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R.F CABLES
TYPE UR, URM AND RG

GENERAL AND TECHNICAL INFORMATION

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CONTENTS

PREFACE

Each leaf of this publication bears the date of issue. Subsequent amendments to the Initial Issue bear the date and number of the Amendment List with which they were issued. New or amended technical matter will be indicated by the use of triangles positioned outside the type area, thus ▶------◀ or by the words 'completely revised' below the title of each prime element where this has been so changed that amendment indicators would be inappropriate.

Chapter 1

GENERAL INFORMATION

CONTENTS

Introduction

1 The r.f. cables described in chapters 2, 3 and 4 have been designated for use at radio frequencies to enable r.f. power to be efficiently transmitted by direct interconnection. Most of the r.f. cables described are suitable for use up to and including the u.h.f. band, as indicated in Table 1. These cables are designated either Uniradio (UR), Uniradio metric (URM), Duradio (DR), or Duradio metric (DRM) dependent upon whether they contain a single (Uni type), or a twisted pair of inner conductors (Du type). The cable type designating letters are followed by numbers which define the particular cable characteristics in accordance with specification D.E.F. 61-11 (Part 1), DEF 61-12 (Part 9), Issue 1, or BS2316.

TABLE 1 RADIO FREQUENCY CLASSIFICATION

Classification	Abbreviation	Frequency range
Low frequency	l.f.	30 to 300 kHz
Medium frequency	m.f.	300 kHz to 3 MHz
High frequency	h.f.	3 to 30 MHz
Very high frequency	v.h.f.	30 to 300 MHz
Ultra high frequency	u.h.f.	300 to 3000 MHz
Super high frequency	s.h.f.	3000 to 30000 MHz

DESCRIPTION

General

2 These r.f. cables are of coaxial construction as shown in Fig.1 and the range of cables available are listed in chapter 2 for UR and DR type, chapter 3 for URM and DRM type, and chapter 4 for RG type, together with the approximate equivalent American MIL-C-17D RG cable, where appropriate. The construction of each cable type, together with the materials used, decides the electrical characteristics and applications of each particular type of cable. When renewing cables, only cables of similar physical and electrical characteristics to that which is being renewed should be used, this may be ascertained from tables contained in chapters 2, 3 and 4.

3 The cables comprise an inner (centre) conductor and an outer (tubular) conductor, separated at a fixed spacing along their length by a dielectric material. The outer conductor may be protected by an insulating sheath and the sheath, in turn, may be covered by additional protection sheaths, or metal armouring, together with the appropriate bedding or serving. The cable may be described by the type of dielectric, the outer conductor and the impedance.

Cable construction

4 The materials used in the construction of each type of cable and the overall dimensions of each layer of material are listed in the appropriate chapters. The various layers of materials that form the cable may be either extruded or wound with the exception of the braidings which are woven.

Inner conductors

5 The inner conductors may be of a single, stranded or braided construction, and a number of different materials may be used, depending upon the application requirements. The materials together with their abbreviations are as follows:

5.1 Plain copper wire (p.c.w.)

5.2 Rhometal

5.3 Manganin

5.4 Copper coated steel wire (c.c. steel w.).

5.5 Silver plated copper wire (s.p.c.w.).

5.6 Tinned copper wire (t.c.w.).

5.7 Copper nickel alloy (c.n.a.).

5.8 Enamelled copper wire (e.c.w.).

5.9 Silver plated, copper coated steel wire (s.p.c.c. steel w.).

5.10 Chrome nickel wire (cr.ni.w.).

Dielectrics

6 The dielectric materials used are either polythene (p.e.) or polytetrafluoroethylene (p.t.f.e.). The construction may be solid, semi-air-spaced or air-spaced.

6.1 Solid dielectrics. Solid dielectrics completely fill the space between the inner and outer conductors. The dielectric may be homogeneous or composite, the latter comprising two or more concentric adhering layers having different properties.

6.2 Semi-air-spaced dielectrics. Semi-air-spaced dielectrics are intermediate between that of air-spaced and solid dielectrics. The main characteristic is that it is not possible to pass from the inner conductor to the outer conductor without passing through alternate layers of air and solid dielectric. Expanded or cellular dielectrics are also regarded as semi-air-spaced dielectrics.

6.3 Air-spaced dielectrics. Air-spaced cables have alternate air and solid dielectric paths between the inner and outer conductors. Characteristically, outside the spacers, or helix tape, it is possible to pass from the inner conductor to the outer conductor without passing through any solid dielectric.

Outer conductors

7 The outer conductors may be in the form of a woven braid or an extruded lead alloy or aluminium tube. The braid material may be as follows:

7.1 Plain copper wire (p.c.w.).

7.2 Silver plated copper wire (s.p.c.w.).

7.3 Tinned copper wire (t.c.w.).

8 Braids may be single or double and the double braids may be fitted with an intersheath of polythene (p.c.) or polyvinyl chloride (p.v.c.). The s.p.c.w. braids are used on cables intended for u.h.f. operation.

Outer protection

9 The outer protections (sheaths) are mainly of extruded polyvinyl chloride (p.v.c.), polythene (p.e.), fluorinated ethene propane (f.e.p.), glass fibre, nylon or p.t.f.e; other materi galvanized steel wire

coated with p.v.c. Normally outer p.e. and p.v.c. protections are coloured black to resist damage by ultra violet light, but certain cables may have coloured outer protections to denote particular functions. Nylon and glass-fibre outer protections are natural colour and contain heat and light stabilizing elements. The cables may be fitted with additional protection in the form of extra sheaths and metal armour. The cable Type UR75 is armoured with an aluminium wire braid. RG type cables (American MIL-C-17D), where armoured, consist of a flexible galvanized iron wire (g.i.w.) braid.

Electrical charateristics

10 These characteristics are functions of the materials and physical dimensions used in the cable construction. A table is provided in chapters 2, 3 and 4 detailing the electrical characteristics for each type of cable which is not affected by changes of frequency.

11 The characteristic impedance of a coaxial cable is the impedance which would be measured at the end of the cable if it were infinitely long. If a cable is terminated by this impedance all the energy flowing along the cable is absorbed at the termination and none is reflected back along the cable. At radio frequencies this impedance may be assumed to be purely resistive. It is a function of ratio of the outer diameter of the inner conductor, to the inner diameter of the outer conductor and of the permittivity of the dielectric.

Capacitance

12 The capacitance of a cable is measured at picofarads per unit length. For imperial units the measurement is in pf/ft and for metric units the measurment is in pf/m. It is a function of the ratio of the outer diameter of the inner conductor to the inner diameter of the outer conductor and the thickness, length and material of the dielectric.

Velocity ratio

13 The velocity ratio of a cable is the ratio of the velocity of wave propagation in the cable to the velocity of wave propagation in free space. It is a function of the permittivity of the dielectric.

Peak voltages

14 The peak r.f. pulse and d.c. voltages which may be applied to the cables are functions of the materials used in the construction of the cables, and dimensions and methods of construction.

Power rating and attenuation

15 The power rating and nominal attenuation are affected by the applied frequencies and therefore determine the maximum frequency for which each cable type may be used.

Power rating

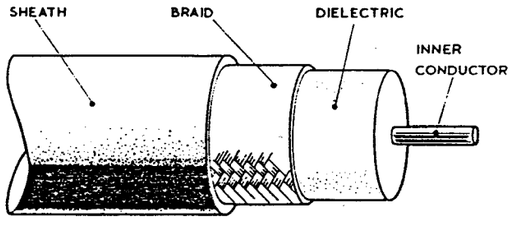
16 The power rating of the cable is the mean input power which may be continuously transmitted along the cable at a stated temperature when the cable is terminated by its characteristic impedance.

Attenuation

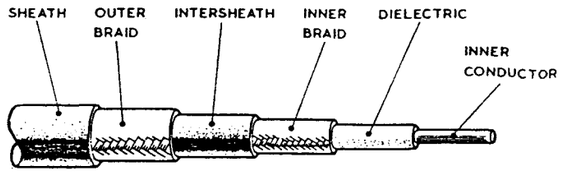
17 The nominal attenuation of a cable is measured per unit length and given in decibels (dB) per 100 ft (imperial) or 100 m (metric) at a specified frequency and ambient temperature.

INSTRUCTIONS FOR USE

18 When preparing coaxial cables for use, care must be taken that they are not damaged either physically or by overheating. When cutting through the various layers only sufficient pressure should be applied to penetrate a single layer at each cut. A pyrotenax cutter, set to the appropriate cutting depth and a pipe bender hand tool IC/8802 should be used for armouring, lead alloy and aluminium sheaths. Inner conductor braids should be carefully unravelled using a scriber or similar sharp pointed tool. When cutting a wrapped layer a whipping should be applied to the layer behind the point of cutting, to prevent the wrapped turns unwinding.



SOLID DIELECTRIC, SINGLE BRAID



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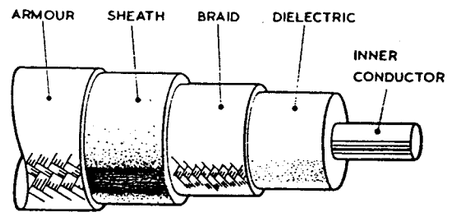
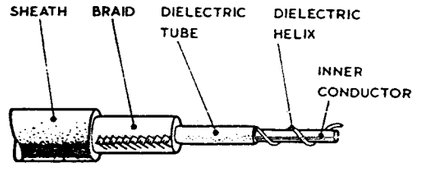
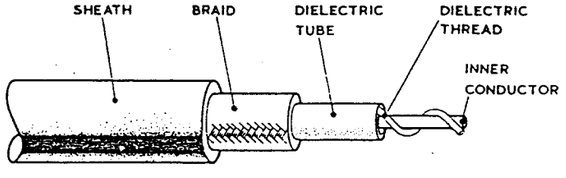


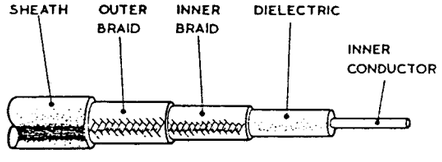
SOLID DIELECTRIC, SINGLE BRAID, ARMOURED



