

REQUEST FOR QUOTATION

Contact person/Telephone/Email Larry Waxman/212-435-4639/lwaxman@panynj.gov	Collective# / Bid Due Date 0000046150 / 06/15/2016 Bids must be received no later than 11:00 AM on the above Bid Due Date. Deliver Goods/Services To: Path ATTN: MIKE BRADY ACADEMY STREET JERSEY CITY N.J. 07302
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Quantity	Description	Unit Price	Total
	ELECTRICAL CABLE, FURNISH AND DELIVER ON "NON -RETURNABLE WOOD REELS". TO PATH, JERSEY CITY, NJ 07302 AS FURTHER DEFINED. SEE ATTACHED SPECIFICATIONS CR02608#122 DATED PSC-C 04/21/16 AND GENERAL PROVISIONS DC TRACTION CABLES DATED 04/21/2016. WITH BID RESPONSE ADVISE ELECTRICAL CABLE TO BE OFFERED IN THE EVENT OF AN ORDER: PATH ITEM 2000KCMIL 2KV CABLE. MANUFACTURER: _____ PLANT LOCATION: _____ MAKE/MODEL/PART NUMBER: _____ QUOTE FOB DELIVERED PRICING ON ALL ITEMS. IN THE EVENT OF AN ORDER ADVISE DELIVERY IN _____ DAYS A.R.O. BIDDERS ARE TO INCLUDE WITH YOUR BID RESPONSE TWO COPIES OF CATALOG CUTS/SPECIFICATIONS/DRAWINGS FOR PORT AUTHORITY/PATH REVIEW AND APPROVAL. INDICATE STOCK ITEM NUMBER ACCORDINGLY. NOTE: THAT ALL REELS ARE TO BE "NON -RETURNABLE WOOD".		
	PAYMENT TERMS PLEASE QUOTE FULLY DELIVERED PRICES	Total Delivered Price	

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Signed _____
 Firm Name _____
 Telephone number _____ Date _____
 Fax Number _____
 Federal Taxpayer ID _____

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 In
 Two
 Places

NOTICE TO BIDDERS: Unless the following term of assurance that the above offer is irrevocable is signed, the offer submitted herein shall not be deemed to be complete.

The foregoing offer shall be irrevocable for 90 days after the date on which The PORT AUTHORITY TRANS-HUDSON CORPORATION opens this proposal.

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	<p>NOTE: BIDDER(S) ARE TO QUOTE NOT MORE THAN TWO (2) DECIMAL PLACES TO THE RIGHT OF THE DECIMAL POINT. IN THE EVENT THAT THIS REQUIREMENT IS NOT FOLLOWED THE PORT AUTHORITY WILL NOT CONSIDER ANY VALUES PAST THE SECOND DECIMAL POINT AND DEFAULT TO TWO DECIMAL POINTS. THE PORT AUTHORITY WILL NOT ROUND UP OR DOWN ANY VALUES.</p> <p>EXAMPLE OF TWO DECIMAL POINTS: \$123.45</p> <p>Bidders quoting 1000/Mft or Kft are not acceptable. Bidders are to quote " Per Foot (FT)" following the decimal point instructions. All item quantities stated are per FT.</p> <p>NOTE: ALL PRICES QUOTED SHALL BE FIRM AND FIXED WITHOUT ADJUSTMENT FOR THE ENTIRE IRREVOCABLE BID PERIOD OF 90 DAYS AFTER THE BID OPENING DATE.</p> <p>ALL PRICES SHALL BE FOB DELIVERED ON A FLAT BED TRUCK, CABLE AND REELS TO BE MARKED WITH PO#, REEL NUMBER, MANUFACTURER, FEET PER REEL ON THE NON-RETURNABLE WOOD REELS, TESTING,</p>		
	<p>PLEASE QUOTE FULLY DELIVERED PRICES</p>	<p>PAYMENT TERMS</p>	<p>Total Delivered Price</p>

