



Science.
Applied to Life.™

Electrical MRO Solutions

Reliable electrical solutions that keep your power on.

- Connecting ● Insulating
- Sealing ● Preventing ● Protecting

Build, repair and maintain your electrical systems with confidence

3M produces over 70,000 existing products many of which are designed specifically for the electrical, electronics and telecommunications industries. We invest in over \$1 Billion a year on R & D and employ over 7,000 research engineers dedicated to meeting your needs. By working closely with our customers we are able to apply our vast experience in cutting edge technologies where it counts the most: optimizing your product or system capabilities. Working with 3M you're on the receiving end of the unrivalled support of a global company - with a strong local presence. Moreover, all our products are independently tested to the major industry standards.

3M Electrical MRO Products

- Vinyl Electrical Tapes
- Rubber, Mastic & Heavy Duty Tapes
- Corrosion Protection Tapes
- Speciality Tapes
- Wire Connectors
- Wire Identification Products
- Wire Pulling Lubricants
- Aerosols (Sprays) & Coatings
- Cable Jacket Repair Products
- Splice kits - for Cables used in Mining
- Contact resistance & General Repair Kits
- Comfort Grip and Cut resistant Gloves
- Animal Guard and Conductor covers
- Cable Ties

Wire Connectors

**SAVE TIME, REDUCE INVENTORY
YOU CAN NEVER BE TOO WELL-CONNECTED ON THE JOB**

The best connectors do more than fit the application. They also fit your hand. They feel good to use. At 3M, we design connectors that are as comfortable and easy to use as they are dependable. Our complete line provides a wide range of connector choices. Simply choose the connector that fits your personal preference as well as the application. We give you plenty of choices.

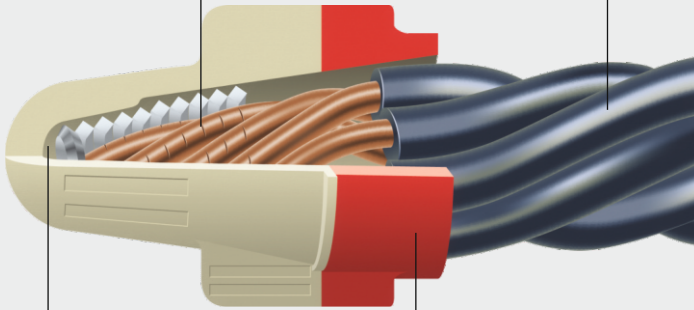


Commercial
Construction
Branch circuit wiring
Motors and relays
Fire alarm systems

Industrial
Branch circuit wiring
Large motors and compressors

A better bite for a better connection
3M™ Performance Plus Wire Connectors now have a better bite. Wires feed better into the connector improving the security of the connection and increasing the level of pull out.

A broad wire range reduces inventory
The versatility of 3M "plus" Wire Connectors saves time on the job and reduces inventory. O/B+ replaces orange, blue, gray and yellow connectors; R/Y+ and TR+ replace red, tan and yellow connectors; and the B/G+ replaces blue and gray connectors.



New design allows easier installation
We have modified the internal design of the 3M Performance Plus Wire Connectors. Installation is smooth, fast and easy on the hands.

Flexible skirt provides safety
The flexible skirts on the 3M Performance Plus Wire Connectors make your customer's workplace a safer environment. The flexible skirt provides protection against potential shock situations.

Connectors Applications: The Possibilities Are Endless
Here are just a few of the general categories and applications for the 3M family of wire connectors

Recreational Equipment
Motor homes
Trailer hitches

Automotive
After market equipment
Security systems

Residential Construction
Branch circuit wiring
Security systems
Ballast lighting
Fans and fixtures

