3M™ Cold Shrink QT-III Silicone Rubber Three-Conductor Cable Termination Kit, 7600-3W Series 5, 8, 15, 25/28 and 35kV

Data Sheet **May 2012**

Product Description

3M™ Cold Shrink QT-III Silicone Rubber Three-Conductor Cable Termination Kit, 7600-3W Series, are designed to accommodate medium voltage 3/C shielded power cables without ground wires, and are available for indoor or outdoor application.

Each termination kit is supplied with the materials required for terminating one three conductor cable. (Terminal or lug is not included in the kit and must be ordered separately. Consult the 3M Electrical Products Catalog.)

All main termination components are produced from color-matched dark gray silicone rubber. These components are:

Breakout Boot – an open-ended molded rubber sealing assembly that is factory expanded and mounted on removable inner supporting plastic cores. Breakout boots are supplied for field installation in a pre-stretched condition. The supporting cores are removed after the boot has been positioned for installation around the breakout area of a 3/C cable. Core removal allows the silicone rubber boot to shrink down to a pre-determined diameter, creating an environmental enclosure for individual cable phase legs and the overall cable jacket.

Re-jacketing Sleeve Assembly – a tubular silicone rubber insulating sleeve that incorporates an inner-expandable polyester braid designed to reduce sliding friction, and deliver the silicone tubing onto the cable phase metallic shielding. Re-jacketing sleeves are designed to protect the shielded cable phase legs from exposure to moisture, corrosion, ozone, ultraviolet radiation, physical contact and other hazards associated with termination operating environments.

QT-III Termination – a one-piece cold shrink assembly that consists of skirted or tubular insulator, high dielectric constant (Hi-K) stress control mastic and a built-in environmental top sealing compound. The complete assembly is pre-stretched and loaded onto a removable plastic core. Core removal allows the termination assembly to shrink down and seal onto prepared cable phase insulation and lug barrel surfaces.

Kit Contents

- 3 - Hi-K, Tracking Resistant, Silicone Rubber Terminations
- 1- Silicone Rubber Breakout Boot
- 3 - Silicone Rubber Phase Re-jacketing Sleeve Assemblies
- 3 - Constant Force Springs (small)
- 1 - Constant Force Spring (large)
- 1 - Pre-formed Ground Braid
- 2 – Strips Scotch® Mastic Sealing Strip 2230
- 3 – 3M™ EMI Copper Foil Shielding Tape 1181 Strips
- 1 - 3M™ Cable Preparation Kit CC-2
- 1 – Instruction Sheet

Features

- Simple hand application: No need for special installation tools
- Versatile: Installs quickly and accommodates a wide range of cable sizes
- No torches or heat required
- Excellent thermal stability
- Good solvent resistance: Compatible with industry-approved cable cleaners
- Excellent resistance to ozone and ultra-violet radiation
- High dry and wet insulation resistance
- Highly flexible: Accommodates most power cable supplier bend radius recommendations
- Seals tight: Retains resiliency and pressure even after prolonged years of aging and exposure
- One-piece versatile design, allowing quick installation and accommodating a wide range of cable sizes.
- Cold Shrink delivery system allows easy installation: Simply place termination over prepared cable and unwind core to shrink into place (no force fit required)
- Hi-K stress control: Specially formulated high dielectric constant material minimizes surface stress by more uniformly distributing the electrical field over the entire surface of the insulator
- Compact design provides for easier installation in restricted spaces
- Silicone rubber insulators, EPDM stress control tubes, stress controlling compound and environmental sealing compound are compatible with all common solid dielectric insulations, such as polyethylene (PE), cross-linked polyethylene (XLPE) and ethylene propylene rubber (EPR)
- Conforms to the IEEE Standard 48 Class 1 requirements for 5, 8,15, 25/28 and 35 kV terminations

Applications

The 3M™ Cold Shrink QT-III Rubber Three-Conductor Termination Kit 7600-3W Series is designed for/to:

