

22/1/2024

RE: STRUCTURAL ENGINEERING CERTIFICATE

1. Structure

Ezzy Fit FRP composite sleeper for retaining wall. Class 10b structure under the Building Code of Australia.

1.6m, 2.0m and 2.4m long, respectively; 60mm wide and 165mm deep hole section; 2.7mm wall thickness.

2. Description of aspect/s certified

1.6m long sleeper: maximum working horizontal pressure resistance 1.5kPa; can be used for up to 5m high retaining wall with or without soil reinforcement.

2.0m long sleeper: maximum working horizontal pressure resistance 1.8kPa; can be used for up to 3m high retaining wall with or without soil reinforcement.

2.4m long sleeper: maximum working horizontal pressure resistance 2.3kPa; can be used for up to 1.0m high retaining wall with or without soil reinforcement.

The sleepers can be used under 5kPa vertical design live load (subject to the site condition as below).

The site condition below must be taken into account when to design retaining wall with the sleepers:

- Soil property;
- Wind load;
- Earthquake load;
- Top surcharge load;
- Retained earth pressure;
- Ground water pressure;
- The distance of building to the retaining wall;
- The distance of construction zone to the retaining wall.

3. Basis of certification

AS1170.0-2002 (R2016) Structural Design Actions-General Principles;
AS1170.1-2002 (R2016) Permanent Imposed & Other Actions;

AS1170.2-2002 Wind loads;
AS1170.4-2007 Earthquake Actions;
AS4678-2002 Earth Retaining Structures.

4. Reference documentation

Ezzy Fit Sleep Drawings;

This certificate must work with the relevant Building Regulation form (e.g. Form 15 in QLD) for a given site location.

The certificate supersedes the ones issued on 15/11/2023 and 1/12/2023.

Bin Wang



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