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**Electrical Solutions
you can rely on.**



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3M Electrical Solutions

“Every company seeks the keys to innovation, but few find them. Over the decades, 3M learned how to be innovative and today the company uses that skill to great competitive advantage.”

Jerry I. Porras, Co-author, Built to Last



You're in a demanding industry. To be successful, you need a wide range of reliable products designed to effectively manage your daily processes. You need a supplier with a solid understanding of your industry and the technology that drives it. Quite simply, you need 3M. The Electrical Markets Division designs and manufactures a comprehensive line of products that can address your diverse applications. Widely recognised for our innovation, quality, reliability and global corporate strength, 3M has the products and services you need and the name you trust.

In your business, power, technology and reliability are essential. 3M delivers that and more. We have the power of a diversified, global manufacturer; a reputation for technical excellence and innovation; and employees committed to delivering quality products and services to you, our valued customer.

We strive to be the chosen supplier, with innovative and effective products and a commitment to high levels of service and support to your business.

Our goal is to satisfy your needs through the provision of exceptional products, expertise, and quality and service excellence.

Our global technology, manufacturing and knowledge network allows us to provide superior design, expertise, widespread support and a continuously evolving range of electrical solutions. Although we design and manufacture a comprehensive line of product that can address your diverse applications, we also recognise that many projects and applications require a customized solution to meet your specific needs. 3M offers customised solutions in a number of areas to suit your application.

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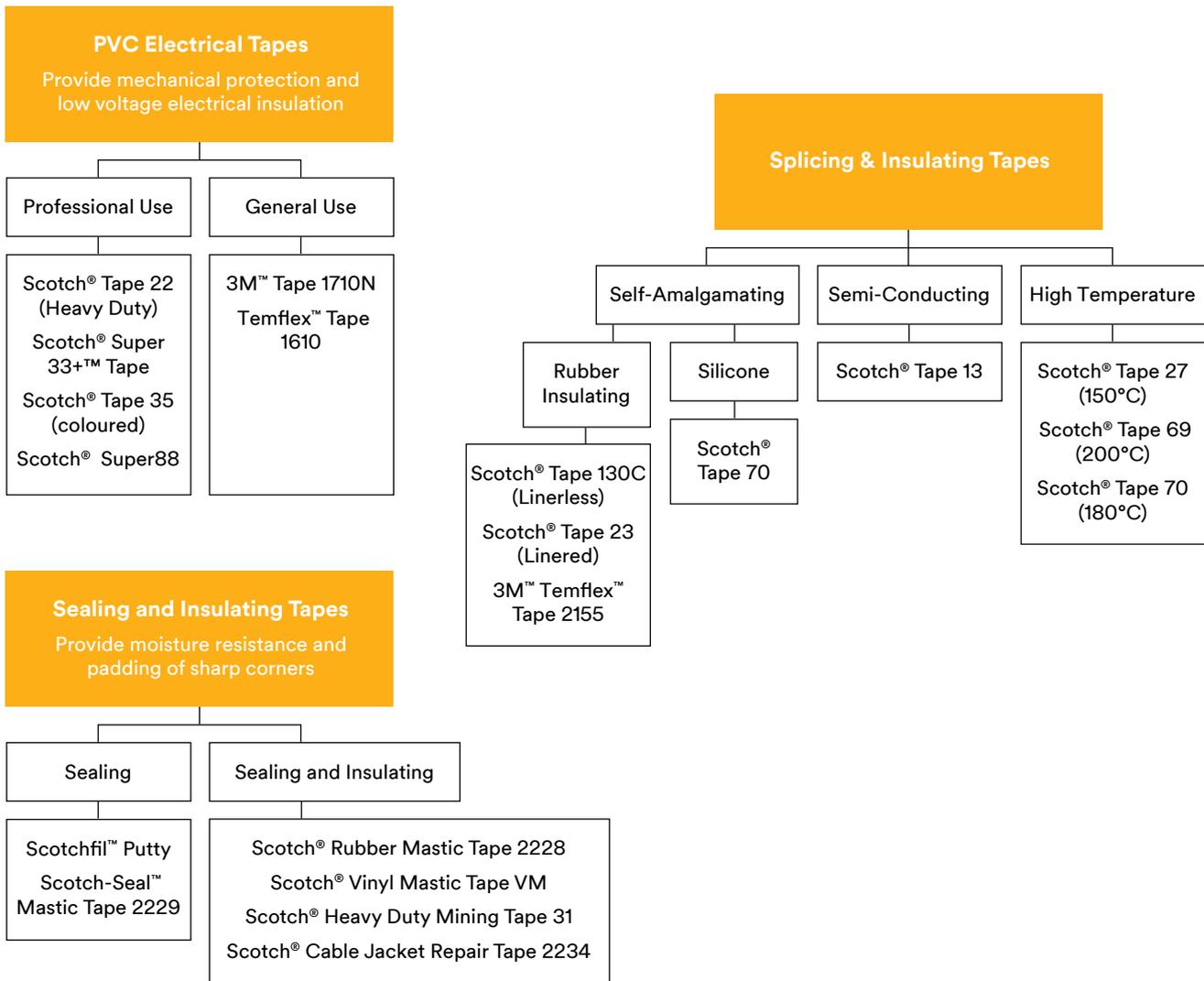


3M™ Electrical Tapes

3M has been developing and manufacturing high performance, easy handling electrical tapes since the 1940s. The 3M Electrical Tapes range includes tapes for low and medium voltage insulating, colour coding, moisture sealing, padding, shaping, protective jacketing, bundling, and harnessing.

Technical Applications

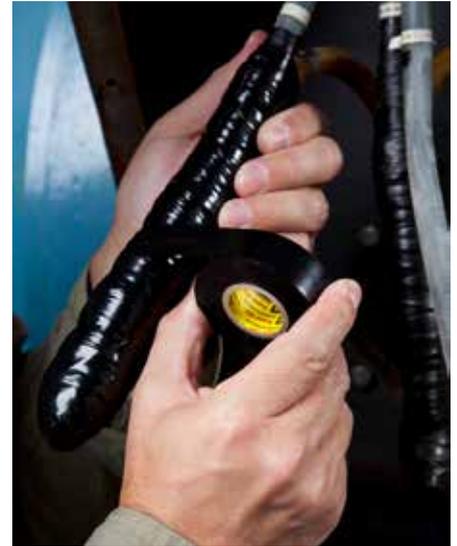
- > Semi-conducting tape to reconstruct a medium voltage cable
- > Track resistant tapes for terminations
- > Fire retardant electric arc proofing tapes to protect cables from arcs and fires from nearby cable failures



Taping Tips

To ensure the safest, most reliable use of PVC Electrical Tapes, always:

- > Apply tape with enough stretch to conform to the objects you're wrapping. Be sure to let the last 50 mm relax before tabbing it down to prevent unwinding (sometimes called "flagging").
- > Wrap an irregular mechanical connector, such as a split bolt, with rubber or mastic tape to pad sharp edges, before overwrapping with vinyl electrical tape.
- > Wrap tapered shapes "uphill" – that is, from the smallest to the largest point. This way you always secure the previous layer.
- > Always use scissors or a knife to cut tape. If you must tear it by hand, then keep fingers close together when tearing tape. The farther apart they are, the more the tape will stretch before it tears.
- > Use the right tape for the right conditions. Vinyl tapes are rated for cold weather application in two classes: 0°C and -18°C. Tapes formulated for high temperature environments are typically rated 80°C or 105°C. Only professional grade tapes should be used on cables rated for less than 0°C and higher than 80°C.
- > Wrap weather exposed vertical cables from the bottom up so water will run down without stopping on the tape edges



Wrapping Tips

Type of Tape		Number of Layers/Application Instructions
Vinyl Electrical Tapes	Jacketing and Mechanical Protection	Always use a minimum of two half-lapped layers. The last layer should be wrapped in a more relaxed manner – let the last wrap relax to prevent the layer from flagging.
Rubber Tapes	Electrical Insulation, Mechanical Padding, Water Sealing and Shaping	Wrap tape tightly to achieve the watertight seal. Rubber tapes are typically overwrapped with vinyl tape.
High Voltage Tapes	Insulating and Semi-conductive Layers	Apply outside of roll to the cable, in highly stretched half-lapped layers. Never use a semi-conductive tape as an insulation.
Mastic Compounds	Insulating, Mechanical Padding, Moisture Sealing and Shaping	Overwrapping with vinyl prevents mastic flow and helps to create a watertight seal. Do not apply excessive amount of mastic to prevent oozing.

Scotch® Super 33+™ Vinyl Electrical Tape

Scotch® Super 33+™ Vinyl Electrical Tape is a premium grade, 0.18 mm thick, flame retardant, all weather vinyl insulating tape. It is designed to perform continuously between a temperature range of -18 to 105°C. It has excellent resistance to abrasion, moisture, alkalis, acids, corrosion and varying weather conditions (including ultraviolet exposure). The combination of elastic backing and aggressive adhesive provides moisture tight electrical and mechanical protection with minimum bulk. Scotch® Super 33+™ Vinyl Electrical Tape is an Underwriters' Laboratories Listed and Canadian Standards Association Certified "Insulating Tape." Available in custom sizes in addition to standard sizes below.

Agency Approvals: 

Applications

- > Primary insulation for splices up to 600 V and 105°C
- > Protective jacketing in indoor and outdoor environments



Product	3M Order Code	Colour	Width	Length	Thickness	Dielectric Strength	Breaking Strength	Operating Temperature
Super 33+ 19 mm x 20 m	80611207012	Black	19 mm	20 m	0.18 mm	45 kV/mm	2.6 kN/m	-18 to 105°C
Super 33+ 19 mm x 33 m	80610138929	Black	19 mm	33 m	0.18 mm	45 kV/mm	2.6 kN/m	-18 to 105°C
Super 33+ 25 mm x 33 m	80014001020	Black	25 mm	33 m	0.18 mm	45 kV/mm	2.6 kN/m	-18 to 105°C

Scotch® Vinyl Electrical Tape Super 88

Scotch® Vinyl Electrical Tape Super 88 is a premium grade vinyl insulating tape that provides great mechanical and abrasion resistance. The combination of elastic backing and aggressive adhesive provides moisture-tight electrical and mechanical protection with minimum bulk in extreme temperatures. It offers excellent resistance to abrasion, moisture, copper corrosion, alkalis and acids. Offers excellent all-weather performance in cold to -18°C or hot to 105°C. It is excellent in cold weather performance especially because it is resistance to abrasion, moisture, alkalis, acids, corrosion and varying weather conditions. Super 88 is compatible with solid dielectric cable insulations, and rubber and synthetic splicing compounds. As well as inhibits corrosion of electrical conductors, flame retardant, and is professional grade.

