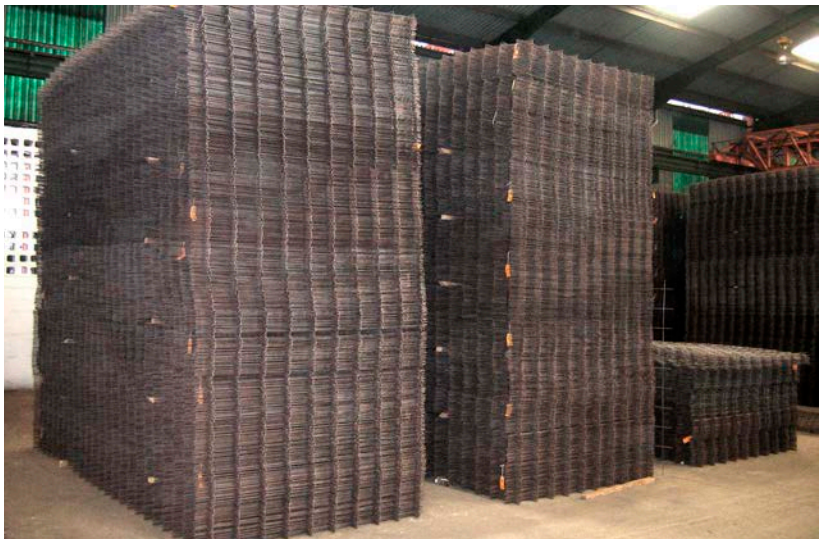
BRC

WELDED WIREMESH



AUTHENTIC CARIBBEAN

TO BARBADIAN APPROVED BNSI STANDARD

BNS 150

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Table 1 Standard Specifications - Sheets Sheet Size 4.8m x 2.0m

Ref. No.	Main Wire Size mm	Main Wire Spacing mm	Cross Wire Size mm	Cross Wire Spacing mm	Cross Sectional Area Main mm^2/m	Cross Sectional Area Cross mm^2/m	Weight Per Unit Area kg/m^2	Weight Per Unit Area lb/yd^2
Square Meshes								
A565	12	200	12	200	565	565	8.88	16.38
A393	10	200	10	200	393	393	6.16	11.35
A252	8	200	8	200	252	252	3.95	7.28
A193	7	200	7	200	193	193	3.02	5.57
A142	6	200	6	200	142	142	2.22	4.09
A98	5	200	5	200	98	98	1.54	2.84
A63	4	200	4	200	63	63	0.99	1.82
Structural Meshes								
B785*	10	100	8	200	785	252	8.14	15.00
B503*	8	100	8	200	503	252	5.93	10.93
B385	7	100	7	200	385	193	4.53	8.35
B283*	6	100	7	200	283	193	3.73	6.88
B196*	5	100	7	200	196	193	3.05	5.62
Long Meshes								
C785*	10	100	6	400	785	70.8	6.72	12.39
C636*	9	100	6	400	636	70.8	5.55	10.23
C503*	8	100	5	400	503	49.0	4.34	7.96
C385*	7	100	5	400	385	49.0	3.41	6.29
C283*	6	100	5	400	283	49.0	2.61	4.81
Wrapping Fabric								
D98	5	200	5	200	98	98	1.54	2.84

* Non Stock Items

Table 2 Wire Sections

Metric Dia	mm	13.0	12.0	10.0	9.0	8.0	7.0	6.5	6.0	5.0	4.0	
Mass	kg/m	1.043	0.889	0.616	0.499	0.395	0.302	0.260	0.222	0.154	0.099	
Imperial Dia	mm	10.16	9.45	8.84	8.23	7.62	7.01	6.40	5.89	5.38	4.88	4.06	3.25
	Ins	0.400	0.372	0.348	0.324	0.300	0.276	0.252	0.232	0.212	0.192	0.160	0.128
	SWG	4/0	3/0	2/0	1/0	1	2	3	4	5	6	8	10
Mass	kg/m	0.636	0.550	0.481	0.417	0.358	0.303	0.252	0.214	0.179	0.146	0.102	0.065

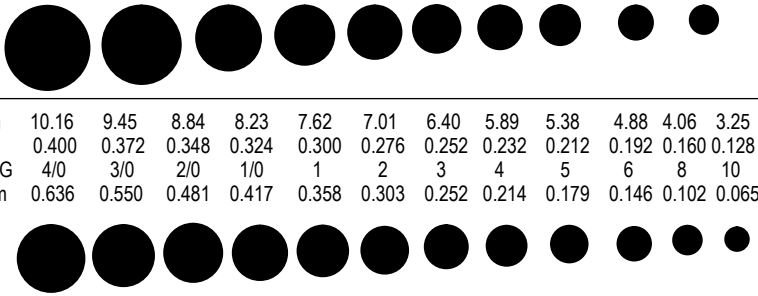


Table 3 Wire Cross-sectional Areas

Metric Wire (mm^2/m)

Dia	Wire Area	Area in mm^2 /m width if wire spaced at centres (mm) shown							
mm	mm^2	50	100	150	200	250	300	350	400
13	132.7	2655	1327	885	664	531	443	379	332
12	113.1	2262	1131	754	566	452	377	323	283
10	78.5	1571	785	524	393	314	262	224	196
9	63.6	1272	636	424	318	254	212	182	159
8	50.3	1005	503	335	251	201	167	144	126
7	38.5	770	385	257	192	154	128	110	96
6.5*	33.2	664	332	221	166	133	111	95	83
6	28.3	565	283	188	141	113	94	81	71
5	19.6	393	196	131	98	79	65	56	49
4	12.6	251	126	84	63	50	42	36	31

Table 4 Wire Cross-sectional Areas

Metric Wire (in^2 /ft)