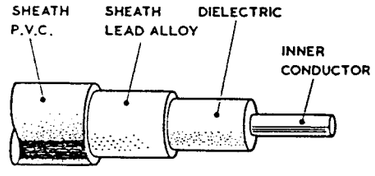
SEMI-AIR SPACED, SINGLE BRAID



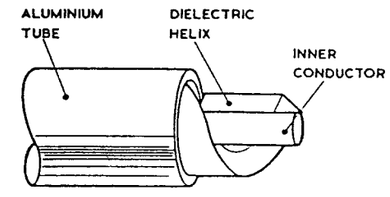
SEMI-AIR SPACED, SINGLE BRAID, THREAD



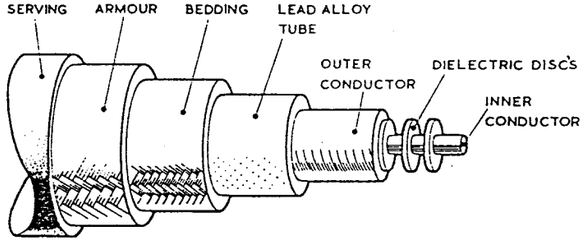
SOLID DIELECTRIC, DOUBLE BRAID



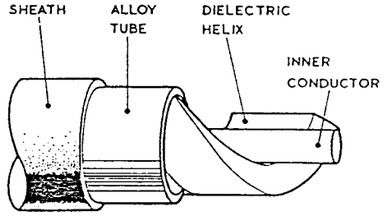
SOLID DIELECTRIC, LEAD ALLOY SHEATH,
P.V.C. SHEATHED



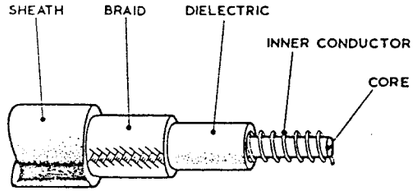
AIR-SPACED, ALUMINIUM TUBE



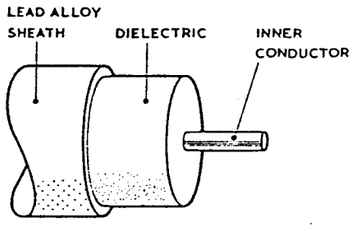
AIR-SPACED, COPPER TAPE ARMOUR SERVED



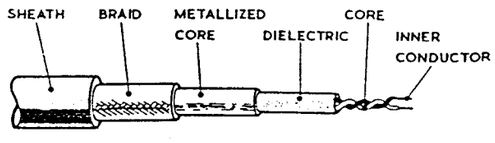
AIR-SPACED, ALLOY TUBE, SHEATHED



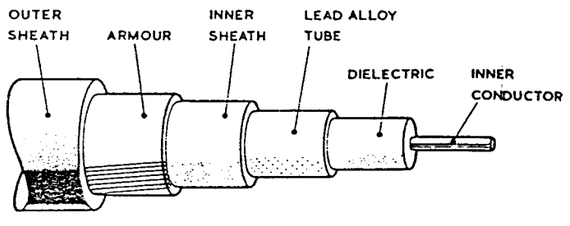
SOLID DIELECTRIC SINGLE BRAID HELIX



SOLID DIELECTRIC LEAD ALLOY SHEATH



SOLID DIELECTRIC, TWIN CONDUCTORS,
SINGLE BRAID



SOLID DIELECTRIC LEAD ALLOY SHEATH
ARMOURED INSULATED

Fig.1

Types of r.f. cables

Chapter 2

R.F. CABLES TYPE UR AND DR

CONTENTS

Introduction

1 The UR and DR type r.f. cables described in this chapter are manufactured in imperial units, which are now classified as obsolete. This chapter is therefore retained for reference purposes only. The imperial unit (UR and DR) cables should not be used for new equipment designs, but may be used for maintenance purposes to replace unserviceable imperial type cables. For details of replacement metric units (URM and DRM) refer to Chapter 3. It should be noted that the metric unit cables listed in Chapter 3 are similar to, but not the exact replacement of, the imperial unit cables listed in this chapter.

2 For general information of cable construction and electrical characteristics refer to Chapter 1.

DESCRIPTION

General

3 The range of UR and DR type cables available are listed in Table 1, which are cross-referenced to the approximate equivalent American MIL-C-17D RG type cable, where appropriate. The materials used in the construction of each type of cable are listed in Table 2, and the dimensions in Table 3. The electrical characteristics of each type of cable are listed in Table 4.

TABLE 1 R.F. CABLES (UR AND DR)

Cable UR	N.A.T.O. No. 6145-99	Ref. No. 5E/	Approx. RG/U equivalent
1	910-0307	9100307	
4	942-4553	9424553	
6	910-0309	9100309	
9	910-0272	9100272	
10	910-0273	9100273	
17	910-0274	9100274	
21	910-0313	9100313	
31	910-0275	9100275	
33	910-0276	9100276	
34	910-0318	9100318	
39	910-0277	9100277	
41	910-0278	9100278	
42	910-0279	9100279	
43	910-0280	9100280	
45	910-0281	9100281	
47		9100319	
54	910-0282	9100282	
55	910-0283	9100283	
56	910-0284	9100284	
57	910-0285	9100285	11A/U
58	910-0286	9100286	
59	910-0287	9100287	
60	910-0288	9100288	13A/U (216/U)
61	910-0289	9100289	
62	910-0290	9100290	
63	910-0291	9100291	
64	910-0292	9100292	63B/U
65	910-0293	9100293	
66	910-0294	9100294	
67	910-0295	9100295	8A/U (213/U)
68	910-0296	9100296	
69	910-0297	9100297	
70	910-0298	9100298	
72	910-0299	9100299	
73	910-0300	9100300	
74	910-0301	9100301	17A/U (218/U)
75	910-0302	9100302	18A/U (219/U)
76	942-4556	9424556	58C/U
77	942-4557	9424557	164/U
78	942-4558	9424558	133A/U
79		9424559	
80	942-4560	9424560	
81			
82		9424562	
83		9424563	
84	942-4564	9424564	
85	942-4565	9424565	
86	942-4566	9424566	
87		9424567	
88	942-456		

ontinued)

TABLE 1 R.F. CABLES (UR AND DR)(Continued)

Cable UR	N.A.T.O. No. 6145-99	Ref. No. 5E/	Approx. RG/U equivalent
89	942-4569	9424569	
90	943-3956	9433956	59B/U
91	943-4034	9434034	
92		9434035	
94	943-3954	9433954	
95	943-3953	9433953	
96	943-3957	9433957	62A/U
97	943-3945	9433945	
98	943-3946	9433946	
99		9433944	
100		9433943	
101	943-3962	9433962	
102	943-3961	9433961	
103		9433965	
104	943-3959	9433959	
132	910-303	910303	
137	910-304	910304	
140	910-305	910305	
141	910-306	910306	
188	910-0322	0100322	

TABLE 2 CABLE CONSTRUCTION

Cable No.	Description	Inner conductor	Dielectric	Outer conductor	Outer protection (sheaths)	Bedding	Armour	Sheath
1	Solid dielectric, single braid	1/0·056, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. black	—	—	—
4	Solid dielectric, single braid	7/0·032, p.c.w.	p.e., solid	t.c.w. braid	p.v.c. black	—	—	—
6	Semi-air-spaced dielectric, single braid	1/0·036, p.c.w.	p.e., spiral thread and tube	p.c.w. braid	p.v.c. black	—	—	—
9	Air-spaced dielectric copper tape, armoured	1/0·014, p.c.w.	p.e., spaced discs	Copper tape, secured by solder or steel tape	Lead alloy tube	Paper tape and jute yarn or hessian tape and cotton	Steel tape	Hessian tape
10	Solid dielectric, lead alloy	1/0·144, p.c.w.	p.e., solid	Lead alloy tube	—	—	—	—
17	Solid dielectric, single braid	7/0·044, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. black	—	—	—
21	Solid dielectric, lead alloy	1/0·056, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. black (non-migrating)	—	—	—
31	Solid dielectric, single braid	1/0·029, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. black	—	—	—
33	Solid dielectric, lead alloy	1/0·022, p.c.w.	p.e., solid	Lead alloy tube	—	—	—	—
34	Solid dielectric, single braid	1/0·128, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. grey (non-migrating)	—	—	—
39	Solid dielectric, single braid	1/0·036, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. black	—	—	—
	Solid dielectric, single braid	1/0·022, rhometal	p.e., solid	p.c.w. braid	p.v.c. black	—	—	—
2	Solid dielectric, single braid	p.c.w. braid over p.e., thread	p.e., solid	p.c.w. braid	p.v.c. black	—	—	—
3	Solid dielectric, single braid	1/0·032, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. black	—	—	—
5	Solid dielectric, lead alloy	1/0·029, p.c.w.	p.e., solid	Lead alloy tube	—	—	—	—
7	Solid dielectric, single braid	19/0·044, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. black	—	—	—
4	Solid dielectric, double braid	7/0·0076, p.c.w.	p.e., solid	p.c.w. braid, p.v.c. inter-sheath	p.v.c. black	—	—	—
5	Solid dielectric, double braid	1/0·022, manganin	p.e., solid	p.c.w. braids	p.v.c. black	—	—	—
5	Solid dielectric, single braid	1/0·022, p.c.w.	p.e., solid	s.p.c.w. braid	p.e., 2% channel black	—	—	—
7	Solid dielectric, single braid	1/0·044, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. black	—	—	—
5	Solid dielectric, lead alloy	1/0·044, p.c.w.	p.e., solid	Lead alloy tube	—	—	—	—
9	Solid dielectric, single braid	1/0·044, p.c.w.	p.e., solid	p.c.w. braid	p.e., 2% channel black	—	—	—
0	Solid dielectric, double braid	1/0·044, p.c.w.	p.e., solid	s.p.c.w. double braid	p.v.c. grey (non-migrating)	—	—	—
3	Air-spaced dielectric aluminium	1/0·72, p.c.w.	p.e., helical tape spacer	Aluminium tube	p.v.c. black	—	—	—
64	Semi-air-spaced dielectric single braid	1/0·0253, c.c.steel w.	p.e., helical thread and tube	p.c.w. braid	p.v.c. black	—	—	—
65	Solid dielectric, single braid	1/0·044, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. grey (non-migrating)	—	—	—
66	Solid dielectric, lead alloy	1/0·044, p.c.w.	p.e., solid	Lead alloy tube	—	—	—	—
67	Solid dielectric, single braid	7/0·029, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. black	—	—	—
68	Solid dielectric, single braid, twisted pair	7/0·010, p.c.w.	p.e., solid	t.c.w. braid over metallized paper	p.v.c. black	—	—	—
69	Solid dielectric, lead alloy	7/0·029, p.c.w.	p.e., solid	Lead alloy tube	p.v.c. black	—	—	—
70	Solid dielectric, single braid	7/0·0076, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. black	—	—	—
72	Solid dielectric, single braid	1/0·036, s.p.c.w.	p.t.f.e. solid	s.p.c.w. braid	Glass fibre	—	—	—
73	Solid dielectric, single braid	7/0·032, s.p.c.w.	p.t.f.e. solid	s.p.c.w. braid	Glass fibre	—	—	—

(continued)

TABLE 2 CABLE CONSTRUCTION (continued)

Cable No.	Description	Inner conductor	Dielectric	Outer conductor	Outer protection (sheaths)	Bedding	Armour	Sheath
74	Solid dielectric, single braid	1/0·188, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. black	—	—	—
75	Solid dielectric, single braid, armoured	1/0·1188, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. black	—	Aluminium wire braid	—
76	Solid dielectric, single braid	19/0·0666 p.c.w. or 14/0·00766 t.c.w.	p.e., solid	p.c.w. braid	p.v.c. black	—	—	—
77	Solid dielectric, single braid	1/0·104, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. black	—	—	—
78	Solid dielectric, single braid	1/0·024, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. black	—	—	—
79	Air-spaced, aluminium	1/0·265, p.c.w. or drawn copper tube	p.e., helical tape spacer	Aluminium tube	p.v.c. black	—	—	—
80	Solid dielectric, lead alloy	1/0·024, p.c.w.	p.e., solid	Lead alloy tube	p.v.c. black	—	—	—
81	Solid dielectric, single braid	7/0·024, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. red (non-migrating)	—	—	—
83	Air-spaced dielectric, aluminium	1/0·168, p.c.w.	p.e., helical tape spacer	Aluminium tube	p.v.c. black	—	—	—
2	Solid dielectric, double braid	1/0·044, c.n.a.	p.e., solid	p.c.w. braids	p.v.c. black	—	—	—
4	Solid dielectric, single braid	7/0·0076, p.c.w.	p.e., solid	p.c.w. braid	p.v.c. covered with nylon	—	—	—
5	Air-spaced dielectric, aluminium	1/0·109, p.c.w.	p.e., helical tape spacer	Aluminium tube	p.v.c. black	—	—	—
6	Solid dielectric, lead alloy	1/0·104, p.c.w.	p.e., solid	Lead alloy tube	—	—	—	—
7	Solid dielectric, single braid	e.c.n. 0·0080 in. close helix over p.e.	p.e., solid	p.c.w. braid	p.v.c. black	—	—	—
8	Solid dielectric, lead alloy and p.e. sheath	1/0·044, p.c.w.	p.e., solid	Lead alloy tube with p.e. outer	Galv. steel wire and p.v.c. sheath	—	—	—
9	Solid dielectric, lead alloy	1/0·044, p.c.w.	p.e., solid	Lead alloy tube	p.e. black 2%	—	—	—
0	Solid dielectric, single braid	1/0·022, c.c. steel w.	p.e., solid	p.c.w. braid	p.v.c. black	—	—	—
	Solid dielectric, double braid	7/0·029, p.c.w.	p.e., solid	p.c.w. braids	p.v.c. black	—	—	—
1	Solid dielectric, double braid	7/0·029, p.c.w.	p.e., solid	p.c.w. braids with p.e. tape intersheath	p.v.c. black	—	—	—
94	Solid dielectric, single braid	1/0·0124 s.p.c.c. steel w.	p.e., solid	p.c.w. braid	Nylon	—	—	—
95	Solid dielectric, single braid	1/0·018 s.p.c.c. steel w.	p.e., solid	p.c.w. braid	Nylon	—	—	—
96	Semi-air-spaced, single braid	1/0·0253 s.p.c.c. steel w.	p.e., helical tape spacer in tube	p.c.w. braid	p.v.c. black	—	—	—
97	Solid dielectric, lead alloy	7/0·029, p.c.w.	p.e., solid	Lead alloy tube		—	—	—
98	Air-spaced dielectric aluminium	1/0·172, p.c.w.	p.e., helical tape spacer	Aluminium tube	—	—	—	—
99	Air-spaced dielectric aluminium	1/0·265, p.c.w.	p.e., helical tape spacer	Aluminium tube	—	—	—	—
100	Air-spaced dielectric aluminium	1/0·168, p.c.w.	p.e., helical tape spacer	Aluminium tube	—	—	—	—
101	Air-spaced dielectric aluminium	1/0·109, p.c.w.	p.e., helical tape spacer	Aluminium tube	—	—	—	—

