

## Design Aids For Structural Welded Wire Reinforcement (Metric Units for WWR/Rebar Comparison Tables)

### INTRODUCTION

This Tech Fact\* provides basic information on cold-worked wire and welded wire reinforcement (WWR) to assist in the design and detailing of WWR systems for concrete structures. Tables are included to compare metric steel areas and diameters for reinforcement with a minimum yield strength of 420 MPa and three higher minimum yield strengths, i.e., 485 MPa, 515 MPa and 550 MPa, for WWR. Tables 3-6 consider steel wire diameters ranging from 5 mm to 19 mm.

The American Concrete Institute's (ACI) publication *318M ACI 318, Building Requirements for Structural Concrete* defines deformed reinforcement for structural concrete in Section 2.2. The section states that welded plain wire reinforcement, welded deformed wire reinforcement and deformed wire are defined as deformed reinforcement. For further definition and acceptance for the use of high strength reinforcement see 318M ACI 318, Chapter 3.

### SPECIFICATIONS

The American Society for Testing and Materials (ASTM) publishes specifications for the wire used to manufacture reinforcement and for both plain and deformed WWR. The Canadian Standards Association (CSA) specifications are withdrawn. The appropriate titles and numbers are given in Table 1. These are considered to be the governing specifications for both wire and WWR. Federal, State and local governmental agencies have special specifications that will control. The AASHTO specification numbers are a prime example of this. They are also stated in Table 1. Table 2 has minimum strength properties and weld shear test values. See the section on Minimum Yield Strengths for specific references to high strength reinforcement.

**TABLE 1  
SPECIFICATIONS COVERING WELDED WIRE REINFORCEMENT**

U.S. Specifications	AASHTO Specifications	Title
ASTM A 82	M32	Steel Wire, Plain, for Concrete Reinforcement
ASTM A 185	M55	Steel Welded Wire Reinforcement, Plain, for Concrete
ASTM A 496	M225	Steel Wire, Deformed, for Concrete Reinforcement
ASTM A 497	M221	Steel Welded Wire Reinforcement, Deformed, for Concrete

**TABLE 2  
ASTM PROPERTIES OF STEEL WIRE IN WELDED WIRE REINFORCEMENT**

Type of WWR	Minimum Tensile Strength		Minimum Yield Strength		Weld Shear	
	MPa	psi	MPa	psi	MPa	psi
Welded Wire Reinforcement, Plain	515	75,000	450	65,000	241	35,000
Welded Wire Reinforcement, Deformed	550	80,000	485	70,000	241	35,000

\*This Tech Fact may be inserted in the WRI Structural Detailing Manual, Chapter 2 and will be updated as manufacturing capabilities are changed.

## MINIMUM YIELD STRENGTHS

The yield strength values shown in Table 2 are ASTM requirements for minimum yield strengths measured at a strain of 0.5% of gage length. The 318M ACI 318 Structural Building Code, Chapter 3, states that minimum yield strength values greater than 420 MPa up to 550 MPa may be used, provided they are measured at a strain of 0.35% of gage length. The ACI strain requirements are now covered in supplements specified by ASTM. Also, the 318M ACI 318 Building Code limits the minimum design yield strength of reinforcement to 550 MPa (Chapter 9, 9.4), (Chapter 11, 11.4.2), and to 690MPa for Confinement Reinforcement (Chapter 21, 21.1.5.4).

## WELD SHEAR STRENGTH AND CONCRETE BOND

Plain WWR develops bond with the concrete through the positive mechanical anchorage at each welded intersection of wires. Deformed WWR utilizes wire deformations along with the welded intersections for bond and anchorage. The ASTM requirements for weld shear strength at the wire intersections are shown in Table 2.

ASTM specifies a size differential for wires being welded together to assure adequate weld shear strength. For welded wire reinforcement, plain and deformed, the smaller wire must have an area of 40 percent or more of the area of the larger wire.

**EXAMPLE:** (Showing Use of Comparison Tables 3-14)

### Parameters:

$f_y = 550$  MPa to be used in lieu of  $f_y = 420$  MPa reinforcing bars. The slab is for one-way stress calculations, 150 mm thick.

The positive moment reinforcement is 13 mm bars @ 250 mm c/c ( $A_s = 508$  mm sq./m width)

The temperature reinforcement is 13 mm bars @ 450 mm c/c ( $A_s = 282$  mm sq./m width)

The negative moment reinforcement is 16 mm bars @ 300 mm c/c ( $A_s = 656$  mm sq./m)

Use Table 6 - Reinforcing Bar:  $f_y = 420$  MPa, Welded Wire Reinforcement:  $f_y = 550$  MPa

Begin with 150 mm spacings and adjust as necessary.

The parameters noted above are followed in these derivations:

### POSITIVE MOMENT REINFORCEMENT (BOTTOM)

13mm wires @ 250mm c/c.- Select 8.6 diameter wires @ 150mm spacings

$$A_w = 508 \times \frac{420}{550} \times \frac{150}{1000} = 58.2\text{mm}^2, \text{ then } d_b = \frac{58.2}{0.7854} = 8.6\text{mm} - \text{ok}$$

### TEMPERATURE REINFORCEMENT

13mm wires @ 450mm c/c. — Select 6.4mm diameter wires @ 150mm spacings

$$A_w = 282 \times \frac{420}{550} \times \frac{150}{1000} = 32.3\text{mm}^2, \text{ then } d_b = \frac{32.3}{0.7854} = 6.4\text{mm} - \text{ok}$$

To satisfy ASTM weld/shear requirements of 40% differential areas of larger to smaller wires:  
 $58.2\text{mm}^2 \times 0.4 = 23.3\text{mm}^2$ , and 32.3 is greater than  $23.3\text{mm}^2$  — ok

The style of WWR sheet for the positive moment reinforcement (bottom) is: 150 x 150 — 8.6x6.4

### NEGATIVE MOMENT REINFORCEMENT (TOP)

16mm wires @ 300mm c/c. — Select 9.8mm diameter wires @ 150mm spacings

$$A_w = 656 \times \frac{420}{550} \times \frac{150}{1000} = 75.1\text{mm}^2, \text{ then } d_b = \frac{75.1}{0.7854} = 9.8\text{mm} - \text{ok}$$

Cross wires:  $75.1 \times 0.4 = 30.1\text{mm}^2$ , then  $d_b = \frac{30.1}{0.7854} = 6.2\text{mm}$  - Select 400mm spacings

The style of WWR sheet for the negative moment reinforcement (top) is: 150 x 400 - 9.8 x 6.2

### Definition of expressions:

$A_s$  - Area of steel (per meter width or per foot of width)

$A_w$  - Area of wire

$d_b$  - diameter of bar or wire

### Conversions — Inch-Pound to Metric Measurements

Inch-pound (psi)	S.I. Units (MPa)	Metric (kg/cm <sup>2</sup> )
60,000	420	4220
70,000	485	4920
75,000	515	5270
80,000	550	5620

### Conversion Multipliers

kg/cm<sup>2</sup> x 14.2234 = psi

MPa x 145 = psi

MPa x 10.188 = kg/cm<sup>2</sup>

### REMARKS:

When the WWR style is required to furnish tension reinforcement in only one direction, the cross-wire should be the smallest size permitted at the maximum spacing permitted. ASTM specifies the minimum size as noted above. The maximum spacing is 3 times the slab thickness or 450 mm as specified in ACI 318, Chapter 7.

### NOTES FOR TABLES 3-14

1. Mass in kg/m<sup>2</sup> is for one direction only. Double the weight for the same reinforcing in the other direction, or add the appropriate weight for a different pattern in the other direction.
2. Mass in kg/m<sup>2</sup> is theoretical and is intended for estimating purposes only. Contact the WWR producers for more specific project requirements.
3. ACI 318 requires the minimum deformed wire diameter to be 5.7 mm for structural applications. Sheets of WWR can be both deformed and plain mixed. (ACI 318, Chapter 12, 12.7.4).
4. In accordance with ACI 318, the maximum spacing permitted for plain WWR is 300 mm and the maximum spacing for deformed welded wire reinforcement is 400 mm. The 450 mm spacing in the tables is only recommended for use in slab on grade applications, which is not governed by ACI 318, unless designed as a structural slab.

*WRI provides the material herein as a matter of information and therefore, disclaims any and all responsibility for application of the stated principles or the accuracy of the data other than material developed by the institute.*

TABLE 3 - #10, #13, #16

## COMPARISON TABLES - REINFORCING BARS &amp; WELDED WIRE REINFORCEMENT

Rebar @ 420 MPa and Welded Wire Reinforcement @ 420 Mpa

#10 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	710	5.60	36 (6.8)	71 (9.5)	107 (11.7)	142 (13.4)	178 (15.1)	213 (16.5)	249 (17.8)	284 (19.0)		710	5.60
@ 125	568	4.48	28 (6.0)	57 (8.5)	85 (10.4)	114 (12.0)	142 (13.4)	170 (14.7)	199 (15.9)	227 (17.0)	256 (18.1)	568	4.48
@ 150	473	3.73	24 (5.5)	47 (7.7)	71 (9.5)	95 (11.0)	118 (12.3)	142 (13.4)	166 (14.5)	189 (15.5)	213 (16.5)	473	3.73
@ 175	406	3.20	20 (5.0)	41 (7.2)	61 (8.8)	81 (10.2)	102 (11.4)	122 (12.5)	142 (13.4)	162 (14.4)	183 (15.3)	406	3.20
@ 200	355	2.80	18 (4.8)	36 (6.8)	53 (8.2)	71 (9.5)	89 (10.6)	107 (11.7)	124 (12.6)	142 (13.4)	160 (14.3)	355	2.80
@ 225	316	2.49	16 (4.5)	32 (6.4)	47 (7.7)	63 (9.0)	79 (10.0)	95 (11.0)	111 (11.9)	126 (12.7)	142 (13.4)	316	2.49
@ 250	284	2.24	14 (4.2)	28 (6.0)	43 (7.4)	57 (8.5)	71 (9.5)	85 (10.4)	99 (11.2)	114 (12.0)	128 (12.8)	284	2.24
@ 275	258	2.04	13 (4.1)	26 (5.8)	39 (7.0)	52 (8.1)	65 (9.1)	77 (9.9)	90 (10.7)	103 (11.5)	116 (12.2)	258	2.04
@ 300	237	1.87	12 (3.9)	24 (5.5)	36 (6.8)	47 (7.8)	59 (8.7)	71 (9.5)	83 (10.3)	95 (11.0)	107 (11.7)	237	1.87
@ 325	218	1.72	11 (3.7)	22 (5.3)	33 (6.5)	44 (7.5)	55 (8.4)	65 (9.1)	76 (9.8)	87 (10.5)	98 (11.2)	218	1.72
@ 350	203	1.60	10 (3.6)	20 (5.0)	30 (6.2)	41 (7.2)	51 (8.1)	61 (8.8)	71 (9.5)	81 (10.2)	91 (10.8)	203	1.60
@ 375	189	1.49	9 (3.4)	19 (4.9)	28 (6.0)	38 (6.9)	47 (7.7)	57 (8.5)	66 (9.2)	76 (9.8)	85 (10.4)	189	1.49
@ 400	178	1.40	9 (3.4)	18 (4.8)	27 (5.9)	36 (6.7)	45 (7.6)	53 (8.2)	62 (8.9)	71 (9.5)	80 (10.1)	178	1.40
@ 425	167	1.32	8 (3.2)	17 (4.7)	25 (5.6)	33 (6.5)	42 (7.3)	50 (8.0)	58 (8.6)	67 (9.2)	75 (9.8)	167	1.32
@ 450	158	1.24	8 (3.2)	16 (4.5)	24 (5.5)	32 (6.3)	40 (7.1)	47 (7.7)	55 (8.4)	63 (9.0)	71 (9.5)	158	1.24

