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DEPARTMENT OF AGRICULTURE

Rural Electrification Administration

7 CFR Part 1755

RIN 0572-AA56

REA Specification for Filled Telephone Cables with Expanded Insulation

AGENCY: Rural Electrification Administration, USDA.

ACTION: Final rule.

SUMMARY: The Rural Electrification Administration (REA) amends its regulations on Telecommunications Standards and Specifications for Materials, Equipment and Construction, by rescinding REA Bulletin 345–89, REA Specification for Filled Telephone Cables with Expanded Insulation, PE–89, and codifying this specification. This revised specification updates the end product performance requirements of filled cables with expanded insulation brought about through technological advancements made during the last five years.

EFFECTIVE DATE: June 21, 1993. Incorporation by reference of certain publications listed in this final rule is approved by the Director of the Federal Register as of June 21, 1993.

FOR FURTHER INFORMATION CONTACT: Garnett G. Adams, Chief, Outside Plant Branch, Telecommunications Standards Division, Rural Electrification Administration, room 2844, South Building, U.S. Department of Agriculture, Washington, DC 20250–1500, telephone number (202) 720–0667.

SUPPLEMENTARY INFORMATION:

Executive Order 12291

This final rule has been issued in conformance with Executive Order 12291 and Departmental Regulation 1512–1. This action has been classified as "nonmajor" because it does not meet the criteria for a major regulation as established by the Order.

Executive Order 12778

This final rule has been reviewed under Executive Order 12778, Civil Justice Reform. If adopted, this final rule will not: (1) Preempt any State or local laws, regulations, or policies; (2) Have any retroactive effect; and (3) Require administrative proceedings before parties may file suit challenging the provisions of this rule.

Regulatory Flexibility Act Certification

The Administrator of REA has determined that this proposed rule will not have a significant impact on a substantial number of small entities, as defined by the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). This final rule involves standards and specifications, which may increase the direct short-term costs to the REA borrower. However, the long-term direct economic costs are reduced through greater durability and lower maintenance cost over time.

Information Collection and Recordkeeping Requirements

In compliance with the Office of Management and Budget (OMB) regulations (5 CFR part 1320) which implements the Paperwork Reduction Act of 1980 (Pub. L. 96–511) and section 3504 of that Act, information collection and recordkeeping requirements contained in this final rule have been approved by OMB under control number 0572–0077 which expires on January 31, 1994. Comments concerning these requirements should be directed to the Office of Information and Regulator Affairs of OMB, Attention: Desk Officer for USDA, room 3201, New Executive Office Building, Washington, DC 20503.

National Environmental Policy Act Certification

The Administrator of REA has determined that this final rule will not significantly affect the quality of the human environment as defined by the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*). Therefore, this action does not require an environmental impact statement or assessment.

Catalog of Federal Domestic Assistance

The program described by this final rule is listed in the Catalog of Federal Domestic Assistance programs under No. 10.851, Rural Telephone Loans and Loan Guarantees, and No. 10.852, Rural Telephone Bank Loans. This catalog is available on a subscription basis from the Superintendent of Documents, United States Government Printing Office, Washington, DC 20402.

Executive Order 12372

This final rule is excluded from the scope of Executive Order 12372, Intergovernmental Consultation that requires intergovernmental consultation with State and local officials. A Notice of Final rule titled Department Programs and Activities Excluded from Executive Order 12372 (50 FR 47034) exempts REA and RTB loans and loan guarantees, and RTB bank loans, to governmental and nongovernmental entities from coverage under this Order.

Background

REA issues publications titled "Bulletin" which serve to guide borrowers regarding already codified policy, procedures, and requirements needed to manage loans, loan guarantee programs, and the security instruments which provide for and secure REA financing. REA issues standards and specifications for the construction of telephone facilities financed with REA loan funds. REA is rescinding Bulletin 345–89, REA Specification for Filled Telephone Cables with Expanded Insulation, PE-89, and codifying this specification at 7 CFR 1755.890, REA Specification for Filled Telephone Cables with Expanded Insulation.

The American National Standard Institute (ANSI) and the Insulated Cable Engineers Association (ICEA) are scientific and technical organizations formed for the development of standards on characteristics and performance of materials, products, systems, and services. An ANSI/ICEA standard represents a common viewpoint of those parties concerned with its provisions; namely producers, users, and general interest groups. The standard is intended to aid industry, government agencies, and the general public.

It is REA policy to use the standards, rules, and regulations of such engineering and standards groups as

ANSI, the ICEA, the American Society for Testing and Materials (ASTM), and the various national engineering societies, and such references as the National Electrical Safety Code (NESC) and the National Electrical Code (NEC), to the greatest extent practicable as determined by REA. REA is also guided by OMB Circular No. A-119, Federal Participation in the Development and Use of Voluntary Standards in its activities. In the absence of national standards, or where REA determines that existing national standards are not satisfactory, standards will be prepared for material and equipment as necessary.

On September 13, 1991, REA published a proposed rule (56 FR 46575) to rescind REA Bulletin 345–89, REA Specification for Filled Telephone Cables with Expanded Insulation, PE-89, and to incorporate by reference a new Bulletin 1753F–208(PE–89). Comments on this proposed rule were due October 15, 1991. No comments were received by this due date. Subsequently, REA has determined that the public interest is better served by codifying the revised specification rather than incorporation by reference.

Additionally, REA has determined that by codifying the revised specification, borrowers will be provided with the opportunity to increase subscriber services through enhanced cable designs brought about through technological advancements made during the last five years in an economical and efficient manner. This specification will also allow cable manufacturers to reduce their production costs by providing one uniform cable design to both REA and non-REA telephone companies, a practice not done before this regulation today. This reduction in manufacturing costs will result in lower cable costs for borrowers without any degradation in cable performance.

List of Subjects in 7 CFR Part 1755

Incorporation by reference, Loan programs—communications, Reporting and recordkeeping requirements, Rural areas, Telephone.

For reasons set out in the preamble, REA amends 7 CFR part 1755 as follows:

PART 1755—TELECOMMUNICATIONS STANDARDS AND SPECIFICATIONS FOR MATERIALS, EQUIPMENT AND CONSTRUCTION

1. The authority citation for part 1755 is revised to read as follows:

Authority: 7 U.S.C. 901 *et seq.*, 1921 *et seq.*

§ 1755.97 [Amended]

2. Section 1755.97 is amended by removing the entry REA Bulletin No. 345–89 from the table.

3. Section 1755.890 is added to read as follows:

§ 1755.890 REA specification for filled telephone cables with expanded insulation.

(a) *Scope.* (1) This section covers the requirements for filled telephone cables intended for direct burial installation either by trenching or by direct plowing, for underground application by placement in a duct, or for aerial installation by attachment to a support strand.

(i) The conductors are solid copper, individually insulated with an extruded cellular insulating compound which may be either totally expanded or expanded with a solid skin coating.

(ii) The insulated conductors are twisted into pairs which are then stranded or oscillated to form a cylindrical core.

(iii) For high frequency applications, the cable core may be separated into compartments with screening shields.

(iv) A moisture resistant filling compound is applied to the stranded conductors completely covering the insulated conductors and filling the interstices between pairs and units.

(v) The cable structure is completed by the application of suitable core wrapping material, a flooding compound, a shield or a shield/armor, and an overall plastic jacket.

(2) The number of pairs and gauge size of conductors which are used within the REA program are provided in the following table:

AWG	19	22	24	26
Pairs	6	6	6	
	12	12	12	
	18	18	18	
	25	25	25	25
		50	50	50
		75	75	75
		100	100	100
		150	150	150
		200	200	200
		300	300	300
		400	400	400
		600	600	600
		900	900	900
		1000	1000	1000
			1200	1200
			1500	1500
			1800	1800
				2100
				2400
				2700

Note: Cables larger in pair sizes than those shown in this table must meet all requirements of this section.

(3) Screened cable, when specified, must meet all requirements of this section. The pair sizes of screened cables used within the REA program are referenced in paragraph (e)(2)(i) of this section.

(4) All cables sold to REA borrowers for projects involving REA loan funds under this section must be accepted by REA Technical Standards Committee "A" (Telephone). For cables manufactured to the specification of this section, all design changes to an accepted design must be submitted for acceptance. REA will be the sole authority on what constitutes a design change.

(5) Materials, manufacturing techniques, or cable designs not specifically addressed by this section may be allowed if accepted by REA. Justification for acceptance of modified materials, manufacturing techniques, or cable designs must be provided to substantiate product utility and long-term stability and endurance.

(6) The American National Standard Institute/Insulated Cable Engineers Association, Inc. (ANSI/ICEA) S-84–608–1988, Standard For Telecommunications Cable, Filled, Polyolefin Insulated, Copper Conductor Technical Requirements referenced throughout this section is incorporated by reference by REA. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of ANSI/ICEA S-84–608–1988 are available for inspection during normal business hours at REA, room 2845, U.S. Department of Agriculture, Washington, DC 20250 or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC. Copies are available from ICEA, P. O. Box 440, South Yarmouth, MA 02664, telephone number (508) 394–4424.

(7) American Society for Testing and Materials specifications (ASTM) A 505-87, Standard Specification for Steel, Sheet and Strip, Alloy, Hot-Rolled and Cold-Rolled, General Requirements For; ASTM B 193-87, Standard Test Method for Resistivity of Electrical Conductor Materials; ASTM B 224-80, Standard Classification of Coppers; ASTM B 694-86, Standard Specification for Copper, Copper Alloy, and Copper-Clad Stainless Steel Sheet and Strip for Electrical Cable Shielding; ASTM D 4565-90a, Standard Test Methods for Physical and Environmental Performance Properties of Insulations and Jackets for Telecommunications Wire and Cable; and ASTM D 4566-90, Standard Test Methods for Electrical Performance Properties of Insulations and Jackets for Telecommunications Wire and Cable referenced in this section are incorporated by reference by REA. These incorporations by references

were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the ASTM standards are available for inspection during normal business hours at REA, room 2845, U.S. Department of Agriculture, Washington, DC 20250 or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC. Copies area available from ASTM, 1916 Race Street, Philadelphia, PA 19103–1187, telephone number (215) 299–5585.

(b) *Conductors and conductor insulation.* (1) The gauge sizes of the copper conductors covered by this section must be 19, 22, 24, and 26 American Wire Gauge (AWG).

(2) Each conductor must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 2.1.

(3) Factory joints made in conductors during the manufacturing process must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 2.2.

(4) The raw materials used for conductor insulation must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraphs 3.1 through 3.1.3.

(5) The finished conductor insulation must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraphs 3.2.2, 3.2.3, and 3.3.

(6) Insulated conductor must not have an overall diameter greater than 2 millimeters (mm) (0.081 inch (in.)).

(7) A permissible overall performance level of faults in conductor insulation must average not greater than one fault per 12,000 conductor meters (40,000 conductor feet) for each gauge of conductor.

(i) All insulated conductors must be continuously tested for insulation faults during the twinning operation with a method of testing acceptable to REA. The length count and number of faults must be recorded. The information must be retained for a period of 6 months and be available for review by REA when requested.

(ii) The voltages for determining compliance with the requirements of this section are as follows:

AWG	Direct Current Voltages (kilovolts)
19	4.5
22	3.6
24	3.0
26	2.4

(8) Repairs to the conductor insulation during manufacture are permissible. The method of repair must be accepted by REA prior to its use. The repaired insulation must be capable of meeting the relevant electrical requirements of this section.

(9) All repaired sections of insulation must be retested in the same manner as originally tested for compliance with paragraph (b)(7) of this section.

(10) The colored insulating material removed from or tested on the conductor, from a finished cable, must meet the performance requirements specified in ANSI/ICEA S-84–608–1988, paragraphs 3.4.1 through 3.4.6.

(c) *Identification of pairs and twisting of pairs.* (1) The insulation must be colored to identify:

(i) The tip and ring conductor of each pair; and

(ii) Each pair in the completed cable.

(2) The colors to be used in the pairs in the 25 pair group, together with the pair numbers must be in accordance with the table specified in ANSI/ICEA S-84–608–1988, paragraph 3.5.

(3) Positive identification of the tip and ring conductors of each pair by marking each conductor of a pair with the color of its mate is permissible. The method of marking must be accepted by REA prior to its use.

(4) Other methods of providing positive identification of the tip and ring conductors of each pair may be employed if accepted by REA prior to its use.

(5) The insulated conductors must be twisted into pairs.

(6) In order to provide sufficiently high crosstalk isolation, the pair twists must be designed to enable the cable to meet the capacitance unbalance and crosstalk loss requirements of paragraphs (k)(5), (k)(6), and (k)(8) this section.

(7) The average length of pair twists in any pair in the finished cable, when measured on any 3 meter (10 foot) length, must not exceed the requirement specified in ANSI/ICEA S-84–608–1988, paragraph 3.5.

(d) *Forming of the cable core.* (1) Twisted pairs must be assembled in such a way as to form a substantially cylindrical group.

(2) When desired for lay-up reasons, the basic group may be divided into two or more subgroups called units.

(3) Each group, or unit in a particular group, must be enclosed in bindings of the colors indicated for its particular pair count. The pair count, indicated by the colors of insulation, must be consecutive as indicated in paragraph (d)(6) of this section through units in a group.

(4) The filling compound must be applied to the cable core in such a way as to provide as near a completely filled core as is commercially practical.

(5) Threads and tapes used as binders must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraphs 4.2 and 4.2.1.

(6) The colors of the bindings and their significance with respect to pair count must be as follows:

Group No.	Color of Bindings	Group Pair Count
1	White-Blue	1–25
2	White-Orange.	26–50
3	White-Green.	51–75
4	White-Brown.	76–100
5	White-Slate	101–125
6	Red-Blue ..	126–150
7	Red-Orange.	151–175
8	Red-Green	176–200
9	Red-Brown	201–225
10	Red-Slate .	226–250
11	Black-Blue	251–275
12	Black-Orange.	276–300
13	Black-Green.	301–325
14	Black-Brown.	326–350
15	Black-Slate	351–375
16	Yellow-Blue.	376–400
17	Yellow-Orange.	401–425
18	Yellow-Green.	426–450
19	Yellow-Brown.	451–475
20	Yellow-Slate.	476–500
21	Violet-Blue	501–525
22	Violet-Orange.	526–550
23	Violet-Green.	551–575
24	Violet-Brown.	576–600

(7) The use of the white unit binder in cables of 100 pairs or less is optional.

(8) When desired for manufacturing reasons, two or more 25 pair groups may be bound together with nonhygroscopic and nonwicking threads or tapes into a super-unit. Threads or tapes must meet the requirements specified in paragraph (d)(5) of this section. The group binders and the super-unit binders must be color coded such that the combination of the two binders must positively identify each 25 pair group from every other 25 pair group in the cable. Super-unit binders must be of the color shown in the following table:

Super-Unit Binder Colors

Pair Numbers	Binder Color
1–600	White
601–1200	Red
1201–1800	Black
1801–2400	Yellow
2401–3000	Violet
3001–3600	Blue
3601–4200	Orange
4201–4800	Green
4801–5400	Brown
5401–6000	Slate

(9) Color binders must not be missing for more than 90 meters (300 feet) from any 25 pair group or from any subgroup used as part of a super-unit. At any cable cross-section, no adjacent 25 pair groups and no more than one subgroup of any super-unit may have missing binders. In no case must the total number of missing binders exceed three. Missing super-unit binders must not be permitted for any distance.

(10) Any reel of cable which contains missing binders must be labeled indicating the colors and location of the binders involved. The labeling must be applied to the reel and also to the cable.

(e) *Screened cable.* (1) Screened cable must be constructed such that a metallic, internal screen(s) must be provided to separate and provide sufficient isolation between the compartments to meet the requirements of this section.