(continued)

TABLE 2 CABLE CONSTRUCTION (continued)

Cable No.	Description	Inner conductor	Dielectric	Outer conductor	Outer protection (sheaths)	Bedding	Armour	Sheath
102	Solid dielectric, single braid	7/0 032, s p.c.w.	p.t.f e , solid	s.p.c.w. braid	Glass fibre	—	—	—
103	Solid dielectric, single braid	1/0 048, s p.c.w.	p.t.f.e., solid	s p c.w. braid	Glass fibre	—	—	—
104	Solid dielectric, single braid	1/0 0253, s.p.c.c. steel w.	p.t.f.e , solid	s.p c.w. braid	Glass fibre	—	—	—
132								
137								
140								
141								
188								

TABLE 3 CABLE DIMENSIONS

Cable No.	Nominal diameter (in.)					Minimum bend radius (in.)	Weight (lb/ft)
	Inner conductor	Dielectric	Outer conductor	Outer protection	Armour		
1		0 330	0·365	0 450	—	2·25	0·12
4		0·285	0·320	0 405	—	2·00	0·10
6		0·250	0·285	0 365	—	3·00	0·08
9	0·104	0 375	0·415	0·555	1·10	18·00	2·00
10	0·144	0 800	0 980	—	—	8·00	1·50
17	0·144	0 800	0 835	1 000	—	5·00	0·50
21	0·056	0 330	0 365	0 450	—	2·25	0·11
31	0·029	0 285	0·320	0 405	—	2·00	0·09
33	0·022	0·128	0 188	—	—	1·50	0·08
34	0·128	0 625	0 660	0 810	—	4·00	0·30
39	0·036	0 200	0·235	0 310	—	1·75	0·06
41	0·022	0·128	0 155	0·230	—	4·00	0·03
42	0·178	0 285	0·320	0 405	—	2·00	0·12
43	0·032	0 116	0·143	0 195	—	1·00	0·03
45	0·029	0·285	0·400	—	—	3·25	0·34
47	0·220	0 625	0 660	0 810	—	4·00	0·45

(continued)

TABLE 3 CABLE DIMENSIONS (continued)

Cable No.	Nominal diameter (in.)					Minimum bend radius (in.)	Weight (lb/ft)
	Inner conductor	Dielectric	Outer conductor	Outer protection	Armour		
54	0·0228	0·128	0·242	0·325	—	1·75	0·08
55	0·022	0·128	0·188	0·255	—	1·25	0·04
56	0·022	0·128	0·155	0·230	—	1·25	0·04
57	0·044	0·285	0·320	0·405	—	2·00	0·10
58	0·044	0·285	0·400	—	—	3·50	0·34
59	0·044	0·285	0·320	0·405	—	2·00	0·09
60	0·044	0·285	0·361	0·460	—	2·25	0·13
61							
62							
63	0·172	0·625	0·735	0·855	—	11·00	0·32
64	0·0253	0·285	0·320	0·405	—	2·00	0·09
65	0·044	0·285	0·320	0·405	—	2·00	0·10
66	0 044	0 285	0 400	—	—	3·50	0·34
67	0·087	0 285	0·320	0·405	—	2·00	0·10
68	0·030	0 070	0·208	0·265	—	1·50	0·06
69	0·087	0·285	0·400	0·480	—	4·00	0·45
70	0 0228	0·128	0 155	0·230	—	1·25	0·04
72	0·036	0·116	0·143	0·175	—	1·00	0·10
73	0·096	0·285	0·320	0·380	—	2·00	0·12
74	0·188	0·680	0·715	0·870	—	4·50	0·43
75	0·188	0·680	0·715	0·870	0·926	4·75	0·50
76	0·033	0·116	0·143	0·195	—	1·00	0·03
77	0·104	0 680	0·715	0·870	—	4·50	0·42
78	0·024	0·285	0·320	0·405	—	2·00	0·09
79	0·265	0 625	0·735	0 855	—	11·00	0·33
80	0·024	0·285	0·400	—	—	3·25	0·34
81	0 087	0 285	0 320	0 430	—	2·25	0·10
82	0·044	0 285	0·361	0·460	—	2 50	0·14
83	0·168	0 400	0 475	0 555	—	7 00	0·19
84	0·0228	0 128	0 155	0 246	—	1·25	0·04
85	0 109	0 400	0 475	0 555	—	7·00	0·14
86	0 104	0 680	0 840	—	—	7·00	1·20
87	0·110	0 285	0·320	0·405	—	2·00	0·10
88	0·044	0 285	0 520	0·736	—	6·00	0·82
89	0 044	0 285	0·400	0·520	—	4·50	0·416
90	0·022	0 146	0 173	0 242	—	1·25	0·044
91	0 0870	0 285	0 361	0·450	—	2·25	0·130
92	0·087	0·285	0 435	0·540	—	2·75	0·200
94	0·0124	0 040	0·054	0 068	—	0·50	0·004
95	0·0180	0·060	0·078	0·092	—	0·50	0·007
96	0 0253	0·146	0 173	0 242	—	1·25	0·028
97	0·0870	0 285	0 400	—	—	3·50	0·40
98	0·172	0 625	0 735	—	—	11·00	0·23
99	0 265	0·625	0·735	—	—	11·00	0·24
100	0·168	0 400	0 475	—	—	7·00	0·15
101	0·109	0 400	0 475	—	—	7 00	0 10
102	0 096	0 285	0 320	0·380	—	2 00	0·12
103	0·048	0·285	0 320	0·380	—	2·00	0·12
104	0 0253	0 146	0 173	0 205	—	1·00	0·04

TABLE 4 ELECTRICAL CHARACTERISTICS OF CABLES

Cable No.	Impedance (ohms)	Cap pf/ft	Velocity ratio	Peak r.f. volts (kV)	Peak pulse volts (kV)	Peak d.c. volts (kV)	Inner conductor resistance (ohms/100ft)
1	75	21·2	0·666	6·25			
4	50	30·7	0·666	4·75			
6	100	13·0	0·830	0·70			
9	75	14·0	0·970	1·75	3·50	3·50	0·100
10	69	21·0	0·664	16·00	32·00	130·00	0·0515
17	71	22·0	0·664	10·50	21·00	84·00	0·667
21	71	22·0	0·664	6·25	12·50	50·00	0·341
31	91	17·0	0·666	4·25	8·50	34·00	1·270
33	71	22·0	0·669	2·50	5·00	20·00	2·210
34	63	24·0	0·664	12·50	25·00	100·00	0·065
39	69	23·0	0·674	4·00	7·55	30·00	0·824
41	72	21·0	0 670	2·50	5·00	20·00	125·00
42	15	108·0	0·660	2·70	5·50	22·00	0·350
43	50	29·0	0·674	2·75	5·25	21·00	1·043
45	91	17·0	0·666	4·25	8·50	34·00	1·27
47	43	36·0	0·664	10·25	20·5	82·00	0·03
54	72	22·0	0·669	1·80	3·60	14·00	2·71
55	71	21·0	0·669	2·50	5·00	20·00	55·90
5	71	22·0	0·669	2·50	5·00	20·00	2·21
7	75	20·6	0·666	10·50	10·50	42·00	0·557
8	75	20·6	0·666	5·25	10·50	42·00	0·557
2	75	20·6	0·664	5·00	10·50	42·00	0·557
0	75	20·6	0·664	5·00	10·50	42·00	0·557
2							
3	75	14·00	0·960	4·40	4·40	4·40	0·369
4	125	9·7	0·850	0·70	0·70	0·70	5·50
5	75	20·6	0·664	5·00	10·50	42·00	0·557
6	75	20·6	0·664	5·25	10·50	42·00	0·557
7	50	30·0	0·666	4·80	9·60	38·40	0·185
8	98	16·0	0·655	3·50	7 00	28·00	1·60
0	50	30·0	0·666	4·80	9·60	38·40	0·185
0	72	21·0	0·669	1·80	3·60	14·40	2·710
2	50	28·5	0·720	2·40	4·80	19·20	0·824
5	50	29·5	0·710	4·75	9·25	37·00	0·150
4	50	30·7	0·664	15·00	30·00	120·00	0·0302
5	50	30·7	0·664	15·00	30·00	120·00	0·0302
76	50	29·0	0·674	1·80	3·50	14·00	1·40
77	75	20·5	0·664	12·50	25·00	100·00	0·10
78	100	15·0	0·666	3·70	7·40	29·00	1·97
79	50	21·0	0·960	5·00	5·00	5·00	0·080
80	100	15·0	0·666	3·70	7·40	29·00	1·970
81	50	30·0	0·666	4·80	9·60	38·40	0·185
82	75	20·6	0·664	5·00	10·5	42·00	16·40
83	50	21·0	0 960	2·60	2·60	2·60	0·0378
84	72	21·0	0 669	1·80	3·60	14·40	2·710
85	75	14·0	0·960	2 60	2·60	2·60	0·0919
86	750	20·5	0·664	12·50	25·00	100·00	0·100
87	950	44·0	0·024		1·40		

(continued)

TABLE 4 ELECTRICAL CHARACTERISTICS OF CABLES (continued)

Cable No.	Impedance (ohms)	Cap pf/ft	Velocity ratio	Peak r.f. volts (kV)	Peak pulse volts (kV)	Peak d.c. volts (kV)	Inner conductor resistance (ohms/100ft)
88	75	20·6	0·666	5·25	10·50	42·00	0·550
89	75	20·6	0·666	5·25	10·50	42·00	0·557
90	75	20·0	0·674	2·50	5·00	20·00	7·740
91	50	30·0	0·666	4·80	9·60	38·40	0·185
92	50	30·0	0·666	4·80	9·60	38·40	0·185
94	50	31·7	0·623	0·90	1·80	7·30	14·20
95	50	30·9	0·657	1·30	2·70	10·70	11·80
96	95	12·0	0·900	0·55	0·55	0·55	5·960
97	50	30·0	0·666	4·80	9·60	38·40	0·185
98	75	14·0	0·960	4·40	4·40	4·40	0·0369
99	50	21·0	0·960	5·00	5·00	5·00	0·080
100	50	21·0	0·960	2·60	2·60	2·60	0·0378
101	75	14·0	0·960	2·60	2·60	2·60	0·0919
102	50	30·1	0·700	4·75	9·25	37·00	0·150
103	75	19·5	0·700	5·00	10·50	42·00	0·510
104	75	19·5	0·710	1·90	3·90	15·60	5·96