- 5, 8, 15, 25/28 and 35 kV classes
- Accommodate three conductor power cables ranging from 8 AWG (8mm^2) @ 3 Kv to 500 kcmil (240mm^2) @ 35 kV
- Copper Tape shielded cables
- Solid dielectric insulations, such as polyethylene, XLPE and EPR
- Protected and weather-exposed contaminated locations (Skirted 7600-S-3W and
- 7600-S-INV-3W versions)
- Contaminated and non-contaminated indoor (weather-protected) locations (Tubular 7600-T-3W version)
- Free-hanging or bracket-mounting arrangements
- Upright or inverted installations (Tubular 7600-T-3W, or Skirted Inverted 7600-S-INV-3W versions)
- These terminations can be field tested using normal cable testing procedures (reference: ANSI/IEEE Standard 400 “Guide for Field Testing and Evaluation of the Insulation of Shielded Power Cable Systems”. Refer to most recent version).

The amount of airborne contamination determines the operating environment. Operating environments are described as areas having varying degrees of airborne contaminant or pollution severity that may, or may not, affect the long term performance of terminations. These operating environments are defined as light, medium, heavy and extremely heavy variations according to pollution severity. The appropriate termination selection depends on the system voltage and operating environment. (See tables below)

Outdoor (Skirted) Termination Kit - Recommended Application Guide

Voltage Class	Termination Operating Environment			
	Light	Medium	Heavy	Extremely Heavy
3.3, 6.6 & 10 kV (JIS & IEC) 5.0 & 8 kV (AEIC)	7620-S-2-3W	7620-S-2-3W	7620-S-2-3W	7690-S-4-3W
15 kV (IEC) 15 kV (AEIC)	7620-S-2-3W 7690-S-4-3W	7620-S-2-3W 7690-S-4-3W	7690-S-4-3W 7680-S-8-3W	7690-S-4-3W 7680-S-8-3W
20 kV (IEC) 25 & 28 kV (AEIC)	7690-S-4-3W	7690-S-4-3W	7690-S-4-3W 7680-S-8-3W	7680-S-8-3W
30 kV (IEC) 35 kV (AIEC)	7680-S-8-3W	7680-S-8-3W	7680-S-8-3W	*

*Consult 3M sales representative.
IEC=International Electro-Technical Commission **JIS**=Japanese Industrial Standard **AEIC**=Association of Edison Illuminating Companies

Pollution Severity Level Guide

Light	Heavy
▪ Areas without industry and with low-density housing ▪ areas subjected to frequent winds and/or rainfall with low-density industry and housing ▪ Agricultural areas * ▪ Mountainous areas All of these regions should be situated at least 7 miles from the coast and should not be exposed to coastal winds.**	▪ High-density industrial areas and some urban areas with high-density housing, especially those with infrequent rainfall ▪ Areas subjected to a moderate concentration of conductive dust, particularly deposits from industrial smoke ▪ Areas generally close to the coast and exposed to coastal spray or to strong winds carrying sand and salt, and subjected to regular condensation
Medium	**Extremely Heavy**
▪ Non-polluting industrial areas subject to infrequent rainfall and with average-density housing ▪ Areas subject to frequent winds and/or rainfall with high-density industry and housing ▪ Areas exposed to wind from the coast, but generally over two miles from the coast	▪ Usually very limited areas having extremely heavy pollutants from industrial sites, especially those located near oceans and subjected to prevailing winds from the sea ▪ Very small isolated areas where terminations are located immediately adjacent to a pollutant source, especially downwind (cement plants, paper mills, etc.)

* Use of fertilizers by spraying, or the burning of crop residues, can lead to a higher pollution level due to dispersal by wind.
**Distances from coast depend on the topography of the coastal area and on the extreme wind conditions.

Typical Performance

Some termination technical information is beyond the scope of this document. If additional information is desired, please see the individual component data sheet listed below.

Component	Product No. Reference
Breakout Boot	8560 Series
Re-jacketing Sleeve	RJS- Series
QT-III Termination	7620/7680/7690 Series

Ratings

3M™ Cold Shrink QT-III Silicone Rubber Three-Conductor Cable Termination Kit, 7600-3W Series can be used on cables rated with a continuous operating temperature of 221°F(105°C) and emergency overload temperature of 284°(140°C).

7600-3W Series terminations meet or exceed the current rating of the cables on which they are installed.

7600-3W Series terminations are Class 1 designated products according to Standard IEEE-48 definition.