(2) At the option of the user or manufacturer, identified service pairs providing for voice order and fault location may be placed in screened cables.

(i) The number of service pairs provided must be one per twenty-five operating pairs plus two for a cable size up to and including 400 pairs, subject to a minimum of four service pairs.The pair counts for screened cables are as follows:

Screened Cable Pair Counts

Carrier Pair Count	Service Pairs	Total Pair Count
24	4	28
50	4	54
100	6	106
150	8	158
200	10	210
300	14	314
400	18	418

(ii) The service pairs must be equally divided among the compartments. The color sequence must be repeated in each compartment.

(iii) The electrical and physical characteristics of each service pair must meet all the requirements set forth in this section.

(iv) The colors used for the service pairs must be in accordance with the requirements of paragraph (b)(5) of this section. The color code used for the service pairs together with the service pair number are shown in the following table:

Color Code For Service Pairs

Service Pair No.	Color	
	Tip	Ring
1	White	Red
2	"	Black
3	"	Yellow
4	"	Violet
5	Red	Black
6	"	Yellow
7	"	Violet
8	Black	Yellow
9	"	Violet

(3) The screen tape must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraphs 5.1 through 5.4.

(4) The screen tape must be tested for dielectric strength by completely removing the protective coating from one end to be used for grounding purposes.

(i) Using an electrode, over a 30 centimeter (1 foot) length, apply a direct current (dc) voltage at the rate of rise of 500 volts/second until failure.

(ii) No breakdown should occur below 8 kilovolts.

(f) *Filling compound.* (1) After or during the stranding operation and prior to application of the core wrap, filling compound must be applied to the cable core. The compound must be as nearly colorless as is commercially feasible and consistent with the end product requirements and pair identification.

(2) The filling compound must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraphs 4.4 through 4.4.4.

(3) The individual cable manufacturer must satisfy REA that the filling compound selected for use is suitable for its intended application. The filling compound must be applied to the cable in such a manner that the cable components will not be degraded.

(g) *Core wrap.* (1) The core wrap must comply with the requirements specified in ANSI/ICEA-S-84–608–1988, paragraph 4.3.

(2) If required for manufacturing reasons, white or colored binders of nonhygroscopic and nonwicking material may be applied over the core and/or wrap. When used, binders must meet the requirements specified in paragraph (d)(5) of this section.

(3) Sufficient filling compound must have been applied to the core wrap so that voids or air spaces existing between the core and the inner side of the core wrap are minimized.

(h) *Flooding compound.* (1) Sufficient flooding compound must be applied on all sheath interfaces so that voids and air spaces in these areas are minimized. When the optional armored design is used, the flooding compound must be applied between the core wrap and shield, between the shield and armor, and between the armor and the jacket so that voids and air spaces in these areas are minimized. The use of floodant over the outer metallic substrate is not required if uniform bonding, per paragraph (i)(7) of this section, is achieved between the plastic-clad metal and the jacket.

(2) The flooding compound must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 4.5 and the jacket slip test requirements of appendix A, paragraph (III)(5) of this section.

(3) The individual cable manufacturer must satisfy REA that the flooding compound selected for use is acceptable for the application.

(i) *Shield and optional armor.* (1) A single corrugated shield must be applied longitudinally over the core wrap.

(2) For unarmored cable the shield overlap must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.3.2. Core diameter is defined as the diameter under the core wrap and binding.

(3) For cables containing the coated aluminum shield/coated steel armor (CACSP) sheath design, the coated aluminum shield must be applied in accordance with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.3.2, Dual Tape Shielding System.

(4) General requirements for application of the shielding material are as follows:

(i) Successive lengths of shielding tapes may be joined during the manufacturing process by means of cold weld, electric weld, soldering with a nonacid flux or other acceptable means.

(ii) Shield splices must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.3.3.

(iii) The corrugations and the application process of the coated aluminum and copper bearing shields must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.3.1.

(iv) The shielding material must be applied in such a manner as to enable the cable to pass the cold bend test specified in paragraph (l)(3) of this section.

(5) The following is a list of acceptable materials for use as cable shielding. Other types of shielding materials may also be used provided they are accepted by REA prior to their use.

Standard Cable	Gopher Resistant Cable
8-mil Coated Aluminum[1]	10-mil Copper
5-mil Copper	6-mil Copper-Clad Stainless Steel 5 mil Copper-Clad Stainless Steel 5 mil Copper-Clad Alloy Steel 7-mil Alloy 194 6-mil Alloy 194 8-mil Coated Aluminum[1] and 6-mil Coated Steel[1]

[1]Dimensions of uncoated metal.

(i) The 8-mil aluminum tape must be plastic coated on both sides and must comply with the requirements of ANSI/ICEA S-84–608–1988, paragraph 6.2.2.

(ii) The 5-mil copper tape must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.2.3.

(iii) The 10-mil copper tape must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.2.4.

(iv) The 6-mil copper clad stainless steel tape must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.2.5.

(v) The 5-mil copper clad stainless steel tape must be in the fully annealed condition and must conform to the requirements of American Society for Testing and Materials (ASTM) B 694–86, with a cladding ratio of 16/68/16.

(A) The electrical conductivity of the clad tape must be a minimum of 28 percent of the International Annealed Copper Standard (IACS) when measured per ASTM B 193–87.

(B) The tape must be nominally 0.13 millimeter (0.005 inch) thick with a minimum thickness of 0.11 millimeter (0.0045 inch).

(vi) The 5-mil copper clad alloy steel tape must be in the fully annealed condition and the copper component must conform to the requirements of ASTM B 224–80 and the alloy steel component must conform to the requirements of ASTM A 505–87, with a cladding ratio of 16/68/16.

(A) The electrical conductivity of the copper clad alloy steel tape must comply with the requirement specified in (5)(v)(A) of this section.

(B) The thickness of the copper clad alloy steel tape must comply with the requirements specified in (5)(v)(B) of this section.

(vii) The 6-mil and 7-mil 194 copper alloy tapes must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.2.6.

(6) The corrugation extensibility of the coated aluminum shield must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.4.

(7) When the jacket is bonded to the plastic coated aluminum shield, the bond between the jacket and shield must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 7.2.6.

(8) A single plastic coated steel corrugated armor must be applied longitudinally directly over the coated aluminum shield listed in paragraph (i)(5) of this section with an overlap complying with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.3.2, Outer Steel Tape.

(9) Successive lengths of steel armoring tapes may be joined during the manufacturing process by means of cold weld, electric weld, soldering with a nonacid flux or other acceptable means. Armor splices must comply with the breaking strength and resistance requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.3.3.

(10) The corrugations and the application process of the coated steel armor must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.3.1.

(i) The corrugations of the armor tape must coincide with the corrugations of the coated aluminum shield.

(ii) Overlapped portions of the armor tape must be in register (corrugations must coincide at overlap) and in contact at the outer edge.

(11) The armoring material must be so applied to enable the cable to pass the cold bend test specified in paragraph (l)(3) of this section.

(12) The 6-mil steel tape must be electrolytic chrome coated steel (ECCS) plastic coated on both sides and must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.2.8.

(13) When the jacket is bonded to the plastic coated steel armor, the bond between the jacket and armor must comply with the requirement specified in ANSI/ICEA-S-84–608–1988, paragraph 7.2.6.

(j) *Cable jacket.* (1) The jacket must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 7.2.

(2) The raw materials used for the cable jacket must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 7.2.1.

(3) Jacketing material removed from or tested on the cable must meet the performance requirements specified in ANSI/ICEA S-84–608–1988, paragraphs 7.2.3 and 7.2.4.

(4) The thickness of the jacket must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 7.2.2.

(k) *Electrical requirements*—(1) *Conductor resistance.* The direct current resistance of any conductor in a completed cable and the average resistance of all conductors in a Quality Control Lot must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.1.

(2) *Resistance unbalance.* (i) The direct current resistance unbalance between the two conductors of any pair in a completed cable and the average resistance unbalance of all pairs in a completed cable must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.2.

(ii) The resistance unbalance between tip and ring conductors shall be random with respect to the direction of unbalance. That is, the resistance of the tip conductors shall not be consistently higher with respect to the ring conductors and vice versa.

(3) *Mutual capacitance.* The average mutual capacitance of all pairs in a completed cable and the individual mutual capacitance of any pair in a completed cable must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.3.

(4) *Capacitance difference.* (i) The capacitance difference for completed cables having 75 pairs or greater must comply with the requirement specified in ANSI/ICEA S-84–608–1988, paragraph 8.4.

(ii) When measuring screened cable, the inner and outer pairs must be selected from both sides of the screen.

(5) *Pair-to-pair capacitance unbalance*—(i) *Pair-to-pair.* The capacitance unbalance as measured on the completed cable must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.5.

(ii) *Screened cable.* In cables with 25 pairs or less and within each group of multigroup cables, the pair-to-pair capacitance unbalance between any two pairs in an individual compartment must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.5. The pair-to-pair capacitance unbalances to be considered must be:

(A) Between pairs adjacent in a layer in an individual compartment;

(B) Between pairs in centers of 4 pairs or less in an individual compartment; and

(C) Between pairs in adjacent layers in an individual compartment when the number of pairs in the inner (smaller) layer is 6 or less. The center is counted as a layer.

(iii) In cables with 25 pairs or less, the root-mean-square (rms) value is to include all the pair-to-pair unbalances measured for each compartment separately.

(iv) In cables containing more than 25 pairs, the rms value must include the pair-to-pair unbalances in the separate compartments.

(6) *Pair-to-ground capacitance unbalance*—(i) *Pair-to-ground.* The capacitance unbalance as measured on the completed cable must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.6.

(ii) When measuring pair-to-ground capacitance unbalance all pairs except the pair under test are grounded to the shield and/or shield/armor except when measuring cables containing super units in which case all other pairs in the same super unit must be grounded to the shield.

(iii) The screen tape must be left floating during the test.

(iv) Pair-to-ground capacitance unbalance may vary directly with the length of the cable.

(7) *Attenuation.* (i) For nonscreened and screened cables, the average attenuation of all pairs on any reel when measured at 150 and 772 kilohertz must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.7, Foam and/or Foam-Skin Column.

(ii) For T1C type cables over 12 pairs, the maximum average attenuation of all pairs on any reel must not exceed the values listed below when measured at a frequency of 1576 kilohertz at or corrected to a temperature of 20 ± 1°C. The test must be conducted in accordance with ASTM D 4566–90.

AWG	Maximum Average Attenuation decibel/kilometer (dB/km) (decibel/mile)
19	14.9 (24.0)
22	21.6 (34.8)
24	27.2 (43.8)

(8) *Crosstalk loss.* (i) The equal level far-end power sum crosstalk loss (FEXT) as measured on the completed cable must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.8, FEXT Table.

(ii) The near-end power sum crosstalk loss (NEXT) as measured on completed cable must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.8, NEXT Table.

(iii) *Screened cable.* (A) For screened cables the NEXT as measured on the completed cable must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraphs 8.9 and 8.9.1.

(B) For T1C screened cable the NEXT as measured on the completed cable must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraphs 8.9 and 8.9.2.

(9) *Insulation resistance.* The insulation resistance of each insulated conductor in a completed cable must comply with the requirement specified in ANSI/ICEA S-84–608–1988, paragraph 8.11.

(10) *High voltage test.* (i) In each length of completed cable, the insulation between conductors must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.12, Foam and/or Foam-Skin Column.

(ii) In each length of completed cable, the dielectric between the shield and/or armor and conductors in the core must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.13, Single Jacketed, Foam and/or Foam-Skin Column. In screened cable the screen tape must be left floating.

(iii) *Screened cable.* (A) In each length of completed screened cable, the dielectric between the screen tape and the conductors in the core must comply with the requirement specified in ANSI/ICEA S-84–608–1988, paragraph 8.14.

(B) In this test, the cable shield and/or armor must be left floating.

(11) *Electrical variations.* (i) Pairs in each length of cable having either a ground, cross, short, or open circuit condition will not be permitted.

(ii) The maximum number of pairs in a cable which may vary as specified in paragraph (k)(11)(iii) of this section from the electrical parameters given in this section are listed below. These pairs may be excluded from the arithmetic calculation.

Nominal Pair Count	Maximum Number of Pairs With Allowable Electrical Variation
6–100	1
101–300	2
301–400	3
401–600	4
601 and above	6

(iii) *Parameter variations.* (A) *Capacitance unbalance-to-ground.* If the cable fails either the maximum individual pair or average capacitance unbalance-to-ground requirement and all individual pairs are 3937 picofarad/kilometer (1200 picofarad/1000 feet) or less, the number of pairs specified in paragraph (k)(11)(ii) of this section may be eliminated from the average and maximum individual calculations.

(B) *Resistance unbalance.* Individual pair of 7 percent for all gauges.

(C) *Conductor resistance, maximum.* The following table shows maximum conductor resistance:

AWG	ohms/kilometer	(ohms/1000 feet)
19	29.9	(9.1)
22	60.0	(18.3)
24	94.5	(28.8)
26	151.6	(46.2)

Note: REA recognizes that in large pair count cable (600 pair and above) a cross, short, or open circuit condition occasionally may develop in a pair which does not affect the performance of the other cable pairs. In these circumstances rejection of the entire cable may be economically unsound or repairs may be impractical. In such circumstances the manufacturer may desire to negotiate with the customer for acceptance of the cable. No more than 0.5 percent of the pairs may be involved.

(l) *Mechanical requirements*—(1) *Compound flow test.* All cables manufactured in accordance with the requirements of this section must be capable of meeting the compound flow test specified in ANSI/ICEA S-84–608–1988, paragraph 9.1 using a test temperature of 80 ± 1°C.

(2) *Water penetration test.* All cables manufactured in accordance with the requirements of this section must be capable of meeting the water penetration test specified in ANSI/ICEA S-84–608–1988, paragraph 9.2.

(3) *Cable cold bend test.* All cables manufactured in accordance with the requirements of this section must be capable of meeting the cable cold bend test specified in ANSI/ICEA S-84–608–1988, paragraph 9.3.

(4) *Cable impact test.* All cables manufactured in accordance with the requirements of this section must be capable of meeting the cable impact test specified in ANSI/ICEA S-84–608–1988, paragraph 9.4.

(5) *Jacket notch test (CACSP sheath only).* All cables utilizing the coated aluminum/coated steel sheath (CACSP) design manufactured in accordance with the requirements of this section must be capable of meeting the jacket notch test specified in ANSI/ICEA S-84–608–1988, paragraph 9.5.

(6) *Cable torsion test (CACSP sheath only).* All cables utilizing the coated aluminum/coated steel sheath (CACSP) design manufactured in accordance with the requirements of this section must be capable of meeting the cable torsion test specified in ANSI/ICEA S-84–608–1988, paragraph 9.6.

(m) *Sheath slitting cord (optional).* (1) Sheath slitting cord may be used in the cable structure at the option of the manufacturer unless specified by the end user.

(2) When a sheath slitting cord is used it must be nonhygroscopic and nonwicking, continuous throughout a length of cable and of sufficient strength to open the sheath without breaking the cord.

(n) *Identification marker and length marker.* (1) Each length of cable must be identified in accordance with ANSI/ICEA S-84–608–1988, paragraphs 10.1 through 10.1.4. The color of the ink used for the initial outer jacket marking must be either white or silver.

(2) The markings must be printed on the jacket at regular intervals of not more than 0.6 meter (2 feet).

(3) The completed cable must have sequentially numbered length markers in accordance with ANSI/ICEA S-84–608–1988, paragraph 10.1.5. The color of the ink used for the initial outer jacket marking must be either white or silver.

(o) *Preconnectorized cable (optional).* (1) At the option of the manufacturer and upon request by the purchaser, cables 100 pairs and larger may be factory terminated in 25 pair splicing modules.