TABLE 5 CABLE POWER RATINGS AND ATTENUATION

Cable No.	Power ratings at 20°C (kW)						Nominal attenuation (dB/100ft)					
	100 Mc/s	200 Mc/s	300 Mc/s	600 Mc/s	1000 Mc/s	3000 Mc/s	100 Mc/s	200 M/cs	300 Mc/s	600 Mc/s	1000 Mc/s	3000 Mc/s
1	0·640	0·420	0·330	0 200	0·150	—	0·057	0·089	0·110	0·190	0·240	—
4	0·600	0·420	0·300	0·230	0·120	—	0·074	0·113	0·145	0·245	0·360	—
6	0·060	0·040	0·030	0 020	0·010	—	2·240	3·300	4·200	6·600	9·300	—
9	1·200	0 725	—	0·315	—	—	1·150	1·880	—	4 350	—	—
10	4·900	3·250	2·550	1·650	1·150	—	0 890	1·350	1·750	2·770	3·950	—
17	3 950	2·650	2·100	1·350	0 970	—	1·000	1·510	1·940	3·040	4·300	—
21	1 650	1·150	0·910	0 610	0 450	0 225	1·660	2·450	3·090	4·670	6·400	13·210
31	1·050	0·735	0·590	0 400	0 300	—	2 140	3·130	3·920	5·840	7 920	—
33	0·370	0·260	0·210	0·415	0·110	0 059	4 670	6·700	8·300	12 040	15·920	29·690
34	3·900	2·600	2·050	1·320	0 940	0 435	1·000	1·520	1·950	3 050	4·320	9·600
39	0·885	0·610	0·490	0 335	0 250	—	2·500	3·630	4·540	6·720	9·050	—
41	6·700	4·800	—	3·500	—	2 400	218 0	316·0	—	449·0	—	625·0
42	8·0 (1 Mc/s)	3·2 (5 Mc/s)	1·55 (20 Mc/s)	—	—	—	0 49 (1 Mc/s)	1·22 (5 Mc/s)	2·52 (20 Mc/s)	—	—	—
43	0·440	0·303	0·250	0 170	0·130	—	3·950	5·690	7·060	10·300	13·600	—
45	1·100	0·745	0·600	0·410	0·305	—	2·410	3·500	4·370	6·490	8·750	—
47	3·650	2·450	1·950	1·250	0 915	—	1·230	1·830	2·340	3·600	5·020	—
54	0·415	0·290	0 235	0·160	0 125	—	4·620	6·630	8·210	11·910	15·750	—
55	0·100	0·074	—	0·041	—	—	14 500	20·500	—	35·600	—	—
56	0·500	0·350	0·280	0·195	0·145	—	3·740	5·380	6·680	9·740	12·950	—
57	1·350	0·915	0·730	0 495	0 365	—	1·870	2·740	3·450	5 170	7·050	—
58	1·200	0·845	0·675	0 460	0·340	—	2·200	3·200	4·000	6 000	8·100	—
59	1·400	0·970	0·775	0·520	0 385	0 195	1·900	2·800	3·500	5·200	7·100	14·400
60												

(continued)

TABLE 5 CABLE POWER RATINGS AND ATTENUATION (continued)

Cable No.	Power ratings at 20°C (kW)						Nominal attenuation (dB/100ft)					
	100 Mc/s	200 Mc/s	300 M/cs	600 Mc/s	1000 Mc/s	3000 Mc/s	100 Mc/s	200 Mc/s	300 Mc/s	600 Mc/s	1000 Mc/s	3000 Mc/s
61												
62	1·400	0 975	0 780	0 525	0 390	0 195	1·900	2·700	3·500	5·200	7·100	14·400
63	3·000	2·000	1·700	1·100	0 800	0 420	0·480	0·490	0·850	1·300	1·700	3·300
64	0·424	0·298	0·242	0·169	0·129	0 071	1·691	2·430	3·000	4·330	5·700	10·530
65	1·350	0·915	0·730	0·495	0·365	0 185	1·900	2·800	3·500	5·200	7·100	14·400
66	1·200	0·845	0 675	0·460	0 340	0 175	2·200	3·200	4·000	6·000	8·100	16·200
67	1·350	0·925	0 740	0·500	0 370	—	2·070	3·020	3·800	5·660	7·680	—
68	0·247	0·173	—	0 095	—	—	7·600	11·000	—	19·700	—	—
69	1·200	0·835	0·675	0·460	0·345	—	2·600	3·800	4·700	7·000	9·400	—
70	0·375	0·260	0·210	0·145	0·110	0 060	4·620	6·630	8·210	11·910	15·750	29·400
72	1·000	0·725	0 590	0·415	0·315	0 175	4·100	5·900	7·400	10·900	14·100	26·400
73	3·600	2·500	2·050	1·400	1 050	0 585	1·930	2·810	3·600	5·270	7·130	14·600
74	4·650	3·100	2·400	1·550	1·100	—	0 960	1·450	1·860	2·930	4·160	—
75	3·750	2·500	1 950	1·250	0 890	—	0 960	1·450	1·860	2·930	4·160	—
76	0·330	0·205	0·150	0 085	0 055	—	5·100	8·040	10·900	19·300	29·600	—
77	3·800	2·550	2 000	1 300	0 930	—	0 950	1·450	1·860	2·930	4·150	—
78	0·954	0·660	0·530	0·361	0 270	0 140	2·290	3·330	4·170	6·200	8·380	16·630
79	3·400	2·400	2 000	1·400	1 000	0 530	0 520	0·740	0·900	1·400	1·800	3·400
)	0·913	0·632	0 508	0·347	0 260	0 136	2·550	3·700	4·620	6·830	9·200	18·050
–	1·350	0·925	0·740	0 500	0 370	—	2 070	3·020	3·800	5·660	7·680	—
2	0·320	0·225	0·185	0·130	0·098	0·054	7·600	10·800	13·300	19·100	25·100	45·600
3	1·700	1·200	0·960	0·670	0·520	0·280	0·830	1·200	1·500	2·200	2·800	5·400
4	0·380	0·265	0·215	0·150	0·110	0 061	4·620	6·630	9·210	11·910	15·750	29·400
5	1·600	1·100	0·950	0 650	0·480	0 280	0·730	1·000	1·300	1·800	2·500	4·500
5	3·750	2·500	1·950	1·300	0·915	—	1·000	1·500	2·000	3·100	4·400	—
7	0·500	0·260	0·130	0 065	—	—	5·500	10·200	21·500	40·000	—	—
	(1 Mc/s)	(3 Mc/s)	(10 Mc/s)	(30 Mc/s)			(1 Mc/s)	(3 Mc/s)	(10 Mc/s)	(30 Mc/s)		
8	1·450	1·000	0·810	0·550	0·410	0·210	2·200	3·200	4·000	6·000	8·100	16·200
9	1·400	0·970	0·775	0·515	0·390	—	2·200	3·200	4·000	6·000	8·100	—
)	0·535	0·370	0·300	0·205	0·155	—	3·400	4·910	6·100	8·920	11·900	—
–	1·450	0·985	0·790	0·535	0·395	—	2·070	3·020	3·800	5·660	7·680	—
2	1·400	0·955	0 760	0·515	0 385	—	2 070	3·020	3·800	5·660	7·680	—
4	0·071	0·050	0 040	0 028	0 021	0 012	11 000	15·600	19·200	27·500	35·900	64·100
5	0·125	0·090	0 073	0 051	0 039	0 021	8·200	11·300	14·000	20·000	26·000	48·000
5	0·302	0·212	0·173	0 121	—	—	2·410	3·420	4·210	6·000	—	—
7	1·200	0·820	0·660	0·450	0 335	0 175	2·600	3·800	4·700	7·000	9·400	18·500
98	3·000	2·000	1·700	1·100	0 800	0 420	0·480	0·690	0·850	1·300	1·700	3·300
99	3·400	2·400	2·000	1·400	1·000	0·530	0 520	0·740	0·900	1·400	1·800	3·400
100	1·700	1·200	0 960	0·670	0 520	0 280	0·830	1·200	1·500	2·200	2·800	5·400
101	1·600	1·100	0·950	0·650	0 480	0·280	0·730	1·000	1·300	1·800	2·500	4·500
102	3·600	2·500	2·050	1·400	1·050	0·585	1·930	2·810	3·600	5·370	7·130	14·600
103	3·750	2·400	1·950	1·300	0 950	0 445	1·610	2·490	3·150	4·750	6·500	14·500
104	1·350	0·925	0·745	0·510	0·385	0·200	3·130	4·570	5·700	8·390	11·200	21·500

Chapter 3

R.F. CABLES TYPE URM AND DRM

CONTENTS

Introduction

1 The URM and DRM type r.f. cables described in this chapter are manufactured in metric units. It should be noted that metric unit cables listed in this chapter are similar to, but not the exact replacement of, the imperial unit cables listed in Chapter 2.

2 For general information of cable construction and electrical characteristics, refer to Chapter 1.

DESCRIPTION

General

3 The range of URM AND DRM type cables available are listed in Table 1, which are cross-referenced to the approximate equivalent American MIL-C-17D RG type cable, where appropriate. The materials used in the construction of each type of cable are listed in Table 2, and the dimensions in Table 3. The electrical characteristics of each type of cable are listed in Table 4.

TABLE 1 R.F. CABLES (URM AND DRM)

Cable URM	N.A.T.O. No. 6145-99	Ref. No. 5E/	Approx. RG/URM equivalent
43	014-9533	014-9533	
57	014-9534	014-9534	11A/U
60	014-9535	014-9535	
64	014-9536	014-9536	63B/U
65	014-9537	014-9537	
67	014-9538	014-9538	213/U
68	014-9556	014-9556	
70	014-9558	014-9558	
72	013-9540	014-9540	141A/U
74	014-9541	014-9541	218/U
76	014-9542	014-9542	58C/U
77	014-9543	014-9543	164/U
90	014-9544	014-9644	59B/U
91	014-9545	014-9545	214/U
95	014-9546	014-9546	
96	014-9547	014-9547	62A/U
102	014-9548	014-9548	165/U
104			140/U
105	014-9549	014-9549	144/U
106	014-9567	014-9567	302/U
107	014-9550	014-9550	
108	014-9551	014-9551	303/U
109	198-5786	198-5786	316/U
110	014-9568	014-9568	178B/U
111	117-0120	117-0120	179B/U
112	014-9552	014-9552	214/U
113	014-9553	014-9553	
114	014-9554	014-9554	
115	014-9555	014-9555	223/U
116		017-4520	174/U
117	014-9559	014-9559	
301	014-9560	014-9560	
302	014-9561	014-9561	63B/U
303	014-9562	013-9562	
304	014-9563	014-9563	213/U
305	014-9564	014-9564	
306	014-9565	014-9565	