Maintenance
Replacement of motors and compressors
Refurbishment
Ballast lighting

OEM
Appliances
Lighting fixtures
Lamps
Vacuums
Air conditioning

Underground Splicing
Landscape lighting
Irrigation
Golf course maintenance

Manufacturing
OEM equipment
Equipment maintenance

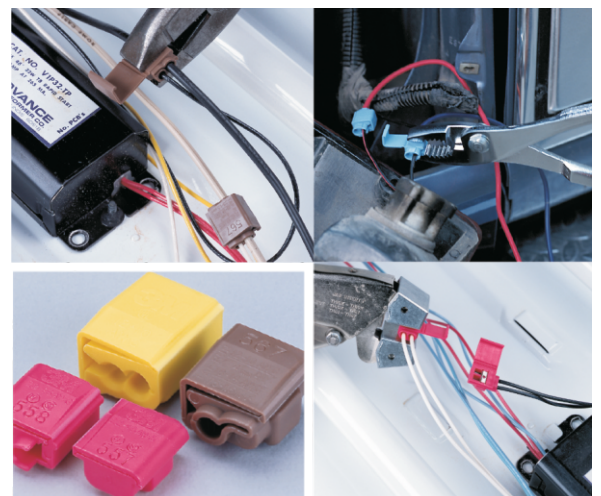
Insulation Displacement Connectors

Proven splicing technology designed for your specific applications.

The latest series of IDCs has kept all that was good about the original connector - the design, the shape, the element technology and the color coding. Models also incorporate a full wire range capability, an increased port size that accommodates up to 0.190" (4.82mm) insulation sizes, double "U" elements and a solvent-resistant plastic construction. Choose from 38 different 3M IDCs to meet a variety of uses, including fluorescent ballast installation and replacement, fixture and appliance wiring, automotive and marine wiring and control circuit wiring. Whatever the application, 3M has the connector to make your job easier.






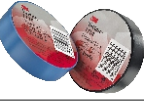







Insulation Displacement Connectors



Features	Benefits
<ul style="list-style-type: none"> • Squeeze shut connector • Crimp with slip-joint pliers • Unique "U" contact, fully insulated • No need to cut run wire • No need to twist on 	<ul style="list-style-type: none"> • No stripping or twisting • No special tools required • Provides dependable connections • Faster installation, minimum clean up • Easy on hands












Application: Electrically connects two wire ends and insulates the connection • Designed for control circuit wiring, fixture wiring, appliance wiring, signal and PA systems, automotive/boat/RV wiring • Flame retardant • Used for pigtail splicing, tap splicing and tap & parallel splicing • Rated up to 600 volts.

Electrical MRO Tapes

PRODUCT NAME	PRODUCT DESCRIPTION	TAPE THICKNESS	SIZES AVAILABLE	TEMPERATURE RATINGS	TYPICAL APPLICATIONS
VINYL ELECTRICAL TAPES					
Scotch® Super33+ Professional use Premium Vinyl Electrical Tape 	Highly conformable, super stretchy in all weather applications; resist UV rays, abrasion, corrosion, alkalis and acids. Flame retardant	7 mil	¾" x 20' ¾" x 44' ¾" x 36 yd. ¾" x 66' 1" x 36 yd. 1½" x 36 yd.	220°F 105°C	Primary insulation for splices up to 600V. Protective jacketing
Scotch 35 Professional use Vinyl Electrical Tape for Color Coding 	Nine fade resistant colors, super stretchy & conformable, excellent insulating properties. Resist UV rays, abrasion, corrosion, alkalis and acid	7 mil	½" x 20' ¾" x 66'	220°F 105°C	Phase identification and marking. Harnessing
Scotch Super 88 Professional use Premium Vinyl Electrical Tape 	All weather; heavy duty, professional use, abrasion resistant, fast build up	8.5 mil	¾" x 36 yd. 1" x 36 yd. 1½" x 36 yd. 2" x 36 yd.	220°F 105°C	Primary insulation for splice up to 600V. Protective jacketing
Scotch 22 Heavy Duty Vinyl Electrical Tape 	Thicker for increased mechanical strength and abrasion resistance. Electrical insulating	10 mil	½" x 36 yd. ¾" x 36 yd. 1" x 36 yd. 1½" x 36 yd. 2" x 36 yd.	176°F 80°C	Bus bar insulation. Cable jacket repair
Temflex 1500 Vinyl Electrical Tape 	Resistant to abrasion, moisture, alkalis, acid and varying wether conditions	5 mil	¾" x 30' ½" x 30'	176°F 80°C	General use. Vinyl insulation tape.
Tartan 1710 Vinyl Electrical Tape 	Excellent resistant to abrasion, moisture, alkalis, acid and varying wether conditions, flame retardant	7 mil	¾" x 30' ¾" x 60'	176°F 80°C	General use. Vinyl insulation tape.
INSULATING & SPLICING TAPES					
Scotch® 13 Semiconducting Tape 	Rubber tape, semi conductive. Compatible with cable semi-conducting jackets	30 mil	¾" x 15'	Continuous: 194°F / 90°C Short-term: 266°F / 130°C	Electrically roundhigh voltage connections. Provide cable shield continuation
Scotch 23 Rubber Tape 	High and low voltage insulating, self-fusing rubber tape	30 mil	¾" x 30' 1" x 20' 1" x 30' 1½" x 30' 2" x 30'	Continuous: 194°F / 90°C Short-term: 266°F / 130°C	Primary electrical insulation for splicing all solid dielectric cables through 69kV
Scotch 24 Shielding Tape 	All metal open weave shielding braid, conformable, temperature stable	-	1" x 15' 1" x 100'	-	Continue electrostatic shielding across splice
Scotch 70 Self-Fusing Silicone Rubber Tape 	Arc and track resistant; self fusing, long lasting silicon rubber	12 mil	1" x 30'	356°F 180°C	Protective overwrap for terminating high voltage cables
Scotch 77 Electric Arc Proofing Tape 	Protects cable until limiting devices can interrupt faulted current	30 mil	1½" x 20' 3" x 20'	Arc Protection	Use of high-energy cables that are within 18" of other high energy cables
Scotch 130C Linerless Rubber Splicing Tape 	High voltage insulating; Thermally conductive; Self-bonding	30 mil	¾" x 30' 1" x 30' 2" x 30'	Continuous: 194°F / 90°C Short-term: 266°F / 130°C	Primary electrical insulation for splicing all solid dielectric cables through 69kV
Scotch Heavy Duty Mining Tape 31 	Has a tough, abrasion-resistant backing for jacket repair on mining cables. The tape is flexible, and the self-healing property of the mastic helps keep out moisture.	60 mil	2" x 6' 2" x 8.5' 2" x 10'	220°F 105°C	Repair of mining cables and outer jacket of mining cable splice kits. Repair and splicing of mine conduit.