Environmental Performance

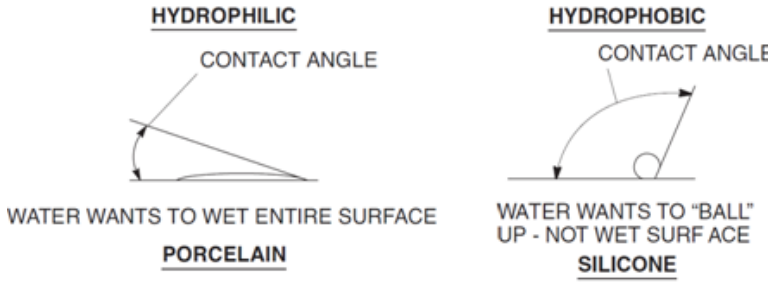
Material Characteristics

Hydrophobicity

When airborne contaminants are deposited on a termination surface, destructive leakage currents can initiate when the surface becomes wet. Fog and drizzle are normally considered to be worse than rain as these two forms of precipitation can combine with accumulated surface contaminants to reduce surface resistivity making the surface conductive to varying degrees, promoting leakage current formation. Rain tends to wash the pollutants off the termination surface.

The inherent hydrophobic nature of the silicone rubber compound used to make 3M™ Cold Shrink QT-III Silicone Rubber Three-Conductor Cable Termination Kit 7600-3W Series, components tends to reject moisture accumulation, and thereby, reduces the probability for discharge-initiated material erosion and tracking.

On occasion, severe environmental conditions that are sustained for long time periods can cause any polymeric surface to lose its hydrophobicity. Because of this, EPD polymers and others tend to lose their hydrophobic nature over time. Porcelain surfaces become increasingly hydrophilic with time, which can result in premature failure or flashover. Silicone surfaces can regenerate their hydrophobic character. The silicone insulator surface will re-establish its hydrophobic surface within 24 hours. This unique ability is a major factor for ensuring a long service life.



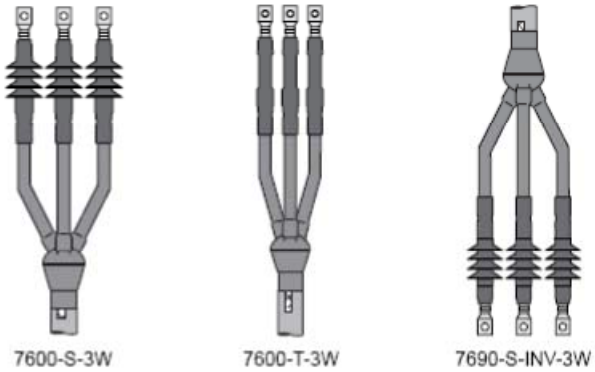
Ozone, Heat and UV Resistance

One of the most outstanding physical characteristics of silicone rubber is its retention of desirable properties over the very wide temperature range of -150°F (-100°C) to 600°F (315°C). While there are applications that take advantage of these temperature extremes, a more attractive feature might be that of its extremely long life expectancy at moderate operating temperatures.

The silicone polymer molecular backbone, silicone-oxygen linkage, provides the same strong –Si-O-Si- type bond occurring in quartz, sand and glass, which accounts for the outstanding temperature properties of silicones and their resistance to oxidation by ozone, corona and weathering. Polymer chains from organic rubber materials often have double carbon bond molecular backbones, which are quickly cleaved by ozone, ultraviolet light, heat or other influences found in the operating environment.

Termination Type Selection Table

Product Number (Kit Series)	Insulator Configuration	Installation Environment	Orientation	For Cable Type(s) (With or without Ground Wires)
7600-S-3W	Skirted	Outdoor	Normal	W (Without)
7600-T-3W	Tubular	Indoor	Normal	W (Without)
7690-S-INV-3W	Skirted	Outdoor	Inverted	W (Without)