TABLE 2 CABLE CONSTRUCTION

Cable No.	Description	Inner conductor	Dielectric	Outer conductor	Outer protection (sheaths)	Bedding	Armour	Sheath
43	Solid dielectric, single braid	1/0.90 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. black	-	-	-
57	Solid dielectric, single braid	1/1.15 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. black	-	-	-
60	Solid dielectric, double braid	1/1.15 p.c.w.	p.e. solid	double s.p.c.w. braid	p.v.c. black (non-migrating)	-	-	-
64	Semi-air-spaced, dielectric, single braid	1/0.64 c.c. steel w.	p.e. helical thread and tube	p.c.w. braid	p.v.c. black	-	-	-
65	Solid dielectric, single braid	1/1.15 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. black (non-migrating)	-	-	-
67	Solid dielectric, single braid	7/0.77 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. black	-	-	-
68	Twin cables, both with solid dielectric, metalized tape and t.c.w. braid	7/0.25 p.c.w. (2 conductors)	p.e. solid	metalized tape, t.c.w. braid	p.v.c. black	-	-	-
)	Solid dielectric, single braid	7/0.19 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. black	-	-	-
2	Solid dielectric, single braid	1/1.0 s.p.c.w.	p.t.f.e. solid	s.p.c.w. braid	glassfibre braid with silicone varnish	-	-	-
4	Solid dielectric, single braid	1/5.0 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. black	-	-	-
5	Solid dielectric, single braid	7/0.32 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. black	-	-	-
7	Solid dielectric, single braid	1/2.65	p.e. solid	p.c.w. braid	p.v.c. black	-	-	-
)	Solid dielectric, single braid	1/0.60 c.c. steel w.	p.e. solid	p.c.w. braid	p.v.c. black	-	-	-
l	Solid dielectric, double braid	7/0.76 p.c.w.	p.e. solid	double p.c.w. braid	p.v.c. black	-	-	-
5	Solid dielectric, single braid	1/0.46 s.p.c.c. steel w.	p.e. solid	p.c.w. braid	nylon, black	-	-	-
5	Semi-air-spaced dielectric, single braid	1/0.64 c.c. steel w.	p.e. helical thread and tube	p.c.w. braid	p.v.c. black	-	-	-
!	Solid dielectric, single braid	7/0.82 s.p.c.w.	p.t.f.e. solid	s.p.c.w. braid	glassfibre braid with silicone varnish	-	-	-
104	Solid dielectric, single braid	1/0.65 s.p.c.c. steel w.	p.t.f.e. solid	s.p.c.w. braid	glassfibre braid with silicone varnish	-	-	-
105	Solid dielectric, single braid	7/0.45 s.p.c.w.	p.t.f.e. solid	s.p.c.w. braid	glassfibre braid with silicone varnish	-	-	-
106	Solid dielectric, single braid	1/0.65 s.p.c.c. steel w.	p.t.f.e. solid	s.p.c.w. braid	f.e.p. black	-	-	-
107	Solid dielectric, single braid	7/0.82 s.p.c.w.	p.t.f.e. solid	s.p.c.w. braid	f.e.p. black	-	-	-
108	Solid dielectric, single braid	1/1.0 s.p.c.w.	p.t.f.e. solid	s.p.c.w. braid	f.e.p. black	-	-	-
109	Solid dielectric, single braid	7/0.18 s.p.c.c. steel w.	p.t.f.e. solid	s.p.c.w. braid	f.e.p. black	-	-	-
110	Solid dielectric, single braid	7/0.11 s.p.c.c. steel w.	p.t.f.e. solid	s.p.c.w. braid	f.e.p. black	-	-	-

(continued)

TABLE 2 CABLE CONSTRUCTION (continued)

Cable No.	Description	Inner conductor	Dielectric	Outer conductor	Outer protection (sheaths)	Bedding	Armour	Sheath
111	Solid dielectric, single braid	7/0.10 s.p.c.c. steel w.	p.t.f.e. solid	s.p.c.w. braid	f.e.p. black	-	-	-
112	Solid dielectric, double braid	7/0.76 s.p.c.w.	p.e. solid	double s.p.c.w. braid	p.v.c. black (non-migrating)	-	-	-
113	Solid dielectric, single braid	7/0.45 s.p.c.w.	p.t.f.e. solid	s.p.c.w. braid	f.e.p. black	-	-	-
114	Solid dielectric, double braid	1/0.60 c.c. steel w.	p.e. solid	double p.c.w. braid with p.v.c. inner-sheath	p.v.c. black	-	-	-
115	Solid dielectric, double braid	1/0.90 p.c.w.	p.e. solid	double p.c.w. braid with p.v.c. inner-sheath	p.v.c. black	-	-	-
116	Solid dielectric, single braid	7/0.165 c.c. steel w.	p.e. solid	p.c.w. braid	p.v.c. black	-	-	-
117	Solid dielectric, single braid	7/0.212 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. black	-	-	-
201	Solid dielectric, single braid	7/0.32 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. and nylon, black	-	-	-
202	Semi-air-spaced dielectric, single braid	1/0.64 c.c. steel w.	p.e. helical thread and tube	p.c.w. braid	p.v.c. nylon braid, and nylon lacquer	-	-	-
203	Solid dielectric, single braid	7/0.40 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. nylon braid, and nylon lacquer	-	-	-
204	Solid dielectric, single braid	7/0.77 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. nylon braid, and nylon lacquer	-	-	-
205	Twin cables both with solid dielectric, metallized paper tape or metal/polythene terephtalate laminate, with t.c.w. braid	7/0.25 p.c.w. (2 conductors)	p.e. solid	metallized tape or composite with t.c.w. braid	p.v.c. and nylon. black	-	-	-
306	Solid dielectric, single braid	7/0.212 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. and nylon. black	-	-	-

TABLE 3 CABLE DIMENSIONS

Cable No.	Nominal diameter (mm) Inner conductor	Dielectric	Outer conductor	Outer protection	Armour	Minimum bend radius (mm)	Weight (g/m)
43	0.90	2.95	3.63	5.00	-	25	40
57	1.15	7.25	8.15	10.30	-	50	150
60	1.15	7.25	8.69	11.00	-	55	190
64	0.64	7.25	8.15	10.30	-	50	130
65	1.15	7.25	8.15	10.30	-	50	150
67	2.31	7.25	8.15	10.30	-	50	160
68	0.75	1.75	5.30	6.75	-	35	90
70	0.75	3.25	3.95	5.80	-	30	60
72	1.00	2.95	3.63	4.50	-	25	45
74	5.00	17.30	18.43	22.00	-	110	690
76	0.96	2.95	3.63	5.00	-	25	40
77	2.65	17.30	18.43	22.00	-	110	580
90	0.60	3.70	4.38	6.00	-	30	66
91	2.28	7.25	8.69	11.00	-	55	210
95	0.46	1.50	1.95	2.30	-	12	10
96	0.64	3.70	4.38	6.00	-	30	42
102	2.46	7.25	8.15	9.70	-	50	180
104	0.65	3.70	4.38	5.25	-	30	60
105	1.35	7.25	8.15	9.70	-	50	180
106	0.65	3.70	4.38	5.25	-	30	60
107	2.46	7.25	8.15	9.00	-	50	180
108	1.00	2.95	3.63	4.50	-	25	45
109	0.54	1.50	1.95	2.45	-	15	15
110	0.33	0.87	1.32	1.80	-	10	8.5
111	0.30	1.50	1.95	2.45	-	15	8
112	2.28	7.25	8.69	11.00	-	55	210
113	1.35	7.25	8.15	9.00	-	50	180
114	0.60	3.70	6.06	8.20	-	40	110
115	0.90	2.95	5.31	7.20	-	35	85
116	0.495	1.50	1.95	2.80	-	15	15
117	0.636	3.70	4.38	6.00	-	30	60
301	0.96	2.95		5.40	-	30	45
302	0.64	7.25		10.30	-	50	130
303	1.20	7.25		10.30	-	50	150
304	2.31	7.25		10.30	-	50	160
305	0.75	1.75		7.15	-	40	100
306	0.636	3.70		6.00	-	30	60

TABLE 4 ELECTRICAL CHARACTERISTICS OF CABLES

Cable No.	Impedance (ohms)	Cap pf/m	Velocity ratio	Peak r.f. volts (kV)	Peak pulse volts (kV)	Peak d.c. volts (kV)	Inner conductor resistance (ohms/100m)
43	50	100	0.67	2.6	5.2	21	3.442
57	75	67	0.66	5.0	10.5	42	1.838
60	75	67	0.66	5.0	10.5	42	1.838
64	125	32	0.85	0.7	0.7	0.7	18.150
65	75	67	0.66	5.0	10.5	42	1.838
67	50	100	0.66	6.5	13.0	40	0.611
68	100	52	0.66	3.5	7.0	28	5.280
70	75	67	0.67	1.8	3.6	14	8.943
72	50	94	0.72	2.0	4.0	16	2.719
74	50	100	0.66	15.0	30.0	120	0.101
76	50	100	0.67	2.6	5.2	21	4.620
77	75	67	0.66	12.5	25.0	100	0.330
90	75	67	0.67	2.6	5.2	21	25.540
91	50	100	0.66	6.5	13.0	40	0.611
95	50	100	0.66	1.3	2.7	10	38.940
96	95	40	0.90	0.55	0.55	0.55	19.668
02	50	96	0.70	5.0	10.0	40	0.495
04	75	63	0.71	2.0	4.0	16	19.668
05	75	64	0.70	4.0	8.0	32	
06	75	63	0.71	2.0	4.0	16	
07	50	96	0.70	5.0	10.0	40	
08	50	94	0.72	2.0	4.0	16	
09	50	94	0.72	1.0	1.0	2	
10	50	92	0.72	0.5	0.5	1	
11	75	63	0.72	1.0	1.0	2	
12	50	100	0.67	6.5	13.0	40	
13	75	64	0.70	4.0	8.0	32	
14	75	67	0.67	2.6	5.2	21	
115	50	100	0.67	2.6	5.2	21	
116	50	100	0.67	1.2	2.4	10	
117	75	67	0.67	2.6	5.2	20	
301	50	100		2.6	5.2	21	
302	125	32		0.7	0.7	0.7	
303	75	67		5.0	10.5	42	
304	50	100		6.5	13.0	40	
305	100	52		3.5	7.0	28	
306	75	67		2.6	5.2	20	

TABLE 5 CABLE POWER RATING AND ATTENUATION

Cable No.	Power ratings at 55°C (kW)						Nominal attenuation (dB/100m)					
	100 Mc/s	200 Mc/s	300 Mc/s	600 Mc/s	1000 Mc/s	3000 Mc/s	100 Mc/s	200 Mc/s	300 Mc/s	600 Mc/s	1000 Mc/s	3000 Mc/s
43	0.175	0.120	0.098	0.067	0.051	-	13.1	18.9	23.5	34.0	44.0	-
57	0.540	0.380	0.300	0.200	0.150	0.075	5.1	9.0	11.2	17.0	23.0	48.0
60	0.590	0.400	0.315	0.215	0.160	0.082	5.1	9.0	11.2	17.0	23.0	48.0
64	0.185	0.130	0.105	0.073	0.057	0.033	5.6	8.1	10.0	14.5	19.0	34.0
65	0.540	0.380	0.300	0.200	0.150	0.075	5.1	9.0	11.2	17.0	23.0	48.0
67	0.530	0.380	0.300	0.200	0.150	-	5.8	9.8	12.3	18.2	25.0	50.0
68	0.124	0.080	0.065	0.044	-	-	26.0	36.0	45.0	65.0	-	-
70	0.160	0.105	0.085	0.060	0.046	-	16.0	22.0	27.0	39.0	52.0	-
72	0.960	0.680	0.540	0.380	0.290	0.160	13.5	19.0	24.0	36.0	47.0	88.0
74	1.850	1.300	1.000	0.640	0.460	-	1.32	4.8	6.1	9.6	13.8	-
76	0.116	0.104	0.074	0.058	0.044	-	15.4	22.2	27.5	40.0	53.0	-
77	1.600	1.100	0.840	0.550	0.390	-	3.1	4.7	6.2	9.8	14.5	-
90	0.215	0.150	0.120	0.082	0.053	-	11.0	16.0	20.0	29.0	39.0	-
91	0.580	0.400	0.320	0.215	0.160	0.080	5.8	9.8	12.3	18.2	25.0	50.0
95	0.050	0.035	0.028	0.019	0.016	-	25.0	37.0	45.0	65.0	85.0	-
96	0.130	0.092	0.074	0.053	0.040	-	8.0	11.3	14.0	20.0	25.5	-
02	3.000	2.100	1.700	1.200	0.900	0.490	5.4	9.2	11.5	17.0	23.0	47.0
04	1.140	0.800	0.640	0.440	0.340	0.185	10.4	15.0	19.0	28.0	37.0	-
05	2.400	1.700	1.350	0.950	0.720	0.390	6.2	9.0	11.0	16.5	23.0	40.0
06	1.140	0.800	0.640	0.440	0.340	0.185	10.4	15.0	19.0	28.0	37.0	-
07	3.000	2.100	1.700	1.200	0.900	0.490	5.4	9.2	11.5	17.0	23.0	47.0
08	0.960	0.680	0.540	0.380	0.290	0.160	13.5	19.0	24.0	36.0	47.0	88.0
09	0.285	0.200	0.166	0.118	0.090	-	25.0	36.0	45.0	64.0	83.0	-
10	0.136	0.096	0.078	0.055	0.043	-	43.0	60.0	74.0	-	-	-
11	0.245	0.180	0.150	0.105	0.080	-	25.0	36.0	44.0	62.0	81.0	-
12	0.580	0.400	0.320	0.215	0.160	0.080	5.8	9.8	12.3	18.2	25.0	50.0
13	2.400	1.700	1.350	0.950	0.720	0.390	6.2	9.0	11.0	16.5	23.0	40.0
114	0.215	0.150	0.120	0.082	0.053	-	11.0	16.0	20.0	29.0	39.0	-
115	0.175	0.120	0.098	0.067	0.051	-	13.1	18.9	23.5	34.0	44.0	-
116	0.050	0.035	0.028	0.019	0.016	-	29.0	41.0	50.0	74.0	96.0	-
117	0.180	0.125	0.100	0.070	0.054	-	12.0	18.0	22.0	31.5	41.0	-
301	0.116	0.104	0.074	0.058	0.044	-	15.4	22.2	27.5	40.0	53.0	-
302	0.185	0.130	0.105	0.073	0.057	0.033	5.6	8.1	10.0	14.5	19.0	34.0
303	0.480	0.325	0.260	0.180	0.135	-	7.0	10.5	13.0	20.0	26.0	-
304	0.530	0.380	0.300	0.200	0.150	-	5.8	9.8	12.3	18.2	25.0	50.0
305	0.124	0.080	0.065	0.044	-	-	26.0	36.0	45.0	65.0	-	-
306	0.180	0.125	0.100	0.070	0.054	-	12.0	18.0	22.0	31.5	41.0	-