PRODUCT NAME	PRODUCT DESCRIPTION	TAPE THICKNESS	SIZES AVAILABLE	TEMPERATURE RATINGS	TYPICAL APPLICATIONS
CORROSION PROTECTION TAPES					
Scotch™ 50 and 51 All-weather Corrosion Protection Tapes  *Must be used alog with Scotchrap Pipe Primer	All-weather performance and corrosion resistance. Resistant to impact and abrasions	50 is 10 mil 51 is 20 mil	1" x 100' 2" x 100' 3" x 100' 4" x 100' 5" x 100'	176°F 80°C	Corrosion protection on pipes, conduits and fittings, etc.
Scotchrap Pipe Primer 	Quick-dry, non-sag rubber base primer that prepares metal surfaces for tape application	-	1 gallon can	-	For use with Scotchrap 50 and 51 tapes and Temflex 1100 Tape

SPECIAL USE TAPES					
Scotch Transparent Duct Tape 2120 	General purpose easy tear transparent duct tape. Water & UV resistant	9 mil	1.88" x 20yd	80°C	Bundling, holding, sealing, reinforcing, Indoor / Outdoor repairs
Scotch 300 Series Barricade Tape*  *Buried Electrical Line Tape (redm 4 mil) available in both series	Durable polyethylene plastic, attractive price, bold 2" letters, long roll length, will not tear easily, attracts attention	3 mil	3" x 300' 3" x 1000'	NA	Barricade applicable in both large and small areas
Temflex Friction Tape 1755 	High-grade, black friction tape designed to provide mechanical protection; has high break strength and low stretch	13 mil	¾" x 60' 1.5" x 82.5' 1.5" x 82.5' 2" x 60'	176°F 80°C	Abrasion and cut-through protection on wire and cable splices; bundling, binding and spot holding on wire harnesses; sharp edges protection
3M Armorcast Structural Material 	It's a flexible fiberglass knit fabric strip. Once wetted with water, the fiber sticks to itself. Resists moisture, acids, alkalis, ozone, gasoline & high temperatures.	NA	4" x 5' 4" x 10'	NA	Provides structural strength. For strengthening cables, splices and auxiliary seals. Suitable for aerial, buried and manhole applications
3M Hi-Temp Tape 	This tape can withstand continuous temperature of 600°C and can withstand thermal shocks of 1000 to 1200°C for few minutes.	30 mil	2" x 10m 4" x 10m 6" x 10m	600°C	To fire and arc proof high-energy power cables and hoses; To provide additional thermal insulation to reduce possibilities of fire propagation.