7600-S-3W Series Termination Selection Table

Kit Number	BIL (kV)	Cable Insulation Range [inches (mm)]	3.3 kV (mm^2) IEC	3.3 kV (mm^2) JIS	5.0 kV (AWG) AEIC	6.6 kV (mm^2) JIS	6.6 kV (mm^2) IEC	8 kV (AWG) AEIC	10 kV (mm^2) IEC
7620-S-2-3W	95	0.33-0.50 (8,40-12,7)	16-35	8-22	8-2	--	16-25	6-4	--
7621-S-2-3W	95	0.50-0.70 (12,7-17,8)	50-95	38-60	1-3/0	--	35-70	2-2/0	10-50
7622-S-2-3W	110	0.70-0.92 (17,8-23,4)	120-185	100-150	4/0-400	60-100	95-150	3/0-350	70-150
7691-S-4-3W	150	0.50-0.70 (12,7- 17,8)	50-95	38-60	1-3/0	--	35-70	2-2/0	10-50
7692-S-4-3W	150	0.70-0.92 (17,8-23,4)	120-185	100-150	4/0-400	60-100	95-150	3/0-350	70-150
7693-S-4-3W	150	0.92-1.18 (23,4-30,0)	240-300	200-250	500-750	150-250	185-300	400-600	185-300
7695-S-4-3W	150	1.18-1.52 (30,0-38,6)	--	300-325	800-1000	300-325	--	750-1000	--
7685-S-8-3W	200	1.18-1.52 (30,0-38,6)	--	300-325	800-1000	300-325	--	750-1000	--

Kit Number	BIL (kV)	Cable Insulation Range [inches (mm)]	15 kV (mm^2) IEC	15kV (AWG) AEIC	20 kV (mm^2) IEC	25/28 kV (AWG) AEIC	30 kV (mm^2) IEC	35 kV (AWG) AEIC	
7620-S-2-3W	95	0.33-0.50 (8,40-12,7)	--	--	--	--	--	--	
7621-S-2-3W	95	0.50-0.70 (12,7-17,8)	16-25	--	--	--	--	--	
7622-S-2-3W	110	0.70-0.92 (17,8-23,4)	35-95	1/0-4/0	--	--	--	--	
7691-S-4-3W	150	0.50-0.70 (12,7- 17,8)	16-25	-	--	--	--	--	
7692-S-4-3W	150	0.70-0.92 (17,8-23,4)	35-95	1/0-4/0	25-70	2-1/0	--	--	
7693-S-4-3W	150	0.92-1.18 (23,4-30,0)	120-185	250-450	95-185	2/0-250	--	--	
7695-S-4-3W	150	1.18-1.52 (30,0-38,6)	200-325	500-750	240-300	300-500	--	--	
7685-S-8-3W	200	1.18-1.52 (30,0-38,6)	200-325	500-750	240-300	300-500	95-240	4/0-500	

Final determining factor is cable insulation diameter. Listed insulation ranges allow + 0,10" (2,54 mm) for shielding.