#13 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	1290	9.94	65 (9.1)	129 (12.8)	194 (15.7)	258 (18.1)						1290	9.94
@ 125	1032	7.95	52 (8.1)	103 (11.5)	155 (14.0)	206 (16.2)	258 (18.1)					1032	7.95
@ 150	860	6.63	43 (7.4)	86 (10.5)	129 (12.8)	172 (14.8)	215 (16.5)	258 (18.1)				860	6.63
@ 175	737	5.68	37 (6.9)	74 (9.7)	111 (11.9)	147 (13.7)	184 (15.3)	221 (16.8)	258 (18.1)			737	5.68
@ 200	645	4.97	32 (6.4)	65 (9.1)	97 (11.1)	129 (12.8)	161 (14.3)	194 (15.7)	226 (17.0)	258 (18.1)	290 (19.2)	645	4.97
@ 225	573	4.42	29 (6.1)	57 (8.5)	86 (10.5)	115 (12.1)	143 (13.5)	172 (14.8)	201 (16.0)	229 (17.1)	258 (18.1)	573	4.42
@ 250	516	3.98	26 (5.8)	52 (8.1)	77 (9.9)	103 (11.5)	129 (12.8)	155 (14.0)	181 (15.2)	206 (16.2)	232 (17.2)	516	3.98
@ 275	469	3.61	23 (5.4)	47 (7.7)	70 (9.4)	94 (10.9)	117 (12.2)	141 (13.4)	164 (14.5)	188 (15.5)	211 (16.4)	469	3.61
@ 300	430	3.31	22 (5.3)	43 (7.4)	65 (9.1)	86 (10.5)	108 (11.7)	129 (12.8)	151 (13.9)	172 (14.8)	194 (15.7)	430	3.31
@ 325	397	3.06	20 (5.0)	40 (7.1)	60 (8.7)	79 (10.1)	99 (11.2)	119 (12.3)	139 (13.3)	159 (14.2)	179 (15.1)	397	3.06
@ 350	369	2.84	18 (4.8)	37 (6.9)	55 (8.4)	74 (9.7)	92 (10.8)	111 (11.9)	129 (12.8)	148 (13.7)	166 (14.5)	369	2.84
@ 375	344	2.65	17 (4.7)	34 (6.6)	52 (8.1)	69 (9.4)	86 (10.5)	103 (11.5)	120 (12.4)	138 (13.3)	155 (14.0)	344	2.65
@ 400	323	2.49	16 (4.5)	32 (6.4)	48 (7.8)	65 (9.1)	81 (10.2)	97 (11.1)	113 (12.0)	129 (12.8)	145 (13.6)	323	2.49
@ 425	304	2.34	15 (4.4)	30 (6.2)	46 (7.7)	61 (8.8)	76 (9.8)	91 (10.8)	106 (11.6)	122 (12.5)	137 (13.2)	304	2.34
@ 450	287	2.21	14 (4.2)	29 (6.1)	43 (7.4)	57 (8.5)	72 (9.6)	86 (10.5)	100 (11.3)	115 (12.1)	129 (12.8)	287	2.21

#16 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	1990	15.52	100 (11.3)	199 (15.9)								1990	15.52
@ 125	1592	12.42	80 (10.1)	159 (14.2)	239 (17.4)							1592	12.42
@ 150	1327	10.35	66 (9.2)	133 (13.0)	199 (15.9)	265 (18.4)						1327	10.35
@ 175	1137	8.87	57 (8.5)	114 (12.0)	171 (14.8)	227 (17.0)	284 (19.0)					1137	8.87
@ 200	995	7.76	50 (8.0)	100 (11.3)	149 (13.8)	199 (15.9)	249 (17.8)					995	7.76
@ 225	884	6.90	44 (7.5)	88 (10.6)	133 (13.0)	177 (15.0)	221 (16.8)	265 (18.4)				884	6.90
@ 250	796	6.21	40 (7.1)	80 (10.1)	119 (12.3)	159 (14.2)	199 (15.9)	239 (17.4)	279 (18.8)			796	6.21
@ 275	724	5.64	36 (6.8)	72 (9.6)	109 (11.8)	145 (13.6)	181 (15.2)	217 (16.6)	253 (17.9)	290 (19.2)		724	5.64
@ 300	663	5.17	33 (6.5)	66 (9.2)	99 (11.2)	133 (13.0)	166 (14.5)	199 (15.9)	232 (17.2)	265 (18.4)		663	5.17
@ 325	612	4.78	31 (6.3)	61 (8.8)	92 (10.8)	122 (12.5)	153 (14.0)	184 (15.3)	214 (16.5)	245 (17.7)	275 (18.7)	612	4.78
@ 350	569	4.43	28 (6.0)	57 (8.5)	85 (10.4)	114 (12.0)	142 (13.4)	171 (14.8)	199 (15.9)	228 (17.0)	256 (18.1)	569	4.43
@ 375	531	4.14	27 (5.9)	53 (8.2)	80 (10.1)	106 (11.6)	133 (13.0)	159 (14.2)	186 (15.4)	212 (16.4)	239 (17.4)	531	4.14
@ 400	498	3.88	25 (5.6)	50 (8.0)	75 (9.8)	100 (11.3)	125 (12.6)	149 (13.8)	174 (14.9)	199 (15.9)	224 (16.9)	498	3.88
@ 425	468	3.65	23 (5.4)	47 (7.7)	70 (9.4)	94 (10.9)	117 (12.2)	140 (13.4)	164 (14.5)	187 (15.4)	211 (16.4)	468	3.65
@ 450	442	3.45	22 (5.3)	44 (7.5)	66 (9.2)	88 (10.6)	111 (11.9)	133 (13.0)	155 (14.0)	177 (15.0)	199 (15.9)	442	3.45

\* Mass per square meter is for one direction only. Double the mass for the same reinforcement in the other direction, or add the appropriate mass for a different pattern in the other direction. Masses per square meter are theoretical and are intended for estimating purposes only.

TABLE 4 - #19, #22, #25

## COMPARISON TABLES - REINFORCING BARS &amp; WELDED WIRE REINFORCEMENT

Rebar @ 420 MPa and Welded Wire Reinforcement @ 420 Mpa

#19 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As/ m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	2840	22.35	142 (13.4)	284 (19.0)								2840	22.35
@ 125	2272	17.88	114 (12.0)	227 (17.0)								2272	17.88
@ 150	1893	14.90	95 (11.0)	189 (15.5)	284 (19.0)							1893	14.90
@ 175	1623	12.77	81 (10.2)	162 (14.4)	243 (17.6)							1623	12.77
@ 200	1420	11.18	71 (9.5)	142 (13.4)	213 (16.5)	284 (19.0)						1420	11.18
@ 225	1262	9.93	63 (9.0)	126 (12.7)	189 (15.5)	252 (17.9)						1262	9.93
@ 250	1136	8.94	57 (8.5)	114 (12.0)	170 (14.7)	227 (17.0)	284 (19.0)					1136	8.94
@ 275	1033	8.13	52 (8.1)	103 (11.5)	155 (14.0)	207 (16.2)	258 (18.1)					1033	8.13
@ 300	947	7.45	47 (7.7)	95 (11.0)	142 (13.4)	189 (15.5)	237 (17.4)	284 (19.0)				947	7.45
@ 325	874	6.88	44 (7.5)	87 (10.5)	131 (12.9)	175 (14.9)	219 (16.7)	262 (18.3)				874	6.88
@ 350	811	6.39	41 (7.2)	81 (10.2)	122 (12.5)	162 (14.4)	203 (16.1)	243 (17.6)	284 (19.0)			811	6.39
@ 375	757	5.96	38 (7.0)	76 (9.8)	114 (12.0)	151 (13.9)	189 (15.5)	227 (17.0)	265 (18.4)			757	5.96
@ 400	710	5.59	36 (6.8)	71 (9.5)	107 (11.7)	142 (13.4)	178 (15.1)	213 (16.5)	249 (17.8)	284 (19.0)		710	5.59
@ 425	668	5.26	33 (6.5)	67 (9.2)	100 (11.3)	134 (13.0)	167 (14.6)	200 (16.0)	234 (17.3)	267 (18.4)		668	5.26
@ 450	631	4.97	32 (6.4)	63 (9.0)	95 (11.0)	126 (12.7)	158 (14.2)	189 (15.5)	221 (16.8)	252 (17.9)	284 (19.0)	631	4.97

#22 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As/ m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	3870	30.42	194 (15.7)									3870	30.42
@ 125	3096	24.34	155 (14.0)									3096	24.34
@ 150	2580	20.28	129 (12.8)	258 (18.1)								2580	20.28
@ 175	2211	17.38	111 (11.9)	221 (16.8)								2211	17.38
@ 200	1935	15.21	97 (11.1)	194 (15.7)	290 (19.2)							1935	15.21
@ 225	1720	13.52	86 (10.5)	172 (14.8)	258 (18.1)							1720	13.52
@ 250	1548	12.17	77 (9.9)	155 (14.0)	232 (17.2)							1548	12.17
@ 275	1407	11.06	70 (9.4)	141 (13.4)	211 (16.4)	281 (18.9)						1407	11.06
@ 300	1290	10.14	65 (9.1)	129 (12.8)	194 (15.7)	258 (18.1)						1290	10.14
@ 325	1191	9.36	60 (8.7)	119 (12.3)	179 (15.1)	238 (17.4)						1191	9.36
@ 350	1106	8.69	55 (8.4)	111 (11.9)	166 (14.5)	221 (16.8)	277 (18.8)					1106	8.69
@ 375	1032	8.11	52 (8.1)	103 (11.5)	155 (14.0)	206 (16.2)	258 (18.1)					1032	8.11
@ 400	968	7.61	48 (7.8)	97 (11.1)	145 (13.6)	194 (15.7)	242 (17.6)	290 (19.2)				968	7.61
@ 425	911	7.16	46 (7.7)	91 (10.8)	137 (13.2)	182 (15.2)	228 (17.0)	273 (18.6)				911	7.16
@ 450	860	6.76	43 (7.4)	86 (10.5)	129 (12.8)	172 (14.8)	215 (16.5)	258 (18.1)				860	6.76

#25 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As/ m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	5100	39.73	255 (18.0)									5100	39.73
@ 125	4080	31.78	204 (16.1)									4080	31.78
@ 150	3400	26.49	170 (14.7)									3400	26.49
@ 175	2914	22.70	146 (13.6)	291 (19.2)								2914	22.70
@ 200	2550	19.87	128 (12.8)	255 (18.0)								2550	19.87
@ 225	2267	17.66	113 (12.0)	227 (17.0)								2267	17.66
@ 250	2040	15.89	102 (11.4)	204 (16.1)								2040	15.89
@ 275	1855	14.45	93 (10.9)	186 (15.4)	278 (18.8)							1855	14.45
@ 300	1700	13.24	85 (10.4)	170 (14.7)	255 (18.0)							1700	13.24
@ 325	1569	12.22	78 (10.0)	157 (14.1)	235 (17.3)							1569	12.22
@ 350	1457	11.35	73 (9.6)	146 (13.6)	219 (16.7)							1457	11.35
@ 375	1360	10.59	68 (9.3)	136 (13.2)	204 (16.1)	272 (18.6)						1360	10.59
@ 400	1275	9.93	64 (9.0)	128 (12.8)	191 (15.6)	255 (18.0)						1275	9.93
@ 425	1200	9.35	60 (8.7)	120 (12.4)	180 (15.1)	240 (17.5)						1200	9.35
@ 450	1133	8.83	57 (8.5)	113 (12.0)	170 (14.7)	227 (17.0)	283 (19.0)					1133	8.83

\* Mass per square meter is for one direction only. Double the mass for the same reinforcement in the other direction, or add the appropriate mass for a different pattern in the other direction. Masses per square meter are theoretical and are intended for estimating purposes only.