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	<p>DRAWINGS ETC.</p> <p>TOTAL CABLE TOLERANCE FOR PATH ITEM 2000KCMIL 2KV CABLE SEE REEL PUT-UPS FOR PER REEL TOLERANCE MINUS ZERO(0)PERCENT(%)PER REEL. TOTAL RUN TOLERANCE : PLUS FIVE (5) PERCENT(%) MINUS ZERO(0)PERCENT(%).</p> <p>NOTE TO BIDDERS A) ALL UNIT PRICING SHALL BE FIRM FOR THE 90 DAY BIDDING PERIOD INCLUDING THE DELIVERY PERIOD WITH OUT ADJUSTMENT. THE ONLY ADJUSTMENT ALLOWED IS THE DELIVERED FOOT QUANTITY THAT IS WITHIN THE SPECIFIED TOLERANCE. THE DELIVERED QUANTITY WILL THEN BE ADJUSTED BY THE AWARDED UNIT PRICE TO EQUAL THE NEW LINE ITEM VALUE. THIS WILL ALLOW A CHANGE ORDER TO BE ISSUED TO MATCH THE VENDOR INVOICE.</p> <p>PLEASE FOLLOW RETURN TO BID INSTRUCTIONS. REPLY ONLY ON P.A./PATH REQUEST FOR QUOTATION FORM AS ATTACHING YOUR COMPANY'S TERMS & CONDITIONS MAY CAUSE YOUR BID TO BE DEEMED NON RESPONSIVE AND OR DELAY AN AWARD ISSUED.</p>			
	PLEASE QUOTE FULLY DELIVERED PRICES	PAYMENT TERMS		
		Total Delivered Price		

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	<p>A price preference of 10 % is available for NY/NJ Minority and Women Business Enterprises (M/WBE) or 5% for NY/NJ Small Business Enterprises (SBE) certified by the Port Authority (PA) by the day before bid opening for awards not exceeding \$1,000,000. My firm was certified as a _____ on _____.</p> <p>QUESTIONS ONLY CONTACT: LARRY WAXMAN TEL: 212 435 4639 OR EMAIL: Lwaxman@panynj.gov</p>		
	<p>PLEASE QUOTE FULLY DELIVERED PRICES</p>		
	<p>PAYMENT TERMS</p>		
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	<p>This is a Formal Bid Invitation Mail Sealed Bids to:</p> <p>The Port Authority of NY & NJ Attn: Bid Custodian Procurement Department 4 World Trade Center 150 Greenwich Street, 21st Floor New York, NY 10007</p> <p>by the date and time listed above, where it will be publicly opened and read.</p> <p>If you do not use or have an envelope provided, you must clearly mark the outside envelope/package with 'BID ENCLOSED' and show the company name, address, as well as Bid number and Due date as stated on this bid document.</p> <p>Bids are only accepted Monday through Friday, excluding Port Authority holidays, between the hours of 8 A.M. & 5 P.M., via regular mail, express delivery service or hand delivery. Express carrier deliveries by commercial vehicles can be made via vendors approved by Silverstein Properties, the 4 World Trade Center (4WTC) Property Manager, through the Vehicle Security Center (VSC). Presently, UPS is the only delivery vendor with approved recurring delivery times. There is extensive security at the World Trade Center Site. Individuals must present a valid government-issued photo ID</p>		
	<p>PAYMENT TERMS</p>		
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	to enter 4 WTC. Individuals without packages or carrying small packages or boxes that can be conveyed by hand or on a hand truck may enter through the lobby. All envelopes, packages and boxes may be subject to additional security screening. There is no parking available at 4 WTC/150 Greenwich Street, and parking in the surrounding area is extremely limited. A valid government-issued photo ID is required to gain access into the building to attend the bid opening or hand deliver a bid. Bids that are not received by the bid custodian by the scheduled bid opening date will be considered late.			
9,996 FT	CR02608 DC TRACTION POWER CABLE ELECTRICAL CABLE DC TRACTION 20 Reels of 2000KCMIL Cable as defined in attached general provision document and PATH Specification CR02608 #122 PSC-C 04/21/16 FOR Tunnels A&B.			
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TERMS AND CONDITIONS

