



SPECIFICATION

Lot 1: High Radiation Cable RG71 B/U B/R (IEC 60332-1-2)

1. Scope

This Specification describes the requirements for a nuclear grade, double shielded, flame retardant, radiation hardened 95 Ω Coaxial cable (hereinafter referred as the "Cable") type RG71 B/U B/R (Part No.CD95146), manufactured by BRAND REX, or equivalent.

2. Requirements

2.1. Functional and Performance Requirements

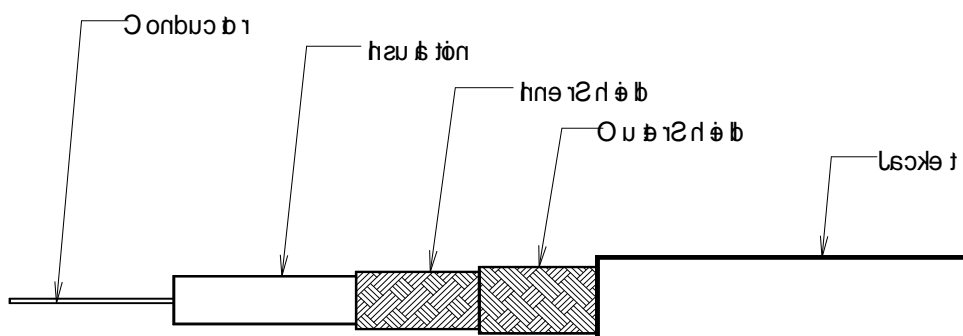
The Cable shall meet the following functional and performance requirements:

- 2.1.1. Be nuclear grade, double shielded, flame retardant, radiation hardened 95 Ω Coaxial cable type;
- 2.1.2. Have Dielectric core (insulation) rated for 100 °C; and
- 2.1.3. Be flame-retardant in accordance with IEC 60332-1-2 or equal.

2.2. Technical Requirements

2.2.1 Diagram Construction

The Cable shall meet the following diagram construction:



2.2.2 Material Requirements



The Cable shall meet the following material requirements:

		<i>Diameter in inch</i>	<i>Diameter in mm</i>
Conductor	#28 AWG copper covered steel	.0126	.32
Insulation	.064 crosslinked polyethylene compound wall	.140	3.56
Inner Shield	#34 AWG tinned copper braid Coverage: min 95%		
Outer Shield	#34 AWG tinned copper braid Coverage: min 95%		
Jacket	.026 flame retardant Hypalon or crosslinked polyethylene	.25 ± .005	6.35

2.2.3 Mechanical Requirements

The Cable shall meet the following mechanical requirements:

Cable Weight:	53.4 lbs / 1000 ft	7.96 kg/100m
Braid Strength:	140 lbs	63.4 kg
Bend Radius:	2-inch	50.8 mm
Cable Area:	.049 square inch	31.61 mm ²

2.2.4 Electrical Requirements

The Cable shall meet the following electrical requirements:

Impedance:	95 - 96 Ω
Capacitance:	16.0 – 18.8 pF / ft
Velocity of Propagation:	64%
DC loop resistance:	168.2 Ω / 1000 ft
Insulation resistance:	52 G Ω / 1000 ft
Maximum operating Voltage:	>750 V rms
Dielectric Strength:	7500 V rms

2.2.5 Radiation and Security Certification Requirements

2.2.5.1 The cable shall be radiation tolerant, Nuclear Class 1E (IEEE 383 or equal); and



3. Marking

The Cable shall be clearly marked in English language, with the following information:

Manufacturer Name

Model number

4. Packing

The Cable, for the shipment by air to the International Atomic Energy Agency (IAEA), shall be packed in accordance with international standards that are applicable for the shipment by air of this kind of equipment.

5. Quality Requirements

5.1. The Cable shall be manufactured, shipped and installed in accordance with the Supplier's ISO quality assurance system or an equivalent quality assurance system; and

5.2. The Supplier shall document the compliance with this quality assurance system.

6. Testing and Acceptance

The Cable, prior to shipment, shall be tested for conformance of the Cable with manufacturer's performance specifications and the minimum requirements specified herein.

The results of the testing of the Cable shall be documented by the Supplier in an acceptance protocol that shall be signed by the IAEA.

7. Deliverables

The Supplier shall provide 5000 m of the requested Cable to the IAEA Vienna.