TABLE 5 - #20, #32, #36

## COMPARISON TABLES - REINFORCING BARS &amp; WELDED WIRE REINFORCEMENT

Rebar @ 420 MPa and Welded Wire Reinforcement @ 420 Mpa

#29 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	6450	50.60										6450	50.60
@ 125	5160	40.48	258 (18.1)									5160	40.48
@ 150	4300	33.73	215 (16.5)									4300	33.73
@ 175	3686	28.91	184 (15.3)									3686	28.91
@ 200	3225	25.30	161 (14.3)									3225	25.30
@ 225	2867	22.49	143 (13.5)	287 (19.1)								2867	22.49
@ 250	2580	20.24	129 (12.8)	258 (18.1)								2580	20.24
@ 275	2345	18.40	117 (12.2)	235 (17.3)								2345	18.40
@ 300	2150	16.87	108 (11.7)	215 (16.5)								2150	16.87
@ 325	1985	15.57	99 (11.2)	199 (15.9)								1985	15.57
@ 350	1843	14.46	92 (10.8)	184 (15.3)	276 (18.7)							1843	14.46
@ 375	1720	13.49	86 (10.5)	172 (14.8)	258 (18.1)							1720	13.49
@ 400	1613	12.65	81 (10.2)	161 (14.3)	242 (17.6)							1613	12.65
@ 425	1518	11.91	76 (9.8)	152 (13.9)	228 (17.0)							1518	11.91
@ 450	1433	11.24	72 (9.6)	143 (13.5)	215 (16.5)	287 (19.1)						1433	11.24

#32 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	8190	64.04										8190	64.04
@ 125	6552	51.23										6552	51.23
@ 150	5460	42.69	273 (18.6)									5460	42.69
@ 175	4680	36.59	234 (17.3)									4680	36.59
@ 200	4095	32.02	205 (16.2)									4095	32.02
@ 225	3640	28.46	182 (15.2)									3640	28.46
@ 250	3276	25.62	164 (14.5)									3276	25.62
@ 275	2978	23.29	149 (13.8)									2978	23.29
@ 300	2730	21.35	137 (13.2)	273 (18.6)								2730	21.35
@ 325	2520	19.70	126 (12.7)	252 (17.9)								2520	19.70
@ 350	2340	18.30	117 (12.2)	234 (17.3)								2340	18.30
@ 375	2184	17.08	109 (11.8)	218 (16.7)								2184	17.08
@ 400	2048	16.01	102 (11.4)	205 (16.2)								2048	16.01
@ 425	1927	15.07	96 (11.1)	193 (15.7)	289 (19.2)							1927	15.07
@ 450	1820	14.23	91 (10.8)	182 (15.2)	273 (18.6)							1820	14.23

#36 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	10060	79.07										10060	79.07
@ 125	8048	63.26										8048	63.26
@ 150	6707	52.71										6707	52.71
@ 175	5749	45.18	287 (19.1)									5749	45.18
@ 200	5030	39.54	252 (17.9)									5030	39.54
@ 225	4471	35.14	224 (16.9)									4471	35.14
@ 250	4024	31.63	201 (16.0)									4024	31.63
@ 275	3658	28.75	183 (15.3)									3658	28.75
@ 300	3353	26.36	168 (14.6)									3353	26.36
@ 325	3095	24.33	155 (14.0)									3095	24.33
@ 350	2874	22.59	144 (13.5)	287 (19.1)								2874	22.59
@ 375	2683	21.09	134 (13.1)	268 (18.5)								2683	21.09
@ 400	2515	19.77	126 (12.7)	252 (17.9)								2515	19.77
@ 425	2367	18.60	118 (12.3)	237 (17.4)								2367	18.60
@ 450	2236	17.57	112 (11.9)	224 (16.9)								2236	17.57

\* Mass per square meter is for one direction only. Double the mass for the same reinforcement in the other direction, or add the appropriate mass for a different pattern in the other direction. Masses per square meter are theoretical and are intended for estimating purposes only.

TABLE 6 - #10, #13, #16

## COMPARISON TABLES - REINFORCING BARS &amp; WELDED WIRE REINFORCEMENT

Rebar @ 420 MPa and Welded Wire Reinforcement @ 485 Mpa

#10 Bars	A <sub>S</sub> /m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As/ m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	710	5.60	31 (6.3)	61 (8.8)	92 (10.8)	123 (12.5)	154 (14.0)	184 (15.3)	215 (16.5)	246 (17.7)	277 (18.8)	710	5.60
@ 125	568	4.48	25 (5.6)	49 (7.9)	74 (9.7)	98 (11.2)	123 (12.5)	148 (13.7)	172 (14.8)	197 (15.8)	221 (16.8)	568	4.48
@ 150	473	3.73	20 (5.0)	41 (7.2)	61 (8.8)	82 (10.2)	102 (11.4)	123 (12.5)	143 (13.5)	164 (14.5)	184 (15.3)	473	3.73
@ 175	406	3.20	18 (4.8)	35 (6.7)	53 (8.2)	70 (9.5)	88 (10.6)	105 (11.6)	123 (12.5)	141 (13.4)	158 (14.2)	406	3.20
@ 200	355	2.80	15 (4.4)	31 (6.3)	46 (7.7)	62 (8.8)	77 (9.9)	92 (10.8)	108 (11.7)	123 (12.5)	138 (13.3)	355	2.80
@ 225	316	2.49	14 (4.2)	27 (5.9)	41 (7.2)	55 (8.3)	68 (9.3)	82 (10.2)	96 (11.1)	109 (11.8)	123 (12.5)	316	2.49
@ 250	284	2.24	12 (3.9)	25 (5.6)	37 (6.9)	49 (7.9)	61 (8.8)	74 (9.7)	86 (10.5)	98 (11.2)	111 (11.9)	284	2.24
@ 275	258	2.04	11 (3.7)	22 (5.3)	34 (6.6)	45 (7.5)	56 (8.4)	67 (9.2)	78 (10.0)	89 (10.6)	101 (11.3)	258	2.04
@ 300	237	1.87	10 (3.6)	21 (5.2)	31 (6.3)	41 (7.2)	51 (8.1)	62 (8.9)	72 (9.6)	82 (10.2)	92 (10.8)	237	1.87
@ 325	218	1.72	9 (3.4)	19 (4.9)	28 (6.0)	38 (6.9)	47 (7.7)	57 (8.5)	66 (9.2)	76 (9.8)	85 (10.4)	218	1.72
@ 350	203	1.60	9 (3.4)	18 (4.8)	26 (5.8)	35 (6.7)	44 (7.5)	53 (8.2)	62 (8.9)	70 (9.4)	79 (10.0)	203	1.60
@ 375	189	1.49	8 (3.2)	16 (4.5)	25 (5.6)	33 (6.5)	41 (7.2)	49 (7.9)	57 (8.5)	65 (9.1)	74 (9.7)	189	1.49
@ 400	178	1.40	8 (3.2)	15 (4.4)	23 (5.4)	31 (6.3)	39 (7.0)	46 (7.7)	54 (8.3)	62 (8.9)	69 (9.4)	178	1.40
@ 425	167	1.32	7 (3.0)	14 (4.2)	22 (5.3)	29 (6.1)	36 (6.8)	43 (7.4)	51 (8.1)	58 (8.6)	65 (9.1)	167	1.32
@ 450	158	1.24	7 (3.0)	14 (4.2)	21 (5.2)	27 (5.9)	34 (6.6)	41 (7.2)	48 (7.8)	55 (8.4)	62 (8.9)	158	1.24

#13 Bars	A <sub>S</sub> /m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As/ m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	1290	9.94	56 (8.4)	112 (11.9)	168 (14.6)	223 (16.9)	279 (18.8)					1290	9.94
@ 125	1032	7.95	45 (7.6)	89 (10.6)	134 (13.1)	179 (15.1)	223 (16.9)	268 (18.5)				1032	7.95
@ 150	860	6.63	37 (6.9)	74 (9.7)	112 (11.9)	149 (13.8)	186 (15.4)	223 (16.9)	261 (18.2)			860	6.63
@ 175	737	5.68	32 (6.4)	64 (9.0)	96 (11.1)	128 (12.7)	160 (14.3)	191 (15.6)	223 (16.9)	255 (18.0)	287 (19.1)	737	5.68
@ 200	645	4.97	28 (6.0)	56 (8.4)	84 (10.3)	112 (11.9)	140 (13.4)	168 (14.6)	195 (15.8)	223 (16.9)	251 (17.9)	645	4.97
@ 225	573	4.42	25 (5.6)	50 (8.0)	74 (9.7)	99 (11.2)	124 (12.6)	149 (13.8)	174 (14.9)	198 (15.9)	223 (16.9)	573	4.42
@ 250	516	3.98	22 (5.3)	45 (7.6)	67 (9.2)	89 (10.7)	112 (11.9)	134 (13.1)	156 (14.1)	179 (15.1)	201 (16.0)	516	3.98
@ 275	469	3.61	20 (5.0)	41 (7.2)	61 (8.8)	81 (10.2)	102 (11.4)	122 (12.5)	142 (13.4)	162 (14.4)	183 (15.3)	469	3.61
@ 300	430	3.31	19 (4.9)	37 (6.9)	56 (8.4)	75 (9.7)	93 (10.9)	112 (11.9)	130 (12.9)	149 (13.8)	168 (14.6)	430	3.31
@ 325	397	3.06	17 (4.7)	34 (6.6)	52 (8.1)	69 (9.4)	86 (10.5)	103 (11.5)	120 (12.4)	138 (13.3)	155 (14.0)	397	3.06
@ 350	369	2.84	16 (4.5)	32 (6.4)	48 (7.8)	64 (9.0)	80 (10.1)	96 (11.1)	112 (11.9)	128 (12.8)	144 (13.5)	369	2.84
@ 375	344	2.65	15 (4.4)	30 (6.2)	45 (7.6)	60 (8.7)	74 (9.7)	89 (10.6)	104 (11.5)	119 (12.3)	134 (13.1)	344	2.65
@ 400	323	2.49	14 (4.2)	28 (6.0)	42 (7.3)	56 (8.4)	70 (9.4)	84 (10.3)	98 (11.2)	112 (11.9)	126 (12.7)	323	2.49
@ 425	304	2.34	13 (4.1)	26 (5.8)	39 (7.0)	53 (8.2)	66 (9.2)	79 (10.0)	92 (10.8)	105 (11.6)	118 (12.3)	304	2.34
@ 450	287	2.21	12 (3.9)	25 (5.6)	37 (6.9)	50 (8.0)	62 (8.9)	75 (9.8)	87 (10.5)	99 (11.2)	112 (11.9)	287	2.21