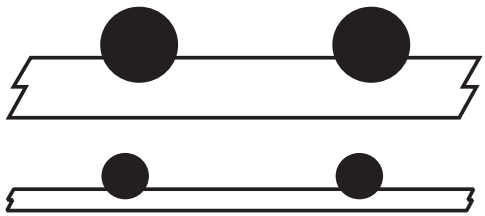
Dia	Wire Area	Area in in^2 /ft width if wire spaced at centres (mm) shown							
mm	in^2	50	100	150	200	250	300	350	400
1 3	0.2057	1.225	0.627	0.525	0.314	0.251	0.209	0.179	0.157
1 2	0.1753	1.069	0.534	0.356	0.267	0.214	0.178	0.153	0.134
10	0.1217	0.742	0.371	0.248	0.186	0.148	0.124	0.106	0.093
9	0.0986	0.601	0.300	0.200	0.150	0.120	0.100	0.086	0.075
8	0.0780	0.475	0.238	0.158	0.119	0.095	0.079	0.068	0.060
7	0.0597	0.364	0.182	0.121	0.091	0.073	0.060	0.052	0.045
6.5	0.0514	0.314	0.157	0.105	0.078	0.063	0.052	0.045	0.039
6	0.0439	0.267	0.134	0.089	0.067	0.053	0.044	0.038	0.034
5	0.0304	0.186	0.093	0.062	0.046	0.037	0.031	0.026	0.023
4	0.0195	0.119	0.060	0.040	0.030	0.024	0.020	0.017	0.015

Special Fabrics

Where standard Fabrics do not meet a particular design requirement, BRC SPECIAL FABRICS can be manufactured. The tables show cross sectional areas that enable special meshes to be designed.

Possible wire spacings are limited by the machine design: longitudinal wires must be spaced in multiples of 50mm or 75mm and cross wires in multiples of 25mm. Variation in sheet length is comparatively easily achieved. There are however limits on the diameter of longitudinal and cross wires that can be used. Proposed special fabrics should be discussed with a senior BRC Representative to confirm that they can be manufactured before being incorporated into a design.

When special sizes are used, the cutting of Fabric on site is usually eliminated saving time and avoiding costly waste.



BRC FABRIC

Description

BRC Fabric is a pre-fabricated steel reinforcement material. It is a rectangular or square mesh reinforcement manufactured in flat sheets from cold reduced high yield strength steel wire.

Welded Wire Fabric is manufactured on automatic welding machines which assures uniform spacing of wires and consistent cross-sectional areas.

The welding is accomplished by an electronically controlled electrical process employing the principle of fusion combined with pressure, which actually fuses the intersecting wires into a homogeneous section without loss of strength.

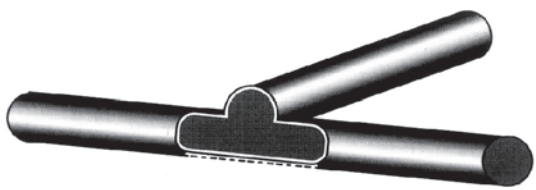


FIG. 1

Cutaway Section of Weld

Controlled Manufacture

BRC Fabric is manufactured from hard drawn steel wire which has a breaking strength of not less than 510 N/mm^2 and a minimum of 0.2% proof stress of 485 N/mm^2, whereas the yield point of structural grade mild steel may be as low as 250 N/mm^2. Unlike hot-rolled bars, cold reduced wire has no definite yield point at or near its elastic limit.

The Benefits of Using BRC Fabric

BRC Wire Fabric provides designers, engineers and contractors with an established convenient and economical reinforcement for modem concrete structures.

Properties

The Barbados National Standards Institute (BNSI), in their standard BNS 150 : 1990, requires wire used in the manufacture of Fabric to have a characteristic yield strength of 460 N/mm^2 (approx. 66,700 p.s.i.). The hard-drawn steel wire used in the manufacture of BRC Fabric meets this requirement.

BRC Fabric bears the BNSI and Buy Caribbean certification marks.

To ensure that high standards are maintained, the wire is regularly tested at our factory and copies of test certificates are available for inspection.

Designed Reinforcement

Welded Wire Fabric provides proper distribution of steel reinforcement throughout the concrete slab. The great number of small diameter wires, which are closely and more uniformly spaced, distribute load stress widely and equally throughout the concrete slab.

From the standpoint of efficiency, Welded Wire Fabric is preferred reinforcement for concrete.

Whereas steel bars must rely entirely on adhesion of the concrete to the bar surface to provide bond for anchorage, BRC Fabric provides positive mechanical anchorage by utilizing the rigidly connected cross-wires welded at each intersection.

By specifying BRC Fabric, the designer is assured of obtaining the required areas of steel at the correct spacing so that on-site supervision is reduced.

Easily Handled & Placed

BRC Fabric is simple to fix and, when properly supported, will remain in position during concreting.

Adaptable For Forming & Shaping

Welded Wire Fabric possesses the right degree of ductility to allow it to be bent, shaped, or fashioned readily on the job yet is sufficiently rigid to maintain its shape after bending.

BRC Fabric permits maximum construction speed and economy while retaining full design strength in the concrete structure.
The higher tensile working stresses permitted for Fabric in building codes reduces the mass of steel required, and costs associated with transportation, handling and placing costs.
BRC Fabric is a reinforcing material pre-fabricated to suit individual job requirements. The cost of laying the flat sheets is much less than the cost of placing, spacing and wiring together the equivalent number of loose rods at the site.
The direct saving in time is becoming increasingly important under modern construction methods and the use of 'Critical Path' planning. In many cases, the time and labour required to place reinforcement can be considerably reduced.
Weighing some 65 per cent less, BRC Fabric as a reinforcement is equivalent in strength to mild steel bars and the total cost of the fabric in place is generally much less than the in-situ cost of loose rods.
As well as providing these economies, BRC Fabric does not have the scrap and waste during processing compared with mild steel bars. The actual quantity of steel bar purchased is usually at least 5 per cent more than that used and this factor should be taken into account in any cost comparison.

A conversion chart appears on Page 15 to compare the difference in quantities of BRC Fabric used at an allowable stress of 230 N/mm^2 against quantities of mild steel bar designed at 140 N/mm^2.

Controls Cracking

BRC Fabric controls cracking in concrete slabs. The small closely spaced wires are highly efficient at distributing and equalizing the stresses that occur at or near any cracks that may form.
Research into crack widths and the width prediction formulae being adopted by building codes show that maximum crack widths are proportional to the distance from the surface to the closest reinforcement, that is, to bar spacing and concrete cover.

Principal Applications

BRC Fabric is especially suitable for the reinforcement of concrete floors (including flat plates), roofs, walls, footings, retaining walls, swimming pools, tanks, roads, pavements, pre-cast concrete components and for the encasing and fireproofing of structural steel-work.

Slabs on Ground

Various BRC Fabrics are made for use in slabs laid directly on the ground, either excavated or filled. Examples of such slabs are the extensive floors of houses of the modern type, and floors for factories, office buildings, garages, warehouses, etc.

