淡邊新永威工業有限公司

TAMPIN SIN YONG WAI INDUSTRY SDN. BHD.

(Company No.: 323431-A)

TAMPIN SIN YONG WAI INDUSTRY SDN. BHD.

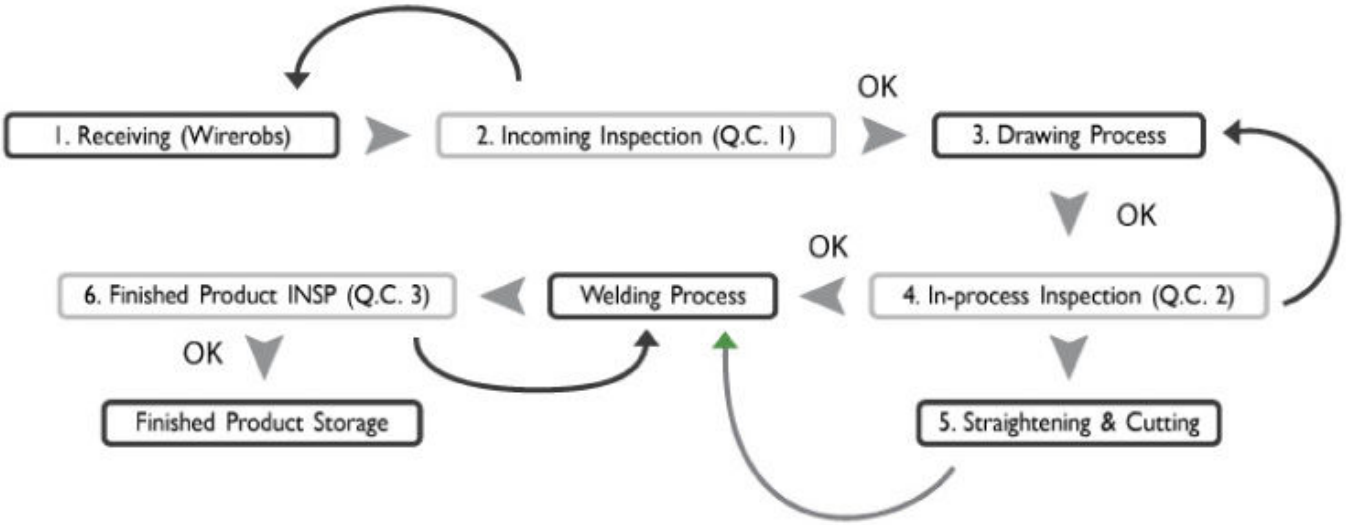
Tampin Sin Yong Industry Sdn. Bhd. is a manufacturer of Steel Fabric, Steel Bar, Galvanised Wire Mesh, Chain Linked Netting and Galvanised Barbed Wire, located at Taman Mas,Tampin, Negeri Sembilan.

With the adoption of new technology, Tampin Sin Yong Wai is now able to produce ribbed fabric MESH which is superior to the normal plain fabric for the building industry. Our ribbed welded mesh can enhance the performance of concrete structures by providing better crack control properties, stress transfer and bond strength.

Our high-tech machines can produce standard sizes as well as cut to size orders efficiently according to customer requirements

Our finished products are neatly packed and ready to be delivered.

Process Flow Chart And Quality Control Checking Point



All our products go throught Stringent quality test in compliance to MS145:2001 requirement.

淡邊新永威工業有限公司

TAMPIN SIN YONG WAI INDUSTRY SDN. BHD.