SEALING AND INSULATING TAPES					
Scotch 2000 and 2210 Vinyl Mastic / Scotch 06147 and 06149 Moisture Sealant 	Excellent moisture sealant; tough vinyl backing; electrical insulating	2200 is 125 mil 2200 is 90 mil 6147 is 45 mil 6149 is 45 mil	4" x 10' roll 2 ½" x 10' 2 ½" x 2 ½' Also available in pads	176°F 80°C	Insulate moisture-seal and pad connections up to 600V
Scotch 2228 Rubber Mastic Tape 	Self-fusing rubber based compound bonded to a moisture sealing mastic; all weather	65 mil	1" x 10' 2" x 3' 2" x 10'	194°F / 90°C emergency/ overload of 266°F / 130°C	Insulate, pad and bus bar and splice connections
Scotch-Seal™ 2229 Mastic Tape Compound 	Conformable and durable mastic. Excellent moisture and environmental seal	125 mil	3 ¾" x 10' 1" x 10' Also available in pads	176°F 80°C	Sealing high voltage cables and accessories
Scotch™ Electrical Insulation Putty 	Black, self-fusing, insulating putty in tape form	125 mil	1 ½" x 60"	176°F 80°C	To roundout HV connections; Smooth bus bar irregularities; Insulate connections upto 600V

Aerosols and Coatings

Whether insulating, cleaning, preventing or protecting, 3M Sprays (Aerosols) offer the right product for the right application. 3M products are user-friendly and formulated for top performance.

All of these Scotch™ Sprays are complying with all European legal requirements including safety instructions printed on all spray cans. Alternatively this information on material and safety data sheets can be obtained from your local distributor or directly from 3M, at all times.

Protective Sprays:

Anti-Corrosion Spray

1600 Spray (400ml)

Scotch™ 1600 provides highly effective anti-corrosion protection. It's rubber-asphalt base forms a dense, abrasion resistant covering, that protects against moisture, spray salt water, all corrosive media and is resistant to the effects of physical impacts.



3M 1600

Zinc Spray

16-501 Zinc Spray (400 ml)

3M™ Zinc Spray 16-501 is a dispersion of fine powdered 97% pure zinc in petroleum distillates. This spray is formulated to inhibit rust and corrosion of metal surfaces. It is suitable for use in transmission and distribution equipment including towers, transformers, light standards & other metal and galvanized surfaces. It is halogen-free and leaves a barriercoating similar to hot-dipped galvanized surfaces. With its instant drying capability, this non-corrosive spray preserves base metal, even when scratched or chafed. RoHS 2011/65/EU Compliant.



3M 16-501

Silicone Spray

1609 Spray (400ml)

Scotch™ 1609 is a general use product for preventative maintenance, protection and lubrication. It lubricates moving parts, without becoming resinous & can be used over a wide temperature range (- 32 °C to + 177 °C) thereby, providing long lasting protection against moisture and corrosion. Scotch™1609 is neutral towards paints, plastic, rubber, foamed materials, wood and fabrics.

Insulating Sprays:

Clear & Colored Insulating Sprays (400 ml)

1601-Clear; 1602-Red; 1603-Black; 1604-Grey

These sprays are insulating and covering paint based on alkyd resin. They “hardens” into a flexible and resistant film, with excellent adhesion to most common surfaces such as metal, glass, plastic, wood, etc. These are resistant to UV-rays, acids, oil, alkalis and are moisture and weatherproof and are characterized by its high dielectric strength.



3M 1602

Cleaning Sprays:

Special Contact Cleaner

1625 Spray (400 ml)

Scotch™ 1625 loosens dirt, light oxide layers and impurities of every kind in an effective gentle manner. Scotch™ 1625 is electrically neutral and totally residue-free, making it ideal for use in almost any environment as a spray cleaner.

Degreasing and Cleaning Spray

1626 Spray (400 ml)

Scotch™ 1626 is an ideal dissolving cleaner for greases, oils, lubricants, resins and tar. It is residue free, non-corroding and washes away asbestos. Scotch™ 1626 may corrode plastics.



3M 1626

Rust Remover

1633 Spray (400ml)

Scotch™ 1633 is a multi-purpose spray. It loosens rust, protects against moisture and renewed oxidation, can be used ideally as a lubricant, easily releases tightly sealed bolts, and has a high penetration capacity.