The ability of a floor slab cast on the ground to carry load and resist flexural stresses depends upon its overall tensile strength. BRC Fabric will assist in limiting random cracking to a series of much finer cracks and will permit greater lengths of concrete to be laid in one operation.
The reinforcement can be expected to help control tensile forces developed in the concrete as a result of natural shrinkage, contraction of the slab being restricted by frictional contact with the ground.
Basements, ground floors, utility rooms, porches, driveways, garage floors and sidewalks require Welded Wire Fabric for concrete construction in and around the home to control unsightly cracking, leakage and slab deterioration as the building ages.

Suspended Slabs
The greatest benefits of BRC Fabric are enjoyed when it is used as a structural material in suspended slabs spanning up to 5 metres.
In many cases the most difficult work in connection with erection of reinforced concrete structures, is the accurate spacing of the reinforcement. In order that a slab of concrete may safely sustain its super-imposed load, it is not merely essential that it be provided with a certain amount of steel, but the greatest care must be taken to ensure that the reinforcement is correctly placed in the concrete.
Where single rods are used, a considerable amount of time and money is involved in separately laying the bars, carefully spacing them and then individually tying them into position. The correctness or otherwise of such positioning is completely dependent on the steel fixer, whereas the spacing of the wire in BRC Fabric is machine controlled and it is impossible for their relative positions to become changed either before or after laying, or during concreting. The speed of fixing and time saved in supervision and inspection allow concrete to be poured sooner thereby reducing overall construction time. Both Fabric series 'B' and 'C' are commonly used in suspended slabs.

Spread Footings & Strip Footings
BRC Fabric is a convenient reinforcement for use in footings because of the ease of placing this reinforcement in the ground. BRC B503 Fabric may be suitable in strip footings.

Girder Wrapping
In steel framed structures the structural steel members may be concrete encased to achieve the required fire resistance. Most building regulations require that the steel members be wrapped with steel wire to reinforce the concrete encasement. Welded Wire Fabric (D98), is ideal for this purpose as it can be pre-fabricated to shape and quickly installed on the site.

Pre-cast Concrete Units
Welded Wire Fabric is finding increasing application in the reinforcement of pre-cast concrete units because of its high strength, crack control properties and the

fact that it is a pre-fabricated reinforcement and consequently is very easy to fix in position.

Pre-cast Concrete Components
BRC Fabric is ideally suited to reinforce pre-cast concrete products such as concrete planks, roof slabs, floor slabs and wall panels.

Concrete Pipe
BRC Fabric is a standard reinforcing material used in the manufacture of concrete pipes. Concrete pipe, reinforced with BRC Fabric, is used because of its high strength and ability to withstand heavy concentrated loads, its long life, and its low coefficient of roughness, which permit the use of the minimum size of conduit laid on flat gradient without loss of velocity.

Gunite/Shotcrete
The sand-cement product known as Gunite/Shotcrete is used extensively in the construction field. Applied by means of compressed air the dry materials are mixed and blown from a cement gun where water is added at the nozzle. Welded Wire Fabric provides an excellent key during application and reinforces the Gunite/Shotcrete concrete. Reinforced Gunite/ Shotcrete concrete is used for the construction of ditch linings, swimming pools, coal bunkers, pits and other similar facilities, also, for the protection of steel girders and beams, and the repair of damaged structures.

Concrete Walls
Welded Wire Fabric is a very convenient reinforcement for concrete walls because of the ease of placing Fabric sheets when compared to placing and tying individual bars in a vertical position. Again special lengths can be an attractive proposition if there is sufficient repetition, particularly if long overhangs can be provided for splicing at floor level to avoid interference with slab reinforcement. Usually the BRC 'A' series Fabrics are suitable.

Continuously Reinforced Pavements
This type of construction has rapidly gained popularity, because these pavements can be constructed in greater lengths reducing the number of troublesome transverse joints.
Indications are that continuously reinforced concrete roadways can be constructed at little greater capital cost than equivalent flexible and conventional pavements, and with far less maintenance cost. A greater amount of reinforcement of high bond value and of high yield strength is necessary. In general, a 170mm - 200mm slab with 0.5% - 0.7% of longitudinal reinforcement is used for present commercial traffic.
A recent development has been to use a comparatively thin (100mm), continuously reinforced concrete overlay to reinstate a badly worn bitumen or concrete surface, provided the sub-grade has retained its load-carrying capacity.

Standard Series

BRC-manufactured metric Fabrics comply with BNS 150 : 1990 which is identical to British Standards BS 4483 : 1985. The Fabrics come in three series.

"A" series - Square meshes with wires at 200mm spacing; these are ideal for short two way suspended slabs and pavements or canal linings.

"B" series - Rectangular 'Short Mesh" Fabrics with main wire spacing of 100mm and cross wire spacing of 200mm. This series is normally used for suspended slabs and similar applications.

"C" series - Rectangular "Long Mesh" Fabrics with main wire spacing of 100mm and a very light cross wire at -400mm centres. These Fabrics are useful in long span two-way suspended slabs and road pavements.

The reference number used in the BNSI standard gives the type as above, A, B or C followed by the cross-sectional area of the main wire (in mm^2/m width of Fabric).

BRC also manufactures Fabrics additional to the range listed in the National Standard. Metric Fabrics are the preferred range.

Standard Sizes

The standard sheet size is 4.8m long and 2.0m wide.

How to order BRC Fabric

The style of BRC Fabrics should be specified by the Reference Number given on Page 2.
For Special (non standard) Fabrics specify the style by the combination of wire size in both directions, wire spacing in both directions and by sheet size.

Length

Length of a BRC Fabric sheet is defined as the dimension in the direction of manufacture. Hence the length is the length of the main wire, which is usually the heavier wire. The specification of the main wire (length, spacing, diameter), is always given before the specification of the cross wire.
Length of a sheet measured tip to tip of main wires may be any length that can be handled and transported, but the length must be a multiple of cross wire spacing.