Agency Approvals: 

Applications

- > Primary electrical insulation for all wire and cable splices rated up to 600 volts and 105°C (220°F)
- > Protective jacketing for high voltage cable splices and repairs
- > Harnessing of wires and cables



Product	3M Order Code	Width	Length	Thickness	Dielectric Strength	Breaking Strength	Operating Temperature
Super 88 19 mm x 20 m	80610833867	19 mm	20 m	0.22 mm	45 kV/mm	3.5 kN/m	-18 to 105°C
Super 88 19 mm x 33 m	80610833875	19 mm	33 m	0.22 mm	45 kV/mm	3.5 kN/m	-18 to 105°C
Super 88 25 mm x 33 m	80610138978	25 mm	33 m	0.22 mm	45 kV/mm	3.5 kN/m	-18 to 105°C

Scotch® Vinyl Colour Coding Electrical Tape 35

Scotch® Vinyl Electrical Tape 35 is a 0.18 mm thick PVC colour-coding, flame retardant tape. Outstanding electrical and mechanical properties make this tape excellent for use in phase identification, colour coding of motor leads and piping systems, and for marking safety areas. Scotch® Tape 35 operates over a wide range of temperatures between 0 to 105°C. This tape is available in a range of fade-resistant colours.

Agency Approvals: 

Applications

- > Phase identification and marking
- > Harnessing
- > Insulating splices up to 600 V



Product	3M Order Code	Colour	Width	Length	Thickness	Dielectric Strength	Breaking Strength	Operating Temperature
35 Blue	80610833925	Blue	19 mm	20 m	0.18 mm	49 kV/mm	3 kN/m	0 to 105°C
35 Green	80610834048	Green	19 mm	20 m	0.18 mm	49 kV/mm	3 kN/m	0 to 105°C
35 Red	80610833909	Red	19 mm	20 m	0.18 mm	49 kV/mm	3 kN/m	0 to 105°C
35 White	80610833982	White	19 mm	20 m	0.18 mm	49 kV/mm	3 kN/m	0 to 105°C
35 Yellow	80610833966	Yellow	19 mm	20 m	0.18 mm	49 kV/mm	3 kN/m	0 to 105°C
35 Orange	80610834022	Orange	19 mm	20 m	0.18 mm	49 kV/mm	3 kN/m	0 to 105°C
35 Brown	80610833941	Brown	19 mm	20 m	0.18 mm	49 kV/mm	3 kN/m	0 to 105°C
35 Violet	80610834006	Violet	19 mm	20 m	0.18 mm	49 kV/mm	3 kN/m	0 to 105°C
35 Grey	80610834055	Grey	19 mm	20 m	0.18 mm	49 kV/mm	3 kN/m	0 to 105°C
35 Pink	80611616634	Pink	19 mm	20 m	0.18 mm	49 kV/mm	3.0 kN/m	0 to 105°C

Scotch® Heavy Duty Vinyl Electrical Tape 22

Scotch® Heavy Duty Vinyl Electrical Tape 22 is one of 3M's thickest (0.25 mm) premium vinyl electrical tapes. It is designed for insulation applications that require greater mechanical strength and abrasion resistance. Scotch® Tape 22 provides moisture-resistant electrical and mechanical protection with fewer wraps than thinner tapes.

Agency Approvals: 

Applications

- > Bus bar insulation
- > Cable jacket repair



Product	3M Order Code	Colour	Width	Length	Thickness	Dielectric Strength	Breaking Strength	Operating Temperature
22 – 19 mm x 33 m	80012017044	Black	19 mm	33 m	0.25 mm	47.2 kV/mm	3.5 kN/m	-10 to 80°C
22 – 25 mm x 33 m	80012017051	Black	25 mm	33 m	0.25 mm	47.2 kV/mm	3.5 kN/m	-10 to 80°C
22 – 38 mm x 33 m	80012017069	Black	38 mm	33 m	0.25 mm	47.2 kV/mm	3.5 kN/m	-10 to 80°C
22 – 50 mm x 33 m	80012017077	Black	50 mm	33 m	0.25 mm	47.2 kV/mm	3.5 kN/m	-10 to 80°C

3M™ PVC Electrical Tape 1710N

3M PVC Electrical Tape 1710N is a good quality general purpose PVC insulating tape. It has very good resistance to abrasion, moisture, alkalis, acids, copper corrosion and varying weather conditions. It is flame retardant, has a high wet dielectric strength, is conformable, and provides excellent mechanical protection with minimum bulk. This tape is an Underwriters' Laboratories Listed and Canadian Standards Association Certified "Insulating Tape."

Agency Approvals:  

Applications

- > Low voltage electrical insulating up to 600 V
- > Moisture sealing



Product	3M Order Code	Colour	Width	Length	Thickness	Dielectric Strength	Breaking Strength	Operating Temperature
1710N Black	XE000724635	Black	18 mm	20 m	0.18 mm	39.4 kV/mm	2.6 kN/m	0 to 80°C
1710N Blue	XE000724668	Blue	18 mm	20 m	0.18 mm	39.4 kV/mm	2.6 kN/m	0 to 80°C
1710N Green	XE000724676	Green	18 mm	20 m	0.18 mm	39.4 kV/mm	2.6 kN/m	0 to 80°C
1710N Red	XE000724650	Red	18 mm	20 m	0.18 mm	39.4 kV/mm	2.6 kN/m	0 to 80°C
1710N White	XE000724643	White	18 mm	20 m	0.18 mm	39.4 kV/mm	2.6 kN/m	0 to 80°C
1710N Yellow	XE000724684	Yellow	18 mm	20 m	0.18 mm	39.4 kV/mm	2.6 kN/m	0 to 80°C
1710N Yellow/Green	XE000724692	Yellow/ Green Stripe	18 mm	20 m	0.18 mm	39.4 kV/mm	2.6 kN/m	0 to 80°C
1710N Rainbow NZ*	XE070007648	Rainbow NZ	18 mm	20 m	0.18 mm	39.4 kV/mm	2.6 kN/m	0 to 80°C
1710N Rainbow AU**	AE010606810	Rainbow AU	18 mm	20 m	0.18 mm	39.4 kV/mm	2.6 kN/m	0 to 80°C

*Rainbow NZ pack includes 3 rolls of white, 2 rolls each of black, red, and blue, and 1 roll of yellow/green stripe

**Rainbow AU pack includes 3 rolls of black, 2 rolls each of white, red and blue, and 1 roll of yellow/green stripe

3M™ Temflex™ General Purpose Electrical Tape 1610 (available in AU only)

3M Temflex Electrical Tape 1610 is a good quality, economical, general purpose vinyl insulating tape. Temflex Tape 1610 is designed for use in phase identification, colour coding of motor leads and piping systems and for marking safety areas. It has very good resistance to abrasion, moisture, alkalis, acids and varying weather conditions. thinner tapes.

Applications

- > Phase identification
- > Colour coding
- > Harnessing



Product	3M Order Code	Colour	Width	Length	Thickness	Dielectric Strength	Breaking Strength	Operating Temperature
1610 Black	AE010586764	Black	19 mm	20 m	0.15 mm	39.4 kV/mm	2.8 kN/m	0 to 80°C
1610 Blue	AE010586749	Blue	19 mm	20 m	0.15 mm	39.4 kV/mm	2.8 kN/m	0 to 80°C
1610 Brown	AE019172450	Brown	19 mm	20 m	0.15 mm	39.4 kV/mm	2.8 kN/m	0 to 80°C
1610 Green/Yellow	AE010586723	Green/ Yellow Stripe	19 mm	20 m	0.15 mm	39.4 kV/mm	2.8 kN/m	0 to 80°C
1610 Grey	AE019312394	Grey	19 mm	20 m	0.15 mm	39.4 kV/mm	2.8 kN/m	0 to 80°C
1610 Orange	AE019312329	Orange	19 mm	20 m	0.15 mm	39.4 kV/mm	2.8 kN/m	0 to 80°C
1610 Red	AE010586731	Red	19 mm	20 m	0.15 mm	39.4 kV/mm	2.8 kN/m	0 to 80°C
1610 White	AE010586756	White	19 mm	20 m	0.15 mm	39.4 kV/mm	2.8 kN/m	0 to 80°C
1610 Rainbow^	AE010601407	Rainbow	19 mm	20 m	0.15 mm	39.4 kV/mm	2.8 kN/m	0 to 80°C

^Rainbow pack includes 3 rolls of black, 2 rolls each of white, red and blue, and 1 roll of yellow/green stripe.

Note: Available in Australia only

Scotch® Rubber Splicing Tape 23

Scotch® Rubber Splicing Tape 23 is a premium, highly conformable, self-fusing Ethylene Propylene Rubber (EPR), high voltage insulating tape. Scotch® Tape 23 has a “snakeskin” liner that is easily removed as the tape is applied. This product can be used for low and high voltage (up to 69 kV) applications.



Applications

- > Primary electrical insulation for splicing all solid dielectric cables up to 69 kV
- > Moisture sealing electrical connections
- > Jacketing on high voltage splices and terminations

Product	3M Order Code	Colour	Width	Length	Thickness	Dielectric Strength	Elongation	Breaking Strength	Operating Temperature	Emergency Operating Temperature
23 – 19 mm x 9 m	HT002007413	Black	19 mm	9.15 m	0.76 mm	31.5 kV/mm	1000%	1.4 kN/m	Up to 90°C	130°C
23 – 19 mm x 9 m Bulk*	AE010606562	Black	19 mm	9.15 m	0.76 mm	31.5 kV/mm	1000%	1.4 kN/m	Up to 90°C	130°C
23 – 25 mm x 9 m	HT002001283	Black	25 mm	9.15 m	0.76 mm	31.5 kV/mm	1000%	1.4 kN/m	Up to 90°C	130°C
23 – 38 mm x 9 m	HT002001275	Black	38 mm	9.15 m	0.76 mm	31.5 kV/mm	1000%	1.4 kN/m	Up to 90°C	130°C
23 – 50 mm x 9 m	HC000599767	Black	50 mm	9.15 m	0.76 mm	31.5 kV/mm	1000%	1.4 kN/m	Up to 90°C	130°C

*Bulk pack is 90 rolls per carton, each roll shrink wrapped

Scotch® Linerless Rubber Splicing Tape 130C

Scotch® Linerless Rubber Splicing Tape 130C is a premium, highly conformable, linerless Ethylene Propylene Rubber (EPR), high voltage insulating tape that provides excellent thermal dissipation of splice heat. Scotch® Splicing Tape 130C meets industry specifications and has excellent physical and electrical properties, which helps provide immediate moisture seal and void free buildups. Scotch® Splicing Tape 130C is rated up to 90°C continuous operating temperatures and short term 130°C overload service. This product can be used for low and high voltage (up to 69 kV) applications. This tape should be applied like any rubber tape – that is, the outside of the tape should be facing down as applied (tacky side up). This will help prevent the roll from getting progressively further away from the work area.