(2) The splicing modules must meet the requirements of REA Bulletin 345–54, PE-52, REA Specification for Telephone Cable Splicing Connectors (Incorporated by Reference at §1755.97), and be accepted by REA prior to their use.

(p) *Acceptance testing and extent of testing.* (1) The tests described in appendix A of this section are intended for acceptance of cable designs and major modifications of accepted designs. What constitutes a major modification is at the discretion of REA. These tests are intended to show the inherent capability of the manufacturer to produce cable products having long life and stability.

(2) For initial acceptance, the manufacturer must submit:

(i) An original signature certification that the product fully complies with each section of the specification;

(ii) Qualification Test Data, per appendix A of this section;

(iii) To periodic plant inspections;

(iv) A certification that the product does or does not comply with the domestic origin manufacturing provisions of the "Buy American" requirements of the Rural Electrification Act of 1938 (7 U.S.C. 901 *et seq.*);

(v) Written user testimonials concerning field performance of the product; and

(vi) Other nonproprietary data deemed necessary by the Chief, Outside Plant Branch (Telephone).

(3) For requalification acceptance, the manufacturer must submit an original signature certification that the product fully complies with each section of the specification, excluding the Qualification Section, and a certification that the product does or does not comply with the domestic origin manufacturing provisions of the "Buy American" requirements of the Rural Electrification Act of 1938 (7 U.S.C. 901 *et seq.*), for acceptance by August 30 of each year. The required data must have been gathered within 90 days of the submission. If the initial acceptance of a product to this specification was within 180 days of August 30, then requalification for that product will not be required for that year.

(4) Initial and requalification acceptance requests should be addressed to:

Chairman, Technical Standards Committee "A" (Telephone), Telecommunications Standard Division, Rural Electrification Administration, Washington, DC 20250–1500.

(5) *Tests on 100 percent of completed cable.* (i) The shield and/or armor of each length of cable must be tested for continuity in accordance with ANSI/ICEA S-84–608–1988, paragraph 8.16.

(ii) The screen tape of each length of screened cable must be tested for continuity in accordance with ANSI/ICEA S-84–608–1988, paragraph 8.16.

(iii) Dielectric strength between conductors and shield and/or armor must be tested to determine freedom from grounds in accordance with paragraph (k)(10)(ii) of this section.

(iv) Dielectric strength between conductors and screen tape must be tested to determine freedom from grounds in accordance with paragraph (k)(10)(iii) of this section.

(v) Each conductor in the completed cable must be tested for continuity in accordance with ANSI/ICEA S-84–608–1988, paragraph 8.16.

(vi) Dielectric strength between conductors, in each length of completed cable, must be tested to insure freedom from shorts and crosses in each length of completed cable in accordance with paragraph (k)(10)(i) of this section.

(vii) Each conductor in the completed preconnectorized cable must be tested for continuity.

(viii) Each length of completed preconnectorized cable must be tested for split pairs.

(ix) The average mutual capacitance must be measured on all cables. If the average mutual capacitance for the first 100 pairs tested from randomly selected groups is between 50 and 53 nanofarads/kilometer (nF/km) (80 and 85 nanofarad/mile), the remainder of the pairs need not be tested on the 100 percent basis (See paragraph (k)(3) of this section).

(6) *Capability tests.* Tests on a quality assurance basis must be made as frequently as is required for each manufacturer to determine and maintain compliance with:

(i) Performance requirements for conductor insulation, jacketing material, and filling and flooding compounds;

(ii) Bonding properties of coated or laminated shielding and armoring materials and performance requirements for screen tape;

(iii) Sequential marking and lettering;

(iv) Capacitance difference, capacitance unbalance, crosstalk, and attenuation;

(v) Insulation resistance, conductor resistance, and resistance unbalance;

(vi) Cable cold bend and cable impact tests;

(vii) Water penetration and compound flow tests; and

(viii) Jacket notch and cable torsion tests.

(q) *Summary of records of electrical and physical tests.* (1) Each manufacturer must maintain suitable summary records for a period of at least 3 years of all electrical and physical tests required on completed cable by this section as set forth in paragraphs (p)(5) and (p)(6) of this section. The test data for a particular reel must be in a form that it may be readily available to the purchaser or to REA upon request.

(2) Measurements and computed values must be rounded off to the number of places or figures specified for the requirement according to ANSI/ICEA S-84–608–1988, paragraph 1.3.

(r) *Manufacturing irregularities.* (1) Repairs to the shield and/or armor are not permitted in cable supplied to end users under this section.

(2) Minor defects in jackets (defects having a dimension of 3 millimeters (0.125 inch.) or less in any direction) may be repaired by means of heat fusing in accordance with good commercial practices utilizing sheath grade compounds.

(s) *Preparation for shipment.* (1) The cable must be shipped on reels. The

diameter of the drum must be large enough to prevent damage to the cable from reeling or unreeling. The reels must be substantial and so constructed as to prevent damage to the cable during shipment and handling.

(2) The thermal wrap must comply with the requirements of ANSI/ICEA S-84–608–1988, paragraph 10.3. When a thermal reel wrap is supplied, the wrap must be applied to the reel and must be suitably secured in place to minimize thermal exposure to the cable during storage and shipment. The use of the thermal reel wrap as a means of reel protection will be at the option of the manufacturer unless specified by the end user.

(3) The outer end of the cable must be securely fastened to the reel head so as to prevent the cable from becoming loose in transit. The inner end of the cable must be securely fastened in such a way as to make it readily available if required for electrical testing. Spikes, staples, or other fastening devices which penetrate the cable jacket must not be used. The method of fastening the cable ends must be acceptable to REA and accepted prior to its use.

(4) Each length of cable must be wound on a separate reel unless otherwise specified or agreed to by the purchaser.

(5) The arbor hole must admit a spindle 63 millimeters (2.5 inches) in diameter without binding. Steel arbor hole liners may be used but must be accepted by REA prior to their use.

(6) Each reel must be plainly marked to indicate the direction in which it should be rolled to prevent loosening of the cable on the reel.

(7) Each reel must be stenciled or labeled on either one or both sides with the information specified in ANSI/ICEA S-84–608–1988, paragraph 10.4 and the REA cable designation:

Cable Designation
BFCE
Cable Construction
Pair Count
Conductor Gauge

E = Expanded Insulation
A = Coated Aluminum Shield
C = Copper Shield
Y = Gopher Resistant Shield
X = Armored, Separate Shield
H = T1 Screened Cable
H1C = T1C Screened Cable
P = Preconnectorized

Example: BFCEXH100–22

Buried Filled Cable, Expanded Insulation, Armored (w/separate shield), T1 Screened Cable, 100 pair, 22 AWG.

(8) When cable manufactured to the requirements of this specification is shipped, both ends must be equipped with end caps acceptable to REA.

(9) When preconnectorized cables are shipped, the splicing modules must be protected to prevent damage during shipment and handling. The protection method must be acceptable to REA and accepted prior to its use.

(10) All cables ordered for use in underground duct applications must be equipped with a factory-installed pulling-eye on the outer end in accordance with ANSI/ICEA S-84–608–1988, paragraph 10.5.2.

(The information and recordkeeping requirements of this section have been approved by the Office of Management and Budget (OMB) under the Control Number 0572–0077.)

Appendix A to 7 CFR 1755.890—Qualification Test Methods

(I) The test procedures described in this appendix are for qualification of initial cable designs and major modifications of accepted designs. Included in (V) of this appendix are suggested formats that may to be used in submitting test results to REA.

(II) *Sample selection and preparation.* (1) All testing must be performed on lengths removed sequentially from the same 25 pair, 22 gauge jacketed cable. This cable must not have been exposed to temperatures in excess of 38°C since its initial cool down after sheathing. The lengths specified are minimum lengths and if desirable from a laboratory testing standpoint longer lengths may be used.

(a) Length A must be 10 ± 0.2 meters (33 ± 0.5 feet) long and must be maintained at 23 ± 3°C. One length is required.

(b) Length B must be 12 ± 0.2 meters (40 ± 0.5 feet) long. Prepare the test sample by removing the jacket, shield or shield/armor, and core wrap for a sufficient distance on both ends to allow the insulated conductors to be flared out. Remove sufficient conductor insulation so that appropriate electrical test connections can be made at both ends. Coil the sample with a diameter of 15 to 20 times its sheath diameter. Three lengths are required.

(c) Length C must be one meter (3 feet) long. Four lengths are required.

(d) Length D must be 300 millimeters (1 foot) long. Four lengths are required.

(e) Length E must be 600 millimeters (2 feet) long. Four lengths are required.

(f) Length F must be 3 meters (10 feet) long and must be maintained at 23 ± 3°C for the duration of the test. Two lengths are required.

(2) *Data reference temperature.* Unless otherwise specified, all measurements must be made at 23 ± 3°C.

(III) *Environmental tests*—(1) *Heat aging test*—(a) *Test samples.* Place one sample each of lengths B, C, D, and E in an oven or environmental chamber. The ends of Sample B must exit from the chamber or oven for electrical tests. Securely seal the oven exit holes.

(b) *Sequence of tests.* The samples are to be subjected to the following tests after conditioning:

(i) Water Immersion Test outlined in (III)(2) of this appendix;

(ii) Water Penetration Test outlined in (III)(3) of this appendix;

(iii) Insulation Compression Test outlined in (III)(4) of this appendix; and

(iv) Jacket Slip Strength Test outlined in (III)(5) of this appendix.

(c) *Initial Measurements.* (i) For Sample B measure the open circuit capacitance for each odd numbered pair at 1, 150, and 772 kilohertz, and the attenuation at 150 and 772 kilohertz after conditioning the sample at the data reference temperature for 24 hours. Calculate the average and standard deviation for the data of the 13 pairs on a per kilometer or (on a per mile) basis.

(ii) The attenuation at 150 and 772 kilohertz may be calculated from open circuit admittance (Yoc) and short circuit impedance (Zsc) or may be obtained by direct measurement of attenuation.

(iii) Record on suggested formats in (V) of this appendix or on other easily readable formats.

(d) *Heat conditioning.* (i) Immediately after completing the initial measurements, condition the sample for 14 days at a temperature of 65 ± 2°C.

(ii) At the end of this period note any exudation of cable filler. Measure and calculate the parameters given in (III)(1)(c) of this appendix. Record on suggested formats in (V) of this appendix or other easily readable formats.

(iii) Cut away and discard a one meter (3 foot) section from each end of length B.

(e) *Overall electrical deviation.* (i) Calculate the percent change in all average parameters between the final parameters after conditioning and the initial parameters in (III)(1)(c) of this appendix.

(ii) The stability of the electrical parameters after completion of this test must be within the following prescribed limits:

(A) *Capacitance.* The average mutual capacitance must be within 5 percent of its original value;

(B) The change in average mutual capacitance must be less than 5 percent over frequency 1 to 150 kilohertz; and

(C) *Attenuation.* The 150 and 772 kilohertz attenuation must not have increased by more than 5 percent over their original values.

(2) *Water immersion electrical test*—(a) *Test sample selection.* The 10 meter (33 foot) section of length B must be tested.

(b) *Test sample preparation.* Prepare the sample by removing the jacket, shield or shield/armor, and core wrap for sufficient distance to allow one end to be accessed for test connections. Cut out a series of 6 millimeter (0.25 inch.) diameter holes along the test sample, at 30 centimeters (1 foot) intervals progressing successively 90 degrees around the circumference of the cable. Assure that the cable core is exposed at each hole by slitting the core wrapper. Place the prepared sample in a dry vessel which when filled will maintain a one meter (3 foot) head of water over 6 meters (20 feet) of uncoiled cable. Extend and fasten the ends of the cable so they will be above the water line and the pairs are rigidly held for the duration of the test.

(c) *Capacitance testing.* Measure the initial values of mutual capacitance of all odd pairs in each cable at a frequency of 1 kilohertz

before filling the vessel with water. Be sure the cable shield or shield/armor is grounded to the test equipment. Fill the vessels until there is a one meter (3 foot) head of water on the cables.

(i) Remeasure the mutual capacitance after the cables have been submerged for 24 hours and again after 30 days.

(ii) Record each sample separately on suggested formats attached or on other easily readable formats.

(d) *Overall electrical deviation.* (i) Calculate the percent change in all average parameters between the final parameters after conditioning with the initial parameters in (III)(2)(c) of this appendix.

(ii) The average mutual capacitance must be within 5 percent of its original value.

(3) *Water penetration testing.* (a) A watertight closure must be placed over the jacket of length C. The closure must not be placed over the jacket so tightly that the flow of water through pre-existing voids of air spaces is restricted. The other end of the sample must remain open.

(b) Test per Option A or Option B—(i) *Option A.* Weigh the sample and closure prior to testing. Fill the closure with water and place under a continuous pressure of 10 ± 0.7 kilopascals (1.5 ± 0.1 pounds per square inch gauge) for one hour. Collect the water leakage from the end of the test sample during the test and weigh to the nearest 0.1 gram. Immediately after the one hour test, seal the ends of the cable with a thin layer of grease and remove all visible water from the closure, being careful not to remove water that penetrated into the core during the test. Reweigh the sample and determine the weight of water that penetrated into the core. The weight of water that penetrated into the core must not exceed 6 grams.

(ii) *Option B.* Fill the closure with a 0.2 gram sodium fluorscein per liter water solution and apply a continuous pressure 10 ± 0.7 kilopascals (1.5 ± 0.1 pounds per square inch gauge) for one hour. Catch and weigh any water that leaks from the end of the cable during the one hour period. If no water leaks from the sample, carefully remove the water from the closure. Then carefully remove the jacket, shield or shield/ armor, and core wrap one at a time, examining with an ultraviolet light source for water penetration. After removal of the core wrap, carefully dissect the core and examine for water penetration within the core. Where water penetration is observed, measure the penetration distance. The distance of water penetration into the core must not exceed 127 millimeters (5.0 inches).

(4) *Insulation compression test*—(a) *Test sample D.* Remove jacket, shield or shield/ armor, and core wrap being careful not to damage the conductor insulation. Remove one pair from the core and carefully separate, wipe off core filler and straighten the insulated conductors. Retwist the two insulated conductors together under sufficient tension to form 10 evenly spaced 360 degree twists in a length of 10 centimeters (4 inches).

(b) *Sample testing.* Center the mid 50 millimeters (2 inches) of the twisted pair between 2 smooth rigid parallel metal plates that are 50 millimeters × 50 millimeters (2 inches × 2 inches). Apply a 1.5 volt direct current potential between the conductors, using a light or buzzer to indicate electrical contact between the conductors. Apply a constant load of 67 newtons (15 pound-force) on the sample for one minute and monitor for evidence of contact between the conductors. Record results on suggested formats in (V) of this appendix or on other easily readable formats.

(5) *Jacket slip strength test*—(a) *Sample selection.* Test Sample E from (III)(1)(a) of this appendix.

(b) *Sample preparation.* Prepare test sample in accordance with the procedures specified in ASTM D 4565–90a.

(c) *Sample conditioning and testing.* Remove the sample from the tensile tester prior to testing and condition for one hour at 50 ± 2°C. Test immediately in accordance with the procedures specified in ASTM D 4565–90a. A minimum jacket slip strength of 67 newtons (15 pound-force) is required. Record the highest load attained.

(6) *Humidity exposure.* (a) Repeat steps (III)(1)(a) through (III)(1)(c)(iii) of this appendix for separate set of samples B, C, D, and E which have not been subjected to prior environmental conditioning.

(b) Immediately after completing the measurements, expose the test sample to 100 temperature cyclings. Relative humidity within the chamber must be maintained at 90 ± 2 percent. One cycle consists of beginning at a stabilized chamber and test sample temperature of 52 ± 1°C, increasing the temperature to 57 ± 1°C, allowing the chamber and test samples to stabilize at this level, then dropping the temperature back to 52 ± 1°C.