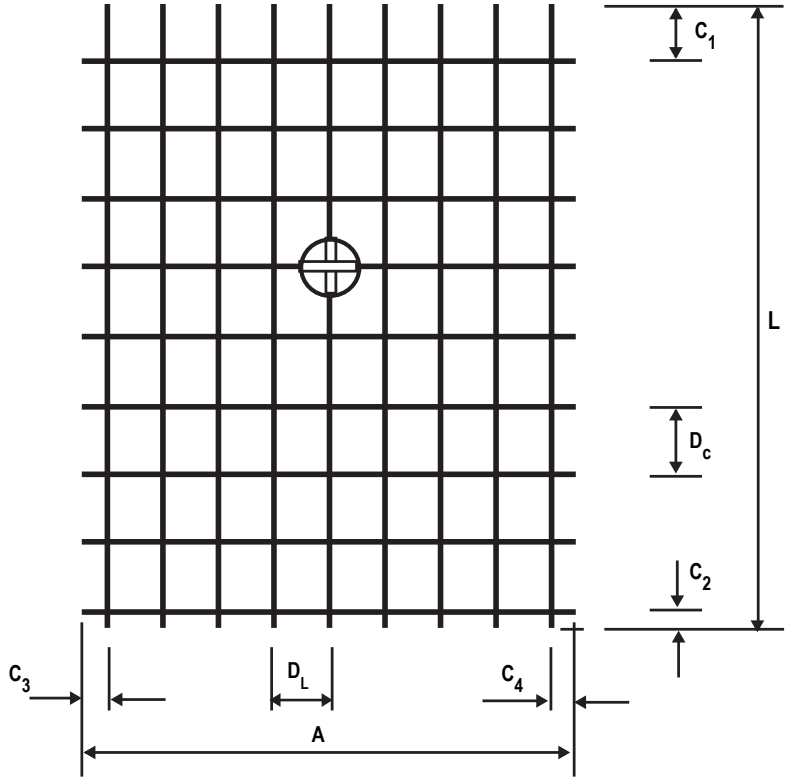
Width

The width of any Fabric sheet is measured in the direction of the cross wire. The width of a sheet measured tip to tip of cross wires may be any width that can be handled and transported up to a maximum of 2.5m, but the width must be a multiple of main wire spacings.

Designation - Special Fabrics

The designation of Special Fabrics is indicated in the following example.

Fabric sheet 3.6m x 2.00m.
wires 200 x 300 - 8/6mm
(Note - wire spacings and diameters are always shown in mm)



Where:

L is the length of the longitudinal wires (which are not necessarily the longer wires in the sheet).

A is the length of the cross wires.

C_1 and C_2 are the overhangs of the longitudinal wires.

C_3 and C_4 are the side overhangs of the cross wires.

D_L is the pitch of the longitudinal wires.

D_c is the pitch of the cross wires.

Figure 2. Fabric Notation

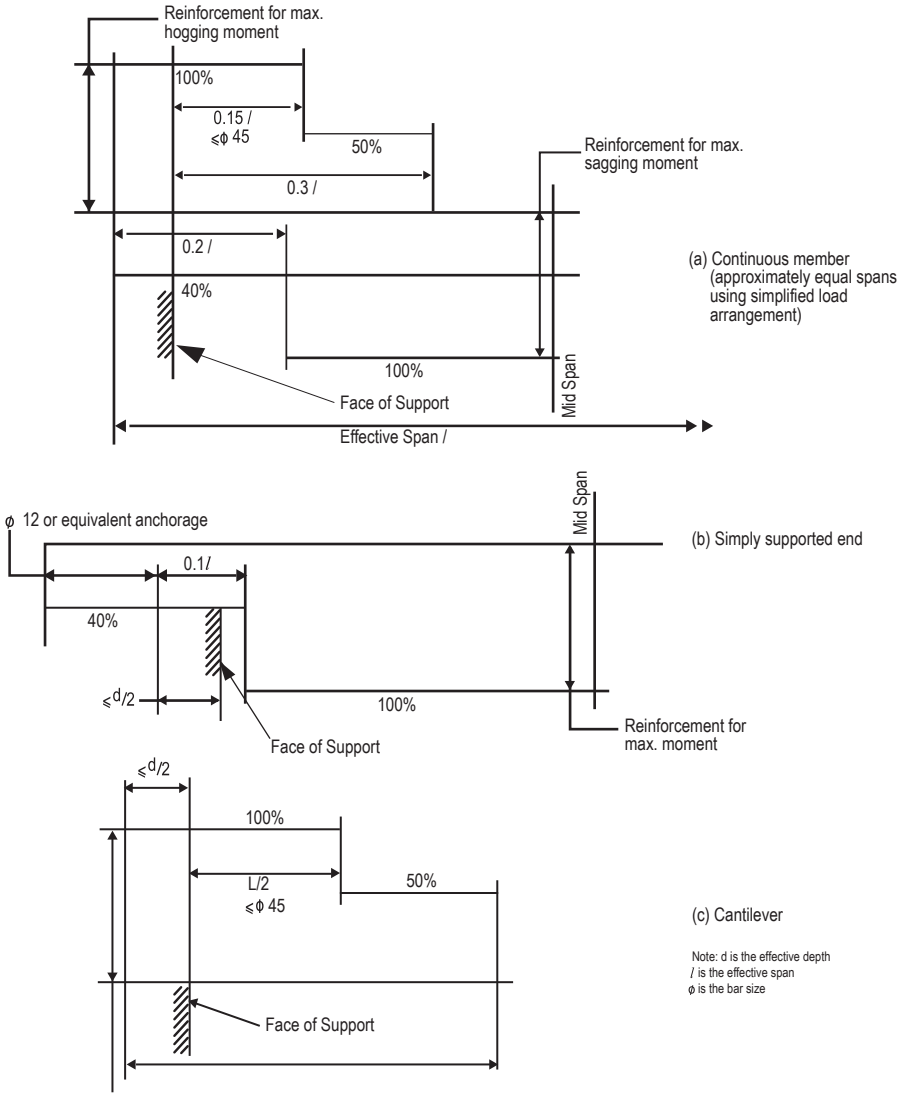
Details of BRC Fabric adjacent to Reinforced Concrete Beams

Some care is needed when detailing Fabric in the bottom of slabs which are adjacent to reinforced concrete beams. Fabric in the top of slabs passes over the beam reinforcement and does not usually cause difficulties providing reasonable care is taken with lap locations.

When locating bottom Fabric on site, the sheet will normally have overhangs at each end which can penetrate the beam. The designer should show the penetration required to meet Design Code requirements.

BRC Fabric is an excellent material for providing torsion steel in slabs as required by BS 8110 Part 1 : 1985 clauses 3.5.3.5.

Figure 3. Simplified detailing rules for slabs



Placing Fabric

The following points will be of assistance when placing BRC Fabric.

1. For rectangular meshes, make sure that the Fabric is placed with the main wires in the correct direction, normally in the direction of the shorter span.

On some occasions, they are placed in the direction of the longer span, therefore the drawings should be followed exactly.