Applications

- > Primary electrical insulation for splicing all solid dielectric cables up to 69 kV
- > Moisture sealing electrical connections
- > Jacket repairs

Product	3M Order Code	Colour	Width	Length	Thickness	Dielectric Strength	Elongation	Breaking Strength	Operating Temperature	Emergency Operating Temperature
130C – 19 mm x 9 m	80610833404	Black	19 mm	9.15 m	0.76 mm	29.5 kV/mm	850%	1.3 kN/m	Up to 90°C	130°C
130C – 25 mm x 9 m	80610833750	Black	25 mm	9.15 m	0.76 mm	29.5 kV/mm	850%	1.3 kN/m	Up to 90°C	130°C
130C – 38 mm x 9 m	80610833412	Black	38 mm	9.15 m	0.76 mm	29.5 kV/mm	850%	1.3 kN/m	Up to 90°C	130°C

3M™ Temflex™ Rubber Splicing Tape 2155

3M™ Temflex™ Rubber Splicing Tape 2155 is a conformable self-fusing rubber electrical insulating tape. Temflex Tape 2155 is compatible with solid dielectric cable insulations. Flexible over a wide temperature range, it is Underwriters Laboratories (UL) Listed for use up to 600 volts.



Applications

Agency Approvals: 

- > Low voltage electrical insulating up to 600 V
- > Moisture sealing

Product	3M Order Code	Colour	Width	Length	Thickness	Dielectric Strength	Elongation	Breaking Strength	Operating Temperature
2155 – 19 mm x 6.7 m	HC000592382	Black	19 mm	6.7 m	0.76 mm	23.6 kV/mm	700%	1.57 kN/m	Up to 80°C

Scotch® Electrical Semi-Conducting Tape 13

Scotch® Electrical Semi-Conducting Tape 13 is a highly conformable, lined, semi-conducting Ethylene Propylene Rubber (EPR) based, high voltage splicing tape. Scotch® Tape 13 elongates easily to conform to irregular shapes and retains its conductivity when stretched.

Applications

- > Provides cable shield continuation



Product	3M Order Code	Colour	Width	Length	Thickness	Elongation	Breaking Strength
13 – 19 mm x 4.5 m	HT002000327	Black	19 mm	4.5 m	0.76 mm	800%	1.0 kN/m

Scotch® Self-Fusing Silicone Rubber Electrical Tape 70

Scotch® Self-Fusing Silicone Rubber Electrical Tape 70 is a high temperature, arc and track resistant tape composed of self-fusing, inorganic silicone rubber with an easy-tear and easy-strip liner. It has excellent UV and ozone resistance and is workable at extremely low temperatures. Scotch Tape 70 can be used as base tape layer to enable clean re-entry of connections. Meets the requirements of Mil A-A-59163 Class I, Type I.

Applications

- > Protects and overlaps high voltage cable terminations and serves as base layer to provide clean re-entry into connections
- > Protective overwrap for terminating high voltage cables



Product	3M Order Code	Colour	Width	Length	Thickness	Elongation	Dielectric Strength	Breaking Strength	Operating Temperature
70 – 25 mm x 9.15 m	80611438617	Grey	25 mm	9.15 m	0.3 mm	450%	34 kV/mm	2.1 kN/m	Up to 180°C

Scotch® Fire-Retardant and Electric Arc Proofing Tape 77

Scotch® Fire-Retardant Electric Arc Proofing Tape 77 is a premium non-adhesive tape designed to protect most types of electrical cables when exposed to failures in an adjacent cable. Its specially formulated material expands in fire to form a thick char buildup between the flame and the cable. The resulting firewall acts as a heat shield and flame barrier, thus protecting the wrapped cables and accessories.

Applications

- > Protects cable until limiting devices can interrupt faulted current
- > Use on high-energy cables that are within 500 mm of other high energy cables



Product	3M Order Code	Colour	Width	Length	Thickness	Dielectric Strength	Breaking Strength
77 – 38 mm x 6 m	80611605975	Black	38 mm	6 m	0.76 mm	19.7 kV/mm	6.3 kN/m
77 – 38 mm x 6 m	80611605991	White	38 mm	6 m	0.76 mm	19.7 kV/mm	6.3 kN/m

Scotch® Varnished Cambric Tape 2510

Scotch® Varnished Cambric Tape 2510 is made from straight-cut woven cotton cambric fabric. The fabric is oil primed and coated with a high grade yellow electrical insulating varnish. Varnished cambric tapes are flexible, electrically insulating and moisture resistant with a smooth finish. Scotch Tape 2510 is yellow, non-adhesive coated and 0.18 mm thick, providing an excellent dielectric strength with high puncture and cut-through resistance. Its electrical properties are stable up to 105°C.

Applications

- > Insulation of bus bars, motor leads (for re-entry), service drop connectors



Product	3M Order Code	Colour	Width	Length	Thickness	Dielectric Strength	Breaking Strength	Operating Temperature
2510 – 25 mm x 33 m	80100220054	Yellow	25 mm	33 m	0.18 mm	31.4 kV/mm	8.8 kN/m	Up to 105°C
2510 – 50 mm x 33 m	80100220096	Yellow	50 mm	33 m	0.18 mm	31.4 kV/mm	8.8 kN/m	Up to 105°C

Scotch® Varnished Cambric Tape 2520

Scotch® Varnished Cambric Tapes are made from straight-cut woven cotton cambric fabric. The fabric is oil primed and coated with a high-grade yellow electrical insulating varnish. Varnished cambric tapes are flexible, electrically insulating and moisture resistant with a smooth finish. They are designed to perform continuously in temperatures up to 105°C (220°F) with excellent resistance to abrasion, puncture and cut-through.



Applications

- > Insulating joints requiring rapid and clean re-entry
- > Use in areas where mechanical protection and puncture resistance is critical

Product	3M Order Code	Colour	Width	Length	Thickness	Dielectric Strength	Breaking Strength	Operating Temperature
19 mm x 18 m	80610989537	Yellow	19 mm	18 m	0.20 mm	31.4 kV/mm	8.8 kN/m	Up to 105°C
19 mm x 33 m	80610989529	Yellow	19 mm	33 m	0.20 mm	31.4 kV/mm	8.8 kN/m	Up to 105°C
25 mm x 33 m	80610989503	Yellow	25 mm	33 m	0.20 mm	31.4 kV/mm	8.8 kN/m	Up to 105°C
38 mm x 33 m	80610989495	Yellow	38 mm	33 m	0.20 mm	31.4 kV/mm	8.8 kN/m	Up to 105°C
51 mm x 33 m	80610989511	Yellow	51 mm	33 m	0.20 mm	31.4 kV/mm	8.8 kN/m	Up to 105°C

Scotch® Electrical Shielding Tape 24

Scotch® Electrical Shielding Tape 24 is an all-metal, flat, tinned copper open-weave shielding mesh that is compatible with power cable insulations and all high voltage splicing and terminating materials. Scotch® Electrical Shielding Tape 24 elongates easily to conform and is temperature stable.

Note: Scotch® Electrical Shielding Tape 24 should not be used as a ground strap or jumper wire. Its ampacity is not great enough to carry large fault currents. For ground strap applications please refer to Scotch® Electrical Grounding Braid 25.



Applications

- > Continuous electrostatic shielding across splices

Product	3M Order Code	Width	Length	Thickness	Breaking Strength
24 – 25 mm x 4.5 m	80012024016	25 mm	4.5 m	0.4 mm	3.8 kN/m

Scotch® Electrical Grounding Braid 25

Scotch® Electrical Grounding Braid 25 is a flat, all-metal woven electrical grounding braid that is compatible with power cable insulations and high voltage splicing and terminating materials. The Scotch® Electrical Grounding Braid 25 is conformable and temperature stable, and has a current carrying capacity approximately that of 12 mm² wire.



Applications

- > Conformable ground braid for splices and terminations

Product	3M Order Code	Width	Length	Thickness
25 – 12.7 mm x 4.5 m	80610000210	12.7 mm	4.5 m	2.38 mm

Scotch® Glass Cloth Electrical Tapes 27

Scotch® Glass Cloth Electrical Tape 27 is a 0.18 mm thick woven insulating glass cloth tape with pressure sensitive rubber thermosetting adhesive. This tape is designed to operate in 600 volt dry applications requiring high mechanical strength and resistance to high temperatures. The glass cloth is specially treated and prepared to provide corrosion protection.

Agency Approvals:  

Applications

- > Heat stable insulation for furnace and oven controls, motor leads and switches
- > Provides corrosion free protection



Product	3M Order Code	Colour	Width	Length	Thickness	Breaking Strength	Operating Temperature
27 – 12.7 mm x 20 m	80012020352	White	12.7 mm	20 m	0.18 mm	25.2 kN/m	Up to 150°C
27 – 19 mm x 20 m	80012020360	White	19 mm	20 m	0.18 mm	25.2 kN/m	Up to 150°C
27 – 25 mm x 55 m	80012020139	White	25 mm	55 m	0.18 mm	25.2 kN/m	Up to 150°C

Scotch® Glass Cloth Electrical Tape 69

Scotch® Glass Cloth Electrical Tape 69 is a white glass cloth tape with a high temperature thermosetting silicone adhesive. The thermosetting adhesive provides an increased bond once applied in areas of high ambient temperatures. Scotch® Tape 69 is UL recognised for continuous use up to 200°C. It conforms to Military Specification No. MIL-I-19166C.

Applications

- > Heat stable insulation for furnace and oven controls, motor leads and switches
- > Replaces Scotch® Glass Cloth Electrical Tape 27 in locations where a higher temperature tape is needed



Product	3M Order Code	Colour	Width	Length	Thickness	Breaking Strength	Operating Temperature
69 – 12.7 mm x 33 m	80018002420	White	12.7 mm	33 m	0.18 mm	31.4 kN/m	Up to 200°C
69 – 19 mm x 33 m	80012040046	White	19 mm	33 m	0.18 mm	31.4 kN/m	Up to 200°C
69 – 25 mm x 33 m	80012040053	White	25 mm	33 m	0.18 mm	31.4 kN/m	Up to 200°C

Scotch® Rubber Mastic Tape 2228

Scotch® Rubber Mastic Tape 2228 is a conformable self-fusing rubber electrical insulating and sealing tape. Scotch Rubber Mastic 2228 consists of ethylene propylene rubber (EPR) backing coated with a strong, temperature-stable mastic adhesive. The tape is 1.65 mm thick for quick application build-up. It is designed for electrical insulating and moisture sealing applications.



Applications

- > Primary electrical insulation for joints up to 1000 V
- > Insulate, pad and seal bus bar connections rated up to 35 kV
- > Environmental and moisture seal

Product	3M Order Code	Colour	Width	Length	Thickness	Dielectric Strength	Elongation	Breaking Strength	Maximum Operating Temperature
2228 – 25 mm x 3 m	80610737662	Black	25 mm	3 m	1.65 mm	19.7 kV/mm	1000%	1.7 kN/m	90°C
2228 – 50 mm x 3 m	80610322945	Black	50 mm	3 m	1.65 mm	19.7 kV/mm	1000%	1.7 kN/m	90°C

3M™ Scotch-Seal™ Mastic Tape Compound 2229

Scotch-Seal Mastic Tape Compound 2229 is designed for quick and easy insulating, padding, shaping and sealing of electrical connections. It is a conformable, durable, tacky mastic with an easy release liner for easy application over irregular surfaces and provides excellent moisture resistance. It features excellent self-healing characteristics after being punctured or cut.