(c) Repeat steps (III)(1)(d)(ii) through (III)(5)(c) of this appendix.

(7) *Temperature cycling.* (a) Repeat steps (III)(1)(a) through (III)(1)(c)(iii) of this appendix for separate set of samples B, C, D, and E which have not been subjected to prior environmental conditioning.

(b) Immediately after completing the measurements, subject the test sample to the 10 cycles of temperature between a minimum of −40°C and +60°C. The test sample must be held at each temperature extreme for a minimum of 1 1/2 hours during each cycle of temperature. The air within the temperature cycling chamber must be circulated throughout the duration of the cycling.

(c) Repeat steps (III)(1)(d)(ii) through (III)(5)(c) of this appendix.

(IV) *Control sample*—(1) *Test samples.* A separate set of lengths A, C, D, E, and F must have been maintained at 23 ± 3°C for at least 48 hours before the testing.

(2) Repeat steps (III)(2) through (III)(5)(c) of this appendix except use length A instead of length B.

(3) *Surge test.* (a) One length of sample F must be used to measure the breakdown between conductors while the other length of F must be used to measure the core to shield breakdown.

(b) The samples must be capable of withstanding without damage, a single surge voltage of 15 kilovolts peak between conductors, and a 25 kilovolts peak surge voltage between conductors and the shield or shield/armor as hereinafter described. The surge voltage must be developed from a capacitor discharged through a forming resistor connected in parallel with the dielectric of the test sample. The surge generator constants must be such as to produce a surge of 1.5 × 40 microsecond wave shape.

(c) The shape of the generated wave must be determined at a reduced voltage by connecting an oscilloscope across the forming resistor with the cable sample connected in parallel with the forming resistor. The capacitor bank is charged to the test voltage and then discharged through the forming resistor and test sample. The test sample will be considered to have passed the test if there is no distinct change in the wave shape obtained with the initial reduced voltage compared to that obtained after the application of the test voltage.

(V) The following suggested formats may be used in submitting the test results to REA:

Environmental Conditioning_____

FREQUENCY 1 KILOHERTZ

Pair Number	Capacitance nF/km (nanofarad/mile)	
	Initial	Final
1		
3		
5		
7		
9		
11		
13		
15		
17		
19		
21		
23		
25		
Average $\bar{x}$		

Overall Percent Difference in Average $\bar{x}$ _____

Environmental Conditioning_____

FREQUENCY 150 KILOHERTZ

Pair Number	Capacitance nF/km (nanofarad/mile)		Attenuation dB/km (decibel/mile)	
	Initial	Final	Initial	Final
1				
3				
5				
7				
9				
11				
13				
15				
17				
19				
21				
23				
25				
Average $\bar{x}$				

Overall Percent Difference in Average $\bar{x}$
Capacitance:_____
Conductance:_____

Environmental Conditioning_____

FREQUENCY 772 KILOHERTZ

Pair Number	Capacitance nF/km (nanofarad/mile)		Attenuation dB/km (decibel/mile)	
	Initial	Final	Initial	Final
1				
3				
5				
7				
9				
11				
13				
15				
17				
19				
21				
23				
25				
Average $\bar{x}$				

Overall Percent Difference in Average $\bar{x}$
Capacitance:_____
Conductance:_____

Environmental Conditioning_____

WATER IMMERSION TEST (1 KILOHERTZ)

Pair Number	Capacitance nF/km (nanofarad/mile)		
	Initial	24 Hours	Final
1			
3			
5			
7			
9			
11			
13			
15			
17			
19			
21			
23			
25			
Average $\bar{x}$			

Overall Percent Difference in Average $\bar{x}$
_____

Water Penetration Test

	Option A		Option B	
	End Leakage grams	Weight Gain grams	End Leakage grams	Penetration mm (in.)
Control.				
Heat Age.				
Humidity Exposure.				
Temperature Cycling.				

Insulation Compression

	Failures
Control	
Heat Age	
Humidity Exposure	
Temperature Cycling	

Jacket Slip Strength @ 50°C

	Load in newtons (pound-force)
Control	
Heat Age	
Humidity Exposure	
Temperature Cycling	

Filler Exudation (grams)

Heat Age _____

Filler Exudation (grams)—Continued

Humidity Exposure _____
Temperature Cycling _____

Surge Test (kilovolts)

Conductor to Conductor. _____
Shield to Conductors _____

Dated: May 5, 1993.

Robert Peters,

Acting Under Secretary, Small Community and Rural Development.

[FR Doc 93–11894 Filed 5–19–93; 8:45 am]

BILLING CODE 3410–15–F

7 CFR Part 1755

RIN 0572-AA55

REA Specification for Filled Telephone Cables

AGENCY: Rural Electrification Administration, USDA.

ACTION: Final rule.

SUMMARY: The Rural Electrification Administration (REA) amends its regulations on Telecommunications Standards and Specifications for Materials, Equipment and Construction, by rescinding REA Bulletin 345–67, REA Specification for Filled Telephone Cables, PE–39, and codifying this specification. This revised specification updates the end product performance requirements of filled cables brought about through technological advancements made during the last two years.

EFFECTIVE DATE: June 21, 1993. Incorporation by reference of certain publications listed in this final rule is approved by the Director of the Federal Register as of June 21, 1993.

FOR FURTHER INFORMATION CONTACT: Garnett G. Adams, Chief, Outside Plant Branch, Telecommunications Standards Division, Rural Electrification Administration, room 2844, South Building, U.S. Department of Agriculture, Washington, DC 20250–1500, telephone number (202) 720–0667.

SUPPLEMENTARY INFORMATION:

Executive Order 12291

This final rule has been issued in conformance with Executive Order 12291 and Departmental Regulation 1512–1. This action has been classified as "nonmajor" because it does not meet the criteria for a major regulation as established by the Order.

Executive Order 12778

This final rule has been reviewed under Executive Order 12778, Civil Justice Reform. If adopted, this final rule will not: (1) Preempt any State or local laws, regulations, or policies; (2) Have any retroactive effect; and (3) Require administrative proceedings before parties may file suit challenging the provisions of this rule.

Regulatory Flexibility Act Certification

The Administrator of REA has determined that this proposed rule will not have a significant impact on a substantial number of small entities, as defined by the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). This final rule involves standards and specifications, which may increase the direct short-term costs to the REA borrower. However, the long-term direct economic costs are reduced through greater durability and lower maintenance cost over time.

Information Collection and Recordkeeping Requirements

In compliance with the Office of Management and Budget (OMB) regulations (5 CFR part 1320) which implements the Paperwork Reduction Act of 1980 (Pub. L. 96–511) and section 3504 of that Act, information collection and recordkeeping requirements contained in this final rule have been approved by OMB under control number 0572–0077 which expires on January 31, 1994. Comments concerning these requirements should be directed to the Office of Information and Regulator Affairs of OMB, Attention: Desk Officer for USDA, room 3201, New Executive Office Building, Washington, DC 20503.

National Environmental Policy Act Certification

The Administrator of REA, has determined that this final rule will not significantly affect the quality of the human environment as defined by the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*). Therefore, this action does not require an environmental impact statement or assessment.

Catalog of Federal Domestic Assistance

The program described by this final rule is listed in the Catalog of Federal Domestic Assistance programs under No. 10.851, Rural Telephone Loans and Loan Guarantees, and No. 10.852, Rural Telephone Bank Loans. This catalog is available on a subscription basis from the Superintendent of Documents, the United States Government Printing Office, Washington, DC 20402.

Executive Order 12372

This final rule is excluded from the scope of Executive Order 12372, Intergovernmental Consultation that requires intergovernmental consultation with state and local officials. A Notice of Final rule titled Department Programs and Activities Excluded from Executive Order 12372 (50 FR 47034) exempts REA and RTB loans and loan guarantees, and RTB bank loans, to governmental and nongovernmental entities from coverage under this Order.

Background

REA issues publications titled "Bulletin" which serve to guide borrowers regarding already codified policy, procedures, and requirements needed to manage loans, loan guarantee programs, and the security instruments which provide for and secure REA financing. REA issues standards and specifications for the construction of telephone facilities financed with REA loan funds. REA is rescinding Bulletin 345–67, REA Specification for Filled Telephone Cables, PE–39, and codifying this specification at 7 CFR 1755.390, REA Specification for Filled Telephone Cables.

The American National Standard Institute (ANSI) and the Insulated Cable Engineers Association (ICEA) are scientific and technical organizations formed for the development of standards on characteristics and performance of materials, products, systems, and services. An ANSI/ICEA standard represents a common viewpoint of those parties concerned with its provisions; namely producers, users and general interest groups. The standard is intended to aid industry, government agencies, and the general public.

It is REA policy to use the standards, rules, and regulations of such engineering and standards groups as ANSI, the ICEA, the American Society for Testing and Materials (ASTM), and the various national engineering societies, and such references as the National Electrical Safety Code (NESC) and the National Electrical Code (NEC), to the greatest extent practicable as determined by REA. REA is also guided by OMB Circular No. A-119, Federal Participation in the Development and Use of Voluntary Standards in its activities. In the absence of national standards, or where REA determines that existing national standards are not satisfactory, standards will be prepared for material and equipment as necessary.

On September 10, 1991, REA published a proposed rule (56 FR 46132) to rescind REA Bulletin 345–67, REA Specification for Filled Telephone Cables, PE–39, and to incorporate by reference a new Bulletin 1753F–205(PE–39). Comments on this proposed rule were due by October 10, 1991. No comments were received by this due date. Subsequently REA has determined that the public interest is better served by codifying the revised specification rather than incorporation by reference.

Additionally REA has determined that by codifying the revised specification, borrowers will be provided with the opportunity to increase subscriber services through enhanced cable designs brought about through technological advancements made during the last two years in an economical and efficient manner. This specification will also allow cable manufacturers to reduce their production costs by providing one uniform cable design to both REA and non-REA telephone companies which presently is not being done today. This reduction in manufacturing costs will result in lower cable costs for borrowers without any degradation in cable performance.

List of Subjects in 7 CFR Part 1755

Incorporation by reference, Loan programs—communications, Reporting and recordkeeping requirements, Rural areas, Telephone.

For reasons set out in the preamble, REA amends 7 CFR part 1755 as follows:

PART 1755—TELECOMMUNICATIONS STANDARDS AND SPECIFICATIONS FOR MATERIALS, EQUIPMENT AND CONSTRUCTION

1. The authority citation for Part 1755 is revised to read as follows:

Authority: 7 U.S.C. 901 *et seq.*, 1921 *et seq.*

§ 1755.97 [Amended]

2. Section 1755.97 is amended by removing the entry REA Bulletin No. 345–67 from the table.

3. Section 1755.390 is added to read as follows:

§ 1755.390 REA specification for filled telephone cables.

(a) *Scope.* (1) This section covers the requirements for filled telephone cables intended for direct burial installation either by trenching or by direct plowing, for underground application by placement in a duct, or for aerial installations by attachment to a support strand.

(i) The conductors are solid copper, individually insulated with an extruded solid insulating compound.

(ii) The insulated conductors are twisted into pairs which are then stranded or oscillated to form a cylindrical core.

(iii) For high frequency applications, the cable core may be separated into compartments with screening shields.

(iv) A moisture resistant filling compound is applied to the stranded conductors completely covering the insulated conductors and filling the interstices between pairs and units.

(v) The cable structure is completed by the application of suitable core wrapping material, a flooding compound, a shield or a shield/armor, and an overall plastic jacket.

(2) The number of pairs and gauge size of conductors which are used within the REA program are provided in the following table:

AWG	19	22	24	26
Pairs	6	6	6	
	12	12	12	
	18	18	18	
	25	25	25	25
		50	50	50
		75	75	75
		100	100	100
		150	150	150
		200	200	200
		300	300	300
		400	400	400
			600	600
				900

Note: Cables larger in pair sizes than those shown in this table must meet all requirements of this section.

(3) Screened cable, when specified, must meet all requirements of this section. The pair sizes of screened cables used within the REA program are referenced in paragraph (e)(2)(i) of this section.

(4) All cables sold to REA borrowers for projects involving REA loan funds under this section must be accepted by REA Technical Standards Committee "A" (Telephone). For cables manufactured to the specification of this section, all design changes to an accepted design must be submitted for acceptance. REA will be the sole authority on what constitutes a design change.

(5) Materials, manufacturing techniques, or cable designs not specifically addressed by this section may be allowed if accepted by REA. Justification for acceptance of modified materials, manufacturing techniques, or cable designs must be provided to substantiate product utility and long-term stability and endurance.

(6) The American National Standard Institute/Insulated Cable Engineers Association, Inc. (ANSI/ICEA) S-84–608–1988 Standard For Telecommunications Cable, Filled, Polyolefin Insulated, Copper Conductor Technical Requirements referenced throughout this section is incorporated by reference by REA. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of ANSI/ICEA S-84–608–1988 are available for inspection during normal business hours at REA, room 2845, U.S. Department of Agriculture, Washington, DC 20250 or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC. Copies are available from ICEA, P. O. Box 440, South Yarmouth, MA 02664, telephone number (508) 394–4424.

(7) American Society for Testing and Materials specifications (ASTM) A 505-87, Standard Specification for Steel, Sheet and Strip, Alloy, Hot-Rolled and Cold-Rolled, General Requirements For; ASTM B 193-87, Standard Test Method for Resistivity of Electrical Conductor Materials; ASTM B 224-80, Standard Classification of Coppers; ASTM B 694-86, Standard Specification for Copper, Copper Alloy, and Copper-Clad Stainless Steel Sheet and Strip for Electrical Cable Shielding; ASTM D 4565-90a, Standard Test Methods for Physical and Environmental Performance Properties of Insulations and Jackets for Telecommunications Wire and Cable; and ASTM D 4566-90, Standard Test Methods for Electrical Performance Properties of Insulations and Jackets for Telecommunications Wire and Cable referenced in this section are incorporated by reference by REA. These incorporations by references were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the ASTM standards are available for inspection during normal business hours at REA, room 2845, U.S. Department of Agriculture, Washington, DC 20250 or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC. Copies are available from ASTM, 1916 Race Street, Philadelphia, PA 19103–1187, telephone number (215) 299–5585.

(b) *Conductors and conductor insulation.* (1) The gauge sizes of the copper conductors covered by this specification must be 19, 22, 24, and 26 American Wire Gauge (AWG).

(2) Each conductor must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 2.1.

(3) Factory joints made in conductors during the manufacturing process must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 2.2.

(4) The raw materials used for conductor insulation must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraphs 3.1 through 3.1.3.

(5) The finished conductor insulation must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraphs 3.2.1 and 3.3.

(6) Insulated conductors must not have an overall diameter greater than 2 millimeters (mm) (0.081 inch (in.)).

(7) A permissible overall performance level of faults in conductor insulation must average not greater than one fault per 12,000 conductor meters (40,000 conductor feet) for each gauge of conductor.

(i) All insulated conductors must be continuously tested for insulation faults during the twinning operation with a method of testing acceptable to REA. The length count and number of faults must be recorded. The information must be retained for a period of 6 months and be available for review by REA when requested.

(ii) The voltages for determining compliance with the requirements of this section are as follows:

AWG	Direct Current Voltages (kilovolts)
19	8.0
22	6.0
24	5.0
26	4.0

(8) Repairs to the conductor insulation during manufacture are permissible. The method of repair must be accepted by REA prior to its use. The

repaired insulation must be capable of meeting the relevant electrical requirements of this section.

(9) All repaired sections of insulation must be retested in the same manner as originally tested for compliance with paragraph (b)(7) of this section.

(10) The colored insulating material removed from or tested on the conductor, from a finished cable, must meet the performance requirements specified in ANSI/ICEA S-84-608-1988, paragraphs 3.4.1, 3.4.2, 3.4.4, 3.4.5, and 3.4.6.