2. It is important that the Fabric be given the correct cover as shown on the plan. Any increase in the cover decreases the effective depth of the slab and reduces its strength. Insufficient cover will not protect the reinforcement from rusting.
3. As the final strength of a slab is determined to a major degree by the correct location of the reinforcement, it is advisable to support the Fabric. This can be achieved by the use of Spacers not subject to corrosion should be used under the bottom layer in suspended slabs or in ground slabs where only one layer of Fabric is used. Where Fabric is to be placed in the top of the slab for cantilever reinforcement, or to provide against negative moments, bar chairs of wire or plastic, or short lengths of bar or Fabric bent into a hurdle shape should be used to support the top layer.
4. Cutting is easily done by using bolt cutters.

Concrete Floor Slabs and Pavements on the Ground

BRC Fabric is ideal for use as reinforcement in concrete slabs on the ground. Care is needed in the design of these slabs. The following factors must be considered.

1. Loading and frequency
2. Soil type under the slabs, both as regards bearing capacity and stability.
3. The presence of any ground water.
4. Provision for drainage of surface water.
5. Concrete strength and provision for concrete curing.
6. Joint layout.

The following guidelines will be useful in the design of slabs provided they are followed carefully. If any of the guidelines cannot be met, the assistance of an experienced structural engineer should be obtained.

1. All topsoil containing any plant matter, roots or similar material must be moved.
2. The base should be firm and dry. Slabs on soft soil need special attention.
3. Provide under the slab a layer of hard granular material equal in thickness to the slab thickness. This material should be sand, crushed rock or similar material. Compact this layer well by rolling.
4. Grade the surrounding area away from the slab so the surface water will not penetrate the base below the slab.
5. Concrete should reach a minimum compressive strength of 30 MPa (N/mm^2) (approx. 4350 p.s.i.) after 28 days. This strength can usually be obtained with a minimum cement content of 275 kg/m^3 for lightest loading condition and slab fully protected.

6. The concrete should be cured by keeping it wet for 7 days after pouring. The slab should not be fully loaded until the concrete is 21 days old.
7. Where in Table 5 it is shown that BRC Fabric is required in the top of the slab, this means that the BRC Fabric should be placed 50mm below the top surface of the concrete. Bottom means place BRC Fabric 35mm up from the bottom of the slab.
8. For highway pavements required to carry heavily loaded trucks, structural engineers should design a suitable slab. Similarly, for warehouses where loads are not uniform or loads are unusually heavy, specialist advice is needed.

Table 5. BRC Fabric in typical slabs on the ground

Application	Soil	Slab Thickness mm	Location and BRC Fabric
Domestic cars and foot traffic	dry and stable	100 (4")	top BRC A 142
	needs compaction of base	100 (4½")	top BRC A 193
Light industrial and commercial	dry and stable	125 (5")	top BRC A 193
small trucks	needs compaction of base	150 (5")	top BRC A 252
Warehouses and pavements	dry and stable	160 (6")	top BRC A 393
for trucks	needs compaction of base	200 (8")	top BRC A 393

Crack Control

BRC Fabric will control the spacing and size of cracks that develop in the concrete due to initial shrinkage, temperature changes and minor soil movement. The high quality of the wire used and the positive anchorage provided at each welded joint combine to keep any concrete cracks small and closely spaced.

To perform this task, it is essential that the Fabric is kept in its correct position near the top of the slab. The use of Fabric does not replace the need for good compaction of the base soil. To get a good result it is essential that the layers below the concrete be well compacted.

At joints in the slabs, dowel bars should be placed in the centre of the slab so that the two adjacent slabs do not move vertically out of position.

A typical dowel arrangement for slabs up to 125mm thick, would be 13mm diameter dowel bars 400mm long spaced at 300mm centres.

For slabs 150mm to 200mm thick, 16mm diameter dowel bars 500mm long spaced at 300mm centres would be appropriate.

Fig. 4 Typical dowel bar arrangement

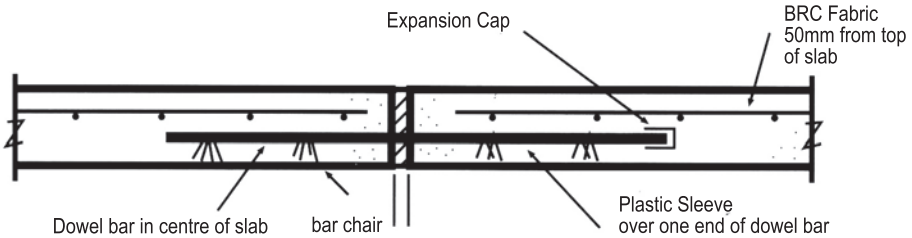


Table 6 Substitution of BRC Fabric for Metric Mild Steel Bars

MILD STEEL			BARS EQUIVALENT METRIC FABRICS			
			Square Mesh		Rectangular Mesh	
Dia. Mm	Spacing mm	Area mm2/m	Ref. No.	mm2/m	Ref. No.	mm2/m
	50	566	A 393	393	B 385	385
6	50	566	A 393	393	B 385	385
	75	377	A 252	252	B 283	283
	100	283	A 193	193	B 196	196
	125	226	A 142	142	B 196	196
	150	189	A 142	142	B 196	196
	200	142	A 98	98	-	-
	250	113	A 98	98	-	-
10	50	1570	-	-	-	-
	75	1047	-	-	-	-
	100	785	2xA 252	504	B 503	503
	125	628	A 393	393	B 385	385
	150	523	A 393	393	B 385	385
	175	448	A 252	252	B 283	283
	200	393	A 252	252	B 283	283
	250	314	A 193	193	B 196	196
	300	262	A 142	142	B 196	196
12	75	1508	-	-	-	-
	100	1131	2xA 393	786	B 785	785
	125	905	2xA 252	504	B 503	503
	150	754	2xA 252	504	B 503	503
	175	646	A 393	393	B 385	385
	200	566	A 393	393	8 385	385
	250	453	A 252	252	B 283	283
	300	377	A 252	252	8 283	283
	400	283	A 193	193	B 196	196
16	125	1609	-	-	-	-
	150	1340	-	-	-	-
	175	1149	2xA 393	786	B 785	785
	200	1005	2xA 393	786	B 785	785
	250	804	2xA 252	504	B 503	503
	300	670	A 393	393	B 385	385
	400	503	A 393	393	B 385	385

FLOOR SLAB TABLES

The tables of the main bending reinforcement required in suspended floors are based on the imposed loading given in C P 3 Chapter V of the Code of Basic Data for the Design of Buildings and also the Code of Practice for the Structural Use of Reinforced Concrete in Building: C.P. 114 Tables A give the thickness of concrete and the BRC Fabric required in solid floors to carry the imposed These tables are for continuous spans when adjacent spans do not vary from one another by more than 15 per cent of the longer span.