1. The Port Authority (PA) reserves the right to request information relating to seller's responsibility, experience and capability to perform the work.
2. Unless otherwise provided, complete shipment of all items must be in one delivery FOB delivery point. Payment will not be made on partial deliveries unless authorized in advance by the party to be charged and the discount, if any, will be taken on the total order.
3. PA payment terms are net 30 days. Cash discounts for prompt payment of invoices may be taken but will not be considered in determining award, except in the case of tie bids.
4. Separate unit and total FOB delivered prices must be shown.
5. Sales to the PA and to PATH are currently exempt from New York and New Jersey State and local taxes and generally from federal taxation. The seller certifies that there are no federal, state, municipal or any other taxes included in the prices shown hereon.
6. The PA shall have the absolute right to reject any or all proposals or to accept any proposal in whole or part and to waive defects in proposals.
7. Unless the phrase "no substitute" is indicated, bidder may offer alternate manufacturer / brands, which shall be subject to Port Authority approval. Please indicate details of product being offered with bid.
8. Acceptance of seller's offer will be only by Purchase Order Form signed by the PA. No change shall be made in the agreement except in writing.
9. If the seller fails to perform in accordance with the terms of this purchase order, the PA may obtain the goods or services from another contractor and charge the seller the difference in price, if any, a reletting cost of \$100, plus any other damages to the PA.
10. Upon request, sellers are encouraged to extend the terms and conditions of any terms agreement with the PA to other government and quasi-government entities by separate agreement.
11. By signing this quotation or bid, the seller certifies to all statements on Form PA 3764A regarding non-collusive bidding; compliance with the PA Code of Ethics; and the existence of investigations, indictments, convictions, suspensions, terminations, debarments and other stated occurrences to assist the PA in determining whether there are integrity issues which would prevent award of the contract to the seller. The PA has adopted a policy set forth in full on PA 3764A, that it will honor a determination by an agency of the State of New York or New Jersey that a bidder is not eligible to bid on or be awarded public contracts because the bidder has been determined to have engaged in illegal or dishonest conduct or to have violated prevailing wage legislation. The Terms and Conditions of PA 3764A apply to this order. A copy can be obtained by calling (212) 435-4600 or at <http://www.panynj.gov/business-opportunities/become-vendor.html>
12. The vendor may subcontract the services or use a supplier for the furnishing of materials required hereunder to such persons or entities as the Manager, Purchasing Services may from time to time expressly approve in writing. All further subcontracting shall also be subject to such approval.
13. The successful bidder (vendor) shall not issue nor permit to be issued any press release, advertisement, or literature of any kind, which refers to the Port Authority or that goods will be, are being or have been provided to it and/or that services will be, are being or have been performed for it in connection with this Agreement, unless the vendor first obtains the written approval of the Port Authority. Such approval may be withheld if for any reason the Port Authority believes that the publication of such information would be harmful to the public interest or is in any way undesirable.
14. Neither the Commissioners of the Port Authority, nor Directors of PATH, nor any of them, nor any officer, agent or employee thereof, shall be charged personally by the Contractor with any liability, or held personally liable to the Contractor under any term or provision of this Agreement, or because of its execution or attempted execution, or because of any breach, or attempted or alleged breach, thereof.

THE PORT AUTHORITY TRANS-HUDSON CORPORATION
GENERAL PROVISIONS
DC TRACTION CABLES

BID # 46150

04/21/2016.

Scope:

As directed by PATH, the Vendor shall furnish and deliver reels of cable for DC traction power. All cable shall be in compliance with all General Provisions herein and with the attached Technical Specifications Section CR02608 # 122 (hereinafter referred to as Specifications or Section).

Furnish and deliver the following assortment of Cable reels:

<u>Reel#</u>	<u>Cable Size</u>	<u>Rated Voltage</u>	<u>Reel Lengths</u>	<u>Reel Name</u>	<u>PATH Specification</u>
1-6	2000 kcmil	2KV	600 ft. ea.	CR02-608 600 FT	CR02608 #122 PSC-C 04/21/16
7-8	2000 kcmil	2KV	550 ft. ea.	CR02-608 550 FT	CR02608 #122 PSC-C 04/21/16
9-12	2000 kcmil	2KV	500 ft. ea.	CR02-608 500 FT	CR02608 #122 PSC-C 04/21/16
13-20	2000 kcmil	2KV	412 ft. ea.	CR02-608 412 FT	CR02608 #122 PSC-C 04/21/16

General Notes:

1. The ensuing Purchase Order is solely for furnishing and delivering the cable specified. Cable terminations or connectors are not required.
2. Cable shall be of Jacketed Type as indicated in the Technical Specifications.
3. Cable length tolerances shall be -0% to +5% of the lengths indicated for each cable reel.
4. Cable reel dimensions shall not exceed 66 inches in diameter and 44 inches in depth.
5. All cable reels shall be of wood construction and be non-returnable.
6. All cable reels shall have a PATH-approved pulling device installed and a PATH-approved cable end seal cap as specified in the Technical Specifications.
7. The Vendor shall allow PATH the opportunity to witness, upon request, all factory testing of the cable.