(c) *Identification of pairs and twisting of pairs.* (1) The insulation must be colored to identify:

(i) The tip and ring conductor of each pair; and

(ii) Each pair in the completed cable.

(2) The colors to be used in the pairs in the 25 pair group, together with the pair numbers must be in accordance with the table specified in ANSI/ICEA S-84-608-1988, paragraph 3.5.

(3) Positive identification of the tip and ring conductors of each pair by marking each conductor of a pair with the color of its mate is permissible. The method of marking must be accepted by REA prior to its use.

(4) Other methods of providing positive identification of the tip and ring conductors of each pair may be employed if accepted by REA prior to its use.

(5) The insulated conductors must be twisted into pairs.

(6) In order to provide sufficiently high crosstalk isolation, the pair twists must be designed to enable the cable to meet the capacitance unbalance and crosstalk loss requirements of paragraphs (k)(5), (k)(6), and (k)(8) of this section.

(7) The average length of pair twists in any pair in the finished cable, when measured on any 3 meter (10 foot) length, must not exceed the requirement specified in ANSI/ICEA S-84-608-1988, paragraph 3.5.

(d) *Forming of the cable core.* (1) Twisted pairs must be assembled in such a way as to form a substantially cylindrical group.

(2) When desired for lay-up reasons, the basic group may be divided into two or more subgroups called units.

(3) Each group, or unit in a particular group, must be enclosed in bindings of the colors indicated for its particular pair count. The pair count, indicated by the colors of insulation, must be consecutive as indicated in paragraph (d)(6) of this section through units in a group.

(4) The filling compound must be applied to the cable core in such a way as to provide as near a completely filled core as is commercially practical.

(5) Threads and tapes used as binders must comply with the requirements specified in ANSI/ICEA S-84-608-1988, paragraphs 4.2 and 4.2.1.

(6) The colors of the bindings and their significance with respect to pair count must be as follows:

Group No.	Color of Bindings	Group Pair Count
1	White-Blue	1–25
2	White-Orange.	26–50
3	White-Green.	51–75
4	White-Brown.	76–100
5	White-Slate	101–125
6	Red-Blue ..	126–150
7	Red-Orange.	151–175
8	Red-Green	176–200
9	Red-Brown	201–225
10	Red-Slate .	226–250
11	Black-Blue	251–275
12	Black-Orange.	276–300
13	Black-Green.	301–325
14	Black-Brown.	326–350
15	Black-Slate	351–375
16	Yellow-Blue.	376–400
17	Yellow-Orange.	401–425
18	Yellow-Green.	426–450
19	Yellow-Brown.	451–475
20	Yellow-Slate.	476–500
21	Violet-Blue	501–525
22	Violet-Orange.	526–550
23	Violet-Green.	551–575
24	Violet-Brown.	576–600

(7) The use of the white unit binder in cables of 100 pairs or less is optional.

(8) When desired for manufacturing reasons, two or more 25 pair groups may be bound together with nonhygroscopic and nonwicking threads or tapes into a super-unit. Threads or tapes must meet the requirements specified in paragraph (d)(5) of this section. The group binders and the super-unit binders must be color coded such that the combination of the two binders must positively identify each 25 pair group from every other 25 pair group in the cable. Super-unit binders must be of the color shown in the following table:

Super-Unit Binder Colors

Pair Numbers	Binder Color
1–600	White
601–1200	Red
1201–1800	Black
1801–2400	Yellow
2401–3000	Violet

(9) Color binders must not be missing for more than 90 meters (300 feet) from any 25 pair group or from any subgroup used as part of a super-unit. At any cable cross-section, no adjacent 25 pair groups and no more than one subgroup of any super-unit may have missing binders. In no case must the total number of missing binders exceed three. Missing super-unit binders must not be permitted for any distance.

(10) Any reel of cable which contains missing binders must be labeled indicating the colors and location of the binders involved. The labeling must be applied to the reel and also to the cable.

(e) *Screened cable.* (1) Screened cable must be constructed such that a metallic, internal screen(s) must be provided to separate and provide sufficient isolation between the compartments to meet the requirements of this section.

(2) At the option of the user or manufacturer, identified service pairs providing for voice order and fault location may be placed in screened cables.

(i) The number of service pairs provided must be one per twenty-five operating pairs plus two for a cable size up to and including 400 pairs, subject to a minimum of four service pairs. The pair counts for screened cables are as follows:

Screened Cable Pair Counts

Carrier Pair Count	Service Pairs	Total Pair Count
24	4	28
50	4	54
100	6	106
150	8	158
200	10	210
300	14	314
400	18	418

(ii) The service pairs must be equally divided among the compartments. The color sequence must be repeated in each compartment.

(iii) The electrical and physical characteristics of each service pair must meet all the requirements set forth in this section.

(iv) The colors used for the service pairs must be in accordance with the requirements of paragraph (b)(5) of this section. The color code used for the

service pairs together with the service pair number are shown in the following table:

Color Code For Service Pairs

Service Pair No.	Color	
	Tip	Ring
1	White	Red
2	"	Black
3	"	Yellow
4	"	Violet
5	Red	Black
6	"	Yellow
7	"	Violet
8	Black	Yellow
9	"	Violet

(3) The screen tape must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraphs 5.1 through 5.4.

(4) The screen tape must be tested for dielectric strength by completely removing the protective coating from one end to be used for grounding purposes.

(i) Using an electrode, over a 30 centimeter (1 foot) length, apply a direct current voltage at the rate of rise of 500 volts/second until failure.

(ii) No breakdown should occur below 8 kilovolts.

(f) *Filling compound.* (1) After or during the stranding operation and prior to application of the core wrap, filling compound must be applied to the cable core. The compound must be as nearly colorless as is commercially feasible and consistent with the end product requirements and pair identification.

(2) The filling compound must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraphs 4.4 through 4.4.4.

(3) The individual cable manufacturer must satisfy REA that the filling compound selected for use is suitable for its intended application. The filling compound must be applied to the cable in such a manner that the cable components will not be degraded.

(g) *Core wrap.* (1) The core wrap must comply with the requirements specified in ANSI/ICEA-S-84–608–1988, paragraph 4.3.

(2) If required for manufacturing reasons, white or colored binders of nonhygroscopic and nonwicking material may be applied over the core and/or wrap. When used, binders must meet the requirements specified in paragraph (d)(5) of this section.

(3) Sufficient filling compound must be applied to the core wrap so that voids or air spaces existing between the core and the inner side of the core wrap are minimized.

(h) *Flooding compound* (1) Sufficient flooding compound must be applied on all sheath interfaces so that voids and air spaces in these areas are minimized. When the optional armored design is used, the flooding compound must be applied between the core wrap and shield, between the shield and armor, and between the armor and the jacket so that voids and air spaces in these areas are minimized. The use of floodant over the outer metallic substrate is not required if uniform bonding, per paragraph (i)(7) of this section, is achieved between the plastic-clad metal and the jacket.

(2) The flooding compound must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 4.5 and the jacket slip test requirements of appendix A, paragraph (III)(5) of this section.

(3) The individual cable manufacturer must satisfy REA that the flooding compound selected for use is acceptable for the application.

(i) *Shield and optional armor* (1) A single corrugated shield must be applied longitudinally over the core wrap.

(2) For unarmored cable the shield overlap must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.3.2. Core diameter is defined as the diameter under the core wrap and binding.

(3) For cables containing the coated aluminum shield/coated steel armor (CACSP) sheath design, the coated aluminum shield must be applied in accordance with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.3.2, Dual Tape Shielding System.

(4) General requirements for application of the shielding material are as follows:

(i) Successive lengths of shielding tapes may be joined during the manufacturing process by means of cold weld, electric weld, soldering with a nonacid flux, or other acceptable means.

(ii) Shield splices must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.3.3.

(iii) The corrugations and the application process of the coated aluminum and copper bearing shields must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.3.1.

(iv) The shielding material must be applied in such a manner as to enable the cable to pass the cold bend test specified in paragraph (l)(3) of this section.

(5) The following is a list of acceptable materials for use as cable shielding. Other types of shielding materials may also be used provided they are accepted by REA prior to their use.

Standard Cable	Gopher Resistant Cable
8-mil Coated Aluminum[1]	10-mil Copper
5-mil Copper	6-mil Copper-Clad Stainless Steel
	5 mil Copper-Clad Stainless Steel
	5 mil Copper-Clad Alloy Steel
	7-mil Alloy 194
	6-mil Alloy 194
	8-mil Coated Aluminum[1] and 6-mil Coated Steel[1]

[1]Dimensions of uncoated metal

(i) The 8-mil aluminum tape must be plastic coated on both sides and must comply with the requirements of ANSI/ICEA S-84–608–1988, paragraph 6.2.2.

(ii) The 5-mil copper tape must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.2.3.

(iii) The 10-mil copper tape must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.2.4.

(iv) The 6-mil copper clad stainless steel tape must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.2.5.

(v) The 5-mil copper clad stainless steel tape must be in the fully annealed condition and must conform to the requirements of American Society for Testing and Materials (ASTM) B 694–86, with a cladding ratio of 16/68/16.

(A) The electrical conductivity of the clad tape must be a minimum of 28 percent of the International Annealed Copper Standard (IACS) when measured per ASTM B 193–87.

(B) The tape must be nominally 0.13 millimeter (0.005 inch) thick with a minimum thickness of 0.11 millimeter (0.0045 inch).

(vi) The 5-mil copper clad alloy steel tape must be in the fully annealed condition and the copper component must conform to the requirements of ASTM B 224–80 and the alloy steel component must conform to the requirements of ASTM A 505–87, with a cladding ratio of 16/68/16.

(A) The electrical conductivity of the copper clad alloy steel tape must comply with the requirement specified in paragraph (i)(5)(v)(A) of this section.

(B) The thickness of the copper clad alloy steel tape must comply with the requirements specified in paragraph (i)(5)(v)(B) of this section.

(vii) The 6-mil and 7-mil 194 copper alloy tapes must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.2.6.

(6) The corrugation extensibility of the coated aluminum shield must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.4.

(7) When the jacket is bonded to the plastic coated aluminum shield, the bond between the jacket and shield must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 7.2.6.

(8) A single plastic-coated steel corrugated armor must be applied longitudinally directly over the coated aluminum shield listed in paragraph (i)(5) of this section with an overlap complying with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.3.2, Outer Steel Tape.

(9) Successive lengths of steel armoring tapes may be joined during the manufacturing process by means of cold weld, electric weld, soldering with a nonacid flux, or other acceptable means. Armor splices must comply with the breaking strength and resistance requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.3.3.

(10) The corrugations and the application process of the coated steel armor must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.3.1.

(i) The corrugations of the armor tape must coincide with the corrugations of the coated aluminum shield.

(ii) Overlapped portions of the armor tape must be in register (corrugations must coincide at overlap) and in contact at the outer edge.

(11) The armoring material must be so applied to enable the cable to pass the cold bend test as specified in paragraph (l)(3) of this section.

(12) The 6-mil steel tape must be electrolytic chrome-coated steel (ECCS) plastic coated on both sides and must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 6.2.8.

(13) When the jacket is bonded to the plastic-coated steel armor, the bond between the jacket and armor must comply with the requirement specified in ANSI/ICEA-S-84–608–1988, paragraph 7.2.6.

(j) *Cable jacket.* (1) The jacket must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 7.2.

(2) The raw materials used for the cable jacket must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 7.2.1.

(3) Jacketing material removed from or tested on the cable must meet the performance requirements specified in ANSI/ICEA S-84–608–1988, paragraphs 7.2.3 and 7.2.4.

(4) The thickness of the jacket must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 7.2.2.

(k) *Electrical requirements*—(1) *Conductor resistance.* The direct current resistance of any conductor in a completed cable and the average resistance of all conductors in a Quality Control Lot must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.1.

(2) *Resistance unbalance.* (i) The direct current resistance unbalance between the two conductors of any pair in a completed cable and the average resistance unbalance of all pairs in a completed cable must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.2.

(ii) The resistance unbalance between tip and ring conductors shall be random with respect to the direction of unbalance. That is, the resistance of the tip conductors shall not be consistently higher with respect to the ring conductors and vice versa.

(3) *Mutual capacitance.* The average mutual capacitance of all pairs in a completed cable and the individual mutual capacitance of any pair in a completed cable must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.3.

(4) *Capacitance difference.* (i) The capacitance difference for completed cables having 75 pairs or greater must comply with the requirement specified in ANSI/ICEA S-84–608–1988, paragraph 8.4.

(ii) When measuring screened cable, the inner and outer pairs must be selected from both sides of the screen.

(5) *Pair-to-pair capacitance unbalance*—(i) *Pair-to-pair.* The capacitance unbalance as measured on the completed cable must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.5.

(ii) *Screened cable.* In cables with 25 pairs or less and within each group of multigroup cables, the pair-to-pair capacitance unbalance between any two pairs in an individual compartment must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.5. The pair-to-pair capacitance unbalances to be considered must be:

(A) Between pairs adjacent in a layer in an individual compartment;

(B) Between pairs in centers of 4 pairs or less in an individual compartment; and

(C) Between pairs in adjacent layers in an individual compartment when the number of pairs in the inner (smaller) layer is 6 or less. The center is counted as a layer.

(iii) In cables with 25 pairs or less, the root-mean-square (rms) value must include all the pair-to-pair unbalances measured for each compartment separately.

(iv) In cables containing more than 25 pairs, the rms value must include the pair-to-pair unbalances in the separate compartments.

(6) *Pair-to-ground capacitance unbalance*—(i) *Pair-to-ground.* The capacitance unbalance as measured on the completed cable must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.6.

(ii) When measuring pair-to-ground capacitance unbalance all pairs except the pair under test are grounded to the shield and/or shield/armor except when measuring cables containing super units in which case all other pairs in the same super unit must be grounded to the shield.

(iii) The screen tape must be left floating during the test.

(iv) Pair-to-ground capacitance unbalance may vary directly with the length of the cable.

(7) *Attenuation.* (i) For nonscreened and screened cables, the average attenuation of all pairs on any reel when measured at 150 and 772 kilohertz must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.7, Solid Column.

(ii) For T1C type cables over 12 pairs, the maximum average attenuation of all pairs on any reel must not exceed the values listed below when measured at a frequency of 1576 kilohertz at or corrected to a temperature of 20 ± 1°C. The test must be conducted in accordance with ASTM D 4566–90.

AWG	Maximum Average Attenuation decibel/kilometer (dB/km) (decibel/mile)
19	13.4 (21.5)
22	18.3 (29.4)
24	23.1 (37.2)

(8) *Crosstalk loss.* (i) The equal level far-end power sum crosstalk loss (FEXT) as measured on the completed cable must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.8, FEXT Table.

(ii) The near-end power sum crosstalk loss (NEXT) as measured on completed cable must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.8, NEXT Table.

(iii) *Screened cable.* (A) For screened cables the NEXT as measured on the completed cable must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraphs 8.9 and 8.9.1.

(B) For T1C screened cable the NEXT as measured on the completed cable must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraphs 8.9 and 8.9.2.

(9) *Insulation resistance.* The insulation resistance of each insulated conductor in a completed cable must comply with the requirement specified in ANSI/ICEA S-84–608–1988, paragraph 8.11.

(10) *High voltage test.* (i) In each length of completed cable, the insulation between conductors must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.12, Solid Column.

(ii) In each length of completed cable, the dielectric between the shield and/or armor and conductors in the core must comply with the requirements specified in ANSI/ICEA S-84–608–1988, paragraph 8.13, Single Jacketed, Solid Column. In screened cable the screen tape must be left floating.

(iii) *Screened cable.* (A) In each length of completed screened cable, the dielectric between the screen tape and the conductors in the core must comply with the requirement specified in ANSI/ICEA S-84–608–1988, paragraph 8.14.