Chapter 4

R.F. CABLES TYPE RG

CONTENTS

Introduction

1 The R.G. type r.f. cables described in this chapter are manufactured in metric units to American MIL-C-17D standards.

2 For general information of cable construction and electrical characteristics, refer to Chapter 1.

DESCRIPTION

General

3 The range of R.G. type cables available are listed in Table 1, which are cross-referenced to the approximate equivalent URM/DRM type cable, where appropriate. The materials used in the construction of each type of cable are listed in Table 2, and the dimensions in Table 3. The electrical characteristics of each type of cable are listed in Table 4.

TABLE 1 R.F. CABLES (RG)

Cable RG	FSN 6145-	NSN 6145-99	URM	Cable RG	FSN 6145	NSN 6145-99	URM
6A/U	00-8123943			181/U			
11A/U	01-0772088		57+65	187A/U	00-6354488	1170119	
12A/U	00-5000794			188A/U	00-08043831	6536970	
22B/U	00-5537822			196A/U	00-8141209	1946265	
	00-1713056			210/U	00-6831110		
23A/U	00-5398508			212/U	00-9456429		
24A/U				213	00-8404862		
34B/U	00-6610192			213/U	00-6608711	7889238	67+304
35B/U	00-9579963			214/U	00-6608054	1410734	112+91
058				215/U	00-6336051		
58C/U	00-5426092	6326699	76+43	216/U	00-6608825		60
59B/U	00-6610191	6446938	90	217/U	00-8437878	4689536	
62A/U		0149547		218/U	00-5778113		74
62B/U	01-1281553		96	219/U	00-6608714		
	01-0975948			220/U			
63B/U	00-5426087		64+302	221/U			
	00-1610914			222/U	00-6608716	6506966	
65A/U	00-5480731			223/U	00-6817849		115
	00-5398951			224/U			
71B/U	00-6835353	1052690		225/U	00-6608718	1170121	
	00-0270954			226/U	00-5480721		
79B/U	00-1713057			227/U	00-6605824	6501451	
108A/U				280/U			
111A/U				302/U	00-4934084		106
115A/U	01-0900839			303/U	00-6806517		108
122/U	00-5839268			304/U	00-4934089		
130/U				316/U	00-9189494	1965786	109
131/U	00-5773491			393/U	00-1499176		
133A/U				400/U	00-5422773	6467590	
141A/U	00-6552728		72	402/U		7587651	
142B/U	00-8232544	1170117		403/U			
144/U	00-6359342		105	404/U			
164/U	00-7713361		77	405/U		6496975	
165/U	00-8891006		102				
166/U							
174/U	00-6068237		116				
174A/U	00-6068237	6192807					
177/U							
178B/U	00-8125034	6648765	110				
179B/U	00-9846262	1170120	111				
180B/U	00-6830634	6445638					

TABLE 2 CABLE CONSTRUCTION

Cable No.	Description	Inner Conductor	Dielectric	Outer conductor	Outer protection (sheaths)	Bedding	Armour	Sheath
6A/U	Solid dielectric, double braid	1/0.73 c.c. steel w.	p.e. solid	s.p.c.c. and p.c.w. braid	p.v.c. black (non-migrating)	-	-	-
11A/U	Solid dielectric, single braid	7/0.4 t.c.w.	p.e. solid	p.c.w. braid	p.v.c. black (non-migrating)	-	-	-
12A/U	Solid dielectric, single braid, armoured	7/0.4 t.c.w.	p.e. solid	p.c.w. braid	g.i.w. armour	-	flexible	-
22B/U	Solid dielectric, double braid, two inner conductors	(2) x 7/0.4 p.c.w.	p.e. solid	(2) x t.c.w. braids	p.v.c. black (non-migrating)	-	-	-
23A/U	Solid dielectric, double braid, two inner conductors	(2) x 7/0.72 p.c.w.	p.e. solid	(2) x p.c.w. braids	p.v.c. black (non-migrating)	-	-	-
24A/U	Solid dielectric, double braid, armoured, two inner conductors	(2) x 7/0.72 p.c.w.	p.e. solid	(2) x p.c.w. braids	g.i.w. armour	-	flexible	-
34B/U	Solid dielectric, single braid	7/0.62 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. black (non-migrating)	-	-	-
35B/U	Solid dielectric, double braid, armoured	1/2.65 p.c.w.	p.e. solid	(2) x p.c.w. braids	g.i.w. armour	-	flexible	-
058	Solid dielectric, single braid	19/0.18 t.c.w.	p.e. solid	t.c.w. braid	p.v.c. black (non-migrating)	-	-	-
58C/U	Solid dielectric, single braid	19/0.18 t.c.w.	p.e. solid	t.c.w. braid	p.v.c. black (non-migrating)	-	-	-
59B/U	Solid dielectric, single braid	1/0.6 c.c. steel w.	p.e. solid	p.c.w. braid	p.v.c. black (non-migrating)	-	-	-
62A/U	P.e.-helix dielectric, single braid	1/0.6 c.c. steel w.	p.e. helix	p.c.w. braid	p.v.c. black (non-migrating)	-	-	-
62B/U	P.e.-helix dielectric, single braid	7/0.2 c.c. steel w.	p.e. helix	p.c.w. braid	p.v.c. black (non-migrating)	-	-	-
63B/U	P.e.-helix dielectric, single braid	1/0.6 c.c. steel w.	p.e. helix	p.c.w. braid	p.v.c. black (non-migrating)	-	-	-
65A/U	Solid dielectric, single braid	0.21/3.3 p.c.w. isolated	p.e. solid	p.c.w. braid	p.v.c. black (non-migrating)	-	-	-
71B/U	P.e.-helix dielectric, double braid	1/0.6 c.c. steel w.	p.e. helix	p.c.w. and t.c.w. braids	p.e. black	-	-	-
79B/U	P.e.-helix dielectric, single braid armoured	1/0.6 c.c. steel w.	p.e. helix	p.c.w. braid	g.i.w. armour	-	flexible	-
108A/U	Solid dielectric, single braid, two inner conductors	(2) x 7/0.32 t.c.w.	p.e. solid	t.c.w. braid	p.v.c. black (non-migrating)	-	-	-
111A/U	Solid dielectric, double braid, armoured, two inner conductors	(2) x 7/0.4 p.c.w.	p.e. solid	(2) x t.c.w. braids	g.i.w. armour	-	flexible	-
115A/U	Solid dielectric, double braid	7/0.75 s.p.c.w.	p.t.f.e. solid	(2) x s.p.c.w. braid	p.t.f.e. tape, glassfibre braid silicone varnish	-	-	-
122/U	Solid dielectric, single braid	27/0.13 t.c.w.	p.e. solid	t.c.w. braid	p.v.c. black (non-migrating)	-	-	-
130/U	Solid dielectric, single braid, two inner conductors	(2) x 7/0.72 p.c.w.	p.e. solid	t.c.w. braid	p.v.c. black	-	-	-
131/U	Solid dielectric, single braid, armoured, two inner conductors	(2) x 7/0.72 p.c.w.	p.e. solid	t.c.w. braid	g.i.w. armour	-	flexible	-

(continued)

TABLE 2 CABLE CONSTRUCTION (continued)

Cable No.	Description	Inner Conductor	Dielectric	Outer conductor	Outer protection (sheaths)	Bedding	Armour	Sheath
133A/U	Solid dielectric, single braid	1/0.65 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. black (non-migrating)	-	-	-
141A/U	Solid dielectric, single braid	1/0.95 s.p.c.c. steel w.	p.t.f.e. solid	s.p.c.w. braid	p.t.f.e. tape, glassfibre braid silicone varnish	-	-	-
142B/U	Solid dielectric, double braid	1/0.95 s.p.c.c. steel w.	p.t.f.e. solid	(2) x s.p.c.w. braids	f.e.p. light-brown	-	-	-
144/U	Solid dielectric, single braid	7/0.45 s.p.c.c. steel w.	p.t.f.e. solid	s.p.c.w. braid	p.t.f.e. tape, glassfibre braid, silicone varnish	-	-	-
164/U	Solid dielectric, single braid	1/2.65 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. black (non-migrating)	-	-	-
165/U	Solid dielectric, single braid	7/0.82 s.p.c.w.	p.t.f.e. solid	s.p.c.w. braid	p.t.f.e. tape, glassfibre braid, silicone varnish	-	-	-
166/U	Solid dielectric, single braid, armoured	7/0.82 s.p.c.w.	p.t.f.e. solid	s.p.c.w. braid	g.i.w. armour	-	flexible	-
174/U	Solid dielectric, single braid	7/0.16 c.c. steel w.	p.e. solid	t.c.w. braid	p.v.c. black	-	-	-
174A/U	Solid dielectric, single braid	7/0.16 c.c. steel w.	p.e. solid	t.c.w. braid	p.v.c. black (non-migrating)	-	-	-
177/U	Solid dielectric, double braid	1/5.0 p.c.w.	p.e. solid	(2) x s.p.c.w. braids	p.v.c. black (non-migrating)	-	-	-
178B/U	Solid dielectric, single braid	7/0.1 s.p.c.c. steel w.	p.t.f.e. solid	s.p.c.w. braid	f.e.p. light-brown	-	-	-
179B/U	Solid dielectric, single braid	7/0.1 s.p.c.c. steel w.	p.t.f.e. solid	s.p.c.w. braid	f.e.p. light-brown	-	-	-
180B/U	Solid dielectric, single braid	7/0.1 s.p.c.c. steel w.	p.t.f.e. solid	s.p.c.w. braid	f.e.p. light-brown	-	-	-
181/U	Solid dielectric, double braid, two inner conductors	(2) x 7/0.4 p.c.w.	p.e. solid	(2) x p.c.w. braids	p.v.c. black (non-migrating)	-	-	-
187A/U	Solid dielectric, single braid	7/0.1 s.p.c.c. steel w.	p.t.f.e. solid	s.p.c.w. braid	p.t.f.e. white	-	-	-
188A/U	Solid dielectric, single braid	7/0.18 s.p.c.c steel w.	p.t.f.e. solid	s.p.c.w. braid	p.t.f.e. white	-	-	-
196A/U	Solid dielectric, single braid	7/0.1 s.p.c.c. steel w.	p.t.f.e. solid	s.p.c.w. braid	p.t.f.e. white	-	-	-
210/U	Solid dielectric, single braid	1/0.64 s.p.c.c. steel w.	p.t.f.e. solid	s.p.c.w. braid	p.t.f.e. tape, glassfibre braid, silicone varnish	-	-	-
212/U	Solid dielectric, double braid	1/1.35 s.p.c.w.	p.e. solid	(2) x s.p.c.w. braids	p.v.c. black (non-migrating)	-	-	-
213	Solid dielectric, single braid	7/0.75 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. black (non-migrating)	-	-	-
213/U	Solid dielectric, single braid	7/0.75 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. black (non-migrating)	-	-	-
214/U	Solid dielectric, double braid	7/0.75 s.p.c.w.	p.e. solid	(2) x s.p.c.w. braids	p.v.c. black (non-migrating)	-	-	-
215/U	Solid dielectric, double braid, armoured	7/0.75 p.c.w.	p.e. solid	(2) x s.p.c.w. braids	g.i.w. armour	-	flexible	-