Attached Technical Specifications:

<u>PATH Spec #</u>	<u>Title</u>	<u>Date</u>
CR02608 #122	DC Traction Power Cable	PSC-C 04/21/16

Delivery Requirements:

FOB Destination. Partial deliveries are not acceptable. Pricing shall include, but not be limited to, costs for any multiple shipments necessary to complete the delivery of all reels, for shop tests, and for inspections.

Deliver all cable reels within ~~20~~ weeks of receipt of Purchase Order. Indicate delivery lead-time on the Bid.

Deliver to PATH, 120 Academy Street, Jersey City, NJ 07302. Notify Mike Brady at 201-216-6985 or John Brunetto at 201-216-6969 two weeks prior to delivery. Provide hydraulic or similar hoisting machine capable of unloading all reels, which will be conducted at the direction and supervision of PATH.

DC TRACTION POWER CABLE
TECHNICAL SPECIFICATION CR02608 # 122

B.D. 46150

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies requirements for cables for D.C. traction cables.

1.2 DESIGN AND PERFORMANCE REQUIREMENTS

- A. The cables shall be designed, manufactured, tested and installed in accordance with the latest revisions of the referenced Standards and this Section. Where a discrepancy exists between Standards, the more stringent requirements shall apply.

1.3 RELATED SECTIONS

- A. None

1.4 STANDARDS

- A. American Society for Testing and Materials (ASTM)
1. B1 - Standard Specification for Hard-Drawn Copper Wire
 2. B2 - Standard Specification for Medium-Hard-Drawn Copper Wire
 3. B3 - Standard Specification for Soft or Annealed Copper Wire
 4. B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft
 5. B33 - Standard Specification for Tinned Soft or Annealed Copper Wire for Electrical Purposes
 6. B189 - Standard Specification for Lead-Coated and Lead-Alloy-Coated Soft Copper Wire for Electrical Purposes
 7. D2802 - Standard Specification for Ozone-Resistant Ethylene-Alkene Polymer Insulation for Wire and Cable
 8. D3005 - Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape
 9. D4388 - Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes
 10. E662 - Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials

- B. Ministry of Defense Standards (DEF STAN), UK
 - 1. 02-713 - Determination of the Toxicity Index of the Products of Combustion From Small Specimens of Materials
- C. Federal Specifications (FS)
 - 1. FS-HH-I-553 Insulation Tap, Electrical (Rubber, Natural and Synthetic)
- D. Insulated Cable Engineers Association (ICEA)
 - 1. T-33-655 – Low Smoke, Halogen-Free Polymeric Jackets
 - 2. ICEA S-95-658 Standard for Non-shielded Power Cables rated 2000 volts or less for the Distribution of Electrical Energy
- E. Institute of Electrical and Electronics Engineers, Inc. (IEEE)
 - 1. 48 - Standard Test Procedures and Requirements for Alternating-Current Cable Terminations 2.5 kV through 765 kV
 - 2. 404 - Standard for Cable Joints for Use With Extruded Dielectric Cable Rated 5000-138 000 V and Cable Joints for Use With Laminated Dielectric Cable Rated 2500-500 000 V
 - 3. 837 - Standard for Qualifying Permanent Connections Used in Substation Grounding
 - 4. 1202 – Standard for Flame Testing of Cables for Use in Cable Tray in Industrial and Commercial Occupancies
- F. Military Specifications (MIL)
 - 1. MIL-DTL-24643 – General Specification for Cables and Cords, Electric, Low Smoke, for Shipboard Use
- G. National Fire Protection Association (NFPA)
 - 1. 70 - National Electrical Code
 - 2. 130 - Standard for Fixed Guideway Transit and Passenger Rail Systems
 - 3. 258 - Research Test Method for Determining Smoke Generation of Solid Materials
 - 4. 262 – Standard Method of Test for Flame Travel and Smoke of Wires and Cables for use in Air-Handling Spaces
- H. National Electrical Manufacturers Association (NEMA)
 - 1. WC 70 – Non-Shielded Power Cable 2000 V or Less
 - 2. WC 71 – Standard for Non-Shielded Cables Rated 2001-5000 Volts for Use in the Distribution of Electric Energy
 - 3. WC 74 – 5-46 kV Shielded Power Cable for Use in the Transmission and Distribution of Electric Energy

I. Underwriters Laboratories Inc. (UL)

1. 44 - Thermoset-Insulated Wires and Cables
2. 467 – Standard for Grounding and Bonding Equipment
3. 510 – Standard for Polyvinyl Chloride, Polyethylene and Rubber Insulating Tape
4. 1581 – Reference Standard for Electrical Wires, Cables, and Flexible Cords
5. 1685 – Standard for Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables

1.5 SUSTAINABLE DESIGN REQUIREMENTS

- A. None

1.6 QUALITY ASSURANCE

- A. The bidder shall have a minimum of three years experience in manufacturing cable of the type and size described herein and the bidder shall have the manufacturer provide a list of installations and contracts for which he has produced such materials.
- B. Tests requiring certified reports and those requiring factory or field inspection shall be conducted and reported to the PATH in conformance with standards herein specified.
- C. Cables that have been manufactured more than two years prior to installation shall not be used in the Work of this Section.

