Structural Design Certificate CR-19-02

BigRiver Structural Girders

Client : BigRiver Group

Trenayr Road Junction Hill, Grafton NSW

I certify that I have undertaken a structural analysis of the BigRiver Structural girders as detailed below and consider that they are structurally adequate to act as a direct replacement for the rounds used timbers in bridges as defined in the table below. The analysis was carried out using principles of structural mechanics, Australian Structural Timber code AS1720.1 and meeting the requirements of the National Construction Code of Australia.

BigRiver Girder			F27 Round
LVL	d (mm)	b (mm)	Dia (mm)
540PR27	540	450	533
495PR27	495	400	483
450PR27	450	400	457
450PR27	450	360	431
405PR27	405	360	406

The design is based on the assumption that bending capacity and stiffness of the Timber rounds is exceeded by the equivalent Big River Girder. The design is based on Section 8 of the AS1720 and utilising the material properties as defined in AS1720.1 and presented below that have been verified through independent testing carried out at Griffith University.

f'_b 50 MPa
f'_s 5.3 MPa
E 13,200 MPa

This design certificate is limited to the direct replacement of the F27 rounds acting as girders, headstocks or corbels with the designated size of BigRiver structural girder, on the assumption that loading of the Rounds does not exceed those determined using the material properties and design clauses as specified in AS1720.1 for round timbers.

26/2/19

Andrew Wheeler
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