(Company No.: 223431-A)

With advanced technology, complete production equipment as well as well-trained technicians and R & D teams, we provide innovative and high quality products to fulfill different customer demands ever since 1994. Diligence, honesty, and trustworthiness is our motto in running the business and this helps us build up a high reputation within the wire mesh industry. TSYW, the name that stands for quality-guarantted

新永威（淡边）工业有限公司在1994年成立以来，我们不断的改革创新，引进先进的机器，培训技术人员掌握新的技术，以提升本公司的生产水平，提供顾客品质更佳的产品。多年来，我们朝著提升品质，服务和价值的目标前进，不断的改良品质，提升我们的服务水平，加强公司的行政营理，提升产品的价值，带给顾客最佳的服务及最优质的产品，奠定品质保证的良好信誉 。

TAMPIN SIN YONG WAI MESH

STANDARDS

• **MANUFACTURING**	To BS4483 OR SS32 OR MS145 : 1987 "Specification for Steel Fabric For the reinforcement of concrele."
• **MATERIAL**	Hard dran wire conforming to MS144 : 1987 OR BS 4482 : 1985

PROPERTIES

MINIMUM YIELDS STRENGTH	: 485 N/mm^2
MINIMUM TENSILE STRENGTH	: 510 N/mm^2
MINIMUM SHEAR STRENGTH (Welding Strength)	: 250 N/mm^2

DIMENSIONS AND SIZES

Tampin Sin Yong Wai Meshes are being manufactured in Metric and Imperial sizes and both in square and rectangular in shape.

• METRIC SIZES MESH

Refer to Table I, indicating the range of Tampin Sin Yong Wai Meshes in Metric sizes which are standardied in 2.2m width by 6.0m length. There are, 4 types of Metric sizes with different combinations of main wire and cross wire spacings as follows:

A Series	Square mesh where both man and cross wire spacing are 200mm.
B Series	Rectangles mesh where main wire spacing is 100mm and cross wire spacing is 200mm.
C Series	Long mesh where main wire spacing is 100mm and cross wire spacing is 400mm.
D series	Small square mesh where main wire and cross wire spacing are 100mm.

• IMPERIAL SIZES MESH

Refer to Table II, indicating the range of standard meshes in imperial sizes. Which usually come in 6m length by 2.2m width, while thinner guage sizes come in roll forms of 40m length by 2.0 width.

• CUT SIZES MESH

We undertake to design specific cut size meshes and manufacture accordingly to suit construction projects. This will definitely minimize cost by saving time and labour at the construction sites. Refer to Table III indicating cross sectional areas that enable special meshes to be designed.

• SUBSTITUTION OF TAMPIN SIN YONG WAI MESH FOR STEEL BARS

Table IV show the equivalent of Tampin Sin Yong Wai mesh which can be used to replace mild steel bars. Kindly note that the strength of the concrete is not reduced even though the quantity of material used is less. Refer to Table VI for calculation formula for the substitution of steel bars into Tampin Sin Yong Wei Mesh.

• OVERLAPPING

Refer to Table VII indicating the amount of overlap necessary in the splicingof mesh which could depend on the strength across the splice, normally, a full yield srength is adopted. To obtain this full yield strength transfer, it isnecessary that the adjacent sheets overlap by 2 welds plus at least 25mm,this is the normal practice unless otherwise specified by the designing engineer. Half yield strength will be achieved when the fabric overlap by one wire plus 25mm, if overlap is not specified, full yield strength lap should be used. The location of laps should be at points of low tensile stress, i.e. for the bottom reinforcement, laps are normally located near the supports while the top reinforcement, these are normally located in the middle of the span. Kindly refer to Table VIII & IX for further information to facilitate the conversion of steel bars in slab to Tampin Sin Yong Wai Mesh. Nevertheless should you require further clarification our sales team shall be at your service at all times.