#16 Bars	A <sub>S</sub> /m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As/ m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	1990	15.52	86 (10.5)	172 (14.8)	258 (18.1)							1990	15.52
@ 125	1592	12.42	69 (9.4)	138 (13.3)	207 (16.2)	276 (18.7)						1592	12.42
@ 150	1327	10.35	57 (8.5)	115 (12.1)	172 (14.8)	230 (17.1)	287 (19.1)					1327	10.35
@ 175	1137	8.87	49 (7.9)	98 (11.2)	148 (13.7)	197 (15.8)	246 (17.7)					1137	8.87
@ 200	995	7.76	43 (7.4)	86 (10.5)	129 (12.8)	172 (14.8)	215 (16.5)	258 (18.1)				995	7.76
@ 225	884	6.90	38 (7.0)	77 (9.9)	115 (12.1)	153 (14.0)	191 (15.6)	230 (17.1)	268 (18.5)			884	6.90
@ 250	796	6.21	34 (6.6)	69 (9.4)	103 (11.5)	138 (13.3)	172 (14.8)	207 (16.2)	241 (17.5)	276 (18.7)		796	6.21
@ 275	724	5.64	31 (6.3)	63 (9.0)	94 (10.9)	125 (12.6)	157 (14.1)	188 (15.5)	219 (16.7)	251 (17.9)	282 (18.9)	724	5.64
@ 300	663	5.17	29 (6.1)	57 (8.5)	86 (10.5)	115 (12.1)	144 (13.5)	172 (14.8)	201 (16.0)	230 (17.1)	258 (18.1)	663	5.17
@ 325	612	4.78	26 (5.8)	53 (8.2)	79 (10.0)	106 (11.6)	132 (13.0)	159 (14.2)	185 (15.3)	212 (16.4)	238 (17.4)	612	4.78
@ 350	569	4.43	25 (5.6)	49 (7.9)	74 (9.7)	99 (11.2)	123 (12.5)	148 (13.7)	172 (14.8)	197 (15.8)	222 (16.8)	569	4.43
@ 375	531	4.14	23 (5.4)	46 (7.7)	69 (9.4)	92 (10.8)	115 (12.1)	138 (13.3)	161 (14.3)	184 (15.3)	207 (16.2)	531	4.14
@ 400	498	3.88	22 (5.3)	43 (7.4)	65 (9.1)	86 (10.5)	108 (11.7)	129 (12.8)	151 (13.9)	173 (14.8)	194 (15.7)	498	3.88
@ 425	468	3.65	20 (5.0)	41 (7.2)	61 (8.8)	81 (10.2)	101 (11.3)	122 (12.5)	142 (13.4)	162 (14.4)	182 (15.2)	468	3.65
@ 450	442	3.45	19 (4.9)	38 (7.0)	57 (8.5)	77 (9.9)	96 (11.1)	115 (12.1)	134 (13.1)	153 (14.0)	172 (14.8)	442	3.45

\* Mass per square meter is for one direction only. Double the mass for the same reinforcement in the other direction, or add the appropriate mass for a different pattern in the other direction. Masses per square meter are theoretical and are intended for estimating purposes only.

TABLE 7 - #19, #22, #25

## COMPARISON TABLES - REINFORCING BARS &amp; WELDED WIRE REINFORCEMENT

Rebar @ 420 MPa and Welded Wire Reinforcement @ 485 Mpa

#19 Bars	A <sub>S</sub> /m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)								WWR As/ m	WWR kg/m <sup>2</sup>	
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm			450mm
@ 100	2840	22.35	123 (12.5)	246 (17.7)								2840	22.35
@ 125	2272	17.88	98 (11.2)	197 (15.8)								2272	17.88
@ 150	1893	14.90	82 (10.2)	164 (14.5)	246 (17.7)							1893	14.90
@ 175	1623	12.77	70 (9.4)	141 (13.4)	211 (16.4)	281 (18.9)						1623	12.77
@ 200	1420	11.18	61 (8.8)	123 (12.5)	184 (15.3)	246 (17.7)						1420	11.18
@ 225	1262	9.93	55 (8.4)	109 (11.8)	164 (14.5)	219 (16.7)	273 (18.6)					1262	9.93
@ 250	1136	8.94	49 (7.9)	98 (11.2)	148 (13.7)	197 (15.8)	246 (17.7)					1136	8.94
@ 275	1033	8.13	45 (7.6)	89 (10.6)	134 (13.1)	179 (15.1)	224 (16.9)	268 (18.5)				1033	8.13
@ 300	947	7.45	41 (7.2)	82 (10.2)	123 (12.5)	164 (14.5)	205 (16.2)	246 (17.7)	287 (19.1)			947	7.45
@ 325	874	6.88	38 (7.0)	76 (9.8)	114 (12.0)	151 (13.9)	189 (15.5)	227 (17.0)	265 (18.4)			874	6.88
@ 350	811	6.39	35 (6.7)	70 (9.4)	105 (11.6)	141 (13.4)	176 (15.0)	211 (16.4)	246 (17.7)	281 (18.9)		811	6.39
@ 375	757	5.96	33 (6.5)	66 (9.2)	98 (11.2)	131 (12.9)	164 (14.5)	197 (15.8)	229 (17.1)	262 (18.3)		757	5.96
@ 400	710	5.59	31 (6.3)	61 (8.8)	92 (10.8)	123 (12.5)	154 (14.0)	184 (15.3)	215 (16.5)	246 (17.7)	277 (18.8)	710	5.59
@ 425	668	5.26	29 (6.1)	58 (8.6)	87 (10.5)	116 (12.1)	145 (13.6)	174 (14.9)	202 (16.0)	231 (17.1)	260 (18.2)	668	5.26
@ 450	631	4.97	27 (5.9)	55 (8.4)	82 (10.2)	109 (11.8)	137 (13.2)	164 (14.5)	191 (15.6)	219 (16.7)	246 (17.7)	631	4.97

#22 Bars	A <sub>S</sub> /m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)								WWR As/ m	WWR kg/m <sup>2</sup>	
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm			450mm
@ 100	3870	30.42	168 (14.6)									3870	30.42
@ 125	3096	24.34	134 (13.1)	268 (18.5)								3096	24.34
@ 150	2580	20.28	112 (11.9)	223 (16.9)								2580	20.28
@ 175	2211	17.38	96 (11.1)	191 (15.6)	287 (19.1)							2211	17.38
@ 200	1935	15.21	84 (10.3)	168 (14.6)	251 (17.9)							1935	15.21
@ 225	1720	13.52	74 (9.7)	149 (13.8)	223 (16.9)							1720	13.52
@ 250	1548	12.17	67 (9.2)	134 (13.1)	201 (16.0)	268 (18.5)						1548	12.17
@ 275	1407	11.06	61 (8.8)	122 (12.5)	183 (15.3)	244 (17.6)						1407	11.06
@ 300	1290	10.14	56 (8.4)	112 (11.9)	168 (14.6)	223 (16.9)	279 (18.8)					1290	10.14
@ 325	1191	9.36	52 (8.1)	103 (11.5)	155 (14.0)	206 (16.2)	258 (18.1)					1191	9.36
@ 350	1106	8.69	48 (7.8)	96 (11.1)	144 (13.5)	192 (15.6)	239 (17.4)	287 (19.1)				1106	8.69
@ 375	1032	8.11	45 (7.6)	89 (10.6)	134 (13.1)	179 (15.1)	223 (16.9)	268 (18.5)				1032	8.11
@ 400	968	7.61	42 (7.3)	84 (10.3)	126 (12.7)	168 (14.6)	210 (16.4)	251 (17.9)				968	7.61
@ 425	911	7.16	39 (7.0)	79 (10.0)	118 (12.3)	158 (14.2)	197 (15.8)	237 (17.4)	276 (18.7)			911	7.16
@ 450	860	6.76	37 (6.9)	74 (9.7)	112 (11.9)	149 (13.8)	186 (15.4)	223 (16.9)	261 (18.2)			860	6.76

#25 Bars	A <sub>S</sub> /m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)								WWR As/ m	WWR kg/m <sup>2</sup>	
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm			450mm
@ 100	5100	39.73	221 (16.8)									5100	39.73
@ 125	4080	31.78	177 (15.0)									4080	31.78
@ 150	3400	26.49	147 (13.7)									3400	26.49
@ 175	2914	22.70	126 (12.7)	252 (17.9)								2914	22.70
@ 200	2550	19.87	110 (11.8)	221 (16.8)								2550	19.87
@ 225	2267	17.66	98 (11.2)	196 (15.8)								2267	17.66
@ 250	2040	15.89	88 (10.6)	177 (15.0)	265 (18.4)							2040	15.89
@ 275	1855	14.45	80 (10.1)	161 (14.3)	241 (17.5)							1855	14.45
@ 300	1700	13.24	74 (9.7)	147 (13.7)	221 (16.8)							1700	13.24
@ 325	1569	12.22	68 (9.3)	136 (13.2)	204 (16.1)	272 (18.6)						1569	12.22
@ 350	1457	11.35	63 (9.0)	126 (12.7)	189 (15.5)	252 (17.9)						1457	11.35
@ 375	1360	10.59	59 (8.7)	118 (12.3)	177 (15.0)	236 (17.3)						1360	10.59
@ 400	1275	9.93	55 (8.4)	110 (11.8)	166 (14.5)	221 (16.8)	276 (18.7)					1275	9.93
@ 425	1200	9.35	52 (8.1)	104 (11.5)	156 (14.1)	208 (16.3)	260 (18.2)					1200	9.35
@ 450	1133	8.83	49 (7.9)	98 (11.2)	147 (13.7)	196 (15.8)	245 (17.7)					1133	8.83

\* Mass per square meter is for one direction only. Double the mass for the same reinforcement in the other direction, or add the appropriate mass for a different pattern in the other direction. Masses per square meter are theoretical and are intended for estimating purposes only.