Applications

- > Sealing high voltage cables and accessories
- > Environmental and moisture seal

Product	3M Order Code	Colour	Width	Length	Thickness	Dielectric Strength	Maximum Operating Temperature
2229 – 25 mm x 3 m	80610732911	Black	25 mm	3 m	3.2 mm	14.9 kV/mm	90°C
2229 – 95 mm x 3 m	80610594410	Black	95 mm	3 m	3.2 mm	14.9 kV/mm	90°C

3M™ Scotchfil™ Electrical Insulation Putty

Use as a build-up compound on highly irregular surfaces such as fittings and valves, providing a smooth, waterproof taping surface. Scotchfil Electrical Insulation Putty is soft and pliable – simply press putty into place on irregular surfaces, mould with finger pressure and overtape using standard methods.



Applications

- > Insulation of connections up to 600 V
- > Smoothing of bus bar irregularities
- > Shaping and padding for split bolt connections

Product	3M Order Code	Colour	Width	Length	Thickness	Elongation	Dielectric Strength	Maximum Operating Temperature
Scotchfil Putty	80610833727	Black	38 mm	1.5 m	3.2 mm	1000%	22.6 kV/mm	0 to 80°C

For best mechanical and UV protection, overwrap:

- > Scotch® Rubber Mastic Tape 2228
 - > 3M™ Scotch-Seal™ Mastic Tape Compound 2229
 - > 3M™ Scotchfil™ Electrical Insulation Putty
- with Scotch® Super 33+™ Vinyl Electrical Tape

Scotch® Vinyl Mastic Tape VM

Two tapes in one - vinyl and mastic, designed to provide low voltage insulation, seal out moisture and protect against corrosion. Scotch® Vinyl Mastic (VM) Tape seals out moisture and protects against corrosion in one step, without the need for heating tools or using other tapes.



Applications

- > Cable sheath repair
- > Splice case and load case protection
- > Auxiliary sleeve and cable reel end sealing
- > Drop wire insulating
- > Conduit repair and protection of CATV components

Product	3M Order Code	Colour	Width	Length	Thickness	Dielectric Strength	Operating Temperature
VM – 38 mm x 6 m	80050045014	Black	38 mm	6 m	0.6 mm	11.8 kV/mm	-40 to 80°C
VM – 102 mm x 3 m	80050045022	Black	102 mm	3 m	1.1 mm	11.8 kV/mm	-40 to 80°C
VM – 152 mm x 3 m	80050045030	Black	152 mm	3 m	1.1 mm	11.8 kV/mm	-40 to 80°C

Scotch® Heavy Duty Mining Tape 31

Scotch® Heavy Duty Mining Tape 31 has a tough, abrasion resistant backing for jacket repair on mining cables. Mining cables are exposed to extremely abrasive environments which often results in the damage of their original jackets. MSHA-approved Scotch Tape 31 offers an innovative solution for cable repair. With its abrasion-resistant properties and flame retardant mastic, Scotch Tape 31 applies easily and remains flexible while maintaining a strong moisture seal. The tape is printed with the MSHA logo/approval number.



Applications

- > Jacket repair of mining cables
- > Splicing of mine conduit

Product	3M Order Code	Colour	Width	Length	Thickness	Elongation	Dielectric Strength	Breaking Strength	Operating Temperature
31 – 50 mm x 2.6 m	80611434004	Black	50 mm	2.6 m	1.5 mm	500%	15.7 kV/mm	27.3 kN/m	-30 to 105°C

Scotch® Cable Jacket Repair Tape 2234

Scotch® Cable Jacket Repair Tape 2234 has a tough abrasion-resistant backing for jacket repair on industrial cables, such as flexible portable power cables, draglines, diesel locomotive cable, welding and shipboard cables. Due to abrasive dragging and reeling of these flexible cables, the original jacketing gets damaged often and needs to be repaired. Scotch Tape 2234 is flexible and the self-healing property of the mastic helps keep out moisture.



Agency Approvals: 

Applications

- > Jacket repair on electrical cables in extremely harsh environments

Product	3M Order Code	Colour	Width	Length	Thickness	Elongation	Dielectric Strength	Breaking Strength	Operating Temperature
2234 – 50 mm x 1.8 m	80611440936	Black	50 mm	1.8 m	1.5 mm	500%	15.7 kV/mm	27.3 kN/m	-30 to 105°C

3M™ Performance Plus Duct Tape 8979

3M Performance Plus Duct Tape 8979 has a unique tape construction that allows for both permanent and temporary applications whether indoors or outdoors. It is removable with little or no adhesive residue from most opaque surfaces up to six months after application. The tape is conformable, abrasion resistant, and water resistant. The polyethylene film and cloth scrim with rubber adhesive construction provides straight, easy tear with high tensile strength for some of the most demanding applications.



Agency Approvals: 

Applications

- > Cap pipe ends and conduit stored outside
- > Hanging, sealing poly drapes

Product	3M Order Code	Colour	Width	Length	Thickness	Elongation	Breaking Strength	Operating Temperature	Adhesion to Steel
8979 - Blue - 48 mm x 23 m	70006412756	Slate Blue	48 mm	23 m	0.31 mm	19%	6.3 kN/m	Up to 93°C	53 N/100 mm
8979 - Blue - 48 mm x 55 m	70006413457	Slate Blue	48 mm	55 m	0.31 mm	19%	6.3 kN/m	Up to 93°C	53 N/100 mm
8979 - Olive - 48 mm x 55 m	70004038843	Olive	48 mm	55 m	0.31 mm	19%	6.3 kN/m	Up to 93°C	53 N/100 mm
8979 - Black - 48 mm x 55 m	70006413507	Black	48 mm	55 m	0.31 mm	19%	6.3 kN/m	Up to 93°C	53 N/100 mm
8979 - Black - 72 mm x 55 m	70006704590	Black	72 mm	55 m	0.31 mm	19%	6.3 kN/m	Up to 93°C	53 N/100 mm

3M™ Heavy Duty Duct Tape 3939

3M Duct Tape 3939 is composed of waterproof polyethylene film over cloth scrim backing with a rubber adhesive used for demanding duct tape applications. Meets UL 723.



Agency Approvals: 

Applications

- > Sealing heating ventilation and air conditioning ducts

Product	3M Order Code	Colour	Width	Length	Thickness	Elongation	Breaking Strength	Operating Temperature	Adhesion to Steel
3939 - 48 mm x 55 m	70006250131	Silver	48 mm	55 m	0.22 mm	17%	4.72 kN/m	Up to 93°C	63 N/100 mm

3M™ Utility (GAFFA) Duct Tape 1910C

Polyethylene coated cloth backing with tacky rubber adhesive for sealing, holding, bundling. Available in black or silver.



Applications

- > Sealing, holding, bundling

Product	3M Order Code	Colour	Width	Length	Thickness	Breaking Strength	Operating Temperature	Adhesion to Steel
1910C – Black – 48 mm x 10 m*	AT010565813	Black	48 mm	10 m	0.15 mm	2.0 kN/m	Up to 50°C	106 N/100mm
1910C - Black - 48 mm x 50 m*	AT010565839	Black	48 mm	50 m	0.15 mm	2.0 kN/m	Up to 50°C	106 N/100mm
1910C - Silver - 48 mm x 50 m*	AT010565847	Silver	48 mm	50 m	0.15 mm	2.0 kN/m	Up to 50°C	106 N/100mm
1910C - Black - 48 mm x 10 m**	XT000706728	Black	48 mm	10 m	0.15 mm	2.0 kN/m	Up to 50°C	106 N/100mm
1910C - Black - 48 mm x 50 m**	XT000706744	Black	48 mm	50 m	0.15 mm	2.0 kN/m	Up to 50°C	106 N/100mm
1910C - Silver - 48 mm x 10 m**	XT000706736	Silver	48 mm	10 m	0.15 mm	2.0 kN/m	Up to 50°C	106 N/100mm
1910C - Silver - 48 mm x 50 m**	XT000706751	Silver	48 mm	50 m	0.15 mm	2.0 kN/m	Up to 50°C	106 N/100mm

*Note: Available in Australia only

**Note: Available in New Zealand only

Scotch® 1352B & Tartan™ 2352 Duct Tapes

Scotch® 1352B and Tartan™ 2352 Tapes are stabilised and plasticised PVC film coated tapes suitable for most light industrial sealing and joining applications.



Applications

- > Joining polythene sheeting
- > Sealing air ducts
- > Temporary holding

Product	3M Order Code	Colour	Width	Length	Thickness
1352B (NZ) - 50 mm x 30 m	XT000732013	Black	50 mm	30 m	0.15 mm
1352B (AU) - 50 mm x 30 m	AT010575275	Black	50 mm	30 m	0.15 mm
2352 - 50 mm x 30 m	AT010575283	Silver	50 mm	30 m	0.15 mm

3M™ Double Sided Foam Tape 4466W

3M™ Double Sided Foam Tape 4466W is a polyethylene, conformable, double coated, closed-cell foam tape. It provides “quick stick” and conformability for a wide range of surfaces.



Applications

> Bonding, attaching and mounting. Indoor use only

Product	3M Order Code	Colour	Width	Length	Thickness	Operating Temperature
4466W - 12 mm x 10 m	AT019314783	White	12 mm	10 m	1.6 mm	Up to 49°C long term. Up to 70°C short term
4466W - 18 mm x 10 m	AT019314791	White	18 mm	10 m	1.6 mm	Up to 49°C long term. Up to 70°C short term
4466W - 24 mm x 10 m	AT019314809	White	24 mm	10 m	1.6 mm	Up to 49°C long term. Up to 70°C short term

3M™ Scotchrap™ Corrosion Protection Tape 50

3M Scotchrap Corrosion Protection Tape 50 is a tough PVC tape with high tack adhesive that resists corrosion of metal piping systems above and below ground. It applies over a wide temperature range and is resistant to impact, abrasion and punctures. Coat the pipe or other metal surfaces with 3M Scotchrap Pipe Primer before wrapping with Scotchrap Tape 50.



Applications

> Protects pipe, conduits and fittings from corrosion

Product	3M Order Code	Colour	Width	Length	Thickness	Breaking Strength	Installation Temperature Range	Service Temperature Range
50 - 25 mm x 30 m	80008006621	Black	25 mm	30 m	0.25 mm	3.5 kN/m	-12 to 65°C	-48 to 80°C
50 - 50 mm x 30 m	80008006639	Black	50 mm	30 m	0.25 mm	3.5 kN/m	-12 to 65°C	-48 to 80°C
50 - 100 mm x 30 m	80008006647	Black	100 mm	30 m	0.25 mm	3.5 kN/m	-12 to 65°C	-48 to 80°C
50 - 150 mm x 30 m	80008006654	Black	150 mm	30 m	0.25 mm	3.5 kN/m	-12 to 65°C	-48 to 80°C

3M™ Scotchrap™ Pipe Primer

A quick-drying, non-sag rubber based primer that fills metal surface pits and irregularities, preparing the surface for tape application. Compatible with the special adhesive on 3M Scotchrap Tapes, it enhances adhesion. To be used with 3M Scotchrap Corrosion Protection Tape 50.