(B) In this test, the cable shield and/or armor must be left floating.

(11) *Electrical variations.* (i) Pairs in each length of cable having either a ground, cross, short, or open circuit condition will not be permitted.

(ii) The maximum number of pairs in a cable which may vary as specified in paragraph (k)(11)(iii) of this section from the electrical parameters given in this section are listed below. These pairs may be excluded from the arithmetic calculation.

Nominal Pair Count	Maximum Number of Pairs With Allowable Electrical Variation
6–100	1
101–300	2
301–400	3
401–600	4
601 and above	6

(iii) *Parameter variations.* (A) *Capacitance unbalance-to-ground.* If the cable fails either the maximum individual pair or average capacitance unbalance-to-ground requirement and all individual pairs are 3937 picofarad/kilometer (1200 picofarad/1000 feet) or less, the number of pairs specified in paragraph (k)(11)(ii) of this section may be eliminated from the average and maximum individual calculations.

(B) *Resistance unbalance.* Individual pair of 7 percent for all gauges.

(C) *Conductor resistance, maximum.* The following table shows maximum conductor resistance:

AWG	ohms/kilometer	(ohms/1000 feet)
19	29.9	(9.1)
22	60.0	(18.3)
24	94.5	(28.8)
26	151.6	(46.2)

Note: REA recognizes that in large pair count cable (600 pair and above) a cross, short or open circuit condition occasionally may develop in a pair which does not affect the performance of the other cable pairs. In these circumstances rejection of the entire cable may be economically unsound or repairs may be impractical. In such circumstances the manufacturer may desire to negotiate with the customer for acceptance of the cable. No more than 0.5 percent of the pairs may be involved.

(l) *Mechanical requirements*—(1) *Compound flow test.* All cables manufactured in accordance with the requirements of this section must be capable of meeting the compound flow test specified in ANSI/ICEA S-84–608–1988, paragraph 9.1 using a test temperature of 80 ± 1°C.

(2) *Water penetration.* All cables manufactured in accordance with the requirements of this section must be capable of meeting the water penetration test specified in ANSI/ICEA S-84–608–1988, paragraph 9.2.

(3) *Cable cold bend test.* All cables manufactured in accordance with the requirements of this section must be capable of meeting the cable cold bend test specified in ANSI/ICEA S-84–608–1988, paragraph 9.3.

(4) *Cable impact test.* All cables manufactured in accordance with the requirements of this section must be capable of meeting the cable impact test specified in ANSI/ICEA S-84–608–1988, paragraph 9.4.

(5) *Jacket notch test (CACSP sheath only).* All cables utilizing the coated aluminum/coated steel sheath (CACSP) design manufactured in accordance with the requirements of this section must be capable of meeting the jacket notch test specified in ANSI/ICEA S-84–608–1988, paragraph 9.5.

(6) *Cable torsion test (CACSP sheath only).* All cables utilizing the coated aluminum/coated steel sheath (CACSP) design manufactured in accordance with the requirements of this section must be capable of meeting the cable torsion test specified in ANSI/ICEA S-84–608–1988, paragraph 9.6.

(m) *Sheath slitting cord (optional).* (1) Sheath slitting cords may be used in the cable structure at the option of the manufacturer unless specified by the end user.

(2) When a sheath slitting cord is used it must be nonhygroscopic and nonwicking, continuous throughout a length of cable and of sufficient strength to open the sheath without breaking the cord.

(n) *Identification marker and length marker.* (1) Each length of cable must be identified in accordance with ANSI/ICEA S-84–608–1988, paragraphs 10.1 through 10.1.4. The color of the ink used for the initial outer jacket marking must be either white or silver.

(2) The markings must be printed on the jacket at regular intervals of not more than 0.6 meter (2 feet).

(3) The completed cable must have sequentially numbered length markers in accordance with ANSI/ICEA S-84–608–1988, paragraph 10.1.5. The color of the ink used for the initial outer jacket marking must be either white or silver.

(o) *Preconnectorized cable (optional).* (1) At the option of the manufacturer and upon request by the purchaser, cables 100 pairs and larger may be factory terminated in 25 pair splicing modules.

(2) The splicing modules must meet the requirements of REA Bulletin 345–54, PE-52, REA Specification for Telephone Cable Splicing Connectors (Incorporated by reference at § 1755.97), and be accepted by REA prior to their use.

(p) *Acceptance testing and extent of testing.* (1) The tests described in appendix A of this section are intended for acceptance of cable designs and major modifications of accepted designs. What constitutes a major modification is at the discretion of REA. These tests are intended to show the inherent capability of the manufacturer to produce cable products having long life and stability.

(2) For initial acceptance, the manufacturer must submit:

(i) An original signature certification that the product fully complies with each section of the specification;

(ii) Qualification Test Data, per appendix A of this section;

(iii) To periodic plant inspections;

(iv) A certification that the product does or does not comply with the domestic origin manufacturing provisions of the "Buy American" requirements of the Rural Electrification Act of 1938 (7 U.S.C. 901 *et seq.*);

(v) Written user testimonials concerning field performance of the product; and

(vi) Other nonproprietary data deemed necessary by the Chief, Outside Plant Branch (Telephone).

(3) For requalification acceptance, the manufacturer must submit an original signature certification that the product fully complies with each section of the specification, excluding the Qualification Section, and a certification that the product does or does not comply with the domestic origin manufacturing provisions of the "Buy American" requirements of the Rural Electrification Act of 1938 (7 U.S.C. 901 *et seq.*), for acceptance by August 30 of each year. The required data must have been gathered within 90 days of the submission. If the initial acceptance of a product to this specification was within 180 days of August 30, then requalification for that product will not be required for that year.

(4) Initial and requalification acceptance requests should be addressed to:

Chairman, Technical Standards Committee "A" (Telephone), Telecommunications Standards Division, Rural Electrification Administration, Washington, DC 20250–1500.

(5) *Tests on 100 percent of completed cable.* (i) The shield and/or armor of each length of cable must be tested for continuity in accordance with ANSI/ICEA S-84–608–1988, paragraph 8.16.

(ii) The screen tape of each length of screened cable must be tested for continuity in accordance with ANSI/ICEA S-84–608–1988, paragraph 8.16.

(iii) Dielectric strength between conductors and shield and/or armor must be tested to determine freedom from grounds in accordance with paragraph (k)(10)(ii) of this section.

(iv) Dielectric strength between conductors and screen tape must be tested to determine freedom from grounds in accordance with paragraph (k)(10)(iii) of this section.

(v) Each conductor in the completed cable must be tested for continuity in accordance with ANSI/ICEA S-84–608–1988, paragraph 8.16.

(vi) Dielectric strength between conductors must be tested to insure freedom from shorts and crosses in each length of completed cable in accordance with paragraph (k)(10)(i) of this section.

(vii) Each conductor in the completed preconnectorized cable must be tested for continuity.

(viii) Each length of completed preconnectorized cable must be tested for split pairs.

(ix) The average mutual capacitance must be measured on all cables. If the average mutual capacitance for the first 100 pairs tested from randomly selected groups is between 50 and 53 nanofarad/kilometer (nF/km) (80 and 85 nanofarad/mile), the remainder of the pairs need not be tested on the 100 percent basis (See paragraph (k)(3) of this section).

(6) *Capability tests.* Tests on a quality assurance basis must be made as frequently as is required for each manufacturer to determine and maintain compliance with:

(i) Performance requirements for conductor insulation, jacketing material, and filling and flooding compounds;

(ii) Bonding properties of coated or laminated shielding and armoring materials and performance requirements for screen tape;

(iii) Sequential marking and lettering;

(iv) Capacitance difference, capacitance unbalance, crosstalk, and attenuation;

(v) Insulation resistance, conductor resistance and resistance unbalance;

(vi) Cable cold bend and cable impact tests;

(vii) Water penetration and compound flow tests; and

(viii) Jacket notch and cable torsion tests.

(q) *Summary of records of electrical and physical tests.* (1) Each manufacturer must maintain suitable summary records for a period of at least 3 years of all electrical and physical tests required on completed cable by this section as set forth in paragraphs (p)(5) and (p)(6) of this section. The test data for a particular reel must be in a form that it may be readily available to the purchaser or to REA upon request.

(2) Measurements and computed values must be rounded off to the number of places or figures specified for the requirement according to ANSI/ICEA S-84–608–1988, paragraph 1.3.

(r) *Manufacturing irregularities.* (1) Repairs to the shield and/or armor are not permitted in cable supplied to end users under this section.

(2) Minor defects in jackets (defects having a dimension of 3 millimeters (0.125 inch) or less in any direction) may be repaired by means of heat fusing in accordance with good commercial practices utilizing sheath grade compounds.

(s) *Preparation for shipment.* (1) The cable must be shipped on reels. The diameter of the drum must be large enough to prevent damage to the cable from reeling or unreeling. The reels must be substantial and so constructed as to prevent damage to the cable during shipment and handling.

(2) The thermal wrap must comply with the requirements of ANSI/ICEA S-84–608–1988, paragraph 10.3. When a thermal reel wrap is supplied, the wrap must be applied to the reel and must be suitably secured in place to minimize thermal exposure to the cable during storage and shipment. The use of the thermal reel wrap as a means of reel protection will be at the option of the manufacturer unless specified by the end user.

(3) The outer end of the cable must be securely fastened to the reel head so as to prevent the cable from becoming loose in transit. The inner end of the cable must be securely fastened in such a way as to make it readily available if required for electrical testing. Spikes, staples, or other fastening devices which penetrate the cable jacket must not be used. The method of fastening the cable ends must be accepted by REA prior to its use.

(4) Each length of cable must be wound on a separate reel unless otherwise specified or agreed to by the purchaser.

(5) The arbor hole must admit a spindle 63 millimeters (2.5 inches) in diameter without binding. Steel arbor hole liners may be used but must be accepted by REA prior to their use.

(6) Each reel must be plainly marked to indicate the direction in which it should be rolled to prevent loosening of the cable on the reel.

(7) Each reel must be stenciled or labeled on either one or both sides with the information specified in ANSI/ICEA S-84–608–1988, paragraph 10.4 and the REA cable designation:

Cable Designation
BFC
Cable Construction
Pair Count
Conductor Gauge
A = Coated Aluminum Shield
C = Copper Shield
Y = Gopher Resistant Shield
X = Armored, Separate Shield
H = T1 Screened Cable
H1C = T1C Screened Cable
P = Preconnectorized
Example: BFCXH100–22

Buried Filled Cable, Armored (w/separate shield), T1 Screened Cable, 100 pair, 22 AWG.

(8) When cable manufactured to the requirements of this section is shipped, both ends must be equipped with end caps acceptable to REA.

(9) When preconnectorized cables are shipped, the splicing modules must be protected to prevent damage during shipment and handling. The protection method must be acceptable to REA and accepted prior to its use.

(10) All cables ordered for use in underground duct applications must be equipped with a factory-installed pulling-eye on the outer end in accordance with ANSI/ICEA S-84–608–1988, paragraph 10.5.2.

(The information and recordkeeping requirements of this section have been approved by the Office of Management and Budget (OMB) under the Control Number 0572–0077.)

Appendix A to 7 CFR 1755.390—Qualification Test Methods

(I) The test procedures described in this appendix are for qualification of initial designs and major modification of accepted designs. Included in (V) of this appendix are suggested formats that may be used in submitting the test results to REA.

(II) *Sample selection and preparation.* (1) All testing must be performed on lengths removed sequentially from the same 25 pair, 22 gauge jacketed cable. This cable must not have been exposed to temperatures in excess of 38°C since its initial cool down after sheathing. The lengths specified are minimum lengths and if desirable from a laboratory testing standpoint longer lengths may be used.

(a) Length A shall be 10 ± 0.2 meters (33 ± 0.5 feet) long and must be maintained at 23 ± 3°C. One length is required.

(b) Length B shall be 12 ± 0.2 meters (40 ± 0.5 feet) long. Prepare the test sample by removing the jacket, shield or shield/armor and core wrap for a sufficient distance on both ends to allow the insulated conductors to be flared out. Remove sufficient conductor insulation so that appropriate electrical test connections can be made at both ends. Coil the sample with a diameter of 15 to 20 times its sheath diameter. Three lengths are required.

(c) Length C shall be one meter (3 feet) long. Four lengths are required.

(d) Length D shall be 300 millimeters (1 foot) long. Four lengths are required.

(e) Length E must be 600 millimeters (2 feet) long. Four lengths are required.

(f) Length F shall be 3 meters (10 feet) long and must be maintained at 23 ± 3°C for the duration of the test. Two lengths are required.

(2) *Data reference temperature.* Unless otherwise specified, all measurements must be made at 23 ± 3°C.

(III) *Environmental tests*—(1) *Heat aging test*—(a) *Test samples.* Place one sample each of lengths B, C, D and E in an oven or environmental chamber. The ends of Sample B must exit from the chamber or oven for electrical tests. Securely seal the oven exit holes.

(b) *Sequence of tests.* The samples are to be subjected to the following tests after conditioning:

(i) Water Immersion Test outlined in (III)(2) of this appendix;

(ii) Water Penetration Test outlined in (III)(3) of this appendix;

(iii) Insulation Compression Test outlined in (III)(4) of this appendix; and

(iv) Jacket Slip Strength Test outlined in (III)(5) of this appendix.

(c) *Initial measurements.* (i) For Sample B measure the open circuit capacitance for each odd numbered pair at 1, 150, and 772 kilohertz, and the attenuation at 150 and 772 kilohertz after conditioning the sample at the data reference temperature for 24 hours. Calculate the average and standard deviation for the data of the 13 pairs on a per kilometer or (on a per mile) basis.

(ii) The attenuation at 150 and 772 kilohertz may be calculated from open circuit admittance (Yoc) and short circuit impedance (Zsc) or may be obtained by direct measurement of attenuation.

(iii) Record on suggested formats in (V) of this appendix or on other easily readable formats.

(d) *Heat conditioning.* (i) Immediately after completing the initial measurements, condition the sample for 14 days at a temperature of 65 ± 2°C.

(ii) At the end of this period note any exudation of cable filler. Measure and calculate the parameters given in (III)(1)(c) of this appendix. Record on suggested formats in (V) of this appendix or on other easily readable formats.

(iii) Cut away and discard a one meter (3 foot) section from each end of length B.

(e) *Overall electrical deviation.* (i) Calculate the percent change in all average parameters between the final parameters after conditioning and the initial parameters in (III)(1)(c) of this appendix.

(ii) The stability of the electrical parameters after completion of this test must be within the following prescribed limits:

(A) *Capacitance.* The average mutual capacitance must be within 5 percent of its original value;

(B) The change in average mutual capacitance must be less than 5 percent over frequency 1 to 150 kilohertz; and

(C) *Attenuation.* The 150 and 772 kilohertz attenuation must not have increased by more than 5 percent over their original values.

(2) *Water immersion electrical test*—(a) *Test sample selection.* The 10 meter (33 foot) section of length B must be tested.

(b) *Test sample preparation.* Prepare the sample by removing the jacket, shield or shield/armor, and core wrap for sufficient distance to allow one end to be accessed for test connections. Cut out a series of 6 millimeter (0.25 inch) diameter holes along the test sample, at 30 centimeters (1 foot) intervals progressing successively 90 degrees around the circumference of the cable. Assure that the cable core is exposed at each hole by slitting the core wrapper. Place the prepared sample in a dry vessel which when filled will maintain a one meter (3 foot) head of water over 6 meters (20 feet) of uncoiled cable. Extend and fasten the ends of the cable so they will be above the water line and the pairs are rigidly held for the duration of the test.

