

Beam Reinforcement Detail

Structural Guide

What to Consider

Design requirements
 Nominal cover to reinforcements
 Minimum area of reinforcements
 Bar spacing
 Bars along sides of beams
 Links spacing
 Anchorage lengths
 Hanger bars
 Curtailment

Cover shall be as per the fire and exposure class – for durability.

Tension reinforcement, compression reinforcement, Transverse reinforcement in the top flange and minimum bar diameter

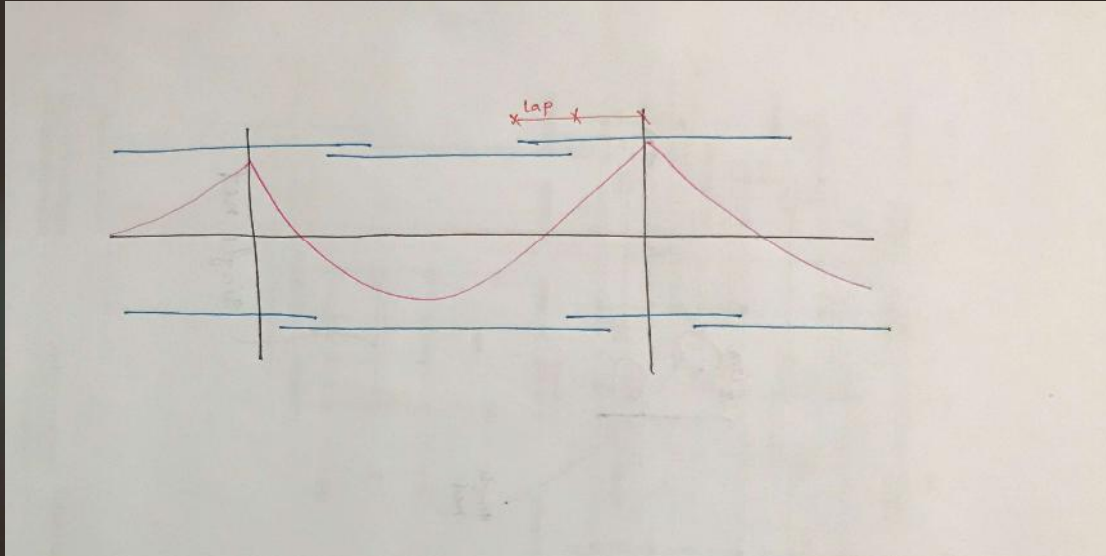
Minimum horizontal pitch (gap between bars), Minimum vertical pitch (gap between two layers; 25mm or bar diameter, which ever greater, Maximum pitch (maximum gap between bars : tension bars – to be as per crack width, compression bars – consider spacing and restrain.

Provide crack control rebar as per relevant standards

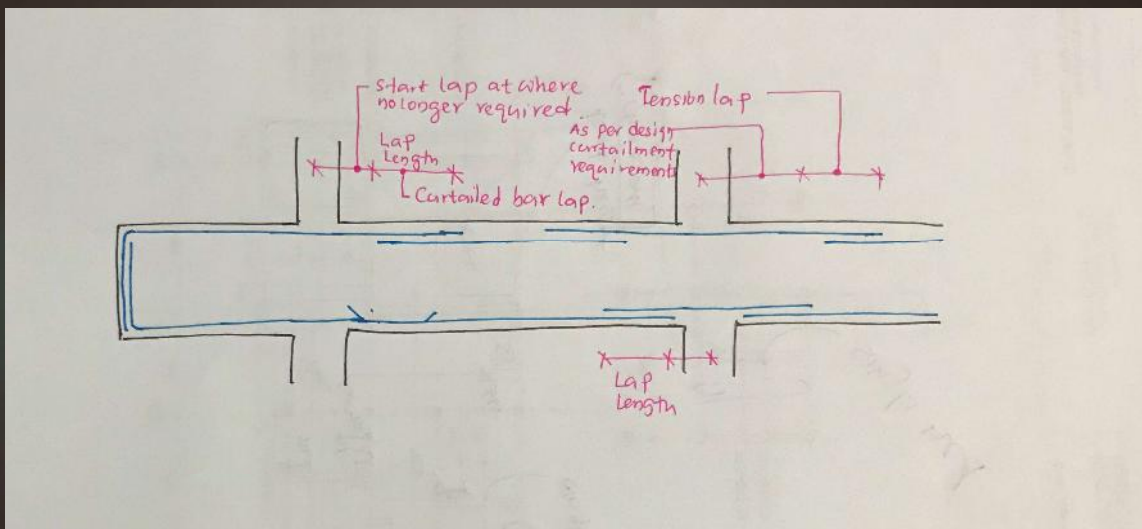
Minimum and maximum spacing and distance to tension or compression bar from vertical leg shall be limit to 150mm