Applications

> Used with Scotchrap Corrosion Protection Tape 50 to resist corrosion of above and below ground metal piping systems

Product	3M Order Code	Size
Pipe Primer	80610925739	3.8 L

3M™ Temflex™ Cotton Friction Tape 1755

3M Temflex Cotton Friction Tape 1755 is a high-grade, black friction tape designed to provide mechanical protection against abrasion and cut through for cable, wire splices and connections insulated with rubber electrical tape. The 0.33 mm thick tape is composed of a high quality cotton fabric, coated on both sides with an electrical grade, solvent free, rubber adhesive. Temflex Tape 1755 has high break strength and low stretch, making it ideal as a heavy duty binding and harnessing tape.



Applications

> Abrasion protection for splices and connections

Product	3M Order Code	Colour	Width	Length	Thickness	Breaking Strength	Operating Temperature
1755 - 19 mm x 18.3 m	80611604283	Black	19 mm	18.3 m	0.33 mm	8.4 kN/m	Up to 80°C

3M™ Antistatic Utility Tape 40PR

General use utility tape, clear polyester film backing, anti-static conductive polymer adhesive. With preprinted static symbol. Helps prevent electrostatic discharge (ESD) damage to sensitive electronic components in manufacturing environments.



Applications

- > For use in static sensitive areas
- > Closing static shielding bags

Product	3M Order Code	Colour	Width*	Length*	Thickness	Breaking Strength	Adhesion to Steel	Static Charge Generation at 50% RH	
								Remove from Roll	Remove from Stainless Sheet
40PR - 6.4 mm x 66 m	80610872592	Clear with printing	6.4 mm	66 m	0.056 mm	3.5 kN/m	17 N/100mm	5 V	5 V
40PR - 19 mm x 66 m	80610872642	Clear with printing	19 mm	66 m	0.056 mm	3.5 kN/m	17 N/100mm	5 V	5 V

*Also available from 3M converters in other standard and custom sizes.

Scotch® Pipe Thread Sealant Tape 48

A high temperature-stable (PTFE) thread sealant that provides a leak-proof seal.



Product	3M Order Code	Colour	Width	Length	Thickness	Operating Temperature
48 - 12.7 mm x 33 m	80018003915	White	12.7 mm	33 m	0.076 mm	-268 to 260°C

3M™ Armorcast Structural Material

3M Armorcast Structural Material (roll format) is packed dry in a sealed foil envelope and is a flexible fiberglass knit fabric strip that has been saturated with a curable black urethane resin syrup that starts to cure when water is added. Once wet, the fiber strip becomes tacky and sticks to itself, so it wraps easily around almost any shape or size. Armorcast Structural Material is resistant to moisture, fungus, acid, alkali, ozone, sunlight, gasoline and high temperatures. It combines long life and very little maintenance.



Applications

- > Creates maintenance free mechanical protection for power cable splices
- > For strengthening old cable, splices and auxiliary seals

Product	3M Order Code	Width	Length
4560 - 100 mm x 3 m	80610932545	100 mm	3 m

3M™ VHB Tape RP45

3M VHB Tape RP45 is a conformable, double-sided, pressure sensitive, closed-cell acrylic foam tape with a paper liner. Excellent permanent bonding to most surfaces used in a wide range of general industrial bonding applications. This permanent assembly tape bonds high and medium surface energy substrates. Provides handling convenience, cushioning, damping and impact resistance. UV and weather resistance for exterior and interior applications.



Applications

- > Bonding a lens to a metal sign frame, washing machine touch panel bonding, commercial vehicle roof vent attachment, commercial vehicle trim attachment, interior rail car construction

Product	3M Order Code	Colour	Width	Length	Thickness	Operating Temperature
RP45 - 12.7 mm x 5 m	70006743044	Grey	12.7 mm	5 m	1.1 mm	Up to 93°C long term. Up to 121°C short term
RP45 - 19 mm x 5 m	70006743168	Grey	19 mm	5m	1.1 mm	Up to 93°C long term. Up to 121°C short term

3M™ Paper Backed Electrical Filament Tape 1076

3M™ Paper Backed Electrical Filament Tape 1076 is made of an electrical-grade paper backing reinforced with scrim glass filaments and an oil-compatible acrylic pressure-sensitive adhesive. Unlike conventional film backed tapes, this product paper backing construction allows for complete impregnation and saturation of the tape in adjacent layers of insulation. The unique coating on the back side of 3M™ Tape 1076 promotes exceptional bonding of the diamond paper insulation epoxy during the transformer baking process. The tape has an operating temperature of up to 105°C. The adhesive remains stable even after long exposure to transformer fluids, has a saturable backing for air entrapment resistance and the stiffness of the tape promotes superior handling, which enhances operator efficiency.



Applications

- > Oil filled transformer applications

Product	3M Order Code	Colour	Width	Length	Thickness	Operating Temperature	Dielectric Breakdown	Breaking Strength	Adhesion to Steel
1076 - 9.5 mm x 55 m	80611602477	Cream	9.5 mm	55 m	0.25 mm	Up to 105°C	3500 V	48.1 kN/m	44 N/100 mm
1076 - 19 mm x 55 m	80611605207	Cream	9.5 mm	55 m	0.25 mm	Up to 105°C	3500 V	48.1 kN/m	44 N/100 mm

3M™ Copper Foil Tape 1194

3M™ Copper Foil Shielding Tape 1194 has a 0.04 mm smooth copper foil backing with a non-conductive acrylic pressure-sensitive adhesive and liner. The non-conductive adhesive does not drain the static charge to a grounded substrate.

Agency Approvals:



Applications

- > Economical electrical bonding
- > Grounding
- > EMI shielding



Product	3M Order Code	Colour	Width	Length	Thickness	UL Flame Retardant	Breaking Strength	Adhesion to Steel
1194 - 25 mm x 16 m	80610875926	Copper	25 mm	16 m	0.08 mm	Yes	4.4 kN/m	51 N/100 mm
1194 - 25 mm x 33 m	XE002196063	Copper	25 mm	33 m	0.08 mm	Yes	4.4 kN/m	51 N/100 mm

3M™ Insulating and Conductive Tapes

3M Insulating and Conductive Tapes are made from a broad range of backings and adhesives to meet the uniquely demanding requirements of different applications and environments. Extensive quality control and testing, combined with accurate process controls, are just part of the reason that 3M consistently provides high quality products.

These tapes are typically available from 3M converters in standard and custom sizes. Some tapes are available in slit sizes from 3M. Please contact your 3M representative for more details.



Product	Product Description	Features	Total Thickness	Operating Temperature	UL Flame Retardant	Dielectric Breakdown	Insulation Resistance	Breaking Strength	Adhesion to Steel	Agency Approvals	
										UL	SP
Glass Fibre Reinforced Polyester Film Electrical Tape											
1039	3M™ Glass Fibre Reinforced Polyester Film Electrical Tape 1039	Solvent-resistant filament tape with pressure sensitive acrylic adhesive	0.177 mm	130°C		5500 V	1 × 10 ⁵ MΩ	48.1 kN/m	38 N/100 mm	✓	
Acetate Cloth Electrical Tape											
28	3M™ Acetate Cloth Electrical Tape 28	Thermosetting Rubber adhesive. Printable. White	0.203 mm	105°C		2500 V	2 × 10 ⁴ MΩ	6.2 kN/m	44 N/100 mm		
11	3M™ Acetate Cloth Electrical Tape 11	Thermosetting Rubber adhesive. Printable. Black	0.203 mm	105°C		2000 V	2 × 10 ⁴ MΩ	6.2 kN/m	44 N/100 mm		
Crepe Paper Electrical Tape											
16	3M™ Crepe Paper Electrical Tape 16	Paper tape with aggressive rubber resin adhesive. Coil cover on bobbin-wound coils	0.228 mm	105°C		2500 V	>1 × 10 ⁶ MΩ	4.4 kN/m	55 N/100 mm		
Epoxy Film Electrical Tape											
Super 20	3M™ Epoxy Film Electrical Tape Super 20	Thick double sided epoxy for higher temperature and dielectric. Acrylic adhesive. UL510 flame retardant.	0.127 mm	155°C	Yes	8000 V	>1 × 10 ⁶ MΩ	7.9 kN/m	33 N/100 mm	✓	✓
Super 10	3M™ Epoxy Film Electrical Tape Super 10	Thicker, double-sided epoxy for higher temperature and dielectric. Rubber adhesive. UL510 flame retardant.	0.127 mm	155°C	Yes	8000 V	>1 × 10 ⁶ MΩ	7.9 kN/m	49 N/100 mm	✓	✓
Polyester Film Electrical Tape											
5	3M™ Polyester Film Electrical Tape 5	General purpose polyester tape with acrylic adhesive. 0.025 mm film. Clear	0.063 mm	130°C		5500 V	>1 × 10 ⁶ MΩ	4.4 kN/m	38 N/100 mm	✓	✓
1318-1	3M™ Polyester Film Electrical Tape 1318-1	Acrylic adhesive. 0.025 mm film. Printable. Black or White	0.063 mm	130°C		5500 V	>1 × 10 ⁶ MΩ	4.4 kN/m	33 N/100 mm	✓	
1350F-1	3M™ Polyester Film Electrical Tape 1350F-1	Acrylic adhesive. 0.025 mm film. UL510 flame retardant. Yellow	0.063 mm	130°C	Yes	5500 V	>1 × 10 ⁶ MΩ	4.4 kN/m	33 N/100 mm	✓	✓
56	3M™ Polyester Film Electrical Tape 56	General purpose polyester tape with thermosetting rubber adhesive. 0.025 mm film. Yellow	0.058 mm	130°C		5000	>1 × 10 ⁶ MΩ	4.4 kN/m	55 N/100 mm	✓	✓
58	3M™ Polyester Film Electrical Tape 58	Thicker, higher dielectric. Thermosetting rubber adhesive. 0.05 mm film. Clear	0.083 mm	130°C		7000 V	>1 × 10 ⁶ MΩ	8.8 kN/m	65 N/100 mm	✓	

