

Helix Versus Mesh and Rebar

Updated 10/13/06



HELIX STRENGTH

Dosage	Strength, Mn (Kip-in)				
	4 inch	5 inch	6 inch	7 inch	8 inch
10 lb/yd ³	10.0	15.7	22.6	30.8	40.2
15 lb/yd ³	11.8	18.4	26.4	36.0	47.0
20 lb/yd ³	14.0	21.8	31.4	42.8	55.9
25 lb/yd ³	15.9	24.8	35.8	48.7	63.6
30 lb/yd ³	18.2	28.5	41.0	55.8	72.9
40 lb/yd ³	21.6	33.8	48.6	66.2	86.4
50 lb/yd ³	25.3	39.6	57.0	77.5	101.3

Common Mesh Arrangments

Rebar/Mesh Designation	Strength, Mn (Kip-in)				
	4 inch	5 inch	6 inch	7 inch	8 inch
6x6 W1.4XW1.4	3.3	4.2	5.0	5.8	6.7
6x6 W2.1XW2.1	5.2	6.5	7.9	9.2	10.5
6X6 W2.9XW2.9	6.8	8.6	10.3	12.0	13.8
4X4 W2.1XW2.1	7.3	9.1	11.0	12.9	14.7
6X6 W4XW4	9.3	11.7	14.1	16.5	18.9
4X4 W2.9XW2.9	10.1	12.7	15.3	17.9	20.6
6X6 W5.5XW5.5	12.7	16.0	19.3	22.6	25.9
4X4 W4XW4	13.8	17.4	21.0	24.6	28.2
4X4 W5.5XW5.5	18.6	23.5	28.5	33.4	38.4

Common Rebar Arrangments (single layer)

Rebar Configuration	Strength, Mn (Kip-in)				
	4 inch	5 inch	6 inch	7 inch	8 inch
#3 18" OC	8.6	10.7	13.0	15.1	17.4
#3 16" OC	9.6	12.1	14.6	17.1	19.5
#3 12" OC	12.7	16.0	19.3	22.6	25.9
#4 18" OC	15.2	19.2	23.2	27.1	31.2
#4 16" OC	17.0	21.5	26.0	30.5	35.0
#4 12" OC	22.2	28.2	34.2	40.2	46.2
#5 12" OC	33.0	42.3	51.6	60.9	70.2

Common Rebar Arrangments (double layer)

Rebar Configuration	Strength, Mn (Kip-in)				
			6 inch	7 inch	8 inch
#4 12" OC T&B			42.2	54.8	67.4
#5 12" OC T&B			63.9	83.4	103

To get the Helix dosage:

Look up the mesh or rebar configuration from the table and get the Strength number (Kip-in)

Find the same or strength on the Helix chart (you can use the same thickness concrete or reduce the thickness)

Example:

#4 rebar, 12" OC with 8" concrete = 46.2 Kip-in

Acceptable Helix dosages could be -

8" concrete with 15 lbs/yd of Helix (47.0 Kip-in)

or 7" concrete with 25 lbs/yd of Helix (48.7 Kip-in)

or 6" concrete with 40 lbs/yd of Helix (48.6 Kip-in)