The concrete should be 1:2:4 by volume gauged in the proportions of 50kg Portland Cement, 0.07m^3 clean well graded sand, 0.14m^3 clean gravel or crushed stone graded uniformly from 5mm to 19mm with the minimum quantity of water to give a workable mixture.

We recommend that the cement content for this mix should be not less than 300 kg per cubic metre.

USE OF TABLES

Tables A are for continuous spans. The figures in each table give the Ref. No. of BRC Fabric to be used. For instance - to carry a safe imposed load of 1.5 kN/m^2 over a span of 3.0m using concrete 150mm thick with a maximum concrete stress of 7 N/mm^2, Ref. B196 Fabric may be used. If the thickness of concrete is not determined by other considerations it is usually most economical to select the thinnest slab.

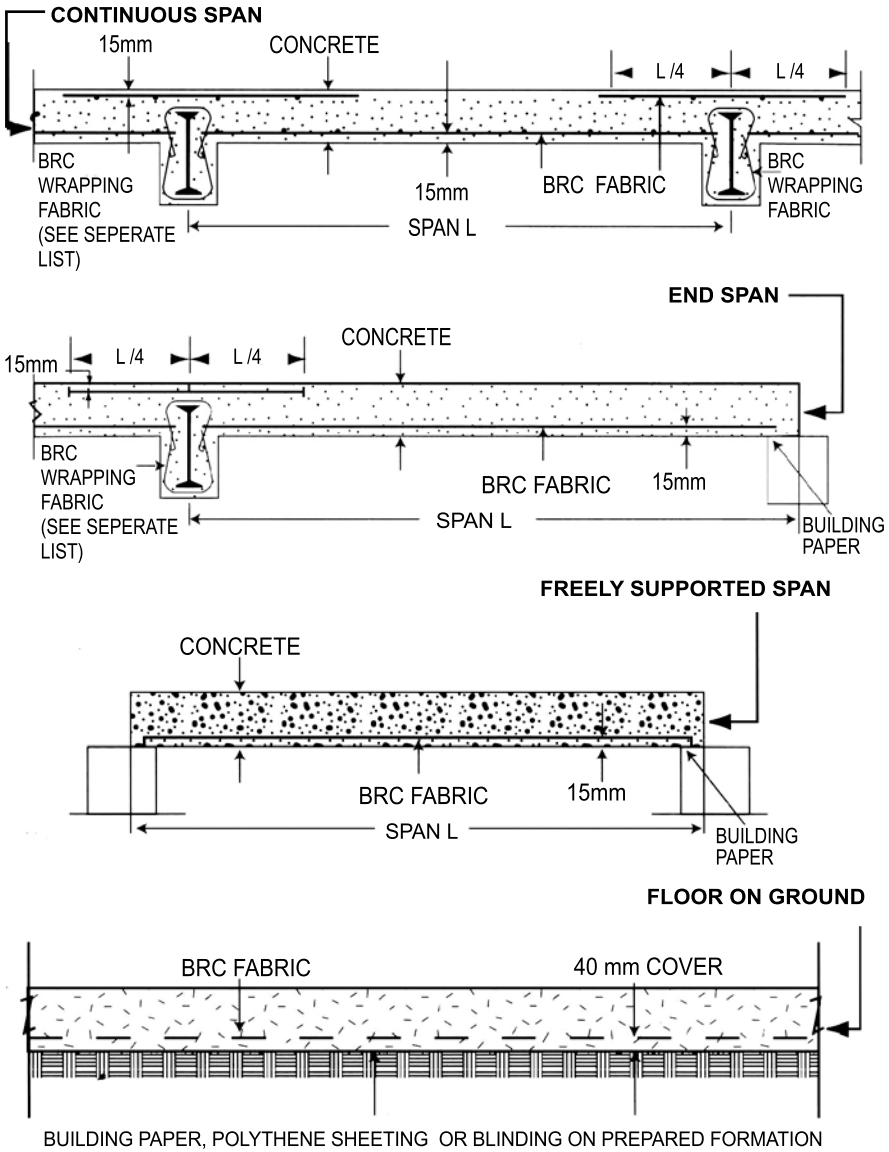
End spans should, if possible, be made equal to, or less than nine-tenths of the continuous spans, for the same size of reinforcement. If the end spans are the same as the others, an extra strip of reinforcement, of length equal to two-thirds of the span, should be placed in the bottom of the slab, and another strip of length equal to one-quarter of the span, should be placed near the top surface symmetrically over the support next to the free end support. This extra reinforcement need be only about one-quarter the strength of the main reinforcement, though it is often more convenient to make it the same size. A freely supported span may be designed from the tables, by assuming it to be equivalent to a continuous span 25% greater.
The tables allow in every case for the weight of the floor and finish, and also cover the requirements of C P 3 Chapter V. It is sometimes necessary to make allowance for partitions and whilst lightweight partitions will be covered by using a table for a loading 1.0 kN/m^2 more than the class being considered, heavier partitions, e.g. brick, will call for special design.

Tables B give the resistance moments of slabs in accordance with the load-factor method of calculation given in C.P. 114.

The tables are calculated using the permissible working tensile stress in BRC Fabric of 230 N/mm2 and two qualities of concrete for which the permissible working compressive stresses are 7 N/mm2 and 8.5 N/mm2 respectively.

These tables are intended for the use of qualified structural engineers who have made their calculations and only require to choose suitable combinations of slab thickness and BRC Fabric.