TABLE 8 - #29, #32, #36

## COMPARISON TABLES - REINFORCING BARS &amp; WELDED WIRE REINFORCEMENT

Rebar @ 420 MPa and Welded Wire Reinforcement @ 485 Mpa

#29 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	6450	50.60	279 (18.8)									6450	50.60
@ 125	5160	40.48	223 (16.9)									5160	40.48
@ 150	4300	33.73	186 (15.4)									4300	33.73
@ 175	3686	28.91	160 (14.3)									3686	28.91
@ 200	3225	25.30	140 (13.4)	279 (18.8)								3225	25.30
@ 225	2867	22.49	124 (12.6)	248 (17.8)								2867	22.49
@ 250	2580	20.24	112 (11.9)	223 (16.9)								2580	20.24
@ 275	2345	18.40	102 (11.4)	203 (16.1)								2345	18.40
@ 300	2150	16.87	93 (10.9)	186 (15.4)	279 (18.8)							2150	16.87
@ 325	1985	15.57	86 (10.5)	172 (14.8)	258 (18.1)							1985	15.57
@ 350	1843	14.46	80 (10.1)	160 (14.3)	239 (17.4)							1843	14.46
@ 375	1720	13.49	74 (9.7)	149 (13.8)	223 (16.9)							1720	13.49
@ 400	1613	12.65	70 (9.4)	140 (13.4)	210 (16.4)	279 (18.9)						1613	12.65
@ 425	1518	11.91	66 (9.2)	131 (12.9)	197 (15.8)	263 (18.3)						1518	11.91
@ 450	1433	11.24	62 (8.9)	124 (12.6)	186 (15.4)	248 (17.8)						1433	11.24

#32 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	8190	64.04										8190	64.04
@ 125	6552	51.23	284 (19.0)									6552	51.23
@ 150	5460	42.69	236 (17.3)									5460	42.69
@ 175	4680	36.59	203 (16.1)									4680	36.59
@ 200	4095	32.02	177 (15.0)									4095	32.02
@ 225	3640	28.46	158 (14.2)									3640	28.46
@ 250	3276	25.62	142 (13.4)	284 (19.0)								3276	25.62
@ 275	2978	23.29	129 (12.8)	258 (18.1)								2978	23.29
@ 300	2730	21.35	118 (12.3)	236 (17.3)								2730	21.35
@ 325	2520	19.70	109 (11.8)	218 (16.7)								2520	19.70
@ 350	2340	18.30	101 (11.3)	203 (16.1)								2340	18.30
@ 375	2184	17.08	95 (11.0)	189 (15.5)	284 (19.0)							2184	17.08
@ 400	2048	16.01	89 (10.6)	177 (15.0)	266 (18.4)							2048	16.01
@ 425	1927	15.07	83 (10.3)	167 (14.6)	250 (17.8)							1927	15.07
@ 450	1820	14.23	79 (10.0)	158 (14.2)	236 (17.3)							1820	14.23

#36 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	10060	79.07										10060	79.07
@ 125	8048	63.26										8048	63.26
@ 150	6707	52.71	290 (19.2)									6707	52.71
@ 175	5749	45.18	249 (17.8)									5749	45.18
@ 200	5030	39.54	218 (16.7)									5030	39.54
@ 225	4471	35.14	194 (15.7)									4471	35.14
@ 250	4024	31.63	174 (14.9)									4024	31.63
@ 275	3658	28.75	158 (14.2)									3658	28.75
@ 300	3353	26.36	145 (13.6)	290 (19.2)								3353	26.36
@ 325	3095	24.33	134 (13.1)	268 (18.5)								3095	24.33
@ 350	2874	22.59	124 (12.6)	249 (17.8)								2874	22.59
@ 375	2683	21.09	116 (12.2)	232 (17.2)								2683	21.09
@ 400	2515	19.77	109 (11.8)	218 (16.7)								2515	19.77
@ 425	2367	18.60	102 (11.4)	205 (16.2)								2367	18.60
@ 450	2236	17.57	97 (11.1)	194 (15.7)	290 (19.2)							2236	17.57

\* Mass per square meter is for one direction only. Double the mass for the same reinforcement in the other direction, or add the appropriate mass for a different pattern in the other direction. Masses per square meter are theoretical and are intended for estimating purposes only.

TABLE 9 - #10, #13, #16

## COMPARISON TABLES - REINFORCING BARS &amp; WELDED WIRE REINFORCEMENT

Rebar @ 420 MPa and Welded Wire Reinforcement @ 520 Mpa

#10 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	710	5.60	29 (6.1)	57 (8.5)	86 (10.5)	115 (12.1)	143 (13.5)	172 (14.8)	201 (16.0)	229 (17.1)	258 (18.1)	710	5.60
@ 125	568	4.48	23 (5.4)	46 (7.7)	69 (9.4)	92 (10.8)	115 (12.1)	138 (13.3)	161 (14.3)	184 (15.3)	206 (16.2)	568	4.48
@ 150	473	3.73	19 (4.9)	38 (7.0)	57 (8.5)	76 (9.9)	96 (11.1)	115 (12.1)	134 (13.1)	153 (14.0)	172 (14.8)	473	3.73
@ 175	406	3.20	16 (4.5)	33 (6.5)	49 (7.9)	66 (9.1)	82 (10.2)	98 (11.2)	115 (12.1)	131 (12.9)	148 (13.7)	406	3.20
@ 200	355	2.80	14 (4.2)	29 (6.1)	43 (7.4)	57 (8.5)	72 (9.6)	86 (10.5)	100 (11.3)	115 (12.1)	129 (12.8)	355	2.80
@ 225	316	2.49	13 (4.1)	26 (5.8)	38 (7.0)	51 (8.1)	64 (9.0)	77 (9.9)	89 (10.6)	102 (11.4)	115 (12.1)	316	2.49
@ 250	284	2.24	11 (3.7)	23 (5.4)	34 (6.6)	46 (7.6)	57 (8.5)	69 (9.4)	80 (10.1)	92 (10.8)	103 (11.5)	284	2.24
@ 275	258	2.04	10 (3.6)	21 (5.2)	31 (6.3)	42 (7.3)	52 (8.1)	63 (9.0)	73 (9.6)	83 (10.3)	94 (10.9)	258	2.04
@ 300	237	1.87	10 (3.6)	19 (4.9)	29 (6.1)	38 (7.0)	48 (7.8)	57 (8.5)	67 (9.2)	77 (9.9)	86 (10.5)	237	1.87
@ 325	218	1.72	9 (3.4)	18 (4.8)	26 (5.8)	35 (6.7)	44 (7.5)	53 (8.2)	62 (8.9)	70 (9.4)	79 (10.0)	218	1.72
@ 350	203	1.60	8 (3.2)	16 (4.5)	25 (5.6)	33 (6.5)	41 (7.2)	49 (7.9)	57 (8.5)	66 (9.2)	74 (9.7)	203	1.60
@ 375	189	1.49	8 (3.2)	15 (4.4)	23 (5.4)	31 (6.2)	38 (7.0)	46 (7.7)	53 (8.2)	61 (8.8)	69 (9.4)	189	1.49
@ 400	178	1.40	7 (3.0)	14 (4.2)	22 (5.3)	29 (6.1)	36 (6.8)	43 (7.4)	50 (8.0)	58 (8.6)	65 (9.1)	178	1.40
@ 425	167	1.32	7 (3.0)	13 (4.1)	20 (5.0)	27 (5.9)	34 (6.6)	40 (7.1)	47 (7.7)	54 (8.3)	61 (8.8)	167	1.32
@ 450	158	1.24	6 (2.8)	13 (4.1)	19 (4.9)	26 (5.7)	32 (6.4)	38 (7.0)	45 (7.6)	51 (8.1)	57 (8.5)	158	1.24

#13 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	1290	9.94	52 (8.1)	104 (11.5)	156 (14.1)	208 (16.3)	260 (18.2)					1290	9.94
@ 125	1032	7.95	42 (7.3)	83 (10.3)	125 (12.6)	167 (14.6)	208 (16.3)	250 (17.8)				1032	7.95
@ 150	860	6.63	35 (6.7)	69 (9.4)	104 (11.5)	139 (13.3)	174 (14.9)	208 (16.3)	243 (17.6)	278 (18.8)		860	6.63
@ 175	737	5.68	30 (6.2)	60 (8.7)	89 (10.6)	119 (12.3)	149 (13.8)	179 (15.1)	208 (16.3)	238 (17.4)	268 (18.5)	737	5.68
@ 200	645	4.97	26 (5.8)	52 (8.1)	78 (10.0)	104 (11.5)	130 (12.9)	156 (14.1)	182 (15.2)	208 (16.3)	234 (17.3)	645	4.97
@ 225	573	4.42	23 (5.4)	46 (7.7)	69 (9.4)	93 (10.9)	116 (12.2)	139 (13.3)	162 (14.4)	185 (15.3)	208 (16.3)	573	4.42
@ 250	516	3.98	21 (5.2)	42 (7.3)	63 (9.0)	83 (10.3)	104 (11.5)	125 (12.6)	146 (13.6)	167 (14.6)	188 (15.5)	516	3.98
@ 275	469	3.61	19 (4.9)	38 (7.0)	57 (8.5)	76 (9.8)	95 (11.0)	114 (12.0)	133 (13.0)	152 (13.9)	170 (14.7)	469	3.61
@ 300	430	3.31	17 (4.7)	35 (6.7)	52 (8.1)	70 (9.4)	87 (10.5)	104 (11.5)	122 (12.5)	139 (13.3)	156 (14.1)	430	3.31
@ 325	397	3.06	16 (4.5)	32 (6.4)	48 (7.8)	64 (9.0)	80 (10.1)	96 (11.1)	112 (11.9)	128 (12.8)	144 (13.5)	397	3.06
@ 350	369	2.84	15 (4.4)	30 (6.2)	45 (7.6)	60 (8.7)	75 (9.8)	89 (10.6)	104 (11.5)	119 (12.3)	134 (13.1)	369	2.84
@ 375	344	2.65	14 (4.2)	28 (6.0)	42 (7.3)	56 (8.4)	69 (9.4)	83 (10.3)	97 (11.1)	111 (11.9)	125 (12.6)	344	2.65
@ 400	323	2.49	13 (4.1)	26 (5.8)	39 (7.0)	52 (8.2)	65 (9.1)	78 (10.0)	91 (10.8)	104 (11.5)	117 (12.2)	323	2.49
@ 425	304	2.34	12 (3.9)	25 (5.6)	37 (6.9)	49 (7.9)	61 (8.8)	74 (9.7)	86 (10.5)	98 (11.2)	110 (11.8)	304	2.34
@ 450	287	2.21	12 (3.9)	23 (5.4)	35 (6.7)	46 (7.7)	58 (8.6)	70 (9.4)	81 (10.2)	93 (10.9)	104 (11.5)	287	2.21

#16 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	1990	15.52	80 (10.1)	161 (14.3)	241 (17.5)							1990	15.52
@ 125	1592	12.42	64 (9.0)	129 (12.8)	193 (15.7)	257 (18.1)						1592	12.42
@ 150	1327	10.35	54 (8.3)	107 (11.7)	161 (14.3)	214 (16.5)	268 (18.5)					1327	10.35
@ 175	1137	8.87	46 (7.7)	92 (10.8)	138 (13.3)	184 (15.3)	230 (17.1)	276 (18.7)				1137	8.87
@ 200	995	7.76	40 (7.1)	80 (10.1)	121 (12.4)	161 (14.3)	201 (16.0)	241 (17.5)	281 (18.9)			995	7.76
@ 225	884	6.90	36 (6.8)	71 (9.5)	107 (11.7)	143 (13.5)	179 (15.1)	214 (16.5)	250 (17.8)	286 (19.1)		884	6.90
@ 250	796	6.21	32 (6.4)	64 (9.0)	96 (11.1)	129 (12.8)	161 (14.3)	193 (15.7)	225 (16.9)	257 (18.1)		796	6.21
@ 275	724	5.64	29 (6.1)	58 (8.6)	88 (10.6)	117 (12.2)	146 (13.6)	175 (14.9)	205 (16.2)	234 (17.3)	263 (18.3)	724	5.64
@ 300	663	5.17	27 (5.9)	54 (8.3)	80 (10.1)	107 (11.7)	134 (13.1)	161 (14.3)	187 (15.4)	214 (16.5)	241 (17.5)	663	5.17
@ 325	612	4.78	25 (5.6)	49 (7.9)	74 (9.7)	99 (11.2)	124 (12.6)	148 (13.7)	173 (14.8)	198 (15.9)	222 (16.8)	612	4.78
@ 350	569	4.43	23 (5.4)	46 (7.7)	69 (9.4)	92 (10.8)	115 (12.1)	138 (13.3)	161 (14.3)	184 (15.3)	207 (16.2)	569	4.43
@ 375	531	4.14	21 (5.2)	43 (7.4)	64 (9.0)	86 (10.5)	107 (11.7)	129 (12.8)	150 (13.8)	172 (14.8)	193 (15.7)	531	4.14
@ 400	498	3.88	20 (5.0)	40 (7.1)	60 (8.7)	80 (10.1)	101 (11.3)	121 (12.4)	141 (13.4)	161 (14.3)	181 (15.2)	498	3.88
@ 425	468	3.65	19 (4.9)	38 (7.0)	57 (8.5)	76 (9.8)	95 (11.0)	113 (12.0)	132 (13.0)	151 (13.9)	170 (14.7)	468	3.65
@ 450	442	3.45	18 (4.8)	36 (6.8)	54 (8.3)	71 (9.5)	89 (10.6)	107 (11.7)	125 (12.6)	143 (13.5)	161 (14.3)	442	3.45

\* Mass per square meter is for one direction only. Double the mass for the same reinforcement in the other direction, or add the appropriate mass for a different pattern in the other direction. Masses per square meter are theoretical and are intended for estimating purposes only.