7600-T-3W Series Termination Selection Table

Kit Number	BIL (kV)	Cable Insulation Range [inches (mm)]	3.3 kV (mm^2) IEC	3.3 kV (mm^2) JIS	5.0 kV (AWG) AEIC	6.6 kV (mm^2) JIS	6.6 kV (mm^2) IEC	8 kV (AWG) AEIC	10 kV (mm^2) IEC	15 kV (mm^2) IEC	15 kV (AWG) AEIC	20 kV (mm^2) IEC	25/28 kV (AWG) AEIC	35 kV (AWG) AEIC
7620-T-95-3W	95	0.33-0.50 (8.40-12.7)	16-35	8-22	8-2	--	16-25	6-4	--	--	--	--	--	
7621-T-95-3W	95	0.50-0.70 (12.7-17,8)	50-95	38-60	1-3/0	--	35-70	2-2/0	10-50	16-25	--	--	--	
7623-T-95-3W	95	0.70-0.92 (17,8-23,4)	120-185	100-150	4/0-400	--	95-150	3/0-350	70-150	35-95	--	--	--	
7624-T-95-3W	95	0.92-1.18 (23,4-30,0)	240-300	200-250	500-750	--	185-300	400-600	185-300	120-185	--	--	--	
7625-T-95-3W	95	1.18-1.52 (30,0-38,6)	--	300-325	800-1000	--	--	750-1000	--	200-325	--	--	--	
7621-T-110-3W	110	0.50-0.70 (12.7-17)	50-95	38-60	1-3/0	14-38	35-70	2-2/0	10-50	16-25	2-1	--	--	
7622-T-110-3W	110	0.70-0.92 (17,8-23,4)	120-185	100-150	4/0-400	60-100	95-150	3/0-350	70-150	35-95	1/0-4/0	--	--	
7624-T-110-3W	110	0.92-1.18 (23,4-30,0)	240-300	200-250	500-750	150-250	185-300	400-600	185-300	120-185	250-450	--	--	
7625-T-110-3W	110	1.18-1.52 (30,0-38,6)	--	300-325	800-1000	300-325	--	750-1000	--	200-325	500-750	--	--	
7624-T-125-3W	125	0.92-1.18 (23,4-30,0)	240-300	200-250	500-750	150-250	185-300	400-600	185-300	120-185	250-450	95-185	--	
7625-T-125-3W	125	1.18-1.52 (30,0-38,6)	--	300-225	800-1000	300-325	--	750-1000	--	200-325	500-750	240-300	--	
7693-T-150-3W	150	0.70-0.92 (17,8-23,4)	120-185	100-150	4/0-400	60-100	95-150	3/0-350	70-150	35-95	1/0-4/0	25-70	2-1/0	
7694-T-150-3W	150	0.92-1.18 (23,4-30,0)	240-300	200-250	500-750	150-250	185-300	400-600	185-300	120-185	250-450	95-185	2/0-250	1/0-3/0
7695-T-150-3W	150	1.18-1.52 (30,0-38,6)	----	300-325	800-1000	300-325	--	750-1000	--	200-325	500-750	240-300	300-500	4/0-500

Final determining factor is cable insulation diameter. Listed insulation ranges allow + 0.10” (2,54 mm) for shielding.
150 kV impulse level meets the impulse requirements for 35 kV class equipment where indoor terminations are used.

7600-S-INV-3W Series Termination Selection Table

Kit Number	Cable Insulation Range [inches (mm)]	3.3 kV (mm^2) IEC	3.3 kV (mm^2) JIS	5.0 kV (AWG) AEIC	6.6 kV (mm^2) AEIC	6.6 kV (mm^2) IEC	8 kV (AWG) AEIC	10 kV (mm^2) IEC	15 kV (mm^2) IEC	15 kV (AWG) AEIC	20 kV (mm^2) IEC	20 kV (AWG) AEIC
7693-S-4-INV-3W	0.92-1.18 (23,4-30,0)	240-300	200-250	500-750	150-250	185-300	400-600	185-300	120-185	250-450	95-185	2/0-250
7695-S-4-INV-3W	1.18-1.52 (30,0-38,6)	--	300-325	800-1000	300-325	--	750-1000	--	200-325	500-750	250-300	300-500

Final determining factor is cable insulation diameter. Listed insulation ranges allow + 0.10” (2,54 mm) for shielding.