TAMPIN SIN YONG WAI MESH - METRIC STANDARDS SPECIFICATION

Table I

Ref. No.	Malaysia Standard Ref. No.	Cross Section Area		Main Wire		Cross Wire		Mass per unit area
		Main	Cross	Size	Spacing	Size	Spacing	Kg/m²
		mm²/m	mm²/m	mm	mm	mm	mm	
SQUARE MESH FABRIC								
A10	A393	393	393	10	200	10	200	6.16
A9	A318	318	318	9	200	9	200	4.99
A8	A252	252	252	8	200	8	200	3.95
A7	A193	193	193	7	200	7	200	3.02
A6	A142	142	142	6	200	6	200	2.22
A5	A98	98	98	5	200	5	200	1.54
A4	A63	63	63	4	200	4	200	0.99
RECTANGULAR STRUCTURAL MESH FABRIC								
B12	B1131	1131	252	12	100	8	200	10.86
B10	B785	785	252	10	100	8	200	8.14
B9	B636	636	252	9	100	8	200	6.97
B8	B503	503	252	8	100	8	200	5.93
B7	B385	385	193	7	100	7	200	4.53
B6	B283	283	193	6	100	7	200	3.73
B5	B196	196	193	5	100	8	200	3.05
LONG MESH FABRIC								
CIO	C785	785	71	10	100	6	400	6.72
C9	C636	636	71	9	100	6	400	5.55
C8	C503	503	49	8	100	5	400	4.34
C7	C385	385	49	7	100	5	400	3.41
C6	C283	283	49	6	100	5	400	2.61
CS	C196	196	49	5	100	5	400	1.93
SMALL SQUARE MESH FABRIC								
DA10	DA785	785	785	10	100	10	100	12.32
DA9	DA636	636	636	9	100	9	100	9.98
DA8	DA503	503	503	8	100	8	100	7.90
DA7	DA385	385	385	7	100	7	100	6.04
DA6	DA283	283	283	6	100	6	100	4.44
DA5	DA196	196	196	5	100	5	100	3.08
DA4	DA126	126	126	4	100	4	100	1.97

TAMPIN SIN YONG WAI MESH - IMPERIAL STANDARDS SPECIFICATION

Table II

Ref. No.	BS Ref. 1221A	Wire Spacing		Wire Size		Section Area of wires	Weight of fabric
		Main (in.)	Cross (in.)	Main SWG	Cross SWG	Per unit width $in^2/ft(mm^2/m)$	ib.per sq yd (kg/m^2)
1	101	3	16	4/0	4	0.5027 (1064)	16.35 (8.88)
2	102	3	16	3/0	4	0.4347 (920)	14.27 (7.75)
3	103	3	16	2/0	6	0.3805 (805)	12.31 (6.68)
4	104	3	16	1/0	6	0.3298 (698)	10.76 (5.84)
5	105	3	16	1	6	0.2827 (598)	9.32 (5.06)
6	106	3	16	2	7	0.2393 (507)	7.88 (4.28)
7	107	3	16	3	8	0.1995 (422)	6.57 (3.57)
8	108	3	12	4	9	0.1691 (358)	5.67 (8.08)
9	109	3	12	5	10	0.1412 (299)	4.71 (2.56)
10	110	3	12	6	10	0.1158 (245)	3.94 (2.14)
12	112	3	12	8	12	0.0804 (170)	2.72 (1.48)
13	113	3	12	10	12	0.0515 (109)	1.83 (0.99)
61	121	6	6	1	1	0.1414 (299)	8.66 (4.70)
62	122	6	6	2	2	0.1197 (253)	7.32 (3.97)
63	123	6	6	3	3	0.0998 (211)	6.10 (3.31)
64	124	6	6	4	4	0.0845 (179)	5.17 (2.81)
65	125	6	6	5	5	0.0706 (149)	4.32 (2.35)
66	126	6	6	6	6	0.0579 (123)	3.54 (1.92)
100	130	6	6	10	10	0.0257 (54)	1.58 (0.86)