1.7 SUBMITTALS

- A. Submit the following in accordance with the requirements of Shop Drawings, Catalog Cuts, and GENERAL PROVISIONS
 1. Catalog cut sheets shall be provided for the following but not limited to:
 - D.C. traction power cable(s)
 - Pulling devices and end seals
 2. Certified shop tests reports of cable.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Store material in a clean, dry space and protect from weather.
- B. Unless otherwise indicated in the General Provisions, cables shall be provided with factory fitted pulling devices and end caps to prevent the entrance of moisture into the cable.
- C. Cable reel sizes shall be limited to the maximum dimensions shown in the General Provisions.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. List of acceptable manufacturers is shown on General Provisions.

2.2 CABLES

A. General

1. Locations, types, sizes and numbers of cables are indicated in the General Provisions.
2. Unless otherwise shown in the General Provisions, solid conductors shall be soft or annealed copper, conforming to ASTM B33 (tinned), ASTM B189 (lead or lead alloy coated or lead alloy coated), or ASTM B3 (uncoated).
3. The conductor insulation shall be either low smoke, zero halogen Ethylene Propylene Rubber (EPR) with overall jacket or Low Smoke Zero Halogen Cross-linked Polyolefin (LSZH XLPO) insulation without overall jacket conforming to ICEA S-95-658.
4. Cable jackets over EPR insulation shall be thermoset, low smoke, low toxicity, non-halogen, flame retardant cross-linked polyolefin.
5. Cable jacket and insulation materials, and cable construction as a whole, shall meet the following performance characteristics:

Cables shall pass the flame propagatory criteria according to the test method of UL 1685 or NFPA 262.

The halogen content of the cable jackets shall not exceed 0.2 percent according to the test method of MIL-DTL-24643. The Authority classifies 0.2 percent or less halogen content as "non-halogen."

The toxicity index of cable jackets shall not exceed 2.0 according to the test method of DEF STAN 02-713.

The cable insulation and jacket materials shall comply with ICEA T-33-665 for smoke generation.

The acid gas content of cable jackets shall not exceed a maximum of 2.0 percent according to the test method of MIL-DTL-24643.

The cable insulation and jacket materials shall pass the smoke generation test in accordance with ASTM E662. Cable insulation and jacket materials

when tested on a specimen of 80 mils thick slab shall not exceed the following values:

	<u>EPR</u>	<u>LSZH XLPO</u>
1) Flaming Avg. DS (4 minutes)	100	50
2) Flaming Avg. Dm (20 minutes)	200	150
3) Non-Flaming Avg. Ds (4 minutes)	100	50
4) Non-Flaming Avg. Dm (20 minutes)	350	250

6. The cable shall be resistant to spread of fire and shall have reduced smoke emissions by complying with one of the following:

- a. Meeting the performance criteria when subjected to vertical flame test according to UL 1685:
 - (1) The cable damage height shall be less than 2.44 m (8 ft) when measured from the bottom of the cable tray.
 - (2) The total smoke released shall not exceed 95 m² (1023.6 ft²)
 - (3) The peak smoke release rate shall not exceed 0.25 m²/s (2.7 ft²/s)
- b. Alternatively, the cable shall be listed as having adequate fire-resistant and low smoke-producing characteristics, by having a flame travel distance that does not exceed 1.52 m (5 ft), generating a maximum peak optical density of smoke of 0.5 and a maximum average optical density of smoke of 0.15 when tested in accordance with NFPA 262

7. Pulling Devices and End Seals

Unless otherwise shown in the General Provisions, cables shall be provided with factory fitted pulling devices and end caps to be used shall be submitted to the PATH for approval.

All cables shall be end-sealed, at both ends of each length, with a heat-shrinkable cap to prevent the entrance of moisture.