3M™ Insulating and Conductive Tapes *continued*

Product	Product Description	Features	Total Thickness	Operating Temperature	UL Flame Retardant	Dielectric Breakdown	Insulation Resistance	Breaking Strength	Adhesion to Steel	Agency Approvals	
										UL	SP
Composite Film Tape											
44	3M™ Polyester Film Electrical Tape 44	Low-Halogen, general purpose composite film tape. puncture-resistant with excellent electrical properties. For general purpose insulation, anchoring, and banding in motors and transformers	0.139 mm	130°C		5500	>1 × 10 ⁶ MΩ	7 kN/m	71 N/100 mm	✓	
44D-A	3M™ Reinforced Polyester Film Electrical Tape 44D-A	A version of 44 Tape with twice the backing thickness for greater dielectric strength	0.304 mm	130°C		6000 V	>1 × 10 ⁶ MΩ	7 kN/m	38 N/100 mm	✓	
Polyimide Film Electrical Tape											
92	3M™ Polyimide Film Electrical Tape 92	Silicone adhesive and 0.025 mm film. High temperature, puncture resistant, printable, flame retardant. Stable in coils, harnesses and capacitors that are subjected to high temperatures	0.076 mm	180°C	Yes	7500 V	>1 × 10 ⁶ MΩ	5.3 kN/m	28 N/100 mm	✓	
PTFE Film Electrical Tape											
60	3M™ PTFE Film Electrical Tape 60	Translucent, 0.05 mm PTFE film tape with silicone adhesive. For use on high temperature coils, capacitors and wire harnesses. UL510 flame retardant	0.102 mm	180°C	Yes	9500 V	>1 × 10 ⁶ MΩ	3.5 kN/m	32 N/100 mm	✓	
61	3M™ PTFE Film Electrical Tape 61	Translucent, thicker (0.127 mm) PTFE film tape with silicone adhesive. For use on high temperature coils, capacitors and wire harnesses where high dielectric and breaking strength are required. UL510 flame retardant	0.178 mm	180°C	Yes	15000 V	>1 × 10 ⁶ MΩ	7.9 kN/m	38 N/100 mm	✓	
63	3M™ PTFE Film Electrical Tape 63	Translucent, 0.05 mm PTFE film tape with solvent resistant acrylic adhesive. For use on coils, capacitors and wire harnesses. For use where chemical properties are more important than temperature resistance	0.088 mm	155°C	Yes	9500 V	>1 × 10 ⁶ MΩ	3.5 kN/m	38 N/100 mm	✓	

3M™ Insulating and Conductive Tapes *continued*

Product	Product Description	Features	Total Thickness	Operating Temperature	UL Flame Retardant	Dielectric Breakdown	Insulation Resistance	Breaking Strength	Electrical Resistance	Adhesion to Steel	Agency Approvals	
											UL	SP
EMI Shielding Tapes												
1170	3M™ Aluminum Foil Tape with Conductive Adhesive 1170	Conductive acrylic adhesive, 0.05 mm aluminum foil	0.081 mm	40°C to 130°C	Yes	-	>85 dB, 1MHz to 2 GHz	3.5 kN/m	0.01 Ω	38 N/100 mm	✓	
1181	3M™ Copper Foil Tape with Conductive Adhesive 1181	Conductive acrylic adhesive, 0.04 mm copper foil	0.07 mm	40°C to 130°C	Yes	-	>85 dB, 1MHz to 2 GHz	4.4 kN/m	0.005 Ω	38 N/100 mm	✓	
1182	3M™ Copper Foil Tape with Conductive Adhesive on both sides 1182	Conductive acrylic adhesive on both sides, 0.04 mm copper foil	0.088 mm		Yes	-	70 - 85 dB	4.4 kN/m	0.01 Ω	38 N/100 mm	✓	
1194	3M™ Copper Foil Tape with Nonconductive Adhesive 1194	Nonconductive adhesive, 0.04 mm copper foil	0.066 mm		Yes	-	50 - 60 dB	4.4 kN/m	n/a	44 N/100 mm	✓	
1245	3M™ Embossed Copper Foil Tape 1245	Conductive acrylic adhesive, embossed 0.04 mm copper foil	0.101 mm		Yes	-	75 - 85 dB (30 MHz to 1 GHz)	4.4 kN/m	0.001 Ω	38 N/100 mm	✓	
CN-3190	3M™ Shielding Non-woven Fabric Tape CN-3190	Anti-corrosion metallized polyester rip-stop fabric, acrylic adhesive.	0.11 mm		N/A	-	65 – 70 dB	7 kN/m	0.005	33N/100 mm		
CN-3490	3M™ Shielding Non-woven Fabric Tape CN-3490	Anti-corrosion, metallized nonwoven fabric, acrylic adhesive.	0.066 mm		N/A	-	65 dB, 1 GHz	6.1 kN/m	0.005	33N/100 mm		
CN-4190	3M™ Shielding Fabric Tape CN-4190	Anti-corrosion, metallized polyester rep-stop fabric, acrylic adhesive both sides.	0.11 mm		N/A	-	65 – 70 dB	6.4 kN/m	0.05	40N/100 mm		
X-7001	3M™ Copper-Coated Polyester Cloth Tape X-7001	Anti-corrosion, metallized polyester fabric, acrylic adhesive both sides.	0.13 mm	40°C to 130°C	N/A	-		6.4 kN/m	0.015	6 6N/100 mm		



3M™ Scotchcast™ Resin Cable Joint Kits

The 3M Scotchcast Resin Cable Joint range is designed to make the installation process faster, safer and more reliable than ever before. The range includes hydrocarbon resistant products specially developed for the oil and gas industries, as well as dedicated products to suit armoured cable types commonly found in mining and industrial environments. The range caters to a broad range of cable sizes and configurations, including inline and branch jointing applications.

Features available in new Scotchcast Resin Cable Joint Kit range include:

- “Express” one-part mould body with innovative sealing system requiring no cutting to size or taping, allowing unmatched speed of installation (excludes LVI-3 series, which uses a hydrocarbon resistant two-part mould body, and the 82-AN series sold in New Zealand.)
- Closed Mix-Pour with integrated resin delivery system. Designed to eliminate almost any chance of skin contact, user safety is increased and wastage from spills is minimized (excludes LVI-3 series and 82-AN series).
- High quality 3M resin compounds which offer confidence through renowned reliability, and provide durability to avoid costly re-work and system down time



The 3M Scotchcast Closed Mix-Pour resin system allows mixing and pouring of the two-part resin without exposure to user. Further, no tools or mixing containers are required.



Sealed, two part resin bag



Integrated delivery system. Included nozzle accessory used for LVI-3 series

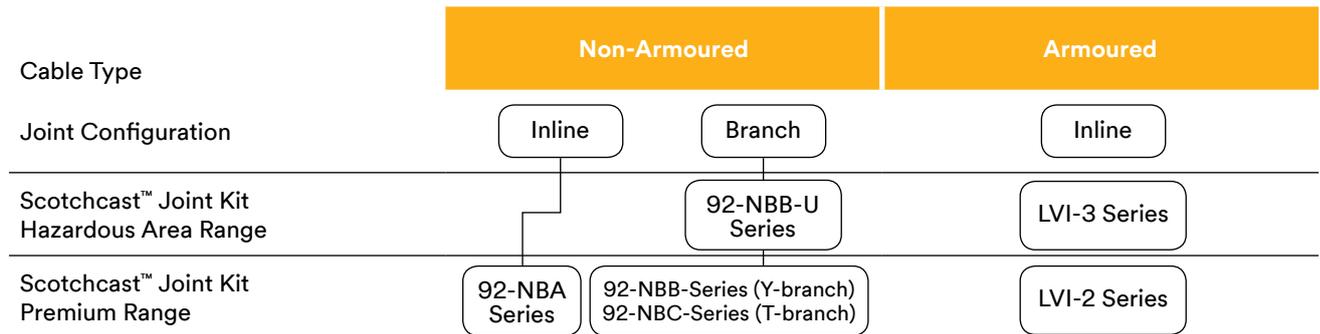


Internal mixing is safe and clean



Resin is released and safely poured in one easy step

3M™ Scotchcast™ Resin Cable Joint Range



3M™ Scotchcast™ Premium Resin Cable Joint Range

3M Scotchcast Premium Resin Cable Joints feature 3M™ Scotchcast™ Electrical Insulating Resin 40, which is a high quality two part polyurethane compound designed for electrical insulation and mechanical protection. Scotchcast Premium Resin Cable Joints are available in a range of sizes and configurations to suit inline, Y-branch, T-branch applications, and joints requiring cable armouring components. All products in this range utilise the “express” one-part mould body, providing time and cost savings through extra fast set up.

Applications

- > Indoor, outdoor, underground and submerged applications

The 3M™ Scotchcast™ “Express” one-part mould body is available in inline, T-branch and Y-branch (pictured) configurations.



Prepare and connect cables



Install mould



Mix and pour resin



Joint complete when resin has completely filled the mould

Product	3M Order Code	Cable Type	Cable Diameter		Joint Configuration	Mould Body
			Main	Branch		
92-NBA0	KE235117568	Non-armoured	4-16 mm		Inline	Express one-part
92-NBA1	KE235117576	Non-armoured	10-22 mm		Inline	Express one-part
92-NBA2	KE235117584	Non-armoured	12-25 mm		Inline	Express one-part
92-NBA3	KE235117592	Non-armoured	13-32 mm		Inline	Express one-part
92-NBA4	KE235117600	Non-armoured	18 - 36 mm		Inline	Express one-part
92-NBA5	KE235117618	Non-armoured	19 - 45 mm		Inline	Express one-part
92-NBA6	KE235117626	Non-armoured	27 - 54 mm		Inline	Express one-part
92-NBA7	KE235117634	Non-armoured	29 - 64 mm		Inline	Express one-part
92-NBB0	KE235119358	Non-armoured	9 – 18 mm	9-18 mm	Branch (Y Config)	Express two-part
92-NBB1	KE235119366	Non-armoured	11 – 23 mm	11-23 mm	Branch (Y Config)	Express two-part
92-NBB2	KE235119374	Non-armoured	16 - 33 mm	16-33 mm	Branch (Y Config)	Express two-part
LVI-2/2-C*	KE235112288	Armoured	12 - 25 mm			Express one-part
LVI-2/4	KE235112320	Armoured	18 - 36 mm			Express one-part
LVI-2/5	KE235112338	Armoured	19 - 45 mm			Express one-part
LVI-2/7	KE235112353	Armoured	29 - 64 mm			Express one-part

Selection Table

Inline joint kits for non-armoured cable

Cable Cross Section (mm ²)	1 Core	2 Cores	3 Cores	4 Cores
1.5	92-NBA0	92-NBA0	92-NBA0	92-NBA0
2.5	92-NBA0	92-NBA0	92-NBA0	92-NBA0
4	92-NBA0	92-NBA0	92-NBA0	92-NBA0
6	92-NBA0	92-NBA0	92-NBA0	92-NBA1
10	92-NBA0	92-NBA1	92-NBA1	92-NBA1
16	92-NBA0	92-NBA1	92-NBA1	92-NBA3
25	92-NBA0	92-NBA3	92-NBA3	92-NBA3
35	92-NBA0	92-NBA3	92-NBA3	92-NBA3
50	92-NBA0	N/A	92-NBA3	92-NBA4
70	92-NBA1	N/A	92-NBA4	92-NBA5
95	92-NBA1	N/A	92-NBA5	92-NBA5
120	92-NBA1	N/A	92-NBA5	92-NBA6
150	92-NBA3	N/A	92-NBA6	92-NBA6
185	92-NBA3	N/A	92-NBA7	92-NBA7

Inline joint kits for armoured cable

Cable Cross Section (mm ²)	1 Core	2 Cores	3 Cores	4 Cores
1.5	N/A	LVI-2/2-C*	LVI-2/2-C*	LVI-2/2-C*
2.5	N/A	LVI-2/2-C*	LVI-2/2-C*	LVI-2/2-C*
4	N/A	LVI-2/2-C*	LVI-2/2-C*	LVI-2/2-C*
6	N/A	LVI-2/2-C*	LVI-2/2-C*	LVI-2/2-C*
10	N/A	LVI-2/3-C*	LVI-2/3-C*	LVI-2/3-C*
16	N/A	LVI-2/3-C*	LVI-2/4	LVI-2/4
25	N/A	LVI-2/3-C*	LVI-2/4	LVI-2/4
35	N/A	LVI-2/4	LVI-2/5	LVI-2/5
50	LVI-2/3-C*	LVI-2/5	LVI-2/5	LVI-2/5
70	LVI-2/3-C*	LVI-2/5	LVI-2/6	LVI-2/6
95	LVI-2/4	LVI-2/6	LVI-2/6	LVI-2/7
120	LVI-2/4	LVI-2/6	LVI-2/7	LVI-2/7
150	LVI-2/4	LVI-2/6	LVI-2/7	LVI-2/7
185	LVI-2/5	LVI-2/7	LVI-2/7	
240	LVI-2/5	LVI-2/7		
300	LVI-2/6			
400	LVI-2/6			-
500	LVI-2/6	-	-	-
630	LVI-2/6	-	-	-
800	LVI-2/7	-	-	-
1000	LVI-2/7	-	-	-

3M™ Scotchcast™ Resin T-Branch Kit LVBT-2/1

3M™ Scotchcast™ Resin T-Branch Kit LVBT-2/1 is designed to be used for single and multicore un-armoured, polymeric, low voltage energy cables up to 600 V. Suitable for indoor, outdoor and buried applications with high humidity or weather exposure. The kit contains resin 40 in a transparent two chamber bag with an integrated closed mixing system, two part mould shelves with a snap fit closing system, transparent mould body, pouring funnel and a closure plug.