(continued)

TABLE 2 CABLE CONSTRUCTION (continued)

Cable No.	Description	Inner Conductor	Dielectric	Outer conductor	Outer protection (sheaths)	Bedding	Armour	Sheath
216/U	Solid dielectric, double braid	7/0.4 t.c.w.	p.e. solid	(2) x p.c.w. braids	p.v.c. black (non-migrating)	-	-	-
217/U	Solid dielectric, double braid	1/2.7 p.c.w.	p.e. solid	(2) x p.c.w. braids	p.v.c. black (non-migrating)	-	-	-
218/U	Solid dielectric, single braid	1/5.0 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. black (non-migrating)	-	-	-
219/U	Solid dielectric, single braid, armoured	1/5.0 p.c.w.	p.e. solid	p.c.w. braid	g.i.w. armour	-	flexible	-
220/U	Solid dielectric, single braid	1/6.6 p.c.w.	p.e. solid	p.c.w. braid	p.v.c. black (non-migrating)	-	-	-
221/U	Solid dielectric, single braid, armoured	1/6.6 p.c.w.	p.e. solid	p.c.w. braid	g.i.w. armour	-	flexible	-
222/U	Solid dielectric, double braid	1/1.37 cr.ni.w.	p.e. solid	(2) x s.p.c.w. braids	p.v.c. black (non-migrating)	-	-	-
223/U	Solid dielectric, double braid	1/0.89 s.p.c.w.	p.e. solid	(2) x s.p.c.w. braids	p.v.c. black (non-migrating)	-	-	-
224/U	Solid dielectric, double braid, armoured	1/2.7 p.c.w.	p.e. solid	(2) x p.c.w. braids	g.i.w. armour	-	flexible	-
225/U	Solid dielectric, double braid	7/0.82 s.p.c.w.	p.t.f.e. solid	(2) x s.p.c.w. braids	p.t.f.e. tape, glassfibre braid, silicone varnish	-	-	-
226/U	Solid dielectric, double braid	19/0.64 s.p.c.w.	p.t.f.e. solid	(2) x p.c.w. braids	p.t.f.e. tape, glassfibre braid, silicone varnish	-	-	-
227/U	Solid dielectric, double braid, armoured	7/0.82 s.p.c.w.	p.t.f.e. solid	(2) x s.p.c.w. braids	g.i.w. armour	-	flexible	-
280/U	Solid dielectric, double braid	1/2.9 p.c.w.	p.t.f.e. solid	(2) x s.p.c.w. braids	p.v.c. black (non-migrating)	-	-	-
302/U	Solid dielectric, single braid	1/0.64 s.p.c.c. steel w.	p.t.f.e. solid	s.p.c.w. braid	f.e.p. light-brown	-	-	-
303/U	Solid dielectric, single braid	1/0.95 s.p.c.c. steel w.	p.t.f.e. solid	s.p.c.w. braid	f.e.p. light-brown	-	-	-
304/U	Solid dielectric, double braid	1/1.50 s.p.c.c. steel w.	p.t.f.e. solid	(2) x s.p.c.w. braids	f.e.p. light-brown	-	-	-
316/U	Solid dielectric, single braid	7/0.18 s.p.c.c. steel w.	p.t.f.e. solid	s.p.c.w. braid	f.e.p. light-brown	-	-	-
393/U	Solid dielectric, double braid	7/0.8 s.p.c.w.	p.t.f.e. solid	(2) x s.p.c.w. braids	f.e.p. light-brown	-	-	-
400/U	Solid dielectric, double braid	19/0.2 s.p.c.w.	p.t.f.e. solid	(2) x s.p.c.w. braids	f.e.p. light-brown	-	-	-
402/U	Solid dielectric, copper tube	1/0.92 s.p.c.c. steel w.	p.t.f.e. solid	copper tube	copper tube	-	-	-
403/U	Solid dielectric, single braid	7/0.1 s.p.c.c. steel w.	p.t.f.e. solid	s.p.c.w. braid	f.e.p. light-brown	-	-	-
404/U	Solid dielectric, single braid	7/0.1 s.p.c.c. steel w.	p.t.f.e. with semi-conducting layer. solid	s.p.c.w. braid	f.e.p. light-brown	-	-	-
405/U	Solid dielectric, copper tube	1/0.51 s.p.c.c. steel w.	p.t.f.e. solid	copper tube	copper tube	-	-	-

TABLE 3 CABLE DIMENSIONS

Cable No.	Nominal diameter (mm) Inner conductor	Dielectric	Outer conductor	Outer protection	Armour	Minimum bend radius (mm)	Weight (g/m)
6A/U	0.73	4.70	6.2	8.5	-	42.5	107
11A/U	1.20	7.25	8.2	10.3	-	51.5	140
12A/U	1.20	7.25	8.2	-	11.8	59.0	256
22B/U	1.20	2.25/7.25	8.7	10.8	-	54.0	180
23A/U	2.16	9.65/9.65	10.4/12 x 21.6	16.5 x 24.0	-	120	600
24A/U	2.16	9.65/9.65	10.4/12 x 21.6	-	18 x 25.5	127.5	1140
34B/U	1.86	11.50	12.4	16.0	-	80.0	284
35B/U	2.65	17.30	18.6	-	23.5	117.5	750
058	0.90	2.95	3.6	5.0	-	25.0	38
58C/U	0.90	2.95	3.6	5.0	-	25.0	38
59B/U	0.60	3.70	4.5	6.1	-	30.5	50
62A/U	0.60	3.70	4.5	6.1	-	30.5	47
62B/U	0.60	3.70	4.5	6.1	-	30.5	47
63B/U	0.60	7.25	8.2	10.3	-	51.5	95
5A/U	0.21/3.30	7.25	8.2	10.3	-	51.5	150
1B/U	0.60	3.70	5.0	6.2	-	31	61
9B/U	0.60	7.25	8.2	-	11.8	59	210
08A/U	0.96	2.0/4.0	4.7	6.0	-	30	44
11A/U	1.20	2.25/7.25	8.7	-	12.3	61.5	293
15A/U	2.25	6.50	8.0	10.5	-	52.5	226
22/U	0.80	2.50	3.2	4.1	-	20.5	32
30/U	2.16	4.8/12.0	13.3	15.9	-	79.5	360
31/U	2.16	4.8/12.0	13.3	-	17.4	87.0	530
33A/U	0.65	7.25	8.2	10.3	-	51.5	132
41A/U	0.95	2.95	3.6	4.8	-	24.0	58
42B/U	0.95	2.95	4.3	5.0	-	25.0	62
54/U	1.35	7.25	8.0	10.4	-	52.0	200
54/U	2.65	17.30	18.6	22.1	-	110.5	555
55/U	2.46	7.25	8.0	10.4	-	52.0	270
56/U	2.46	7.25	8.0	-	11.9	59.5	330
74/U	0.48	1.50	2.0	2.5	-	12.5	11
74A/U	0.48	1.50	2.0	2.8	-	14	11
177/U	5.00	17.30	18.8	22.7	-	113.5	730
178B/U	0.30	0.84	1.3	1.8	-	9.0	8.5
179B/U	0.30	1.50	2.0	2.5	-	12.5	15
180B/U	0.30	2.60	3.1	3.6	-	18.0	32
181/U	1.20	5.30/12.20	13.9	16.2	-	81.0	380
187A/U	0.30	1.50	2.0	2.6	-	13.0	16
188A/U	0.54	1.50	2.0	2.6	-	13.0	16
196A/U	0.30	0.84	1.3	2.1	-	10.5	11
210/U	0.64	3.70	4.5	6.2	-	31.0	60
212/U	1.35	4.70	6.2	8.5	-	42.5	118
213	2.25	7.25	8.2	10.3	-	51.5	155
213/U	2.25	7.25	8.2	10.3	-	51.5	155
214/U	2.25	7.25	8.8	10.8	-	54.0	187
215/U	2.25	7.25	8.2	-	11.8	59.0	270
216/U	1.20	7.25	8.8	10.8	-	54.0	170

(continued)

TABLE 3 CABLE DIMENSIONS (continued)

Cable No.	Nominal diameter (mm) Inner conductor	Dielectric	Outer conductor	Outer protection	Armour	Minimum bend radius (mm)	Weight (g/m)
217/U	2.70	9.40	11.2	13.8	-	69.0	310
218/U	5.00	17.30	18.6	22.1	-	110.5	670
219/U	5.00	17.30	18.6	-	23.5	117.5	900
220/U	6.60	23.10	24.4	28.4	-	142.0	1110
221/U	6.60	23.10	24.4	-	29.9	149.5	1470
222/U	1.37	4.70	6.2	8.5	-	42.5	115
223/U	0.89	2.95	4.3	5.4	-	27.0	55
224/U	2.70	9.40	11.2	-	15.4	77.0	470
225/U	2.46	7.25	8.8	10.9	-	54.5	280
226/U	3.18	9.40	10.9	12.7	-	63.5	370
?27/U	2.46	7.25	8.8	-	12.4	62.0	400
30/U	2.90	8.30	9.8	12.2	-	61.0	294
02/U	0.64	3.70	4.4	5.1	-	25.5	62
03/U	0.95	2.95	3.6	4.3	-	21.5	51
04/U	1.50	4.70	6.2	7.1	-	35.5	126
16/U	0.54	1.50	2.0	2.5	-	12.5	16
03/U	2.40	7.25	8.8	9.9	-	49.5	270
00/U	1.00	2.95	4.3	5.0	-	25.0	63
02/U	0.92	3.00	3.6	3.6	-	18.0	45
03/U	0.30	0.84	2.4	3.1	-	15.5	22
04/U	0.30	0.84/0.87	1.4	1.9	-	9.5	8.5
05/U	0.51	1.68	2.2	2.2	-	11.0	22