(c) *Capacitance testing.* Measure the initial values of mutual capacitance of all odd pairs in each cable at a frequency of 1 kilohertz before filling the vessel with water. Be sure the cable shield or shield/armor is grounded to the test equipment. Fill the vessels until there is a one meter (3 foot) head of water on the cables.

(i) Remeasure the mutual capacitance after the cables have been submerged for 24 hours and again after 30 days.

(ii) Record each sample separately on suggested formats in (V) of this appendix or on other easily readable formats.

(d) *Overall electrical deviation.* (i) Calculate the percent change in all average parameters between the final parameters after conditioning with the initial parameters in (III)(2)(c) of this appendix.

(ii) The average mutual capacitance must be within 5 percent of its original value.

(3) *Water penetration testing.* (a) A watertight closure must be placed over the jacket of length C. The closure must not be placed over the jacket so tightly that the flow of water through pre-existing voids of air spaces is restricted. The other end of the sample must remain open.

(b) Test per Option A or Option B—(i) *Option A.* Weigh the sample and closure prior to testing. Fill the closure with water and place under a continuous pressure of 10 ± 0.7 kilopascals (1.5 ± 0.1 pounds per square inch gauge) for one hour. Collect the water leakage from the end of the test sample during the test and weigh to the nearest 0.1 gram. Immediately after the one hour test, seal the ends of the cable with a thin layer of grease and remove all visible water from the closure, being careful not to remove water that penetrated into the core during the test. Reweigh the sample and determine the weight of water that penetrated into the core. The weight of water that penetrated into the core must not exceed 8 grams.

(ii) *Option B.* Fill the closure with a 0.2 gram sodium fluorscein per liter water solution and apply a continuous pressure 10 ± 0.7 kilopascals (1.5 ± 0.1 pounds per square inch gauge) for one hour. Catch and weigh any water that leaks from the end of the cable during the one hour period. If no water leaks from the sample, carefully remove the water from the closure. Then carefully remove the jacket, shield or shield/armor and core wrap one at a time, examining with an ultraviolet light source for water penetration. After removal of the core wrap, carefully dissect the core and examine for water penetration within the core. Where water penetration is observed, measure the penetration distance. The distance of water penetration into the core must not exceed 127 millimeters (5.0 inches).

(4) *Insulation compression test*—(a) *Test Sample D.* Remove jacket, shield or shield/armor, and core wrap being careful not to damage the conductor insulation. Remove one pair from the core and carefully separate, wipe off core filler, and straighten the insulated conductors. Retwist the two insulated conductors together under sufficient tension to form 10 evenly spaced 360 degree twists in a length of 10 centimeters (4 inches).

(b) *Sample testing.* Center the mid 50 millimeters (2 inches) of the twisted pair between 2 smooth rigid parallel metal plates that are 50 millimeters × 50 millimeters (2 inches × 2 inches). Apply a 1.5 volt direct current potential between the conductors, using a light or buzzer to indicate electrical contact between the conductors. Apply a constant load of 67 newtons (15 pound-force) on the sample for one minute and monitor for evidence of contact between the conductors. Record results on suggested formats in (V) of this appendix or on other easily readable formats.

(5) *Jacket slip strength test*—(a) *Sample selection.* Test Sample E from (III)(1)(a) of this appendix.

(b) *Sample preparation.* Prepare test sample in accordance with the procedures specified in ASTM D 4565–90a.

(c) *Sample conditioning and testing.* Remove the sample from the tensile tester prior to testing and condition for one hour at 50 ± 2°C. Test immediately in accordance with the procedures specified in ASTM D 4565–90a. A minimum jacket slip strength of 67 newtons (15 pound-force) is required. Record the highest load attained.

(6) *Humidity exposure.* (a) Repeat steps (III)(1)(a) through (III)(1)(c)(iii) of this appendix for separate set of samples B, C, D, and E which have not been subjected to prior environmental conditioning.

(b) Immediately after completing the measurements, expose the test sample to 100 temperature cyclings. Relative humidity within the chamber must be maintained at 90 ± 2 percent. One cycle consists of beginning at a stabilized chamber and test sample temperature of 52 ± 1°C, increasing the temperature to 57 ± 1°C, allowing the chamber and test samples to stabilize at this level, then dropping the temperature back to 52 ± 1°C.

(c) Repeat steps (III)(1)(d)(ii) through (III)(5)(c) of this appendix.

(7) *Temperature cycling.* (a) Repeat steps (III)(1)(a) through (III)(1)(c)(iii) of this appendix for separate set of samples B, C, D, and E which have not been subjected to prior environmental conditioning.

(b) Immediately after completing the measurements, subject the test sample to the 10 cycles of temperature between a minimum of −40°C and +60°C. The test sample must be held at each temperature extreme for a minimum of 1 1/2 hours during each cycle of temperature. The air within the temperature cycling chamber must be circulated throughout the duration of the cycling.

(c) Repeat steps (III)(1)(d)(ii) through (III)(5)(c) of this appendix.

(IV) *Control sample*—(1) *Test samples.* A separate set of lengths A, C, D, E, and F must have been maintained at 23 ± 3°C for at least 48 hours before the testing.

(2) Repeat steps (III)(2) through (III)(5)(c) of this appendix except use length A instead of length B.

(3) *Surge Test.* (a) One length of sample F must be used to measure the breakdown between conductors while the other length of F must be used to measure the core to shield breakdown.

(b) The samples must be capable of withstanding without damage, a single surge voltage of 20 kilovolts peak between conductors, and a 35 kilovolts peak surge voltage between conductors and the shield or shield/armor as hereinafter described. The surge voltage must be developed from a capacitor discharged through a forming resistor connected in parallel with the dielectric of the test sample. The surge generator constants must be such as to produce a surge of 1.5 × 40 microsecond wave shape.

(c) The shape of the generated wave must be determined at a reduced voltage by connecting an oscilloscope across the forming resistor with the cable sample connected in parallel with the forming resistor. The capacitor bank is charged to the test voltage and then discharged through the forming resistor and test sample. The test sample will be considered to have passed the test if there is no distinct change in the wave shape obtained with the initial reduced voltage compared to that obtained after the application of the test voltage.

(V) The following suggested formats may be used in submitting the test results to REA:

Environmental Conditioning_____

FREQUENCY 1 KILOHERTZ

Pair Number	Capacitance nF/km (nanofarad/mile)	
	Initial	Final
1		
3		
5		
7		
9		
11		
13		
15		
17		
19		
21		
23		
25		
Average $\bar{x}$		

Overall Percent Difference in Average $\bar{x}$ _____

Environmental Conditioning_____

FREQUENCY 150 KILOHERTZ

Pair Number	Capacitance nF/km (nanofarad/mile)		Attenuation dB/km (decibel/mile)	
	Initial	Final	Initial	Final
1				
3				
5				
7				
9				
11				
13				
15				
17				
19				
21				
23				
25				
Average $\bar{x}$				

Overall Percent Difference in Average $\bar{x}$
Capacitance:_____
Conductance:_____

Environmental Conditioning_____

FREQUENCY 772 KILOHERTZ

Pair Number	Capacitance nF/km (nanofarad/mile)		Attenuation dB/km (decibel/mile)	
	Initial	Final	Initial	Final
1				
3				
5				
7				
9				
11				
13				
15				
17				
19				
21				
23				
25				
Average $\bar{x}$				

Overall Percent Difference in Average $\bar{x}$
Capacitance:_____
Conductance:_____

Environmental Conditioning_____

WATER IMMERSION TEST (1 KILOHERTZ)

Pair Number	Capacitance nF/km (nanofarad/mile)		
	Initial	24 Hours	Final
1			
3			
5			
7			
9			
11			
13			
15			
17			
19			
21			
23			
25			
Average $\bar{x}$			

Overall Percent Difference in Average $\bar{x}$ _____

Water Penetration Test

	Option A		Option B	
	End Leakage grams	Weight Gain grams	End Leakage grams	Penetration mm (in.)
Control.				
Heat Age.				
Humidity Exposure.				
Temperature Cycling.				

Insulation Compression

	Failures
Control	
Heat Age	
Humidity Exposure	
Temperature Cycling	

Jacket Slip Strength @ 50½C

	Load in newtons (pound-force)
Control	
Heat Age	
Humidity Exposure	
Temperature Cycling	

Filler Exudation (grams)

Heat Age	
Humidity Exposure	
Temperature Cycle	

Surge Test (kilovolts)

Conductor to Conductor.	
Shield to Conductors	

Dated: May 5, 1993.

Robert Peters,

Acting Under Secretary, Small Community and Rural Development.

[FR Doc 93–11895 Filed 5–19–93; 8:45 am]

BILLING CODE 3410–15–F

SMALL BUSINESS ADMINISTRATION

13 CFR Part 121

Small Business Size Regulations Termination of Waiver of the Nonmanufacturer Rule

AGENCY: Small Business Administration.

ACTION: Amendment to Notice to terminate the waiver of the Nonmanufacturer Rule for mainframe computers and certain associated peripheral equipment acquired on the same procurement.

SUMMARY: The Business Administration is amending its notice of a decision to terminate its waiver of the Nonmanufacturer Rule for mainframe computers and certain associated peripheral equipment acquired on the same procurement. The SBA had published a termination notice on February 19, 1993, with an effective date of May 20, 1993. The Agency is now inviting public comment on this matter.

DATES: Comments must be submitted on or before June 21, 1993.

ADDRESSES: Written comments should be addressed to Robert J. Moffitt, Associate Administrator for Procurement Assistance, U.S. Small Business Administration, 409 3rd Street, SW., Washington, DC 20416.

FOR FURTHER INFORMATION CONTACT: Jeanne M. Sclater, Director, Office of Procurement Policy and Liaison, (202) 205–6465 or James Parker at (703) 695–2435.

SUPPLEMENTARY INFORMATION: On February 19, 1993, SBA published in the **Federal Register** a notice to terminate the waiver of the Nonmanufacturer Rule for mainframe computers and certain associated peripheral equipment acquired on the same procurement. 58 FR 9112 (1993). Since the publication of this notice, SBA has received a number of comments from interested parties arguing that this waiver to the Nonmanufacturer Rule should not be repealed. In light of such comments, SBA now invites the public to express its views concerning SBA's intent to terminate the waiver for mainframe computers. In the interim, SBA postpones the effective date of the termination of the mainframe waiver until it has had adequate time to evaluate any comments received in response to this publication and until such time as a determination on the mainframe waiver is published in the **Federal Register.**

The SBA believes that there are small manufacturers of computers that meet performance characteristics previously attributed only to mainframe computers, such as mini-computers and super-minicomputers. The Agency believes this to be particularly true when two or more units of such equipment can be connected to function as one.

SBA also believes that in some instances the existence of the mainframe waiver has led, and for continuing cases has the potential to lead, to abuse by affixing a "mainframe" label to a procurement which in fact describes performance characteristics that are typical of hardware often called mini-computers, super-minicomputers, or "mainframe-equivalent" computers merely to enjoy the benefits of the waiver. In this way, a procuring agency would be able to purchase specific computer hardware manufactured by a large business when in fact other computer hardware manufactured by small business is available to satisfy the actual procurement need. SBA believes that such an action would be contrary to the intent of the Small Business Act in general and to the waiver provision to the Nonmanufacturer Rule contained in section 8(a)(17) of the Small Business Act, 15 U.S.C. 637(a)(17), specifically.

Further, the SBA believes that the statutory authority of the Administrator to grant waivers on a case-by-case, or solicitation-specific basis, allows agencies which in fact need to procure equipment which cannot be produced by small business manufacturers to obtain a waiver of the Nonmanufacturer Rule when such a waiver is required. The statutory authority for solicitation-specific waivers is found at section 8(a)(17)(B)(iv) of the Small Business Act.

Based on the above, SBA solicits comments with respect to SBA's prior Notice to terminate the waiver of the Nonmanufacturer Rule for mainframe computers and certain associated peripheral equipment acquired on the same procurement and with respect to this amendment thereto. SBA requests specific comments concerning the

following items: (1) The definition of mainframe—whether there is a meaningful definition of this term for Federal procurement purposes and what the definition should be; and (2) whether other computer hardware, including mini-computers or super-minicomputers, also have the performance capability to meet such a definition.

All comments to these and other issues raised by the public will be duly considered by SBA in determining whether to finalize its intent to terminate the mainframe waiver.

Robert J. Moffitt,

Associate Administrator for Procurement Assistance.

[FR Doc. 93–12115 Filed 5–19–93; 8:45 am]

BILLING CODE 8025–01–M

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 92–NM–124–AD; Amendment 39–8576; AD 93–09–10]

Airworthiness Directives; McDonnell Douglas Model DC–8 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to all McDonnell Douglas Model DC–8 series airplanes, that requires that all landing gear brakes be inspected for wear and replaced if the wear limits prescribed in this AD are not met, and that new wear limits be incorporated into the FAA-approved maintenance inspection program. This amendment is prompted by an accident in which a transport category airplane executed a rejected takeoff (RTO) and was unable to stop on the runway due to worn brakes. The actions specified by this AD are intended to prevent loss of braking effectiveness during a high energy RTO.

EFFECTIVE DATE: June 21, 1993.

FOR FURTHER INFORMATION CONTACT: Andrew Gfrerer, Aerospace Engineer, Systems and Equipment Branch, ANM–131L, FAA, Transport Airplane Directorate, Los Angeles Aircraft Certification Office, 3229 East Spring Street, Long Beach, California 90806–2425; telephone (310) 988–5338; fax (310) 988–5210.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations to include an airworthiness directive (AD) that is applicable to all McDonnell Douglas Model DC–8 series airplanes was published in the **Federal Register** on October 26, 1992 (57 FR 48478). That action proposed to require that all landing gear brakes be inspected for wear and replaced if the wear limits prescribed in this proposal are not met, and that new wear limits be incorporated into the FAA-approved maintenance inspection program.

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

One commenter supports the rule as proposed.

Several commenters request that paragraph (a) of the proposal be revised to increase the maximum brake wear limit for the brake assemblies on Model DC–8–63 series airplanes. The commenters request specifically that the brake wear limit for Bendix part number 2601412–1 (McDonnell Douglas part number 5759262–5001) be expanded from 0.5 inch to 0.75 inch. The commenters state that expanding the maximum brake wear limit for this brake will be cost effective and will not compromise safety. The commenters note that McDonnell Douglas Service Bulletin 32–181, dated October 29, 1992, which was issued subsequent to the notice, provides a means to rework this brake so that a 0.75-inch wear limit may be established. The FAA concurs in part with the commenters' request. The FAA does not agree to increase the maximum brake wear limit for Bendix brake part number 2601412–1. The FAA has evaluated a series of dynamometer test data and analyses concerning brakes installed on Model DC–8 series airplanes and has determined that expanding the brake wear limit for this specific brake will not prevent loss of braking effectiveness during a high energy rejected takeoff. However, should an operator modify Bendix brake part number 2601412–1 in accordance with the cited McDonnell Douglas service bulletin and, accordingly, change the part number to 2601412–2, the maximum brake wear limit for that modified brake may be expanded to 0.75 inch. In order to include the maximum wear limit of such modified brakes in the FAA-approved inspection program, paragraph (a) of the final rule has been revised to include Bendix brake part number 2601412–2 and its respective wear limit.

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes previously described. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

There are approximately 337 McDonnell Douglas Model DC–8 series airplanes of the affected design in the worldwide fleet. The FAA estimates that 222 airplanes of U.S. registry will be affected by this proposed AD, that it will take approximately 80 work hours per airplane to accomplish the proposed actions, and that the average labor rate is $55 per work hour. (There are 8 brakes per airplane.) The cost of required parts to accomplish the change in wear limits for these airplanes (that is, the cost resulting from the requirement to change the brakes before they are worn to their previously approved limits for a one-time change) will be approximately $5,600 per airplane. Based on these figures, the total cost impact of the proposed AD on U.S. operators is estimated to be $2,220,000, or $10,000 per airplane. This total cost figure assumes that no operator has yet accomplished the requirements of this AD.