TAMPIN SIN YONG WAI MESH - WIRE CROSS - SECTIONAL AREA

Table III

Dia. mm	Wire Area mm2 (in^2)	Cross - Sectional Area in mm^2/m (in^2/ft) at Spacing mm shown							
		50	100	150	200	250	300	350	400
12	113.1 (0.1753)	**2262 (1.069)**	1131 (0.534)	**754 (0.356)**	566 (0.267)	**452 (0.0214)**	377 (0.178)	**323 (0.153)**	283 (0.134)
10	78.5 (0.1217)	**1571 (0.742)**	785 (0.371)	**524 (0.248)**	393 (0.186)	**314 (0.148)**	262 (0.124)	**224 (0.106)**	196 (0.093)
9	63.6 (0.0986)	**1272 (0.601)**	636 (0.300)	**424 (0.200)**	318 (0.150)	**254 (0.120)**	212 (0.100)	**182 (0.086)**	159 (0.075)
8	50.3 (0.0780)	**1005 (0.475)**	503 (0.238)	**335 (0.158)**	251 (0.119)	**201 (0.095)**	167 (0.079)	**144 (0.068)**	126 (0.060)
7	38.5 (0.0597)	**770 (0.364)**	385 (0.182)	**257 (0.121)**	192 (0.091)	**154 (0.073)**	128 (0.060)	**110 (0.052)**	96 (0.045)
6	28.3 (0.0439)	**565 (0.267)**	283 (0.134)	**188 (0.089)**	141 (0.067)	**114 (0.053)**	94 (0.044)	**81 (0.038)**	71 (0.034)
5	19.6 (0.0304)	**393 (0.186)**	196 (0.093)	**131 (0.062)**	98 (0.046)	**79 (0.037)**	65 (0.031)	**56 (0.026)**	49 (0.023)
4	12.6 (0.0195)	**251 (0.119)**	126 (0.060)	**84 (0.040)**	63 (0.030)	**50 (0.024)**	42 (0.020)	**36 (0.017)**	31 (0.015)

SUBSTITUTION OF TAMPIN SIN YONG WAI MESH FOR METRIC MILD STEEL BARS

Table IV

MILD STEEL BAR			EQUIVALENT METRIC FABRICS				EQ IMPERIAL MESH	
			Square Mesh		Rectangular Mesh		Square Mesh	
Dia ins	Spacing mm	Area mm²/m	Ref. No.	mm²/m	Ref. No.	mm²/m	Ref. No.	mm²/m
6	**50**	565	**A 10**	393	**B 7, C 7**	385	**-**	-
	75	377	**A 8**	252	**B 6, C 6**	283	**62**	253
	100	283	**A 7**	193	**B 5, C 5**	196	**64**	179
	125	226	**A 6**	142	**B 5, C 5**	196	**65**	149
	150	188	**A 6**	142	**B 5, C 5**	196	**66**	123
	200	141	**A 5**	98	**-**	-	**66**	123
	250	113	**A 5**	98	**-**	-	**-**	-
10	**50**	1571	**-**	-	**B 12**	1131	**-**	-
	75	1047	**2 X A 9**	636	**B 9, C 9**	636	**-**	-
	100	785	**2 X A 8**	504	**B 8, C 8**	503	**2 X 62**	506
	125	628	**A 10**	393	**B 7, C 7**	385	**2 X 63**	422
	150	524	**A 9**	318	**B 7,C 7**	385	**2 X 64**	358
	175	449	**A 9**	318	**B 6,C 6**	283	**61**	299
	200	393	**A 8**	252	**B 6,C 6**	283	**62**	253
	250	314	**A 7**	193	**B 5, C 5**	196	**63**	211
	300	262	**A7**	193	**B 5, C 5**	196	**64**	179
13	**75**	1770	**-**	-	**B 12**	1131	**-**	-
	100	1327	**-**	-	**B 12**	1131	**-**	-
	125	1062	**2 X A 10**	786	**B 10, C 10**	785	**-**	-
	150	885	**2 X A 9**	636	**B 9, C 9**	636	**2 X 61**	598
	175	758	**2 X A 8**	504	**B 8, C 8**	503	**2 X 62**	506
	200	664	**2 X A 8**	504	**B 8,C 8**	503	**2 X 63**	422
	250	531	**A 10**	393	**B 7, C 7**	385	**2 X 64**	358
	300	442	**A 9**	318	**B 6, C 6**	283	**61**	299
	400	332	**A 8**	252	**B 6, C 6**	283	**63**	211
16	**125**	1608	**-**	-	**B 12**	1131	**-**	-
	150	1340	**-**	-	**B 12**	1131	**-**	-
	175	1149	**2 X A 10**	786	**B 10, C 10**	785	**-**	-
	200	1005	**2 X A 9**	636	**B 9, C 9**	636	**2 X 61**	598
	250	804	**2 X A 8**	504	**B 8, C 8**	503	**2 X 62**	506
	300	670	**2 X A 8**	504	**B 8, C 8**	503	**2 X 63**	422
	400	503	**A 9**	318	**B 7, C 7**	385	**2 X 64**	358