Suspended Floor Slabs



BRC FABRIC
FLOOR SLAB TABLES

Working stresses taken in the preparation of floor slab tables type 'A' are 230N per sq. mm for fabric and 7N per sq. mm for concrete (for simply supported spans use a continuous span 25 per cent greater) T = 230 N per sq. mm P = 7N per sq. mm Cover = 15 mm

RESIDENTIAL BUILDINGS, BEDROOMS IN CLUBS AND HOSTELS

Safe imposed load 15kN per sq. m + 1.0kN per sq. m finishes

SPAN IN METRES

SLAB THICKNESS		2.0 (6.56)	2.5 (8.20)	3.0 (9.84)	3.5 (11.48)	4.0 (13.12)	4.5 (14.76)	5.0 (16.40)	5.5 (18.04)	6.0 (19.69)	6.5 (21.33)	7.0 (22.97)
mm	in.											
100	3.94	B196	B196	B283								
125	4.92	B196	B196	B196	B283							
150	5.90	B196	B196	B196	B283	B385	B503					
175	6.89	B283	B283	B283	B283	B283	B385	B503	B785			
200	7.87	B283	B283	B283	B283	B283	B385	B503	B503	B785		
225	8.86	B283	B283	B283	B283	B283	B385	B385	B503	B785	B785	
250	9.84	B385	B385	B385	B385	B385	B385	B385	B503	B785	B785	B785
275	10.83	B385	B385	B385	B385	B385	B385	B385	B503	B785	B785	B785
300	11.81	B385	B385	B385	B385	B385	B385	B385	B503	B503	B785	B785

A

Figures in parentheses give equivalent span in feet

(for simply supported spans use a continuous span 25 per cent greater) T = 230 N per sq. mm P = 7N per sq. mm Cover = 15 mm

CLUBS, COLLEGES, HOSPITALS, HOTELS

Safe imposed load 15kN per sq. m + 1.0kN per sq. m finishes

SPAN IN METRES

SLAB THICKNESS		2.0 (6.56)	2.5 (8.20)	3.0 (9.84)	3.5 (11.48)	4.0 (13.12)	4.5 (14.76)	5.0 (16.40)	5.5 (18.04)	6.0 (19.69)	6.5 (21.33)	7.0 (22.97)
mm	in.											
100	3.94	B196	B196	B283								
125	4.92	B196	B196	B196	B385							
150	5.90	B196	B196	B196	B283	B385	B503					
175	6.89	B283	B283	B283	B283	B385	B503	B503	B785			
200	7.87	B283	B283	B283	B283	B283	B385	B503	B785	B785		
225	8.86	B283	B283	B283	B283	B283	B385	B503	B785	B785	B785	
250	9.84	B385	B385	B385	B385	B385	B385	B503	B503	B785	B785	
275	10.83	B385	B385	B385	B385	B385	B385	B385	B503	B785	B785	B785
300	11.81	B385	B385	B385	B385	B385	B385	B385	B503	B785	B785	B785

Figures in parentheses give equivalent span in feet

(for simply supported spans use a continuous span 25 per cent greater) T = 230 N per sq. mm P = 7N per sq. mm Cover = 15 mm

OFFICES, INCLUDING LIGHTWEIGHT PARTITIONS

Safe imposed load 15kN per sq. m + 1.0kN per sq. m finishes

SPAN IN METRES

SLAB THICKNESS		2.0 (6.56)	2.5 (8.20)	3.0 (9.84)	3.5 (11.48)	4.0 (13.12)	4.5 (14.76)	5.0 (16.40)	5.5 (18.04)	6.0 (19.69)	6.5 (21.33)
mm	in.										
100	3.94	B196	B283	B385							
125	4.92	B196	B196	B283	B503						
150	5.90	B196	B196	B283	B385	B503	B785				
175	6.89	B283	B283	B283	B385	B503	B503	B785			
200	7.87	B283	B283	B283	B283	B385	B503	B785	B785		
225	8.86	B283	B283	B283	B283	B385	B503	B785	B785	B785	
250	9.84	B385	B385	B385	B385	B385	B385	B503	B785	B785	
275	10.83	B385	B385	B385	B385	B385	B385	B503	B785	B785	B785
300	11.81	B385	B385	B385	B385	B385	B385	B503	B785	B785	B785

A

Figures in parentheses give equivalent span in feet

(for simply supported spans use a continuous span 25 per cent greater) T = 230 N per sq. mm P = 7N per sq. mm Cover = 15 mm

STUDIOS, READING ROOMS, CAR PARKS

Safe imposed load 15kN per sq. m + 1.0kN per sq. m finishes

SPAN IN METRES

SLAB THICKNESS		2.0 (6.56)	2.5 (8.20)	3.0 (9.84)	3.5 (11.48)	4.0 (13.12)	4.5 (14.76)	5.0 (16.40)	5.5 (18.04)	6.0 (19.69)	6.5 (21.33)	7.0 (22.97)
mm	in.											
100	3.94	B196	B196	B385								
125	4.92	B196	B196	B283	B385							
150	5.90	B196	B196	B283	B283	B385	B503					
175	6.89	B283	B283	B283	B283	B385	B503	B785	B785			
200	7.87	B283	B283	B283	B283	B385	B503	B503	B785	B785		
225	8.86	B283	B283	B283	B283	B283	B385	B503	B785	B785		
\ 250	9.84	B385	B385	B385	B385	B385	B385	B503	B785	B785	B785	
275	10.83	B385	B385	B385	B385	B385	B385	B503	B503	B785	B785	
300	11.81	B385	B385	B385	B385	B385	B385	B385	B503	B785	B785	B785

Figures in parentheses give equivalent span in feet

(for simply supported spans use a continuous span 25 per cent greater) T = 230 N per sq. mm P = 7N per sq. mm Cover = 15 mm

BANKING HALLS, CHURCHES, CLASSROOMA, KITCHENS, LAUNDRIES

Safe imposed load 15kN per sq. m + 1.0kN per sq. m finishes

SPAN IN METRES

SLAB THICKNESS		2.0 (6.56)	2.5 (8.20)	3.0 (9.84)	3.5 (11.48)	4.0 (13.12)	4.5 (14.76)	5.0 (16.40)	5.5 (18.04)	6.0 (19.69)	6.5 (21.33)
mm	in.										
100	3.94	B196	B283	B385							
125	4.92	B196	B196	B283	B385						
150	5.90	B196	B196	B283	B283	B503	B785				
175	6.89	B283	B283	B283	B283	B385	B503	B785	B785		
200	7.87	B283	B283	B283	B283	B385	B503	B785	B785		
225	8.86	B283	B283	B283	B283	B385	B385	B503	B785	B785	
250	9.84	B385	B385	B385	B385	B385	B385	B503	B785	B785	
275	10.83	B385	B385	B385	B385	B385	B385	B503	B785	B785	B785
300	11.81	B385	B385	B385	B385	B385	B385	B503	B503	B785	B785