TABLE 10 - #19, #22, #25

## COMPARISON TABLES - REINFORCING BARS &amp; WELDED WIRE REINFORCEMENT

Rebar @ 420 MPa and Welded Wire Reinforcement @ 520 Mpa

#19 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	2840	22.35	115 (12.1)	229 (17.1)								2840	22.35
@ 125	2272	17.88	92 (10.8)	184 (15.3)	275 (18.7)							2272	17.88
@ 150	1893	14.90	76 (9.8)	153 (14.0)	229 (17.1)							1893	14.90
@ 175	1623	12.77	66 (9.2)	131 (12.9)	197 (15.8)	262 (18.3)						1623	12.77
@ 200	1420	11.18	57 (8.5)	115 (12.1)	172 (14.8)	229 (17.1)	287 (19.1)					1420	11.18
@ 225	1262	9.93	51 (8.1)	102 (11.4)	153 (14.0)	204 (16.1)	255 (18.0)					1262	9.93
@ 250	1136	8.94	46 (7.7)	92 (10.8)	138 (13.3)	184 (15.3)	229 (17.1)	275 (18.7)				1136	8.94
@ 275	1033	8.13	42 (7.3)	83 (10.3)	125 (12.6)	167 (14.6)	209 (16.3)	250 (17.8)				1033	8.13
@ 300	947	7.45	38 (7.0)	76 (9.8)	115 (12.1)	153 (14.0)	191 (15.6)	229 (17.1)	268 (18.5)			947	7.45
@ 325	874	6.88	35 (6.7)	71 (9.5)	106 (11.6)	141 (13.4)	176 (15.0)	212 (16.4)	247 (17.7)	282 (18.9)		874	6.88
@ 350	811	6.39	33 (6.5)	66 (9.2)	98 (11.2)	131 (12.9)	164 (14.5)	197 (15.8)	229 (17.1)	262 (18.3)		811	6.39
@ 375	757	5.96	31 (6.3)	61 (8.8)	92 (10.8)	122 (12.5)	153 (14.0)	183 (15.3)	214 (16.5)	245 (17.7)	275 (18.7)	757	5.96
@ 400	710	5.59	29 (6.1)	57 (8.5)	86 (10.5)	115 (12.1)	143 (13.5)	172 (14.8)	201 (16.0)	229 (17.1)	258 (18.1)	710	5.59
@ 425	668	5.26	27 (5.9)	54 (8.3)	81 (10.2)	108 (11.7)	135 (13.1)	162 (14.4)	189 (15.5)	216 (16.6)	243 (17.6)	668	5.26
@ 450	631	4.97	25 (5.6)	51 (8.1)	76 (9.8)	102 (11.4)	127 (12.7)	153 (14.0)	178 (15.1)	204 (16.1)	229 (17.1)	631	4.97

#22 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	3870	30.42	156 (14.1)									3870	30.42
@ 125	3096	24.34	125 (12.6)	250 (17.8)								3096	24.34
@ 150	2580	20.28	104 (11.5)	208 (16.3)								2580	20.28
@ 175	2211	17.38	89 (10.6)	179 (15.1)	268 (18.5)							2211	17.38
@ 200	1935	15.21	78 (10.0)	156 (14.1)	234 (17.3)							1935	15.21
@ 225	1720	13.52	69 (9.4)	139 (13.3)	208 (16.3)	278 (18.8)						1720	13.52
@ 250	1548	12.17	63 (9.0)	125 (12.6)	188 (15.5)	250 (17.8)						1548	12.17
@ 275	1407	11.06	57 (8.5)	114 (12.0)	170 (14.7)	227 (17.0)	284 (19.0)					1407	11.06
@ 300	1290	10.14	52 (8.1)	104 (11.5)	156 (14.1)	208 (16.3)	260 (18.2)					1290	10.14
@ 325	1191	9.36	48 (7.8)	96 (11.1)	144 (13.5)	192 (15.7)	240 (17.5)	289 (19.2)				1191	9.36
@ 350	1106	8.69	45 (7.6)	89 (10.6)	134 (13.1)	179 (15.1)	223 (16.9)	268 (18.5)				1106	8.69
@ 375	1032	8.11	42 (7.3)	83 (10.3)	125 (12.6)	167 (14.6)	208 (16.3)	250 (17.8)				1032	8.11
@ 400	968	7.61	39 (7.0)	78 (10.0)	117 (12.2)	156 (14.1)	195 (15.8)	235 (17.3)	274 (18.7)			968	7.61
@ 425	911	7.16	37 (6.9)	74 (9.7)	110 (11.8)	147 (13.7)	184 (15.3)	221 (16.8)	258 (18.1)			911	7.16
@ 450	860	6.76	35 (6.7)	69 (9.4)	104 (11.5)	139 (13.3)	174 (14.9)	208 (16.3)	243 (17.6)	278 (18.8)		860	6.76

#25 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	5100	39.73	206 (16.2)									5100	39.73
@ 125	4080	31.78	165 (14.5)									4080	31.78
@ 150	3400	26.49	137 (13.2)	275 (18.7)								3400	26.49
@ 175	2914	22.70	118 (12.3)	235 (17.3)								2914	22.70
@ 200	2550	19.87	103 (11.5)	206 (16.2)								2550	19.87
@ 225	2267	17.66	92 (10.8)	183 (15.3)	275 (18.7)							2267	17.66
@ 250	2040	15.89	82 (10.2)	165 (14.5)	247 (17.7)							2040	15.89
@ 275	1855	14.45	75 (9.8)	150 (13.8)	225 (16.9)							1855	14.45
@ 300	1700	13.24	69 (9.4)	137 (13.2)	206 (16.2)	275 (18.7)						1700	13.24
@ 325	1569	12.22	63 (9.0)	127 (12.7)	190 (15.6)	254 (18.0)						1569	12.22
@ 350	1457	11.35	59 (8.7)	118 (12.3)	177 (15.0)	235 (17.3)						1457	11.35
@ 375	1360	10.59	55 (8.4)	110 (11.8)	165 (14.5)	220 (16.7)	275 (18.7)					1360	10.59
@ 400	1275	9.93	51 (8.1)	103 (11.5)	154 (14.0)	206 (16.2)	257 (18.1)					1275	9.93
@ 425	1200	9.35	48 (7.8)	97 (11.1)	145 (13.6)	194 (15.7)	242 (17.6)					1200	9.35
@ 450	1133	8.83	46 (7.7)	92 (10.8)	137 (13.2)	183 (15.3)	229 (17.1)	275 (18.7)				1133	8.83

\* Mass per square meter is for one direction only. Double the mass for the same reinforcement in the other direction, or add the appropriate mass for a different pattern in the other direction. Masses per square meter are theoretical and are intended for estimating purposes only.

TABLE 11 - #29, #32, #36

## COMPARISON TABLES - REINFORCING BARS &amp; WELDED WIRE REINFORCEMENT

Rebar @ 420 MPa and Welded Wire Reinforcement @ 520 Mpa

#29 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	6450	50.60	260 (18.2)									6450	50.60
@ 125	5160	40.48	208 (16.3)									5160	40.48
@ 150	4300	33.73	174 (14.9)									4300	33.73
@ 175	3686	28.91	149 (13.8)									3686	28.91
@ 200	3225	25.30	130 (12.9)	260 (18.2)								3225	25.30
@ 225	2867	22.49	116 (12.2)	232 (17.2)								2867	22.49
@ 250	2580	20.24	104 (11.5)	208 (16.3)								2580	20.24
@ 275	2345	18.40	95 (11.0)	189 (15.5)	284 (19.0)							2345	18.40
@ 300	2150	16.87	87 (10.5)	174 (14.9)	260 (18.2)							2150	16.87
@ 325	1985	15.57	80 (10.1)	160 (14.3)	240 (17.5)							1985	15.57
@ 350	1843	14.46	74 (9.7)	149 (13.8)	223 (16.9)							1843	14.46
@ 375	1720	13.49	69 (9.4)	139 (13.3)	208 (16.3)	278 (18.8)						1720	13.49
@ 400	1613	12.65	65 (9.1)	130 (12.9)	195 (15.8)	261 (18.2)						1613	12.65
@ 425	1518	11.91	61 (8.8)	123 (12.5)	184 (15.3)	245 (17.7)						1518	11.91
@ 450	1433	11.24	58 (8.6)	116 (12.2)	174 (14.9)	232 (17.2)						1433	11.24

#32 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	8190	64.04										8190	64.04
@ 125	6552	51.23	265 (18.4)									6552	51.23
@ 150	5460	42.69	221 (16.8)									5460	42.69
@ 175	4680	36.59	189 (15.5)									4680	36.59
@ 200	4095	32.02	165 (14.5)									4095	32.02
@ 225	3640	28.46	147 (13.7)									3640	28.46
@ 250	3276	25.62	132 (13.0)	265 (18.4)								3276	25.62
@ 275	2978	23.29	120 (12.4)	241 (17.5)								2978	23.29
@ 300	2730	21.35	110 (11.8)	221 (16.8)								2730	21.35
@ 325	2520	19.70	102 (11.4)	204 (16.1)								2520	19.70
@ 350	2340	18.30	95 (11.0)	189 (15.5)	284 (19.0)							2340	18.30
@ 375	2184	17.08	88 (10.6)	176 (15.0)	265 (18.4)							2184	17.08
@ 400	2048	16.01	83 (10.3)	165 (14.5)	248 (17.8)							2048	16.01
@ 425	1927	15.07	78 (10.0)	156 (14.1)	233 (17.2)							1927	15.07
@ 450	1820	14.23	74 (9.7)	147 (13.7)	221 (16.8)							1820	14.23

#36 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	10060	79.07										10060	79.07
@ 125	8048	63.26										8048	63.26
@ 150	6707	52.71	271 (18.6)									6707	52.71
@ 175	5749	45.18	232 (17.2)									5749	45.18
@ 200	5030	39.54	203 (16.1)									5030	39.54
@ 225	4471	35.14	181 (15.2)									4471	35.14
@ 250	4024	31.63	163 (14.4)									4024	31.63
@ 275	3658	28.75	148 (13.7)									3658	28.75
@ 300	3353	26.36	135 (13.1)	271 (18.6)								3353	26.36
@ 325	3095	24.33	125 (12.6)	250 (17.8)								3095	24.33
@ 350	2874	22.59	116 (12.2)	232 (17.2)								2874	22.59
@ 375	2683	21.09	108 (11.7)	217 (16.6)								2683	21.09
@ 400	2515	19.77	102 (11.4)	203 (16.1)								2515	19.77
@ 425	2367	18.60	96 (11.1)	191 (15.6)	287 (19.1)							2367	18.60
@ 450	2236	17.57	90 (10.7)	181 (15.2)	271 (18.6)							2236	17.57

\* Mass per square meter is for one direction only. Double the mass for the same reinforcement in the other direction, or add the appropriate mass for a different pattern in the other direction. Masses per square meter are theoretical and are intended for estimating purposes only.