Kit No.	3M Order Code	Main Cable OD Accommodated	Branch Cable OD Accommodated	Min Cable/ Joint Diameter	Cable Configuration
LVBT-2/1	KE235122212	12.7 – 20.5 mm	Up to 9.5 mm	30	Single and multicore un-armoured, polymeric, low voltage energy cables up to 600 V.

3M™ Scotchcast™ Hazardous Area Resin Cable Joint Range

Scotchcast Hazardous Area Resin Cable Joints feature 3M™ Scotchcast™ Insulating Resin 1402FR. Scotchcast 1402FR resin is flame retardant, halogen free, and remains virtually unaffected by immersion in hydrocarbons and chemical solvents. When exposed to petrol, diesel and aggressive solvents, rapid deterioration can be experienced by standard encapsulating resins – especially those commonly found in conventional, low cost resin jointing kits. 1402FR is an ultra-high quality, highly modified resin that demonstrates superior performance compared to other encapsulating resin types. 3M Scotchcast Hazardous Area resin joint kits are recommended for industrial or specialist applications where hydrocarbons are present.



Applications:

- > Indoor, outdoor, underground and submerged applications
For use within Zone 1 and 2 areas.

Product	3M Order Code	Cable Type	Cable Diameter		Joint Configuration	Mould Body
			Main	Branch		
LVI-3/2-C*	KE235119523	Armoured	14 - 30 mm		Inline	Flame retardant two-part
LVI-3/3-C*	KE235119531	Armoured	23 - 35 mm		Inline	Flame retardant two-part
LVI-3/4	KE235119549	Armoured	28 - 47 mm		Inline	Flame retardant two-part
LVI-3/5	KE235119556	Armoured	35 - 60 mm		Inline	Flame retardant two-part
LVI-3/6	KE235119564	Armoured	45 - 70 mm		Inline	Flame retardant two-part
LVI-3/7	KE235119572	Armoured	45 - 90 mm		Inline	Flame retardant two-part
LVI-3/8	KE235120810	Armoured	45 - 100 mm		Inline	Flame retardant two-part
LVI-3/2-IC	KE235119580	Instrumentation/Control, Armoured	14 - 30 mm		Inline	Flame retardant two-part
LVI-3/4-IC	KE235119606	Instrumentation/Control, Armoured	28 - 47 mm		Inline	Flame retardant two-part
LVI-3/5-IC	KE235119614	Instrumentation/Control, Armoured	35 - 60 mm		Inline	Flame retardant two-part
LVI-3/2-C-TM*	AT019314882	Termite Protection, Armoured	14 - 30 mm		Inline	Flame retardant two-part
LVI-3/3-C-TM*	AT010589193	Termite Protection, Armoured	23 - 35 mm		Inline	Flame retardant two-part
92-NBB1-U	KE235109110	Non Armoured	11 - 23 mm	11 - 23 mm	Branch (Y config)	Express two-part
92-NBB2-U	KE235109128	Non Armoured	16 - 33 mm	16 - 33 mm	Branch (Y config)	Express two-part

Selection Table

Inline joint kits for armoured cable in hazardous areas

Cable Cross Section (mm ²)	1 Core (1 kV)	2 Cores (1 kV)	3 Cores (1 kV)	4 Cores (1 kV)	3 Cores (3.3 kV)	4 Cores (3.3 kV)
1.5	N/A	LVI-3/2-C*	LVI-3/2-C*	LVI-3/2-C*	-	
2.5	N/A	LVI-3/2-C*	LVI-3/2-C*	LVI-3/2-C*	-	
4	N/A	LVI-3/2-C*	LVI-3/2-C*	LVI-3/2-C*	-	
6	N/A	LVI-3/2-C*	LVI-3/2-C*	LVI-3/2-C*	-	
10	N/A	LVI-3/3-C*	LVI-3/3-C*	LVI-3/3-C*	-	
16	N/A	LVI-3/3-C*	LVI-3/3-C*	LVI-3/3-C*	-	LVI-3/4
25	N/A	LVI-3/3-C*	LVI-3/4	LVI-3/4	-	LVI-3/4
35	N/A	LVI-3/4	LVI-3/4	LVI-3/4	-	LVI-3/4
50	LVI-3/2-C*	LVI-3/4	LVI-3/4	LVI-3/5	LVI-3/3-C*	LVI-3/5
70	LVI-3/3-C*	LVI-3/4	LVI-3/5	LVI-3/5	LVI-3/3-C*	LVI-3/5
95	LVI-3/3-C*	LVI-3/5	LVI-3/5	LVI-3/6	LVI-3/3-C*	LVI-3/6
120	LVI-3/4	LVI-3/5	LVI-3/6	LVI-3/6	LVI-3/4	LVI-3/6
150	LVI-3/4	LVI-3/6	LVI-3/7	LVI-3/7	LVI-3/4	LVI-3/6
185	LVI-3/4	LVI-3/6	LVI-3/7	LVI-3/7	LVI-3/4	LVI-3/7
240	LVI-3/5	LVI-3/7	LVI-3/7	LVI-3/8	LVI-3/5	LVI-3/7
300	LVI-3/5	LVI-3/7	LVI-3/7	LVI-3/8	LVI-3/5	LVI-3/8
400	LVI-3/5	LVI-3/7	LVI-3/8	LVI-3/8	LVI-3/5	LVI-3/8
500	LVI-3/5	-			LVI-3/5	
630	LVI-3/6	-			LVI-3/6	
800	LVI-3/6	-			LVI-3/6	
1000	LVI-3/7	-			LVI-3/7	

*Connectors (crimp) included
 Note: Final determining factor is the cable diameter

3M Customised Resin Kit Solutions

The comprehensive 3M Scotchcast Resin Cable Joint range covers a vast array of applications and sizes; however we recognise that many projects require a customised solution to meet specific needs. For customised kit options, including termite and flame protection, please contact 3M with your enquiry.



3M™ Scotchcast™ Inline Resin Power Cable Splice Kits 82-AN Series (available in NZ only)

3M™ 82-AN Series Inline Resin Power Cable Splice Kit is designed to insulate and seal 5kV-rated unshielded, single conductor cables and 1 kV-rated multiple conductor cables. It is suitable for use in weather-exposed or direct-burial locations. Kit includes a mould body, pouring spouts, 23 electrical tape and No. 4N resin.

3M™ Scotchcast™ Electrical Resin 4N is a 2-part, insulating and encapsulating, epoxy-based, liquid resin that generates its own heat to cure. Compatible with solid/synthetic cable insulations and jackets, this resin makes an excellent insulator and sealer for cable splicing.



Applications:

- > Indoor, outdoor, underground and submerged.

Agency Approvals:



Important:

Use cable or connector diameter for final ordering criteria

This range is only available in New Zealand

Product	3M Order Code (NZ only)	Cable Size	Connector Diameter (maximum)	Cable Diameter (maximum)	Joint Configuration	Mould Body
82-A1N	80611616717	Up to 30 mm ²	10 mm	16 mm	Inline	Standard two-part
82-A2N	80611616717	35 - 80 mm ²	16 mm	25 mm	Inline	Standard two-part
82-A3N	80611616733	95 - 200 mm ²	25 mm	40 mm	Inline	Standard two-part

3M™ Scotchcast™ Electrical Insulating Resin 1402FR

3M Scotchcast™ Hazardous Area Electrical Insulating Resin 1402FR is a halogen free, flame retardant, two component polyurethane resin. The resin is designed with flame retardant and chemical resistant properties for electrical insulation and mechanical protection of electrical cable joints.

Applications:

- > Electrical insulation and mechanical protection of low and medium voltage electrical joints installed for indoor and outdoor, underground and submerged applications in conditions where flame retardancy and/or resistance to chemicals such as hydrocarbons is required.



Product	3M Order Code	Size	Viscosity at 23°C (mixed)	Cured Properties			Dielectric Strength
				Hardness Shore D	Tensile Strength	Elongation at Break	
1402FR	KE235108906	C 370 mL	2500 mPas	75	25 MPa	2%	>20 kV/mm

3M™ Scotchcast™ Encapsulating and Blocking Compound 4407

3M Scotchcast Encapsulating and Blocking Compound 4407 is a hard encapsulant designed specifically for permanent splice protection and cable blocking applications using telecommunications cables.

Applications:

- > Telecommunication applications requiring a hard, non-re-enterable compound with good handling and performance characteristics.



Product	3M Order Code	Size	Viscosity at 23°C (mixed)	Cured Properties		
				Hardness Shore A	Tensile Strength	Elongation at Break
4407 Size A	80610060339	89 mL	1200 mPas	70	3.45 Mpa	150%
4407 Size B	80610060347	197 mL	1200 mPas	70	3.45 Mpa	150%
4407 Size C	80610060362	396 mL	1200 mPas	70	3.45 Mpa	150%
4407 Size D	80610060388	637 mL	1200 mPas	70	3.45 Mpa	150%

3M™ Scotchcast™ Electrical Insulating Resin 40

3M Scotchcast Premium Electrical Insulating Resin 40 is a high quality two part polyurethane room temperature curing (low exotherm) resin designed for electrical insulation and mechanical protection. Once hardening is complete, the resin provides impact resistance and durability against moisture and atmospheric corrosion. It features a Closed Mix and Pour (CMP) Delivery System designed to improve user safety and minimize wastage from spills (note - 40 size C without nozzle does not use a Closed Mix and Pour system). Pot life at 23°C is 20 minutes.

Applications:

- > Mechanical protection and electrical insulation of low voltage electrical joints installed for indoor and outdoor, underground and submerged applications.



