Aug | 2022

Anchor Performance near Grout Tubes

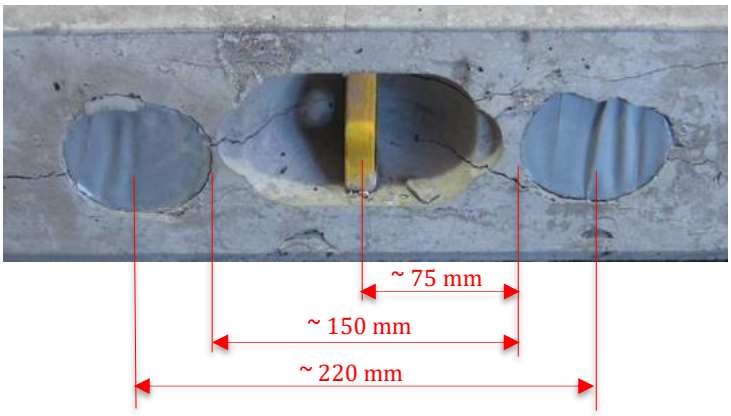
With increased reinforcement and doweled connections being specified; Reid completed testing in April 2020 to determine the effect of placing grout tubes (spiral duct) as close to the anchor as possible. Up until this point, it has been used internally only, however, Reid has determined this information should be shared with the greater industry when utilising 3DX85 anchors.

AS3850 Compliance:

AS3850 dictates the use of shape modification factors are not permitted for lifting inserts which rely on component reinforcement (Clause A7.2); subsequently Reid has tested the effects of 3DX85 near grout tubes.

What was tested?

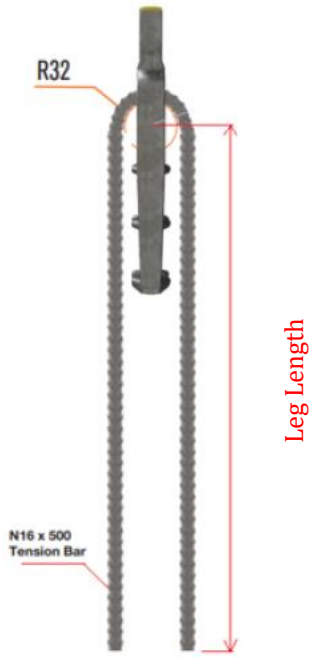
Reid conducted testing (report TRR95) in April 2020 utilising 'U-bar" tension bars consisting of 500mm leg lengths; the same nominated leg length as specified in the 3DX Compliance Document. U-bar style tension bar was utilised as a traditional V-bar would not fit between the tubes. 3DX85 (with U-bar styled tension bar) & 70mm dia. grout tubes (spiral duct) were used. The test set up attempted to have the grout tubes as close to the anchor as possible. This resulted in an edge to edge tube spacing of 150mm apart (i.e. 220mm centers) with the 3DX85 anchor centrally placed between the tubes (anchor to tube distance being ~75mm).



Testing results:

Testing validated tensile data is unaffected. Shear data is reduced by approximately 30% of the published shear capacity, due to the proximity to the tubes. The addition of a shear bar to the 3DX85 was also tested & observed to maintain published capacity. The detail for tension "U-bars" & shear bars required is located below.

Tensile U-bar:



Shear Bar:

Anchor Part Number	Part Numbers and Dimensions			
	Diameter, mm	Bend Radius, (R) mm	Length, (L) mm	Height, (H) mm
3DX85	N12	24	250	90