TAMPIN SIN YONG WAI MESH - SUBSTITUTION FOR INPERIAL MILD STEEL BARS

Table V

MILD STEEL BARS			EQUIVALENT METRIC FABRICS			
			Square Mesh		Rectangular Mesh	
Dia ins	Spacing ins	Area in^2/ft	Ref. No.	mm^2/m	Ref. No.	in^2/ft
1/4	2	0.295	A 10	0.186	B 7, C 7	0.182
	3	0.196	A 8	0.119	B 6, C 6	0.134
	4	0.147	A 7	0.091	B 5, C 5	0.093
	5	0.118	A 7	0.091	B 5, C 5	0.093
	6	0.098	A 6	0.067	B 5, C 5	0.093
	7	0.084	A 6	0.067	B 5, C 5	0.093
	8	0.074	A 5	0.046	-	-
	9	0.065	A 5	0.046	-	-
3/8	3	0.442	2 X A 9	0.300	B 9, C 9	0.300
	4	0.331	2 X A 8	0.238	B 8, C 8	0.238
	5	0.265	A 10	0.186	B 7, C 7	0.182
	6	0.221	A 9	0.150	B 6, C 6	0.134
	7	0.189	A 8	0.119	B 6, C 6	0.134
	8	0.166	A 8	0.119	B 6, C 6	0.134
	9	0.147	A 7	0.091	B 5, C 5	0.093
	10	0.133	A 7	0.091	B 5, C 5	0.093
	12	0.110	A 6	0.067	B 5, C 5	0.093
	15	0.088	A 6	0.067	B 5, C 5	0.093
1/2	3	0.785	-	-	B 12	0.534
	4	0.589	2 X A 10	0.372	B 10, C 10	0.371
	5	0.471	2 X A 9	0.300	B 9, C 9	0.300
	6	0.393	2 X A 8	0.238	B 8, C 8	0.238
	7	0.337	2 X A 8	0.238	B 8,C 8	0.238
	8	0.295	A 10	0.186	B 7, C 7	0.182
	9	0.262	A 10	0.186	B 7, C 7	0.182
	10	0.236	A 9	0.150	B 7, C 7	0.182
	12	0.196	A 8	0.119	B 6, C 6	0.134
	15	0.157	A 8	0.119	B 6, C 6	0.134
5/8	5	0.736	-	-	B 12	0.534
	6	0.614	2 X A 10	0.372	B 10, C 10	0.371
	7	0.526	2 X A 10	0.372	B 10, C 10	0.371
	8	0.460	2 X A 9	0.300	B 9, C 9	0.300
	9	0.409	2 X A 9	0.300	B 9, C 9	0.300
	10	0.368	2 X A 8	0.238	B 8, C 8	0.238
	12	0.307	A 10	0.186	B 8, C 8	0.238
	15	0.245	A 9	0.150	B 7, C 7	0.182

SUBSTITUTION OF STEEL BARS FORMULA

Table VI

In accordance to British Design Code (CP 114 (Part 2) ; (1969), the allowable working stress for mesh reinforcement is 230 N/mm^2 while mild steel is take as 140 N/mm. As the allowable stress for mesh is higher than mild steel there is a reduction in area of steel used and the area reduction factor is worked out as follows:

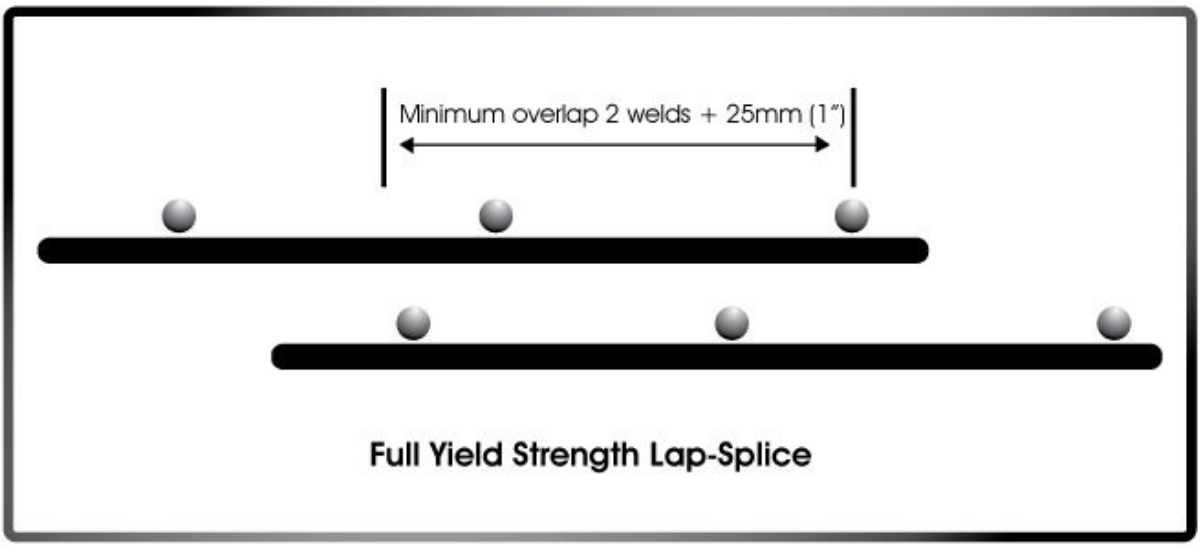
$$\frac{\text{Area reduction}}{\text{factor}} = \frac{\text{steel allowable stress}}{\text{mesh allowable stress}} = \frac{140}{230} = 0.61$$

If the British Design Code CP 110 : 1972 is used , there will be even more saving in reinforcement because is adopts the limits state design under which the characteristic (yield) strength is used. The characteristic strength of Tampin Sin Yong Wai Mesh is 485 N/mm^2 while steel bars are 410 N/mm^2 or 250 N/mm^2 . Conversion of mild steel into Tampin Sin Yong Wai Mesh based on British Design Code CP 110 : 1972 is as follows :

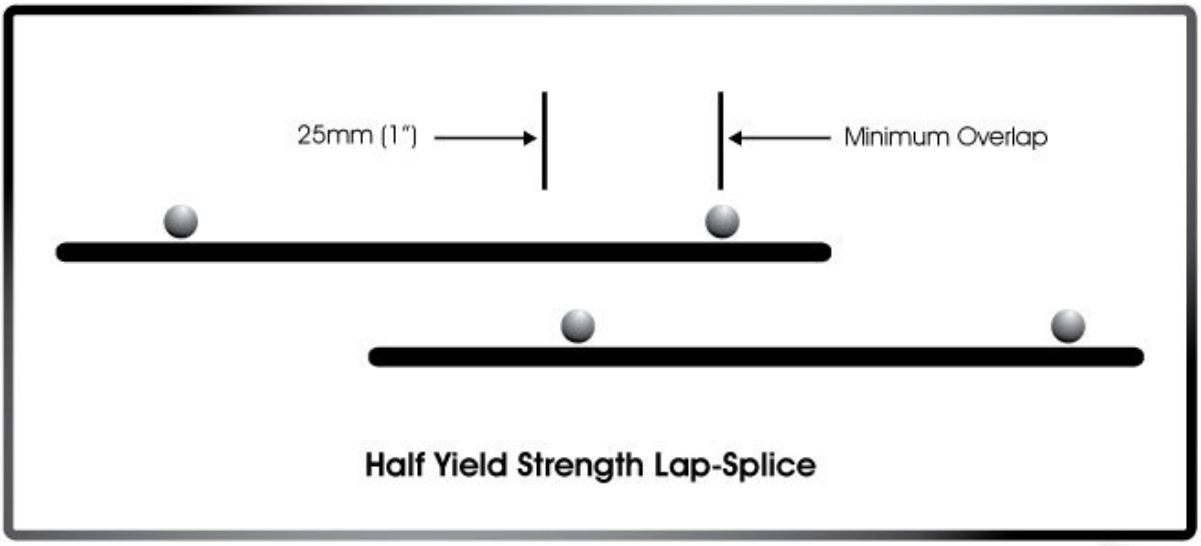
$$\frac{\text{Area reduction}}{\text{factor}} = \frac{250}{485} = 0.61$$

