STANDARD BAR SHAPES DIAGRAM

980
339
460
430
460
430
339
980

DIMENSIONS SHOWN ON BAR SHAPES DIAGRAM ARE MEASURED FROM THE OUTSIDE FACES OF THE BARS AND ARE IN MILLIMETRES.

Bar size is the nominal diameter in millimetres.
The included angle of any bend shall be a right angle.
All bends shall be fitment bends in accordance with AS 5100.5.13.

STANDARD DRAWING

PSC PLANK GIRDER
10m SPAN

DESIGN ASSUMPTIONS

The nominal thickness of cast-in-place reinforced concrete deck: 180mm
The maximum gap between PSC planks: 320mm

DECK: 180mm.
The maximum gap between PSC planks: 320mm.

ELEVATION

STANDARD BAR SHAPES DIAGRAM

GENERAL NOTES

CONCRETE EXPOSURE CLASSIFICATION:...
MINIMUM 28 DAY COMpressive strengTh of CONCRETE Shall Be 50 MPa.
MINIMUM compressive strength of concrete at transfer of prestress shall be 30 MPa.
Nominal cover to reinforcement nearest to the concrete surface shall be 35mm unless specified otherwise.
The cover specified is based on the plank being cast in a rigid steel formwork mould with intense compaction using a vibrating table or form vibrators.
Strands shall be 1 wire, ordinary, diameter 12.7mm, tensile strength 1870 MPa, relax 2, to AS/NZS 4672.1 with minimum breaking force of 164 kN.
The force in each 12.7mm dia strand at the mid-span of the plank immediately after the release of the tensioning jack shall be 138 kN.
After transfer of prestress, strands shall be cut flush with the end of plank and exposed strands sealed against corrosion by the application of epoxy resin.
Calculated hog of plank at transfer is 9mm and 14mm at 28 days (assuming):
- density = 2500 kg/m³
- elastic modulus at transfer = 32 800 MPa
- steam curing at 70 deg C for 8 hours after casting
- storage in open air, after steam curing, at 20 deg C average temperature and relative humidity in range 50% - 75%
- steam curing at 70 deg C for 8 hours after casting
- no loads except plank self weight
Mass of plank is approximately 5.7 tonnes.
During storage, transport and handling, plank shall be in an upright position and supported at not more than 600mm from each end.

SECTION

ALL STRANDS TO BE STRAIGHT

This surface shall be made rough in the manufacture of the plank by broom finishing transversely.
50 x 20 deep recess for placement of 16 thick fibre cement formwork sheeting.
9 deep recess for laminated elastomeric bearing size of recess to suit bearing type used.

VIEW

PLAN

PLANK TYPE A - FIRST THREE PARS OF Q2 BARS ARE REQUIRED AT EACH END OF PLANK.
PLANK TYPE B - FIRST THREE PARS OF Q2 BARS ARE REQUIRED AT EACH END OF PLANK.
PLANK TYPE C - FIRST THREE PARS OF Q2 BARS ARE REQUIRED AT EACH END OF PLANK.

8 BUNDLES OF
Q2 4-N12-L-150
Q3 19-N20-L-250

Q1 1-N12-X-250,
26 BUNDLES OF
Q1 9-N12-X-150
Q2 2-N12-L-250
Q1 1-N12-X-250

PLANK TYPE A - FIRST THREE PARS OF Q2 BARS ARE REQUIRED AT EACH END OF PLANK.
PLANK TYPE B - FIRST THREE PARS OF Q2 BARS ARE REQUIRED AT EACH END OF PLANK.
PLANK TYPE C - FIRST THREE PARS OF Q2 BARS ARE REQUIRED AT EACH END OF PLANK.

DESIGN LOADING: SM1600.

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