TABLE 12 - #10, #13, #16

## COMPARISON TABLES - REINFORCING BARS &amp; WELDED WIRE REINFORCEMENT

Rebar @ 420 MPa and Welded Wire Reinforcement @ 550 Mpa

#10 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)										WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm			
@ 100	710	5.60	27 (5.9)	54 (8.3)	81 (10.2)	108 (11.7)	136 (13.2)	163 (14.4)	190 (15.6)	217 (16.6)	244 (17.6)	710	5.60	
@ 125	568	4.48	22 (5.3)	43 (7.4)	65 (9.1)	87 (10.5)	108 (11.7)	130 (12.9)	152 (13.9)	173 (14.8)	195 (15.8)	568	4.48	
@ 150	473	3.73	18 (4.8)	36 (6.8)	54 (8.3)	72 (9.6)	90 (10.7)	108 (11.7)	126 (12.7)	144 (13.5)	163 (14.4)	473	3.73	
@ 175	406	3.20	16 (4.5)	31 (6.3)	47 (7.7)	62 (8.9)	78 (10.0)	93 (10.9)	109 (11.8)	124 (12.6)	140 (13.4)	406	3.20	
@ 200	355	2.80	14 (4.2)	27 (5.9)	41 (7.2)	54 (8.3)	68 (9.3)	81 (10.2)	95 (11.0)	108 (11.7)	122 (12.5)	355	2.80	
@ 225	316	2.49	12 (3.9)	24 (5.5)	36 (6.8)	48 (7.8)	60 (8.7)	72 (9.6)	84 (10.3)	97 (11.1)	109 (11.8)	316	2.49	
@ 250	284	2.24	11 (3.7)	22 (5.3)	33 (6.5)	43 (7.4)	54 (8.3)	65 (9.1)	76 (9.8)	87 (10.5)	98 (11.2)	284	2.24	
@ 275	258	2.04	10 (3.6)	20 (5.0)	30 (6.2)	39 (7.1)	49 (7.9)	59 (8.7)	69 (9.4)	79 (10.0)	89 (10.6)	258	2.04	
@ 300	237	1.87	9 (3.4)	18 (4.8)	27 (5.9)	36 (6.8)	45 (7.6)	54 (8.3)	63 (9.0)	72 (9.6)	81 (10.2)	237	1.87	
@ 325	218	1.72	8 (3.2)	17 (4.7)	25 (5.6)	33 (6.5)	42 (7.3)	50 (8.0)	58 (8.6)	67 (9.2)	75 (9.8)	218	1.72	
@ 350	203	1.60	8 (3.2)	16 (4.5)	23 (5.4)	31 (6.3)	39 (7.0)	47 (7.7)	54 (8.3)	62 (8.9)	70 (9.4)	203	1.60	
@ 375	189	1.49	7 (3.0)	14 (4.2)	22 (5.3)	29 (6.1)	36 (6.8)	43 (7.4)	51 (8.1)	58 (8.6)	65 (9.1)	189	1.49	
@ 400	178	1.40	7 (3.0)	14 (4.2)	20 (5.0)	27 (5.9)	34 (6.6)	41 (7.2)	48 (7.8)	54 (8.3)	61 (8.8)	178	1.40	
@ 425	167	1.32	6 (2.8)	13 (4.1)	19 (4.9)	26 (5.7)	32 (6.4)	38 (7.0)	45 (7.6)	51 (8.1)	57 (8.5)	167	1.32	
@ 450	158	1.24	6 (2.8)	12 (3.9)	18 (4.8)	24 (5.5)	30 (6.2)	36 (6.8)	42 (7.3)	48 (7.8)	54 (8.3)	158	1.24	

#13 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)										WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm			
@ 100	1290	9.94	49 (7.9)	99 (11.2)	148 (13.7)	197 (15.8)	246 (17.7)					1290	9.94	
@ 125	1032	7.95	39 (7.0)	79 (10.0)	118 (12.3)	158 (14.2)	197 (15.8)	236 (17.3)	276 (18.7)			1032	7.95	
@ 150	860	6.63	33 (6.5)	66 (9.2)	99 (11.2)	131 (12.9)	164 (14.5)	197 (15.8)	230 (17.1)	263 (18.3)		860	6.63	
@ 175	737	5.68	28 (6.0)	56 (8.4)	84 (10.3)	113 (12.0)	141 (13.4)	169 (14.7)	197 (15.8)	225 (16.9)	253 (17.9)	737	5.68	
@ 200	645	4.97	25 (5.6)	49 (7.9)	74 (9.7)	99 (11.2)	123 (12.5)	148 (13.7)	172 (14.8)	197 (15.8)	222 (16.8)	645	4.97	
@ 225	573	4.42	22 (5.3)	44 (7.5)	66 (9.2)	88 (10.6)	109 (11.8)	131 (12.9)	153 (14.0)	175 (14.9)	197 (15.8)	573	4.42	
@ 250	516	3.98	20 (5.0)	39 (7.0)	59 (8.7)	79 (10.0)	99 (11.2)	118 (12.3)	138 (13.3)	158 (14.2)	177 (15.0)	516	3.98	
@ 275	469	3.61	18 (4.8)	36 (6.8)	54 (8.3)	72 (9.5)	90 (10.7)	107 (11.7)	125 (12.6)	143 (13.5)	161 (14.3)	469	3.61	
@ 300	430	3.31	16 (4.5)	33 (6.5)	49 (7.9)	66 (9.1)	82 (10.2)	99 (11.2)	115 (12.1)	131 (12.9)	148 (13.7)	430	3.31	
@ 325	397	3.06	15 (4.4)	30 (6.2)	45 (7.6)	61 (8.8)	76 (9.8)	91 (10.8)	106 (11.6)	121 (12.4)	136 (13.2)	397	3.06	
@ 350	369	2.84	14 (4.2)	28 (6.0)	42 (7.3)	56 (8.5)	70 (9.4)	85 (10.4)	99 (11.2)	113 (12.0)	127 (12.7)	369	2.84	
@ 375	344	2.65	13 (4.1)	26 (5.8)	39 (7.0)	53 (8.2)	66 (9.2)	79 (10.0)	92 (10.8)	105 (11.6)	118 (12.3)	344	2.65	
@ 400	323	2.49	12 (3.9)	25 (5.6)	37 (6.9)	49 (7.9)	62 (8.9)	74 (9.7)	86 (10.5)	99 (11.2)	111 (11.9)	323	2.49	
@ 425	304	2.34	12 (3.9)	23 (5.4)	35 (6.7)	46 (7.7)	58 (8.6)	70 (9.4)	81 (10.2)	93 (10.9)	104 (11.5)	304	2.34	
@ 450	287	2.21	11 (3.7)	22 (5.3)	33 (6.5)	44 (7.5)	55 (8.4)	66 (9.2)	77 (9.9)	88 (10.6)	99 (11.2)	287	2.21	

#16 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)										WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm			
@ 100	1990	15.52	76 (9.8)	152 (13.9)	228 (17.0)							1990	15.52	
@ 125	1592	12.42	61 (8.8)	122 (12.5)	182 (15.2)	243 (17.6)						1592	12.42	
@ 150	1327	10.35	51 (8.1)	101 (11.3)	152 (13.9)	203 (16.1)	253 (17.9)					1327	10.35	
@ 175	1137	8.87	43 (7.4)	87 (10.5)	130 (12.9)	174 (14.9)	217 (16.6)	260 (18.2)				1137	8.87	
@ 200	995	7.76	38 (7.0)	76 (9.8)	114 (12.0)	152 (13.9)	190 (15.6)	228 (17.0)	266 (18.4)			995	7.76	
@ 225	884	6.90	34 (6.6)	68 (9.3)	101 (11.3)	135 (13.1)	169 (14.7)	203 (16.1)	236 (17.3)	270 (18.5)		884	6.90	
@ 250	796	6.21	30 (6.2)	61 (8.8)	91 (10.8)	122 (12.4)	152 (13.9)	182 (15.2)	213 (16.5)	243 (17.6)	274 (18.7)	796	6.21	
@ 275	724	5.64	28 (6.0)	55 (8.4)	83 (10.3)	111 (11.9)	138 (13.3)	166 (14.5)	194 (15.7)	221 (16.8)	249 (17.8)	724	5.64	
@ 300	663	5.17	25 (5.6)	51 (8.1)	76 (9.8)	101 (11.4)	127 (12.7)	152 (13.9)	177 (15.0)	203 (16.1)	228 (17.0)	663	5.17	
@ 325	612	4.78	23 (5.4)	47 (7.7)	70 (9.4)	94 (10.9)	117 (12.2)	140 (13.4)	164 (14.5)	187 (15.4)	210 (16.4)	612	4.78	
@ 350	569	4.43	22 (5.3)	43 (7.4)	65 (9.1)	87 (10.5)	109 (11.8)	130 (12.9)	152 (13.9)	174 (14.9)	196 (15.8)	569	4.43	
@ 375	531	4.14	20 (5.0)	41 (7.2)	61 (8.8)	81 (10.2)	101 (11.3)	122 (12.5)	142 (13.4)	162 (14.4)	182 (15.2)	531	4.14	
@ 400	498	3.88	19 (4.9)	38 (7.0)	57 (8.5)	76 (9.8)	95 (11.0)	114 (12.0)	133 (13.0)	152 (13.9)	171 (14.8)	498	3.88	
@ 425	468	3.65	18 (4.8)	36 (6.8)	54 (8.3)	72 (9.5)	89 (10.6)	107 (11.7)	125 (12.6)	143 (13.5)	161 (14.3)	468	3.65	
@ 450	442	3.45	17 (4.7)	34 (6.6)	51 (8.1)	68 (9.3)	84 (10.3)	101 (11.3)	118 (12.3)	135 (13.1)	152 (13.9)	442	3.45	

\* Mass per square meter is for one direction only. Double the mass for the same reinforcement in the other direction, or add the appropriate mass for a different pattern in the other direction. Masses per square meter are theoretical and are intended for estimating purposes only.