8. Identification

The following information shall be durably printed on the jacket surface and repeated at intervals not exceeding 24 inches:

- 1) Manufacturer's Name
- 2) Manufacturing Plant No.
- 3) No. of Conductors
- 4) Size of Conductors
- 5) Insulation Material and thickness
- 6) Jacket Material LS-Non-Hal/No acid
- 7) 2000 volts (rated voltage)
- 8) DC Traction Power Cable
- 9) Sequential Footage
- 10) Date of Manufacture
- 11) UL Listing (" Type RHW-2" along with "CT Use" & "LS" designations)
- 12) Property of PATH

Each reel shall carry a tag identifying the manufacturer, cable type, size, voltage and length of cable on reel.

B. Jacketed, Single Conductor D.C. Traction Power Cable

- 1. Voltage ratings shall be for 2,000 volts D.C. continuously, rated for 90-degree C

operations, and capable of withstanding frequent spikes of 3,000 volts as is typical to occur in an electrical railroad system.

2. General Construction

Copper conductor, (bare, lead or tin coated,) Class B or Class C stranded as shown on the Contract Drawings in accordance with ASTM B8 and ASTM B33.

An opaque separating tape shall be applied over the conductor that shall prevent migration of the insulation into the conductors, so as to aid in stripping for terminating.

The insulation shall be low smoke, zero halogen ethylene propylene rubber, concentricity extruded over the screen. The insulation thickness shall be 0.140 inches and the thickness at any point shall not be less than 90 percent of that value. The insulation shall otherwise conform to NEMA WC 70, WC 71 and WC 74. The insulation shall also conform to ASTM D 2802 and ICEA S-95-658, Type II of these standards

The EPR insulated conductor shall be covered with an oil-resistant, flame retardant, low smoke, non-halogenated cross-linked polyolefin jacket. The jacket material shall meet or exceed the physical requirements of ICEA S-95-658. The minimum jacket thickness at any point shall be not less than 90 percent of the average jacket thickness as required by this specification. The average jacket thickness shall be 65 mils for 500 kcmil and 95 mils for 2000 kcmil.

This cable must be UL listed as Type RHW-2, 90C wet and dry per UL standard 44. Cables must also bear the "LS" and "CT USE" UL designations.

C. Size:

1. Cable size shall be 500 kcmil or 2000 kcmil as indicated in the General Provisions.

a. For 500-kcmil cable, conductors shall be 127 strands. The stranding requirements for 500-kcmil cable are not an ASTM standard stranding, but are specified to provide for flexible construction. The extra flexible strand can use if approved by the PATH.

b. For 2000 kcmil cable, conductors shall be Class C 169 strand.

2.3 TESTS

A. Shop Tests

1. Unless otherwise shown on the Contract Drawings, regular AC and DC dielectric withstand and insulation-resistance tests shall be performed for all cable in accordance with NEMA WC 70, WC 71 and WC 74. Both tests shall be performed with cable submerged in a tank of water.
2. Flame spread and smoke release tests for cables shall be performed in accordance with either IEEE 1202 and UL 1685 or NFPA 262.
3. Halogen content test shall be performed in accordance with MIL-DTL-24643.
4. Toxicity index test shall be performed in accordance with DEF STAN 02-713.
5. The flame, smoke generation, halogen content and toxicity index tests shall be performed per cable production run as long as the same batch of

compound is being used. A minimum of two tests shall be performed for each. Test samples as chosen by the PATH.

6. The test results shall be certified and submitted to the PATH for each reel of cable.
7. Factory inspection and witnessing of tests by the PATH shall be required for all cables furnished under this Contract. The PATH reserves the right to revise the shop test schedule, or to waive factory inspection or witnessing of tests. The Bidder shall notify the PATH 8 weeks in advance of the scheduling of such factory tests.
8. The cost of the shop tests shall be borne by the Bidder.

B. Independent Laboratory Tests

1. If required by contract drawing the following tests shall be performed in conformance with NEMA or ICEA standards:

Regular AC and DC dielectric-withstand and insulation resistance. Dissection and dimensional analysis.

Microscopic examination for voids, contaminants and protrusions. Hot creep test to determine state of cure of insulation.

Any other additional tests that the Authority may require in order to ensure the quality of the cable.

2. In the event that the cable does not conform and is rejected by the Authority, the cost of the independent lab test-to-test replacement cable shall be borne by the Bidder.
3. The independent laboratory, selected by the Authority, will provide the Authority and manufacturer with all test results in writing within 14 days after receiving cable test specimens.

END OF SECTION