Multi Five

1640 Spray (400ml)

Scotch 1640 Multi Five is a general purpose spray. Due to unique additives, Scotch 1640 Multi Five provides excellent capillarity activities, lubricating, corrosion and cleaning properties, adhesion to metals and an extreme low surface tension. It displaces water immediately which avoids tracking currents. The high dielectric strength allows to use Scotch 1640 for sensitive switch connections. Multi Five spray is furthermore silicone and graphite free and neutral



3M 1640

Preventive Maintenance Sprays:

Dehumidifier

1605 Spray (400ml)

Scotch™ 1605 penetrates and displaces moisture. It also defrosts frozen sections. Scotch™ 1605 then forms a thin protective film & thus prevents the renewed ingress of moisture. It is completely neutral toward paints, plastics, rubber and fabrics. It is effective over a wide temperature range from -74°C to +175°C



3M 1605

Scotchkote™ Electrical Coating FD (440ml)

Tough jobs require tough materials. For applications requiring resistance to oil and weather, choose 3M™ Scotchkote™ Electrical Coating every time. RoHS Compliant.

- Designed for use as an outer seal on a vinyl tape splice
- Fast-drying
- Suitable for use for direct burial & moisture protection
- Helps protect from moisture and corrosion



3M Electrical Coating FD

3M Conductor Insulation and Animal Protection products

525W Insulation & Water Resistant Self-Curing Protection Pad

525W is an easily applied and ambient temperature curable pad for Water resistance and insulation of Overhead bare conductors, Bare electrical joints, Clamps of insulated cables, Electrical Bus bars and End terminals of transformers.

525W after curing delivers good insulation, water resistance, outstanding flexibility, excellent UV resistance & other multiple performances for protection.

525W is supplied in boxes containing 10 separate vacuum bags. Pad dimension approximately in each vacuum bag 10 pieces × 1meter (L) × 80mm (W) × 1.8mm (Thickness). Available in other sizes also.



3M 525W

CCI (Conductor Cover Insulation) - Animal Protection Products

CCI Series Animal Protection Products are extruded silicone rubber products that are designed for field installation over bare conductors. These covers provide a layer of electrical insulation for phase-to-phase and phase-to-ground protection from bird and animal contact.

The silicone rubber material provides electrical Insulation, UV resistance and tracking resistance. The covers are made with a full-length longitudinal bias cut to provide an increased creepage distance between the conductor and the outer surface of the cover and to allow for easy slip-on installation.

CCI series is available in different internal diameters from 9mm to 56mm with thickness ranging from 3.2mm to 5.6mm.



3M CCI



3M Electrical Product Selection Guide

Low Voltage Wire and Cable Maintenance

		Faster Installation	Outdoor / UV Resistance	Lower Temp. <0°C	High Temp. > 105°C	Moisture / Humidity	Chemical / Corrosion Protection	Applying in Small or tight area	Irregular shapes or sharp edges	No access to cable end	Mechanical protection	Customer Needs
Connect & Insulate	Spring Connector	●		●				●			●	
	IDC Connector	●	●	●		●		●			●	
	Direct Bury Kits	●	●	●		●					●	
	Butt Connector	●		●				●			●	
Insulate & Protect	Vinyl Tape		●	●					●	●	●	
	Rubber Tape		●		●	●			●	●		
	Mastic Tape / Pads		●	●		●			●	●		
	Speciality Tape		S, C, D		S, G, V	C, S, D	C, S		●	●	C, G, V, D	
	Cold Shrink		●	●		●	●					
	Heat Shrink		●	●	●	●	●			●	●	
	Resins		●	●		●	●		●	●	●	

NOTE: Products vary within each category. Not all products will be suitable for all the application requirements listed.

* Speciality Tapes coding: S=silicone, C=corrosion protection, G=glass cloth, V=varnished cambric, D=duct tape

To explore the many ways we can serve you or to arrange for sales assistance

Contact:

3M Electrical Markets Division

Email: 3mindiaelectrical@mmm.com

Important Notice

Before using these products, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use.

Warranty; Limited Remedy; Limited Liability.

This product will be free from defects in material and manufacture at the time of purchase. **3M MAKES NO OTHER WARRANTIES**



Electrical Markets Division,

3M Electro and Communication India Pvt. Ltd.

Concorde Block, UB City, 24, Vittal Mallya Road, Bangalore - 560 001.

Ph: 080 - 2223 1414. Fax: 080 - 22232373

INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.**

Website :

www.3m.com/electrical

www.3m.com/in