TABLE 13 - #19, #22, #25

## COMPARISON TABLES - REINFORCING BARS &amp; WELDED WIRE REINFORCEMENT

Rebar @ 420 MPa and Welded Wire Reinforcement @ 550 Mpa

#19 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	2840	22.35	108 (11.7)	217 (16.6)								2840	22.35
@ 125	2272	17.88	87 (10.5)	173 (14.8)	260 (18.2)	347						2272	17.88
@ 150	1893	14.90	72 (9.6)	145 (13.6)	217 (16.6)	289 (19.2)						1893	14.90
@ 175	1623	12.77	62 (8.9)	124 (12.6)	186 (15.4)	248 (17.8)						1623	12.77
@ 200	1420	11.18	54 (8.3)	108 (11.7)	163 (14.4)	217 (16.6)	271 (18.6)					1420	11.18
@ 225	1262	9.93	48 (7.8)	96 (11.1)	145 (13.6)	193 (15.7)	241 (17.5)	289 (19.2)				1262	9.93
@ 250	1136	8.94	43 (7.4)	87 (10.5)	130 (12.9)	174 (14.9)	217 (16.6)	260 (18.2)				1136	8.94
@ 275	1033	8.13	39 (7.0)	79 (10.0)	118 (12.3)	158 (14.2)	197 (15.8)	237 (17.4)	276 (18.7)			1033	8.13
@ 300	947	7.45	36 (6.8)	72 (9.6)	108 (11.7)	145 (13.6)	181 (15.2)	217 (16.6)	253 (17.9)	289 (19.2)		947	7.45
@ 325	874	6.88	33 (6.5)	67 (9.2)	100 (11.3)	134 (13.0)	167 (14.6)	200 (16.0)	234 (17.3)	267 (18.4)		874	6.88
@ 350	811	6.39	31 (6.3)	62 (8.9)	93 (10.9)	124 (12.6)	155 (14.0)	186 (15.4)	217 (16.6)	248 (17.8)	279 (18.8)	811	6.39
@ 375	757	5.96	29 (6.1)	58 (8.6)	87 (10.5)	116 (12.1)	145 (13.6)	173 (14.8)	202 (16.0)	231 (17.1)	260 (18.2)	757	5.96
@ 400	710	5.59	27 (5.9)	54 (8.3)	81 (10.2)	108 (11.7)	136 (13.2)	163 (14.4)	190 (15.6)	217 (16.6)	244 (17.6)	710	5.59
@ 425	668	5.26	26 (5.8)	51 (8.1)	77 (9.9)	102 (11.4)	128 (12.8)	153 (14.0)	179 (15.1)	204 (16.1)	230 (17.1)	668	5.26
@ 450	631	4.97	24 (5.5)	48 (7.8)	72 (9.6)	96 (11.1)	120 (12.4)	145 (13.6)	169 (14.7)	193 (15.7)	217 (16.6)	631	4.97

#22 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	3870	30.42	148 (13.7)									3870	30.42
@ 125	3096	24.34	118 (12.3)	236 (17.3)								3096	24.34
@ 150	2580	20.28	99 (11.2)	197 (15.8)								2580	20.28
@ 175	2211	17.38	84 (10.3)	169 (14.7)	253 (17.9)							2211	17.38
@ 200	1935	15.21	74 (9.7)	148 (13.7)	222 (16.8)							1935	15.21
@ 225	1720	13.52	66 (9.2)	131 (12.9)	197 (15.8)	263 (18.3)						1720	13.52
@ 250	1548	12.17	59 (8.7)	118 (12.3)	177 (15.0)	236 (17.3)						1548	12.17
@ 275	1407	11.06	54 (8.3)	107 (11.7)	161 (14.3)	215 (16.5)	269 (18.5)					1407	11.06
@ 300	1290	10.14	49 (7.9)	99 (11.2)	148 (13.7)	197 (15.8)	246 (17.7)					1290	10.14
@ 325	1191	9.36	45 (7.6)	91 (10.8)	136 (13.2)	182 (15.2)	227 (17.0)	273 (18.6)				1191	9.36
@ 350	1106	8.69	42 (7.3)	84 (10.3)	127 (12.7)	169 (14.7)	211 (16.4)	253 (17.9)				1106	8.69
@ 375	1032	8.11	39 (7.0)	79 (10.0)	118 (12.3)	158 (14.2)	197 (15.8)	236 (17.3)	276 (18.7)			1032	8.11
@ 400	968	7.61	37 (6.9)	74 (9.7)	111 (11.9)	148 (13.7)	185 (15.3)	222 (16.8)	259 (18.2)			968	7.61
@ 425	911	7.16	35 (6.7)	70 (9.4)	104 (11.5)	139 (13.3)	174 (14.9)	209 (16.3)	243 (17.6)	278 (18.8)		911	7.16
@ 450	860	6.76	33 (6.5)	66 (9.2)	99 (11.2)	131 (12.9)	164 (14.5)	197 (15.8)	230 (17.1)	263 (18.3)		860	6.76

#25 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As / m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	5100	39.73	195 (15.8)									5100	39.73
@ 125	4080	31.78	156 (14.1)									4080	31.78
@ 150	3400	26.49	130 (12.9)	260 (18.2)								3400	26.49
@ 175	2914	22.70	111 (11.9)	223 (16.9)								2914	22.70
@ 200	2550	19.87	97 (11.1)	195 (15.8)								2550	19.87
@ 225	2267	17.66	87 (10.5)	173 (14.8)	260 (18.2)							2267	17.66
@ 250	2040	15.89	78 (10.0)	156 (14.1)	234 (17.3)							2040	15.89
@ 275	1855	14.45	71 (9.5)	142 (13.4)	212 (16.4)	283 (19.0)						1855	14.45
@ 300	1700	13.24	65 (9.1)	130 (12.9)	195 (15.8)	260 (18.2)						1700	13.24
@ 325	1569	12.22	60 (8.7)	120 (12.4)	180 (15.1)	240 (17.5)						1569	12.22
@ 350	1457	11.35	56 (8.4)	111 (11.9)	167 (14.6)	223 (16.8)	278 (18.8)					1457	11.35
@ 375	1360	10.59	52 (8.1)	104 (11.5)	156 (14.1)	208 (16.3)	260 (18.2)					1360	10.59
@ 400	1275	9.93	49 (7.9)	97 (11.1)	146 (13.6)	195 (15.7)	243 (17.6)					1275	9.93
@ 425	1200	9.35	46 (7.7)	92 (10.8)	137 (13.2)	183 (15.3)	229 (17.1)	275 (18.7)				1200	9.35
@ 450	1133	8.83	43 (7.4)	87 (10.5)	130 (12.9)	173 (14.8)	216 (16.6)	260 (18.2)				1133	8.83

\* Mass per square meter is for one direction only. Double the mass for the same reinforcement in the other direction, or add the appropriate mass for a different pattern in the other direction. Masses per square meter are theoretical and are intended for estimating purposes only.

TABLE 14 - #29, #32, #36

## COMPARISON TABLES - REINFORCING BARS &amp; WELDED WIRE REINFORCEMENT

Rebar @ 420 MPa and Welded Wire Reinforcement @ 550 Mpa

#29 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As/ m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	6450	50.60	246 (17.7)									6450	50.60
@ 125	5160	40.48	197 (15.8)									5160	40.48
@ 150	4300	33.73	164 (14.5)									4300	33.73
@ 175	3686	28.91	141 (13.4)	281 (18.9)								3686	28.91
@ 200	3225	25.30	123 (12.5)	246 (17.7)								3225	25.30
@ 225	2867	22.49	109 (11.8)	219 (16.7)								2867	22.49
@ 250	2580	20.24	99 (11.2)	197 (15.8)								2580	20.24
@ 275	2345	18.40	90 (10.7)	179 (15.1)	269 (18.5)							2345	18.40
@ 300	2150	16.87	82 (10.2)	164 (14.5)	246 (17.7)							2150	16.87
@ 325	1985	15.57	76 (9.8)	152 (13.9)	227 (17.0)							1985	15.57
@ 350	1843	14.46	70 (9.4)	141 (13.4)	211 (16.4)	282 (18.9)						1843	14.46
@ 375	1720	13.49	66 (9.2)	131 (12.9)	197 (15.8)	263 (18.3)						1720	13.49
@ 400	1613	12.65	62 (8.9)	123 (12.5)	185 (15.3)	246 (17.7)						1613	12.65
@ 425	1518	11.91	58 (8.6)	116 (12.2)	174 (14.9)	232 (17.2)	290 (19.2)					1518	11.91
@ 450	1433	11.24	55 (8.4)	109 (11.8)	164 (14.5)	219 (16.7)	274 (18.7)					1433	11.24

#32 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As/ m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	8190	64.04										8190	64.04
@ 125	6552	51.23	250 (17.8)									6552	51.23
@ 150	5460	42.69	208 (16.3)									5460	42.69
@ 175	4680	36.59	179 (15.1)									4680	36.59
@ 200	4095	32.02	156 (14.1)									4095	32.02
@ 225	3640	28.46	139 (13.3)	278 (18.8)								3640	28.46
@ 250	3276	25.62	125 (12.6)	250 (17.8)								3276	25.62
@ 275	2978	23.29	114 (12.0)	227 (17.0)								2978	23.29
@ 300	2730	21.35	104 (11.5)	208 (16.3)								2730	21.35
@ 325	2520	19.70	96 (11.1)	192 (15.6)	289 (19.2)							2520	19.70
@ 350	2340	18.30	89 (10.6)	179 (15.1)	268 (18.5)							2340	18.30
@ 375	2184	17.08	83 (10.3)	167 (14.6)	250 (17.8)							2184	17.08
@ 400	2048	16.01	78 (10.0)	156 (14.1)	235 (17.3)							2048	16.01
@ 425	1927	15.07	74 (9.7)	147 (13.7)	221 (16.8)							1927	15.07
@ 450	1820	14.23	69 (9.4)	139 (13.3)	208 (16.3)	278 (18.8)						1820	14.23

#36 Bars	A <sub>S</sub> / m mm <sup>2</sup>	Rebar kg/m <sup>2</sup>	Wire Size For Various Spacing - Area in mm <sup>2</sup> (Diameter in mm)									WWR As/ m	WWR kg/m <sup>2</sup>
			50mm	100mm	150mm	200mm	250mm	300mm	350mm	400mm	450mm		
@ 100	10060	79.07										10060	79.07
@ 125	8048	63.26										8048	63.26
@ 150	6707	52.71	256 (18.1)									6707	52.71
@ 175	5749	45.18	220 (16.7)									5749	45.18
@ 200	5030	39.54	192 (15.6)									5030	39.54
@ 225	4471	35.14	171 (14.8)									4471	35.14
@ 250	4024	31.63	154 (14.0)									4024	31.63
@ 275	3658	28.75	140 (13.4)	279 (18.8)								3658	28.75
@ 300	3353	26.36	128 (12.8)	256 (18.1)								3353	26.36
@ 325	3095	24.33	118 (12.3)	236 (17.3)								3095	24.33
@ 350	2874	22.59	110 (11.8)	219 (16.7)								2874	22.59
@ 375	2683	21.09	102 (11.4)	205 (16.2)								2683	21.09
@ 400	2515	19.77	96 (11.1)	192 (15.6)	288 (19.1)							2515	19.77
@ 425	2367	18.60	90 (10.7)	181 (15.2)	271 (18.6)							2367	18.60
@ 450	2236	17.57	85 (10.4)	171 (14.8)	256 (18.1)							2236	17.57

\* Mass per square meter is for one direction only. Double the mass for the same reinforcement in the other direction, or add the appropriate mass for a different pattern in the other direction. Masses per square meter are theoretical and are intended for estimating purposes only.