TAMPIN SIN YONG WAI MESH - OVERLAPPING DETAILS

Table VII



Full Yield Strength Lap-Splice



Half Yield Strength Lap-Splice

TAMPIN SIN YONG WAI MESH - FABRIC COMPARISON CHART

Table VIII

SQUARE MESHES			
Metric Fabric		Imperial Fabric	
Ref. No.	Cross Sectional area mm^2/m in^2/ft	Ref. No.	
A10	393		
	(0.185)		
A 9	318		
	(0.150)	299	61
		(0.141)	
		253	62
A 8	252	(0.120)	
	(0.119)		
		211	63
A 7	193	(0.100)	
	(0.091)	179	64
A 6.5	166	(0.085)	
	(0.078)	149	65
		(0.071)	
A 6	142		
	(0.067)		
		123	66
		(0.058)	
A 5	98		
	(0.046)		
A 4	63		
	(0.030)		
		54	610
		(0.026)	

RECTANGULAR MESHES			
Metric Fabric		Imperial Fabric	
Ref. No.	Cross Sectional area mm^2/m in^2/ft	Ref. No.	
B12	1131		
	(0.534)	1064	1
		(0.503)	
		920	2
		(0.435)	
B 10, C 10	785	805	3
	(0.371)	(0.381	
		698	4
		(0.330)	
B 9, C 9	636	598	5
	(0.300)	(0.283)	
B 8, C 8	503	507	6
	(0.238)	(0.239)	
B 7, C 7	385	422	7
	(0.182)	(0.200)	
		358	8
		(0.169)	
B 6, C 6	283	298	9
	(0.134)	(0.141)	
		245	10
		(0.116)	
B 5, C 5	196	170	12
	(0.093)	(0.080)	
		109	13
		(0.052)	

TAMPIN SIN YONG WAI MESH - WIRE SECTIONS

Table IX

IMPERIAL						
SWG	4/0	3/0	2/0	1/0	1	2
dia.mm	10.16	9.45	8.84	8.23	7.62	7.01
in.	0.400	0.372	0.348	0.324	0.300	0.276
mass kg/m	0.636	0.550	0.481	0.417	0.358	0.303
lb/ft	0.427	0.369	0.323	0.280	0.240	0.203
area mm^2	81.1	70.1	61.4	53.2	45.6	38.6
in^2	0.1257	0.1087	0.0951	0.0824	0.0707	0.0598

IMPERIAL								
SWG	3	4	5	6	7	8	9	10
dia.mm	6.40	5.89	5.38	4.88	4.47	4.06	3.66	3.25
in.	0.252	0.232	0.212	0.192	0.176	0.160	0.144	0.128
mass kg/m	0.252	0.214	0.179	0.146	0.123	0.102	0.083	0.065
lb/ft	0.170	0.144	0.120	0.98	0.083	0.068	0.055	0.044
area mm^2	32.2	27.3	22.7	18.7	15.7	12.9	10.5	8.3
in^2	0.0499	0.0422	0.0352	0.0290	0.0243	0.0201	0.0163	0.0129

METRIC								
dia.mm	12.0	10.0	9.0	8.0	7.0	6.0	5.0	4.0
mass kg/m	0.888	0.616	0.499	0.395	0.302	0.222	0.154	0.099
area mm^2	113.1	78.5	63.6	50.3	38.5	28.3	19.6	12.6

淡邊新永威工業有限公司

TAMPIN SIN YONG WAI INDUSTRY SDN. BHD.

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