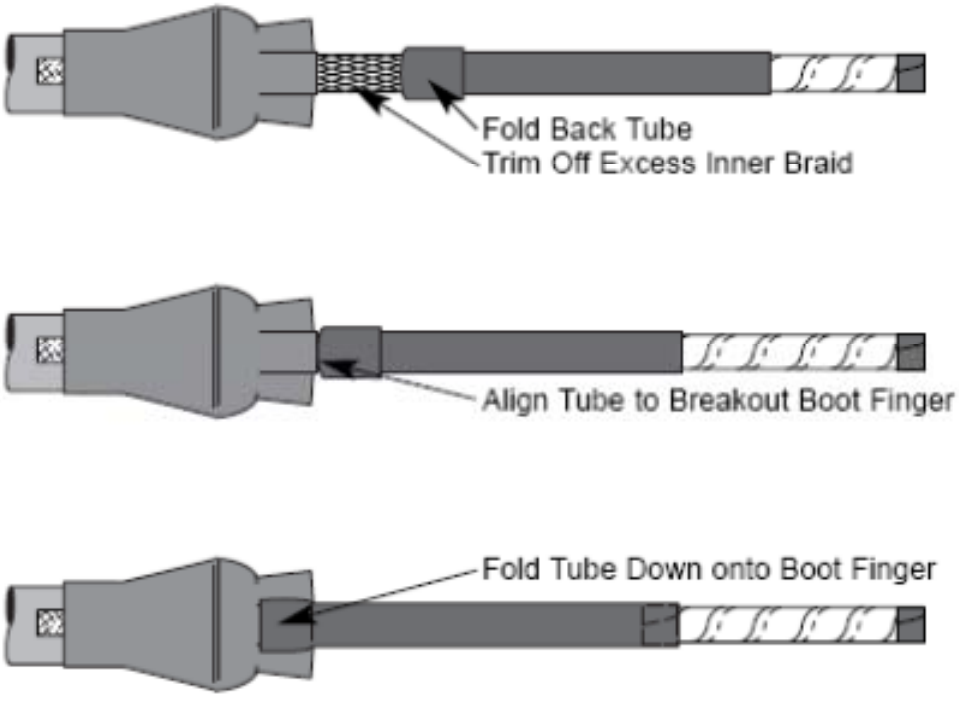
Installation Techniques

⚠ Caution
Working around energized electrical systems may cause serious injury or death. Installation should be performed by personnel familiar with good safety practice in handling high-voltage electrical equipment. De-energize and ground all electrical systems before installing product.

Detailed instructions are included in each 3M™ Cold Shrink QT-III Silicone Rubber Three-Conductor Cable Termination Kit, 7600-3W Series to provide the installer with the information required to properly install the appropriately sized termination product. A brief summary of the installation sequence is outlined below:
Example below: 7600-S-4-3W Kit

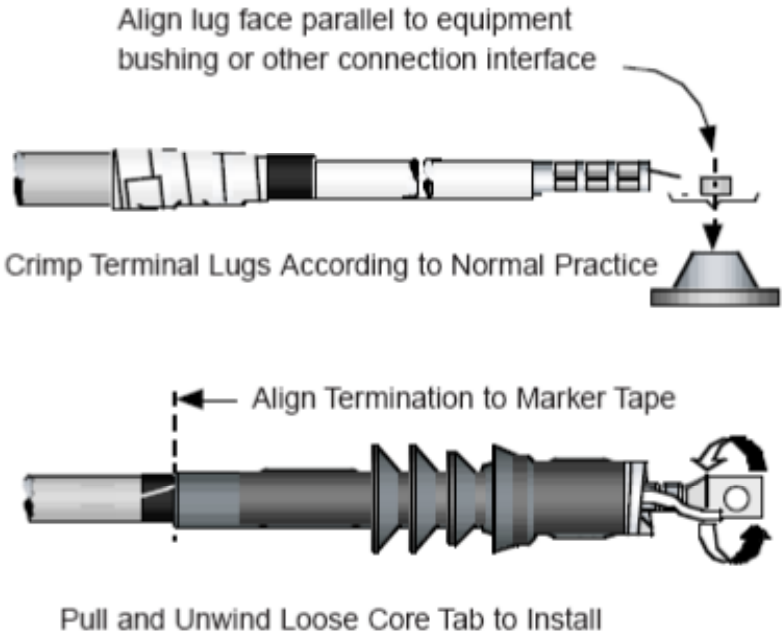
1. Remove cable jacket and armor layers. After attaching shield grounding braids, install silicone rubber breakout boot by unwinding inner plastic supporting cores.

2. After measuring required length, install RJS – Series silicone rubber phase re-jacketing sleeves.



Installation Techniques

3. After preparing cable phase leg ends, install Terminal Lugs & QT-III Termination Assemblies.



NOTE: The Material being removed at this step is mixed polymers and can be recycled with 7 waste.

Performance Tests

Typical Results, IEEE Standard 48 Short-Term Test Sequence

Insulation Class Test	5 kV		8 kV		15 kV		25/28 kV		35 kV	
	Require-ments	Results	Require-ments	Results	Require-ments	Results	Require-ments	Results	Require-ments	Results
Partial Discharge Extinction voltage @ 3 pC	4.5 kV	Passed	7.5 kV	Passed	13 kV	Passed	21.5 kV	Passed	30 kV	Passed
Power Frequency Voltage 1 min. Dry Withstand	25 kV	Passed	35 kV	Passed	50 kV	Passed	65 kV	Passed	90 kV	Passed
Power Frequency Voltage 6 hr. Dry Withstand	15 kV	Passed	25 kV	Passed	35 kV	Passed	60 kV	Passed	76 kV	Passed
Direct Voltage 15 min. Dry Withstand	50 kV	Passed	65 kV	Passed	75 kV	Passed	105 kV	Passed	140 kV	Passed
Lightning Impulse Voltage Withstand (BIL)	75 kV	Passed	95 kV	Passed	110 kV	Passed	150 kV	Passed	200 kV	Passed
Partial Discharge Extinction Voltage @ 3 pC	4.5 kV	Passed	7.5 kV	Passed	13 kV	Passed	21.5 kV	Passed	30 kV	Passed