The regulations adopted herein will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For the reasons discussed above, I certify that this action (1) Is not a "major rule" under Executive Order 12291; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption "ADDRESSES."

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends 14 CFR part 39

of the Federal Aviation Regulations as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. App. 1354(a), 1421 and 1423; 49 U.S.C. 106(g); and 14 CFR 11.89.

§ 39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

93-09-10 McDonnell Douglas: Amendment 39-8576. Docket 92-NM-124-AD.

Applicability: All Model DC-8 series airplanes, certificated in any category.

Compliance: Required as indicated, unless accomplished previously.

To prevent the loss of main landing gear braking effectiveness, accomplish the following:

(a) Within 180 days after the effective date of this AD, inspect the main landing gear brakes having the part numbers indicated below to determine wear. Any brake worn more than the maximum wear limit specified below must be replaced, prior to further flight, with a brake that is within this limit.

Douglas brake part No.	Bendix part No.	Maximum wear limit (inches)
5610206-5001	150787-1	0.7
	150787-2	0.7
5713612-5001	151882-1	0.7
	151882-2	0.7
5773335-5001	154252-1	0.5
5773335-5501	154252-2	0.5
5759262-5001	2601412-1	0.5
	*2601412-2	0.75

* Brakes having this part number include part number 2601412-1 brakes that have been modified in accordance with McDonnell Douglas Service Bulletin 32-181, dated October 29, 1992.

(b) Within 180 days after the effective date of this AD, incorporate the maximum brake wear limits specified in paragraph (a) of this AD into the FAA-approved maintenance inspection program.

(c) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Los Angeles Aircraft Certification Office (ACO), FAA, Transport Airplane Directorate. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Los Angeles ACO.

Note: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Los Angeles ACO.

(d) Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate the airplane to a location where the requirements of this AD can be accomplished.

(e) This amendment becomes effective on June 21, 1993.

Issued in Renton, Washington, on May 11, 1993.

Darrell M. Pederson,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 93-11878 Filed 5-19-93; 8:45 am]

BILLING CODE 4910-13-P

DEPARTMENT OF THE TREASURY

Customs Service

19 CFR Part 12

[T.D. 93-34]

Extension of Import Restrictions on Antique Ceremonial Textiles of Coroma, Bolivia

AGENCY: U.S. Customs Service, Department of the Treasury.

ACTION: Final rule.

SUMMARY: This document amends the Customs Regulations to reflect the extension of the import restrictions on antique ceremonial textiles from Coroma, Bolivia which were imposed by T.D. 89-37. The Deputy Director of the United States Information Agency (USIA) has determined that the emergency conditions which originally warranted the imposition of import restrictions still exist. Accordingly, the restrictions will continue to be in effect for an additional three years, and the Customs Regulations are being amended to indicate this extension.

EFFECTIVE DATE: May 20, 1993.

FOR FURTHER INFORMATION CONTACT:

Legal Aspects: John Atwood, Chief, Intellectual Property Rights Branch, (202) 482-6960.

Operational Aspects: Jan Priestley, Office of Trade Operations, (202) 927-1136.

SUPPLEMENTARY INFORMATION:

Background

Pursuant to the provisions of the Convention on Cultural Property Implementation Act, the Deputy Director of the United States Information Agency (USIA), after consultation with the Secretaries of State and Treasury, determined that significant antique ceremonial textiles from Coroma, Bolivia were in danger of pillage and looting, and that an emergency condition existed which warranted the imposition of a prohibition on the importation of such articles into the United States. In T.D. 89-37, the Customs Service announced the imposition of import restrictions and identified the types of articles covered by the restrictions.

The Deputy Director of the USIA has considered the recommendations of the Cultural Property Advisory Committee and determined that the emergency conditions which warranted imposition of the initial restrictions still exist and has decided to extend the import restrictions for another three years. (See Federal Register of May 5, 1993 (58 FR 26811).)

Accordingly, Customs is amending § 12.104g (19 CFR 12.104g) to reflect the extension of the import restriction.

Regulatory Flexibility Act

Because no notice of proposed rulemaking is required, the provisions of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*), do not apply.

Executive Order 12291

Because this document does not result in a "major rule" as defined by Executive Order 12291, a regulatory analysis is not required.

Inapplicability of Notice and Delayed Effective Date

Because this amendment reflects the extension of emergency import restrictions on cultural property which is currently subject to pillage and looting, pursuant to section 553(b)(B) of the Administrative Procedure Act, no notice of proposed rulemaking or public procedure is necessary. For the same reason, a delayed effective date is both impracticable and contrary to the public interest.

Drafting Information

The principal author of this amendment was Peter T. Lynch, Regulations Branch, Office of Regulations and Rulings, U.S. Customs Service. However, personnel from other offices participated in its development.

List of Subjects in 19 CFR Part 12

Cultural property, customs duties and inspections, Imports.

Amendment to the Regulations

Accordingly, part 12 of the Customs Regulations (19 CFR part 12) is amended as set forth below:

PART 12—SPECIAL CLASSES OF MERCHANDISE

1. The general and specific authority citation for part 12 continues to read as follows:

Authority: 5 U.S.C. 301, 19 U.S.C. 66, 1202 (General note 8, Harmonized Tariff Schedule of the United States (HTSUS)), 1624.

* * * * *

Sections 12.104–12.104i also issued under 19 U.S.C. 2612.

* * * * *

§ 12.104 [Amended]

2. Section 12.104g(b) is amended in the table by adding "extended by 93–34" immediately after the entry "89–37" in the column headed "T.D. No." adjacent to the entry for Bolivia.

Samuel H. Banks,

Acting Commissioner of Customs.

Approved: May 5, 1993.

Ronald K. Noble,

Assistant Secretary of the Treasury.

[FR Doc. 93–11937 Filed 5–19–93; 8:45 am]

BILLING CODE 4820–02–M

19 CFR Parts 19, 113, and 144

[T.D. 92–81]

RIN 1515–AA22

Duty-Free Stores

AGENCY: Customs Service, Department of the Treasury.

ACTION: Notice of effective date.

SUMMARY: This document rescinds the notice published in the Federal Register on October 16, 1992, delaying the effective date of the final Customs Regulations amendments relating to duty-free stores. The duty-free store regulations were published in the Federal Register as T.D. 92–81 on August 20, 1992, with an effective date of October 19, 1992. The effect of this document rescinding the delay of effective date is to make the duty-free store regulations effective as of the original effective date, October 19, 1992.

EFFECTIVE DATE: The October 16, 1992 notice delaying the effective date of T.D. 92–81 is rescinded as of May 20, 1993. T.D. 92–81 became effective on October 19, 1992.

FOR FURTHER INFORMATION CONTACT: Michael Jackson, Office of Cargo Enforcement and Facilitation (202–927–0510).

SUPPLEMENTARY INFORMATION:

Background

On August 20, 1992, Customs published a final rule document in the Federal Register (57 FR 37692) amending the Customs Regulations to designate duty-free stores as a new class of Customs bonded warehouse. The regulations incorporated operating procedures for the administration of these facilities. The final rule was published as T.D. 92–81. The final rule was published after a notice of proposed rulemaking was published on May 5, 1991 in the Federal Register (56 FR 22833) and the comments that were solicited from that notice were carefully reviewed and analyzed. The effective date of T.D. 92–81 was set forth in the August 20, 1992 Federal Register document as October 19, 1992.

In letters dated October 6 and 13, 1992, a major trade association voiced a number of concerns with respect to the final rule. Prompted by these correspondences, Customs determined that it should delay the effective date of the final rule to review several important aspects of the rule. Accordingly, Customs published a document in the Federal Register (57 FR 47409), delaying the effective date of the final rule until further notice.

While Customs has further reviewed aspects of the duty-free store rules including a recent survey of a sampling of duty-free stores around the country, Customs has determined that the indefinite suspension of the effective date of T.D. 92–81 is inoperative based upon a reading of *Natural Resources Defense Council Inc.* v. *U.S. Environmental Protection Agency*, 683 F.2d 752 (3d Cir. 1982) and *Environmental Defense Fund Inc.* v. *Anne M. Gorsuch*, 713 F.2d 802, 815 *et seq.* (D.C. Cir. 1983). Accordingly, by this document, Customs is rescinding the delay of effective date published on October 16, 1992, and is providing notice that the effective date of T.D. 92–81 is October 19, 1992.

It should be noted, however, that in recognition of the publication of the delay of effective date and the fact that some duty-free store operators may have relied on that document, Customs assures duty-free store operators that Customs will not take adverse action against any party for failure to comply with the duty-free store regulations for 90 days from the date of publication of today's notice in the Federal Register. *Cf. Heckler* v. *Community Health Services, Inc.*, 467 U.S. 51, 60–61 (1984).

Dated: May 13, 1993.

John B. O'Loughlin,

Acting Assistant Commissioner, Commercial Operations.

[FR Doc. 93–11938 Filed 5–19–93; 8:45 am]

BILLING CODE 4820–02–M

PENSION BENEFIT GUARANTY CORPORATION

29 CFR Part 2671

Election of Single-Employer Plan Status

AGENCY: Pension Benefit Guaranty Corporation.

ACTION: Final rule.

SUMMARY: This rule repeals 29 CFR part 2671, which contained rules for the election of single-employer plan status pursuant to section 4303 of the Employee Retirement Income Security Act of 1974, as amended by the Multiemployer Pension Plan Amendments Act of 1980. Because the election period has expired, the regulation is no longer needed. This rule informs the public that the PBGC is removing part 2671 from the Code of Federal Regulations.

EFFECTIVE DATE: May 20, 1993.

FOR FURTHER INFORMATION CONTACT: Renae R. Hubbard, Special Counsel, Office of the General Counsel (Code

22000), Pension Benefit Guaranty Corporation, 2020 K Street, NW., Washington, D.C. 20006; 202–778–8850 (202–778–1958 for TTY and TDD). (These are not toll-free numbers.)

SUPPLEMENTARY INFORMATION: The Multiemployer Pension Plan Amendments Act of 1980 ("the Multiemployer Act") expanded the definition of "multiemployer plan" in a manner that would change the status of some plans from "single-employer plans" to "multiemployer plans." See sections 3(37)(A) and 4001(a)(3) of the Employee Retirement Income Security Act of 1974 ("ERISA") and section 414(f) of the Internal Revenue Code ("Code"); H.R. Rep. No. 869, 96th Cong., 2d Sess. 4, 12–13. ERISA section 4303, also added by the Multiemployer Act, provided that a plan that was a single-employer plan under the previous definition of "multiemployer plan," but not under the revised definition, could make an irrevocable election to continue to be treated as a single-employer plan if it met certain statutory tests. The election had to be made within one year after the date of the enactment of the Multiemployer Act (September 26, 1980) according to procedures established by the Pension Benefit Guaranty Corporation ("PBGC"). See also section 3(37)(E) of ERISA and section 414(f)(5) of the Code.

On May 19, 1981, the PBGC promulgated 29 CFR part 2671, the purpose of which was to establish procedures for making the election of single-employer plan status provided for in ERISA section 4303. Sections 2671.2 and 2671.3 of the PBGC's regulation provided that a plan would meet the election deadline if (1) it was amended on or before September 26, 1981, to provide for it to be treated as a multiemployer plan for all purposes under ERISA and the Code and (2) a written notice of the amendment was filed with the PBGC within 60 days after adoption of the amendment. Pursuant to § 2671.4, the PBGC would review the filing to determine whether or not the plan met the statutory eligibility tests and had complied with the regulatory procedure, and would then formally approve or disapprove the election.

Because of the lapse of time since the election deadline expired and the irrevocability of any election out of multiemployer plan status, the regulation is no longer needed. Accordingly, the PBGC is removing part 2671 from the CFR. For the same reasons, the PBGC finds, pursuant to section 553 of the Administrative Procedure Act (5 U.S.C. 551 *et seq.*), that notice and public procedure on this final rule are unnecessary and that good cause exists for making the rule effective immediately.

E.O. 12291 and the Regulatory Flexibility Act

Since part 2671 is no longer needed and its removal does not affect any existing entity, the PBGC has determined that this is not a "major rule" for the purposes of Executive Order 12291 and certifies, as provided in section 605 of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*), that sections 603 and 604 do not apply.

List of Subjects in 29 CFR Part 2671

Employee benefit plans, Pension insurance, Pensions, Reporting requirements.

PART 2671—[REMOVED]

In consideration of the foregoing, under the authority of the Pension Benefit Guaranty Corporation at 29 U.S.C. 1302(b)(3) and 1453, part 2671 of subchapter H of chapter XXVI, title 29, Code of Federal Regulations, is removed and reserved.

Issued in Washington, DC, this 13th day of May, 1993.

Martin Slate,

Executive Director, Pension Benefit Guaranty Corporation.

[FR Doc. 93–11987 Filed 5–19–93; 8:45 am]

BILLING CODE 7708–01–M

DEPARTMENT OF TRANSPORTATION

Maritime Administration

46 CFR Part 204

[Docket No. R–149]

RIN 2133–AB04

Claims Against the Maritime Administration Under the Federal Tort Claims Act

AGENCY: Maritime Administration, Department of Transportation.

ACTION: Final rule.

SUMMARY: This rule reflects an increase, from $25,000 to $100,000, in the amount of a claim under the Federal Tort Claims Act against the agency that it may now settle under authority that has been delegated by the Attorney General to the Secretary of Transportation (DOT), and redelegated by the Secretary to all DOT Administrators.

DATE: This rule is effective on May 20, 1993.

FOR FURTHER INFORMATION CONTACT: Sandra L. Jenkins, Chief, Division of Litigation, Office of the Chief Counsel, Maritime Administration, Washington, DC 20590 Tel. (202) 366–5191.

SUPPLEMENTARY INFORMATION: The regulations at 46 CFR part 204 set forth the requirements and procedures for administrative settlement of claims against the United States, involving the Maritime Administration (MARAD) of the DOT, under the Federal Tort Claims Act, as amended, 28 U.S.C. 2672. The controlling regulations have been promulgated by the Department of Justice (DOJ) at 28 CFR part 14—Administrative Claims Under the Federal Tort Claims Act. MARAD's regulations supplement those of the DOJ and provide specific guidance regarding the processing of tort claims by MARAD. These amendments merely conform MARAD's regulations to those of the DOJ with respect to the dollar amount of settlement authority of the DOT for tort claims (AG Order No. 1583–93), published in the appendix to 28 CFR part 14 (57 FR 13320; April 16, 1992). DOT directives have been issued to implement the increase in the delegated settlement authority by amendment to 46 CFR part 1 (58 FR 6897; Feb. 3, 1993).

Rulemaking Analyses and Notices

Executive Order 12291 (Federal Regulation) and DOT Regulatory Policies and Procedure

This rulemaking has been reviewed under Executive Order 12291, and it has been determined that this is not a major rule. It will not result in an annual effect on the economy of $100 million or more. There will be no increase in production costs or prices for consumers, individual industries, Federal, State or local governments, agencies, or geographic regions. Furthermore, it will not adversely affect competition, employment, investment, productivity, innovation, or the ability of United States-based enterprises in domestic or export markets.

This rulemaking does not involve any change in important Departmental policies and is considered nonsignificant under the DOT regulatory policies and procedures (44 FR 11034; February 26, 1979). It merely conforms MARAD regulations to the provisions of controlling DOJ regulations with respect to the monetary limit on authority to settle tort claims. Because the economic impact should be minimal, further regulatory evaluation is not necessary.

Since this is in the nature of rule of agency procedure, notice with opportunity for public comment is not required pursuant to provision of the Administrative Procedure Act, 5 U.S.C. 553.