

SPAN
SAFETY
SPEED
STABILITY
LOW COST



Hollow Core Concrete Bridges

■ Rapid construction ■ Economical ■ Durable ■ Safe

***Engineer-designed and certified, rural concrete bridges
For farms, cooperatives, factories and regional roads***

HOLLOW CORE CONCRETE PLANK BRIDGES HAVE STRONG ADVANTAGES:

■ Economical

costs are often significantly lower compared to other types of bridge construction

■ Safe

Hollow Core Concrete plank bridges are engineer-designed to carry certified loads

■ Rapid construction

days rather than weeks

■ Durable

concrete bridges have low maintenance costs, particularly when compared to timber decking bridges

FOR SHIRES AND COUNCILS



FOR ON FARM



Hollow Core Concrete Bridges

Engineer-designed and certified

CONSTRUCTION IS SIMPLE

Construction procedure requires the preparation of abutments and footings as is the case for beam and decking bridges. For many farm requirements, the hollow core concrete planks can be simply lifted into place followed by mounding up the of the footings. For heavy loads, a top cover of reinforced screed may be necessary but this is not usually necessary for loads such as tractors, harvesters and other farm machinery.

GETTING THE RIGHT BRIDGE

- Hollow Core Concrete will perform all necessary design to ensure that the bridge required by you answers to appropriate Shire and/or Water Trust regulations. In cases where soil conditions indicate possibility of embankment collapse, a shire engineer should be consulted.
- Provide Hollow Core with a dimensioned sketch of the traverse, and description of loads to be carried
- Hollow Core Concrete will then provide you with the design including specifications for the footings which the user must construct. That's all there is to the whole process

WHEN PLANNING A BRIDGE FOR PRIVATE USE, BE AWARE OF THE FOLLOWING:

- Permit required from local Water Trust (this also applies to dry gullies which may be part of the waterway system) and/or Shire
- Public Liability. Do not expose yourself to risk resulting from injury through bridge collapse.
- The best solution is a properly engineered one.

Hollow core concrete plank bridges are highly economical and quickly constructed. When compared with the construction of traditional beam and decking bridges, the cost of a Hollow core plank bridge not only compares favourably but in addition offers a far more rapid construction time.

For example in the case of a regional road, Hollow core concrete plank bridges are typically constructed in 4 or 5 days. Compare this with the six weeks required to construct a concrete bridge using on-site pouring. For hollow core plank bridges requiring a reinforced top screed, 6 to 7 days only are necessary for curing. Thereafter the bridge is open to traffic!

Hollow core concrete plank bridges can be used to traverse rivers, creeks irrigation channels and ditches in single spans as large as 15 metres and with widths of 1.2, 2.4, 3.6, or 4.8 metres. Live loads of up to T44 category can be carried depending on the chosen design, making the bridges suitable for heavy vehicular loads including semi-trailers and construction machinery.



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TECHNICAL SPECIFICATIONS

Professional advice and engineering available

Hollow Core Concrete's professional engineering team can provide complete bridge designs to suit the requirements of shire councils, transport authorities, and private road users. Bridges compliant with bridge codes including 3T, T44 and SML 1600 can be designed to cover dynamic loads including semi-trailers on single-span constructions. Hollow core planks have a reduced dead weight, but are exceedingly strong because of their cross-sectional design providing high moment of inertia and the pre-stressed cable configuration utilised in the manufacture of the planks. The inherent design of the planks is such as to permit load spreading via transfer of shear force. The grouting and reinforcing further enhance load spreading characteristics. The chart below provides an overview of load carrying capacity according to span, width (no. of planks) and the use of reinforced grouting. The requirement to place a topping screed and reinforcement over the planks would be subject to specific design requirements and span of the planks.

HOLLOWCORE CONCRETE BRIDGES CARRYING CAPACITY:

LOAD	SPAN
Pedestrian	to 16 metres
Vehicle - 3 tonne	to 16 metres
Vehicle - 15 tonne	to 14 metres
Vehicle - T44	to 12 metres
Vehicle - SML1600	to 11 metres
Vehicle - HLP320	to 11 metres
Vehicle - HLP400	to 10 metres



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