with kind permission of Adam Hay

Typical regional design standards

The structural design standards shown on the figures over the following pages are *some* of those in general use in the region, and available to AtoN designers for both marine based and land based AtoN. They are primarily Australian (AS), New Zealand (NZS) or joint standards (AS/NZS). Designers may also refer to organization specific standards, for example national bridges and highways design guides. The list of standards provided in the figures is not exhaustive and there will be other standards that are specifically used for certain aspects of structural element design such as connections, or reinforcing steel. The standards listed will provide a good starting point for discussion however, between the AtoN manager and designer.

Reminder – Standards are regularly updated.
Every effort has been made to ensure the standards quoted here are the most recent versions at the time of publication but you should always check that the version of any standard or code used is the most up to date, and that the designer has also considered any requirement to apply local or national building codes.

Many of the standards used for land based structural AtoN design in the region will also apply to marine based AtoN.

Typical structural design standards referred to in the Southern Pacific islands for land based AtoN



Base image with kind permission of Australian Maritime Safety Authority (AMSA)