Typical Results, IEEE Standard 48 Long-Term Test Sequence

Insulation Class Test	5 kV		8 kV		15 kV		25/28 kV		35 kV	
	Require-ments	Results	Require-ments	Results	Require-ments	Results	Require-ments	Results	Require-ments	Results
Partial Discharge Extinction voltage @ 3 pC	4.5 kV	Passed	7.5 kV	Passed	13 kV	Passed	21.5 kV	Passed	30 kV	Passed
Cycling Aging 30 days, 130°C cond. temp Power Frequency voltage Withstand	9 kV	Passed	15 kV	Passed	26 kV	Passed	43 kV	Passed	60 kV	Passed
Partial Discharge Extinction Voltage @ 3 pC	4.5 kV	Passed	7.5 kV	Passed	13 kV	Passed	21.5 kV	Passed	30 kV	Passed
Lightning Impulse Voltage Withstand (BIL)	75 kV	Passed	95 kV	Passed	110 kV	Passed	150 kV	Passed	200 kV	Passed

Critical performance characteristics for 3M™ Cold Shrink QT-III Silicone Rubber Three-Conductor Cable Termination Kit, 7600-3W Series, includes resistance to damage from impulse flashover and from tracking during long-term exposure to severe environmental conditions.

Impulse Flashover

3M Test Method – Maximum Impulse

The purpose of this test method is to establish both the maximum impulse withstand level and the 100% impulse flashover level (on both positive and negative polarity) for high voltage terminations.

A 1.2 x 50 microsecond voltage wave is applied to the termination lugs as per IEEE Standard 48. Additional test standard references and procedures include those of IEEE Standard 4, IEEE Standard Test Procedures and Requirements for Alternating Current Cable Terminations 2.5 kV Through 765 kV and IEEE Standard 82, IEEE Standard Test Procedure for Impulse Voltage Tests on Insulated Conductors.

To establish the insulating performance suitability of 3M™ Cold Shrink QT-III Silicone Rubber Three-Conductor Cable Termination Kits, 7600-3W Series, phase re-jacketing sleeve components, 15 kV Class termination samples were built in two configurations: those with an exposed grounding ring at the termination base (control) and those without. All specimens exceeded the IEEE Standard 48 BIL requirement by 50% during this test. Increasing the impulse voltage to termination flashover level resulted in no damage to the termination phase insulating re-jacketing components.

Alternating Current (AC) Flashover Test

3M Test Method – AC Step Test

The purpose of this test method is to establish the highest AC voltage that a termination can withstand, and is used to determine if a termination will meet the minimum performance requirements outlined in IEEE Standard 48.

Terminations are exposed to a stepped AC voltage rise to failure or flashover. The voltage magnitude required to arc across the termination surface in air (from terminal lug to ground point) is determined.

Individual 3/C 15 kV Class Termination phases that were tested with and without exposed termination body grounding rings achieved test levels associated with 25 kV Class products during this evaluation. Termination phase re-jacketing sleeves were not damaged at flashover level.

Contamination Chamber

3M Test Methods TM-402/ASTM 2132 Contaminant

Terminations are coated with a slurry consisting of flint, clay, paper pulp, salt and water and allowed to dry. They are then placed in the test chamber where they are energized at 1.5 times rated voltage and exposed to a continuous water mist spray from a rotating nozzle. Individual terminations are re-coated every 300 hours.

Because of the salt content and other solid particulate, this procedure is thought to be representative of industrial-seacoast location exposures.

To determine the tracking performance capability of 7600-3W Series termination re-jacketing sleeves, 15 kV Class termination specimens were built with grounding rings located over the re-jacketing sleeves; eight and sixteen inches below the termination bodies respectively.