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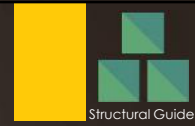
How to detail Continuous beam



How to detail Continuous beam



Lap Length



Tension Lap Length
 Compression Lap Length

45 x d – Example –Compression Lap
 Consider smaller bar diameter
 Consider multiple (45) for compression lap based on rebar type and its yield strength.

1.4 x 50 x d – Example –Tension Lap
 Consider smaller bar diameter
 Consider multiple (50) for tension lap based on rebar type and its yield strength.
 Consider factors (1, 1.4, 2.0) depending on the cover on the side, longitudinal bar spacing

Shear Links

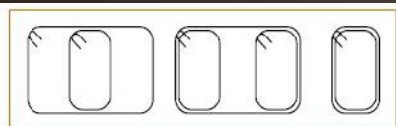


Figure 6.19 Preferred arrangement of links

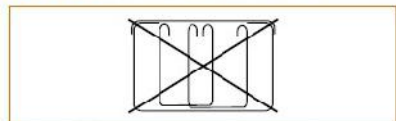


Figure 6.20 Overlapping of links is not recommended

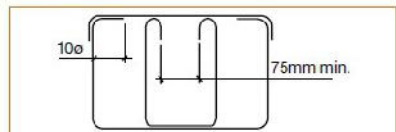


Figure 6.21 Open links with top locking links

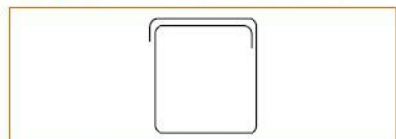
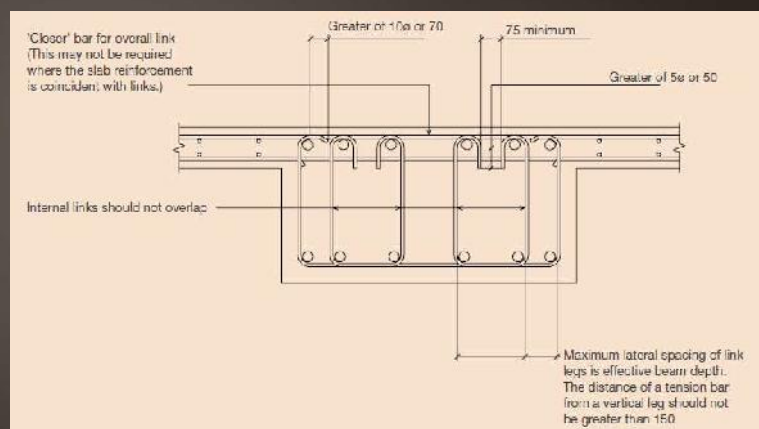
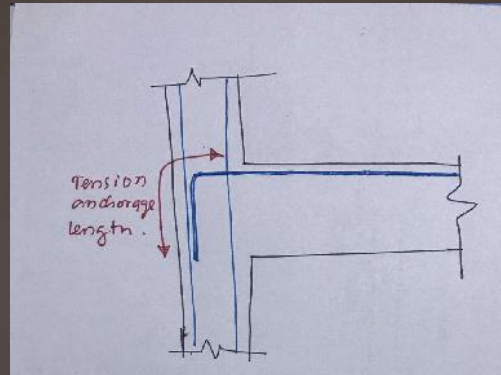
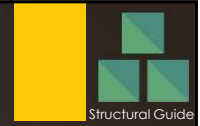


Figure 6.22 Required shape of torsion links



Tension Anchorage



Thank you



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Civil & Structural Engineering Knowledge Base