TABLE 4 ELECTRICAL CHARACTERISTICS OF CABLES

Cable No.	Impedance (ohms)	Cap pf/m	Velocity ratio	Peak r.f. volts (kV)	Peak pulse volts (kV)	Peak d.c. volts (kV)	Inner conductor resistance (ohms)
6A/U	75 ± 3	67	0.662	3.5	7.0	14.0	
11A/U	75 ± 1.5	67	0.662	5.0	10.0	20.0	
12A/U	75 ± 3	67	0.662	5.0	10.0	20.0	
22B/U	95 ± 5	53	0.662	1.0	2.0	4.0	
23A/U	125 ± 5	2 x 80	0.662	7.2	14.4	28.8	
24A/U	125 ± 5	2 x 80	0.662	7.2	14.4	28.8	
34B/U	75 ± 3	67	0.662	7.5	15.0	30.0	
35B/U	75 ± 3	67	0.662	11.0	22.0	44.0	
058	50 ± 2	101	0.662	2.5	5.0	10.0	
58C/U	50 ± 2	101	0.662	2.5	5.0	10.0	
59B/U	75 ± 3	67	0.662	3.5	7.0	14.0	
62A/U	93 ± 5	44.5	0.662	1.5	3.0	6.0	
62B/U	93 ± 5	44.5	0.662	1.5	3.0	6.0	
63B/U	125 ± 6	33	0.662	1.5	3.0	6.0	
65A/U	950 ± 50	144	0.662	1.5	3.0	6.0	
71B/U	93 ± 5	44.5	0.662	1.5	3.0	6.0	
79B/U	125 ± 6	33	0.662	1.5	3.0	6.0	
108A/U	78 ± 7	80	0.662	1.0	2.0	4.0	
111A/U	95 ± 5	53	0.662	1.0	2.0	4.0	
115A/U	50 ± 2	96	0.690	5.0	10.0	20.0	
122/U	50 ± 2	101	0.662	2.5	5.0	10.0	
130/U	95 ± 5	53	0.662	5.0	10.0	20.0	
131/U	95 ± 5	53	0.662	5.0	10.0	20.0	
133A/U	95 ± 5	53	0.662	5.0	10.0	20.0	
141A/U	50 ± 2	96	0.690	2.5	5.0	10.0	
142B/U	50 ± 2	96	0.690	2.5	5.0	10.0	
144/U	75 ± 3	64	0.690	5.0	10.0	20.0	
164/U	75 ± 3	67	0.662	11.0	22.0	44.0	
165/U	50 ± 2	96	0.690	5.0	10.0	20.0	
166/U	50 ± 2	96	0.690	5.0	10.0	20.0	
174/U	50 ± 2	101	0.662	1.5	3.0	6.0	
174A/U	50 ± 2	101	0.662	1.5	3.0	6.0	
177/U	50 ± 2	101	0.662	11.0	22.0	44.0	
178B/U	50 ± 2	96	0.690	1.0	2.0	4.0	
179B/U	75 ± 3	64	0.690	1.0	2.0	4.0	
180B/U	95 ± 5	49.5	0.690	1.0	2.0	4.0	
181/U	125 ± 5	40.0	0.662	6.5	13.00	26.0	
187A/U	75 ± 3	64.0	0.690	1.0	2.0	4.0	
188A/U	50 ± 2	96	0.690	1.0	2.0	4.0	
196A/U	50 ± 2	96	0.690	1.0	2.0	4.0	
210/U	93 ± 5	43	0.690	1.5	3.0	6.0	
212/U	50 ± 2	101	0.662	3.5	7.0	14.0	
213	50 ± 2	101	0.662	5.0	10.0	20.0	
213/U	50 ± 2	101	0.662	5.0	10.0	20.0	
214/U	50 ± 2	101	0.662	5.0	10.0	20.0	

(Continued)

TABLE 4 ELECTRICAL CHARACTERISTICS OF CABLES (continued)

Cable No.	Impedance (ohms)	Cap pf/m	Velocity ratio	Peak r.f. volts (kV)	Peak pulse volts (kV)	Peak d.c. volts (kV)	Inner conductor resistance (ohms)
215/U	50 ± 2	101	0.662	5.0	10.0	20.0	
216/U	75 ± 3	67	0.662	5.0	10.0	20.0	
217/U	50 ± 2	101	0.662	6.0	12.0	24.0	
218/U	50 ± 2	101	0.662	11.0	22.0	44.0	
219/U	50 ± 2	101	0.662	11.0	22.0	44.0	
220/U	50 ± 2	101	0.662	15.0	30.0	60.0	
221/U	50 ± 2	101	0.662	15.0	30.0	60.0	
222/U	50 ± 2	101	0.662	3.5	7.0	14.0	
223/U	50 ± 2	101	0.662	2.5	5.0	10.0	
224/U	50 ± 2	101	0.662	6.0	12.0	24.0	
25/U	50 ± 2	96	0.690	5.0	10.0	20.0	
26/U	50 ± 2	96	0.690	6.0	12.0	24.0	
27/U	50 ± 2	96	0.690	5.0	10.0	20.0	
30/U	50 ± 2	96	0.690	6.0	12.0	24.0	
02/U	75 ± 3	64	0.690	3.5	7.0	14.0	
03/U	50 ± 2	96	0.690	2.5	5.0	10.0	
04/U	50 ± 2	96	0.690	3.5	7.0	14.0	
.6/U	50 ± 2	96	0.690	1.0	2.0	4.0	
03/U	50 ± 2	96	0.690	5.0	10.0	20.0	
00/U	50 ± 2	96	0.690	2.5	5.0	10.0	
02/U	50 ± 1	96	0.690	2.5	5.0	10.0	
03/U	50 ± 2	96	0.690	1.0	2.0	4.0	
04/U	50 ± 2	105	0.690	1.0	2.0	4.0	
05/U	50 ± 1.5	96	0.690	2.5	5.0	10.0	

TABLE 5 CABLE POWER RATING AND ATTENUATION

Cable No.	Power ratings at 25°C (kW)						Nominal attenuation (dB/100m)					
	100 Mc/s	200 Mc/s	300 Mc/s	600 Mc/s	1000 Mc/s	3000 Mc/s	100 Mc/s	200 Mc/s	300 Mc/s	600 Mc/s	1000 Mc/s	3000 Mc/s
6A/U	0.50	0.34	0.28	0.20	0.15	0.08	9	13	16	22	29	68
11A/U	0.90	0.60	0.50	0.33	0.25	0.13	6	9	11	16	23	56
12A/U	0.90	0.60	0.50	0.33	0.25	0.13	6	9	11	16	23	56
22B/U												
23A/U												
24A/U												
34B/U	1.08	0.90	0.72	0.50	0.38	0.20	4	6	7.5	11	15	31
35B/U	2.80	1.90	1.50	1.00	0.70	0.34	2.8	4.2	5.4	8	10.5	23
058	0.25	0.18	0.14	0.10	0.08	0.04	16	22	27	40	50	80
58C/U	0.25	0.18	0.14	0.10	0.08	0.04	16	22	27	40	50	88
59B/U	0.34	0.24	0.19	0.14	0.10	0.05	11	16	19	27	36	70
62A/U	0.13	0.09	0.07	0.05	0.04	-	8	11.3	14	20	25.5	-
62B/U	0.13	0.09	0.07	0.05	0.04	-	8	11.3	14	20	25.5	-
63B/U	0.19	0.13	0.11	0.07	0.06	0.03	5.6	8.1	10	14.5	19	34
65A/U												
71B/U												
79B/U	0.19	0.13	0.11	0.07	0.06	0.03	5.6	8.1	10	14.5	19	34
108A/U												
111A/U												
115A/U	5.00	3.20	2.50	1.75	1.20	0.70	7	11	14	20	28	50
122/U	2.00	1.45	1.15	0.80	0.60	0.36	17	26	33	47	60	110
130/U												
131/U												
133A/U												
141A/U	2.00	1.08	1.02	0.80	0.60	0.33	11	17	22	31	42	75
142B/U	2.00	1.08	1.02	0.80	0.60	0.33	11	17	22	31	42	75
144/U	4.40	3.20	2.50	1.60	1.40	0.73	6	8.5	10	16	22	42
164/U	2.80	1.90	1.50	1.00	0.70	0.34	2.8	4.2	5.4	8	10.5	23
165/U	6.10	4.20	3.30	2.20	1.70	0.90	6	8.5	11	16	22	42
166/U	6.10	4.20	3.30	2.20	1.70	0.90	6	8.5	11	16	22	42
174/U	0.08	0.06	0.05	0.035	0.027	-	28	40	50	70	90	160
174A/U	0.08	0.06	0.05	0.035	0.027	-	28	40	50	70	90	160
177/U	3.50	2.30	1.80	1.25	0.88	0.40	2.8	4.2	5.3	8	12	24
178B/U	0.25	0.18	0.15	0.10	0.08	0.045	42	59	71	100	140	240
179B/U	0.50	0.35	0.27	0.20	0.15	0.09	25	36	45	65	83	150
180B/U												
181/U												
187A/U	0.50	0.35	0.27	0.20	0.15	0.09	25	36	45	65	83	150
188A/U	5.60	4.00	3.20	2.40	1.80	1.00	25	36	44	62	80	150
196A/U	0.25	0.18	0.15	0.10	0.08	0.045	42	59	71	100	140	240
210/U												
212/U	0.60	0.42	0.35	0.24	0.17	0.09	8.5	12	15	22	28	54
213	1.00	0.70	0.55	0.38	0.28	0.15	6.8	9.4	12	17	22	43
213/U	1.00	0.70	0.55	0.38	0.28	0.15	6.8	9.4	12	17	22	43
214/U	1.00	0.70	0.55	0.38	0.28	0.15	6.8	9.4	12	17	22	43
215/U	1.00	0.70	0.55	0.38	0.28	0.15	6.8	9.4	12	17	22	43

(continued)

TABLE 5 CABLE POWER RATING AND ATTENUATION (continued)

Cable No.	Power ratings at 25°C (kW)						Nominal attenuation (dB/100m)					
	100 Mc/s	200 Mc/s	300 Mc/s	600 Mc/s	1000 Mc/s	3000 Mc/s	100 Mc/s	200 Mc/s	300 Mc/s	600 Mc/s	1000 Mc/s	3000 Mc/s
216/U	0.90	0.60	0.50	0.33	0.25	0.13	6	9	11	16	23	56
217/U	1.50	1.00	0.80	0.62	0.40	0.22	5	7	9	13	17	35
218/U	3.50	2.20	1.80	1.20	0.85	0.40	27	42	54	80	110	190
219/U	3.50	2.20	1.80	1.20	0.85	0.40	27	42	54	80	110	190
220/U	5.30	3.60	2.80	1.85	1.35	0.60	2.4	3.5	4.5	7	9.5	21
221/U	5.30	3.60	2.80	1.85	1.35	0.60	2.4	3.5	4.5	7	9.5	21
222/U	0.60	0.42	0.35	0.24	0.17	0.09	8.5	12	15	22	28	54
223/U	0.28	0.20	0.16	0.11	0.085	0.048	14	20	25	36	46	81
224/U	1.50	1.00	0.80	0.62	0.40	0.22	5	7	9	13	17	35
5/U	6.10	4.20	3.30	2.20	1.70	0.90	6	8.5	11	16	22	42
5/U	10.00	6.50	5.00	3.20	2.50	1.20	5	7	9	13	17	34
7/U	6.10	4.20	3.30	2.20	1.70	0.90	6	8.5	11	16	22	42
)/U	8.00	5.00	4.00	2.80	2.00	1.00	5.5	7.5	9.5	15	19	38
2/U	2.20	1.50	1.20	0.85	0.65	0.35	10	15	18	26	35	60
3/U	2.00	1.40	1.10	0.80	0.60	0.34	12	17	21	31	41	74
4/U	3.80	2.50	2.00	1.30	0.95	0.50	9	13	16	24	30	58
5/U	5.60	4.00	3.20	2.40	1.80	1.00	25	36	44	62	80	150
3/U	6.10	4.20	3.30	2.20	1.70	0.90	6	8.5	11	16	22	42
)/U	2.00	1.40	1.10	0.80	0.60	0.32	14	20	25	35	46	85
2/U	2.00	1.40	1.10	0.80	0.60	0.34	11	17	21	31	41	74
1/U	0.25	0.18	0.15	0.10	0.08	0.045	42	59	71	100	140	240
-/U	0.25	0.18	0.15	0.10	0.08	0.045	42	59	71	100	140	240
)/U	0.60	0.45	0.35	0.25	0.20	0.11	20	30	36	51	68	125