Specimens exceeded 2500 hours under these test conditions. This duration equals, or exceeds, the typical performance of 1/C conventionally grounded terminations. There were no signs of re-jacketing sleeve material degradation, or tracking, at the conclusion of the test.

Dielectric Test Performance

7600-3W Series termination kits are designed to conform to applicable international standards (IEEE-48, CENELEC HD 629.1 S1 and VDE 0278). From extensive performance testing in single phase configuration, it has been established that these terminations meet, or exceed, the test requirements defined in these standards.

QT-III terminations pass pressure leak tests as described in Standard IEEE-48 in the single conductor configuration and all 7600-3W Series termination components have demonstrated the ability to provide a good moisture seal. Termination top and bottom seals are tested by applying 7psi (0,05MPa) to the cable conductor strands with the termination submerged in water. Both seals withstand this internal air pressure for 6 hours without leaking.

Product Specifications

The 3M™ Cold Shrink QT-III Silicone Rubber Three –Conductor Cable Termination Kit, 7600-3W Series cable terminations design must conform to internationally recognized termination performance standards; specifically to VDE 0278, CENELEC HD 629.1 S1 and the Class 1 designation of IEEE-48. 7600-3W Terminations shall be made from dark gray track-resistant silicone rubber. Each component (breakout boot, phase insulators and termination body) shall be supplied in the form of a one-piece assembly for hand application. Installation shall require no flame, heat source or specialized tools. The finished termination shall conform to applicable cable industry bend radius standards. The termination kit shall include materials required (except lug) and shall accommodate shielded cables. The Class 1 termination kits shall be used with listed copper or aluminum compression lugs.

Engineering/ Architectural Specifications

Terminate all three-conductor 3 kV through 35 kV Class shielded power cables in accordance with the instructions provided in 7600-3W Series Kit. The termination kits shall be used in conjunction with 3M™ Scotchlok™, Copper Compression Lugs, 30000 and 31000 Series, 3M™ Scotchlok™ Copper/Aluminum Compression Lugs, 40000 Series or 3M™ Stem Connector SC Series.

Shelf Life & Storage

As provided, in the expanded state, the 3M™ Cold Shrink QT-III Silicone Rubber Termination Kits 7600-3W Series have a 3-year shelf life from date of manufacture when stored in a humidity controlled storage (50°F/10°C to 80°F/27°C and <75% relative humidity).

Maintenance

It is good practice to incorporate a general inspection/cleaning of 3M™ Cold Shrink QT-III Silicone Rubber terminations during normal scheduled shutdowns or maintenance inspections. Once the area has been de-energized, the terminations can be inspected, and if need be, cleaned. Some recommendations for surface cleaning 3M™ Cold Shrink QT-III Silicone Rubber terminations are as follows;

- Use a can of compressed ‘air’ in order to blast off dust and miscellaneous airborne contaminants on the surface of the termination body. If needed, wipe the surface of the termination with a cable cleaning solvent, such as 3M™ CC Series Cable Cleaning Solvent (CC-2 Cable Cleaning Preparation Kit or CC-3 Cable Cleaning Pad Kits), and allow it to dry before re-energizing the installation.
- Mix a mild soap and water solution (deionized water is recommended, if available) in a hand sprayer, or spray bottle, and spray down the surface of the termination. Wipe dry, or allow to air dry, before re-energizing.
- If tan discoloration between skirts is observed on the surface of the termination, wipe with a cable cleaning solvent. The discoloration itself does not pose any detrimental effect to the installation, and may not disappear entirely, but it will lighten up to some degree. This discoloration a typical result of the outgassing effect of EPR cable and does not interfere with the performance of the termination in any capacity.

  Do not abrade the surface of the termination in any way. Do not use high pressure cleaning (this can tear, or split, the termination), high pressure water with corn cobs, sandpaper or other abrasive products. This will damage the termination surface and reduce tracking and arcing resistance.

Availability	Please contact your local distributor; available from 3M.com/electrical [Where to Buy] or call 1.800.245.3573

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Note: The core material being removed from the Termination and other Cold Shrink items are mixed polymers and can be recycled with 7 waste.

3M

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