Figures in parentheses give equivalent span in feet

(for simply supported spans use a continuous span 25 per cent greater) T = 230 N per sq. mm P = 7N per sq. mm Cover = 15 mm

SHOPS, ASSEMBLY HALLS (FIXED SEATING), EXHIBITION GALLERIES

Safe imposed load 15kN per sq. m + 1.0kN per sq. m finishes

SPAN IN METRES

SLAB THICKNESS		2.0 (6.56)	2.5 (8.20)	3.0 (9.84)	3.5 (11.48)	4.0 (13.12)	4.5 (14.76)	5.0 (16.40)	5.5 (18.04)	6.0 (19.69)
mm	in.									
100	3.94	B196	B283	B503						
125	4.92	B196	B283	B385	B385					
150	5.90	B196	B196	B283	B283	B503	B503			
175	6.89	B283	B283	B283	B283	B503	B503	B785		
200	7.87	B283	B283	B283	B283	B385	B385	B785	B785	
225	8.86	B283	B283	B283	B283	B385	B385	B785	B785	
250	9.84	B385	B385	B385	B385	B385	B385	B785	B785	B785
275	10.83	B385	B385	B385	B385	B385	B385	B503	B785	B785
300	11.81	B385	B385	B385	B385	B385	B385	B503	B785	B785

A

Figures in parentheses give equivalent span in feet

(for simply supported spans use a continuous span 25 per cent greater) T = 230 N per sq. mm P = 7N per sq. mm Cover = 15 mm

GARAGES, WORKSHOPS, ASSEMBLY AREAS, (WITHOUT FIXED SEATING) FILING ROOMS

Safe imposed load 15kN per sq. m + 1.0kN per sq. m finishes

SPAN IN METRES

SLAB THICKNESS		2.0 (6.56)	2.5 (8.20)	3.0 (9.84)	3.5 (11.48)	4.0 (13.12)	4.5 (14.76)	5.0 (16.40)	5.5 (18.04)	6.0 (19.69)
mm	in.									
100	3.94	B196	B385	B503						
125	4.92	B196	B283	B385	B785					
150	5.90	B196	B283	B385	B503	B785	B785			
175	6.89	B283	B283	B283	B385	B503	B785			
200	7.87	B283	B283	B283	B385	B503	B785	B785		
225	8.86	B283	B283	B283	B385	B385	B503	B785	B785	
250	9.84	B385	B385	B385	B385	B385	B503	B785	B785	
275	10.83	B385	B385	B385	B385	B385	B503	B785	B785	B785
300	11.81	B385	B385	B385	B385	B385	B503	B503	B785	B785

A

Figures in parentheses give equivalent span in feet

(for simply supported spans use a continuous span 25 per cent greater) T = 230 N per sq. mm P = 7N per sq. mm Cover = 15 mm

FACTORIES, MOTOR ROOMS, BROADCASTING STUDIOS, STAGES

Safe imposed load 15kN per sq. m + 1.0kN per sq. m finishes

SPAN IN METRES

SLAB THICKNESS		2.0 (6.56)	2.5 (8.20)	3.0 (9.84)	3.5 (11.48)	4.0 (13.12)	4.5 (14.76)	5.0 (16.40)	5.5 (18.04)
mm	in.								
100	3.94	B283	B503	B785					
125	4.92	B283	B385	B503	B785				
150	5.90	B196	B283	B503	B785	B785			
175	6.89	B283	B283	B385	B503	B785			
200	7.87	B283	B283	B385	B503	B785	B785		
225	8.86	B283	B283	B283	B385	B503	B785		
250	9.84	B385	B385	B385	B385	B503	B785	B785	
275	10.83	B385	B385	B385	B385	B503	B785	B785	
300	11.81	B385	B385	B385	B385	B385	B503	B503	B785

A

Figures in parentheses give equivalent span in feet

(for simply supported spans use a continuous span 25 per cent greater) T = 230 N per sq. mm P = 7N per sq. mm Cover = 15 mm

FACTORIES, WAREHOUSES

Safe imposed load 15kN per sq. m + 1.0kN per sq. m finishes

SPAN IN METRES

SLAB THICKNESS		2.0 (6.56)	2.5 (8.20)	3.0 (9.84)	3.5 (11.48)	4.0 (13.12)	4.5 (14.76)	5.0 (16.40)
mm	in.							
100	3.94	B385	B785					
125	4.92	B283	B503	B785				
150	5.90	B283	B385	B503	B785			
175	6.89	B283	B283	B503	B785			
200	7.87	B283	B283	B385	B503	B785		
225	8.86	B283	B283	B385	B503	B785	B785	
250	9.84	B385	B385	B385	B503	B785	B785	
275	10.83	B385	B385	B385	B385	B503	B785	
300	11.81	B385	B385	B385	B385	B503	B785	B785

A

Figures in parentheses give equivalent span in feet

B MOMENTS OF RESISTANCE OF SLABS REINFORCED WITH BRC FABRIC IN NEWTON METRES PER METRE WIDTH BY LOAD FACTOR METHOD OF DESIGN.

T = 230.0 N per sq. mm P = 7.0 N per sq. mm Cover = 15.0 mm

FABRIC REFERENCE NUMBERS

SLAB THICKNESS		B196	B283	B385	B503	B785
mm	in.					
100	3.94	3501	4883	6376	7936	10951
125	4.92	4628	6510	8590	10829	15465
150	5.90	5755	8137	10804	13721	19978
175	6.89		9765	13017	16613	24492
200	7.87		11392	15231	19505	29006
225	8.86		13019	17445	22398	33520
250	9.84			19659	25290	38033
275	10.83			21872	28182	42547
300	11.81			24086	31074	47061

B MOMENTS OF RESISTANCE OF SLABS REINFORCED WITH BRC FABRIC IN NEWTON METRES PER METRE WIDTH BY LOAD FACTOR METHOD OF DESIGN.

T = 230.0 N per sq. mm P = 8.0 N per sq. mm Cover = 15.0 mm

FABRIC REFERENCE NUMBERS

SLAB THICKNESS		B196	B283	B385	B503	B785
mm	in.					
100	3.94	3539	4963	6524	8189	11567
125	4.92	4666	6590	8738	11082	16081
150	5.90	5793	8218	10952	13974	20599
175	6.89		8945	13166	16866	25108
200	7.87		11472	15379	19758	29622
225	8.86		13099	17593	22651	34136
250	9.84			19807	25543	38650
275	10.83			22021	28435	43163
300	11.81			24234	31327	47677