Product	3M Order Code	Size	Viscosity at 23°C (mixed)	Cured Properties			
				Hardness Shore D	Tensile Strength	Elongation at Break	Dielectric Strength
40 Size A	KE235117667	A 90 mL (104 g)	900 MPa	56	17 MPa	87%	36 kV/mm
40 Size B	KE235117675	B 200 mL (230 g)	900 MPa	56	17 MPa	87%	36 kV/mm
40 Size C	KE235117683	C 370 mL (426 g)	900 MPa	56	17 MPa	87%	36 kV/mm
40 Size C no nozzle*	KE235117741	C 370 mL (426 g) without nozzle	900 MPa	56	17 MPa	87%	36 kV/mm

*No nozzle format is recommended for resin pressure method (RPM) applications.

3M™ Scotchcast™ Easy Dispenser 250

3M™ Scotchcast™ Easy Dispenser 250 is an easy to use dispenser of electrical re-enterable resin for electrical installers. The 3M™ Scotchcast™ Easy Dispenser 250 contains 3M™ Scotchcast™ 8882 resin. This is a soft, two-part polybutadiene electrical resin encapsulant, designed for re-enterable splice protection. 3M™ Scotchcast™ 8882 resin is formulated for virtually every electrical application requiring a reliable, soft, re-enterable resin with good handling and performance characteristics. Scotchcast™ 8882 has excellent wetting properties and low viscosity. The resin flows well at low temperatures, filling the closure and minimizing air voids.



Applications:

- > Electrical insulation and moisture sealing of multicore low voltage cables up to 0.6/1 (1.2)kV in junction boxes where a re-enterable system is required.

Product	3M Order Code	Size	Operating Temperature	Emergency Operating Temperature	Dielectric Strength
Easy 250	UU001577251	250 ml	90°C continuous	Up to 130°C	22 kV/mm

3M™ High Gel Re-enterable Encapsulant 8882

3M High Gel Re-enterable Encapsulant 8882 is a two-part non-urethane encapsulating compound. The encapsulant aggressively adheres to filled cable and is compatible with common plastics used in telephone splice connectors. The encapsulant permits easy cable splice re-entry for future changes and maintenance.



Applications:

- > Encapsulating, sealing, potting and shock damping.

Product	3M Order Code	Size	Operating Temperature	Emergency Operating Temperature	Waterproof
8882-Size A	UU003021522	90 ml	90°C continuous	Up to 130°C	Meets IP68, and IEC60529 requirements
8882-Size E	UU003021548	292 ml	90°C continuous	Up to 130°C	Meets IP68, and IEC60529 requirements
8882-Size C	UU003021514	385 ml	90°C continuous	Up to 130°C	Meets IP68, and IEC60529 requirements
8882-Size D	UU003021530	659 ml	90°C continuous	Up to 130°C	Meets IP68, and IEC60529 requirements

3M™ Direct Bury Closure Kit - DBC Series

The 3M DBC Series Kits filled with gel are designed for polymeric insulated power cables up to 0.6/1.0 kV in high humidity environment such as outdoor electrical lighting and garden landscape applications.. The kits are pre-filled silicone gel boxes that provide quick and safe electrical installation. Easy to connect with provided premium connector block and has excellent water sealing. 3M Direct Bury Closure boxes offer high mechanical protection from external forces and are ready for power immediately after closing the box.



Applications:

- > Electrical insulation and mechanical protection of joints with mechanical connectors for indoor and outdoor, underground and submerged.

3M Order Code	Reference	Dimensions	Cable Formation and Conductor Cross Section
KE235126155	DBC-2C	180 × 60 mm	5 × 1.5 - 5 × 6 mm ²
KE235126163	DBC-3C	210 × 65 mm	5 × 2.5 - 5 × 16 mm ²

3M™ Scotchcast™ Re-enterable Resin 48FR

3M Scotchcast Re-enterable Polyurethane Resin 48FR can be used on either temporary or permanent cable joints. It is designed for easy removal, enabling further work or the recovery of parts, and can be removed with a simple plastic knife - no other tools, heat or solvents are required. It was developed to satisfy the requirements of the coal mining industry, where re-entry into joints and couplers is necessary. Flame retardant and semi-flexible. Gel time 15 minutes.

Applications:

- > To provide secondary insulation and moisture sealing in joints and couplers where re-entry into that joint or coupler may be necessary.

Product	3M Order Code	Size	Viscosity at 23°C (mixed)	Cured Properties			
				Hardness Shore A	Tensile Strength	Elongation	Dielectric Strength
48FR	UE555571905	4 L	1500 mPas	12	0.24 MPa	120%	>5 kV/mm
48FR	UE444457951	2 L	1500 mPas	12	0.24 MPa	120%	>5 kV/mm

3M™ Scotchcast™ Flame-Retardant Electrical Resin 2131

3M™ Scotchcast™ Flame-Retardant Electrical Insulating resin 2131 is a two-part polyurethane resin designed to replace the cable jacket when splicing or repairing mine and portable cables. It can withstand the rugged conditions under which mine and portable cables operate.



Applications:

- > Replace or repair the jacket on both single and multi-core power cables
- > Insulate between conductors of splices operating at up to 1000 volts
- > Potting cable or wire encasements, splices, printed circuit boards and junction boxes

Product	3M Order Code	Packaging Description	Weight (g)	Volume (cm ³)	Flame Retardant	Voltage	Maximum Operating Temperature
2131B	80611468259	2-part pouch	213	175	Yes	Up to 1000 v	90°C Continuous 130°C Emergency
2131C	80611468267	2-part pouch	612	502	Yes	Up to 1000 v	90°C Continuous 130°C Emergency

3M™ Scotchcast™ Flexible Power Cable Kits 82-F Series

3M™ Scotchcast™ Flexible Power Cable Splicing Kits 82-F Series are flexible inline splices for use on non-shielded portable power cables and cords. These splices are designed to be used on single or multiple conductor cables, depending on the voltage rating.



Applications:

- > For use in weather-exposed, direct burial or submerged location

Product	3M Order Code	Cable O.D. Range (mm)	Number of Conductors	Connection Max O.D. (mm)	Voltage Rating (Max. Volts)	Conductor Size Range (mm ²)
82-F1	80611468358	6.4 - 20.3	1	15.7 (Connector)	5000	16 - 50 mm ²
			Multi	22.8 (Connector Bundle O.D.)	1000 (600/2000)*	**
82-F2	80611468366	20.4 - 30.4	1	20.8 (Connector)	5000	70 - 120 mm ²
			Multi	33 (Connector Bundle O.D.)	1000 (600/2000)*	**

*Mine Portable Cable Rating of 600/2000 Volts. **Base multi-conductor selection on cable O.D. range.

3M™ Scotchcast™ Flexible Cable Jointing and Repair Systems

3M™ Scotchcast™ Flexible Cable Jointing and Repair Systems are flexible cold pour resin systems for the permanent jointing and repair of single and multi-core flexible power cables. The flexible Scotchcast resin bonds securely to the cable sheath, providing a permanent joint or repair with water tight seal. 3M™ Scotchcast™ Flame-Retardant Electrical Insulating Resin 2131 is suitable for use with these Kits.



Applications:

- > Can be used to joint or repair frequently coiled power cables

Product	3M Order Code	Min Cable Size (Dia) (mm)	Max Cable Size (Dia) (mm)	Max Length of Joint/Repair (mm)	Mould Length (mm)	Quantity of Resin needed for Joint - supplied separately
M20	80611468820	41	63	330-381	508	1200g (2 x Size C packs)
M30	80611468838	47	102	508	737	2220g (3 x Size C and 2 x Size B Packs)
M40	80611468846	47	152	813	1118	3600g (6 x Size C Packs)

3M™ Cold Shrink Low Voltage Insulators and Kits

3M Cold Shrink Insulators offer a safe, easy to install method of insulating, sealing and protecting connectors, cable, hoses, fittings and conduit. They are well suited for in-field applications because they require no special tools or heat to install. The unique 3M cold shrink delivery system ensures consistent installation and long term reliability. With 3M cold shrink insulators and accessories you get a water resistant seal without heat, torches or adhesive; simply unwind the core to install. It's that simple.

Why move to 3M Cold Shrink Technology?

- > No flame required
- > Less chance of damaging cable material
- > No cooling time needed before energising
- > Constant radial pressure for optimised environmental performance
- > Easier to use in enclosed areas
- > No special site permits needed
- > Fast, straightforward installation



3M™ Cold Shrink Wireless Weatherproofing Kit CXS Series

3M™ Cold Shrink Sealing Kits CXS Series use a cold shrink EPDM rubber tube, in conjunction with a closed cell foam strip, to seal connections and terminations on coaxial cables with Type N or 7/16 DIN connectors. 3M Cold Shrink tubes form a reliable water-resistant seal as well as providing excellent protection in tough environments, including resistance to UV, acids, alkalis, fungus, ozone, abrasion and vibration. Due to no adhesive needed to create the seal, the cold shrink tubes can be easily removed as required for system maintenance, inspection and repair.



Kit Number	3M Part Number	Sealing Application Sizes for DIN or Type N Coax Cable Connectors
CXS-1	80611207673	6.4 mm (1/4") – 22 mm (7/8") Cable to 6.4 mm (1/4") – 22 mm (7/8") Cable
CXS-2	80611207681	6.4 mm (1/4") - 41 mm (1 5/8") Cable to 32 mm (1 1/4") – 41 mm (1 5/8") Cable 32 mm (1 1/4") – 41 mm (1 5/8") Cable to Antenna or Surge Arrestor
CXS-3	80611207699	6.4 mm (1/4") – 57 mm (2 1/4") Cable to 32 mm (1 1/4") – 57 mm (2 1/4") Cable 32 mm (1 1/4") – 57mm (2 1/4") Cable to Antenna or Surge Arrestor
CXS-4	80611207707	6.4 mm (1/4") – 22 mm (7/8") Cable to Antenna or Surge Arrestor

3M™ Cold Shrink Connector Insulators 8420 and 8430 Series

3M Cold Shrink Connector Insulators 8420 and 8430 Series are designed using 3M's unique cold shrink delivery system. Products are supplied prestretched on a removable core for efficiency and ease of installation. Removal of the core (unwinding) after positioning the splice allows the product to shrink into position forming a moisture-tight seal. The live memory action of the specially formulated EPDM material promotes a permanent, durable environmental seal and insulation, with a typical operating temperature range from -40 to 90°C.



Important

- > Use cable insulation/jacket diameters and connector outer diameter for final sizing confirmation

Applications

- > Primary electrical insulation for all solid dielectric (rubber and plastic) insulated wire and cable splicing rated to 1000 V. Good for repairs and environmental sealing for communication and other non-electrical applications

Product Code	3M Order Code	Typical Cable Size	Minimum Cable Diameter for Seal	Maximum Diameter (Cable or Connector)	Maximum Connector Length	Relaxed Tube Length
8423-6	80610839484	14 - 20 mm ²	7.80 mm	14.3 mm	51 mm	152 mm
8424-8**	80610921928	6 - 50 mm ²	2.54 mm	20.9 mm	76 mm	203 mm
8425-8	80610921936	35 - 50 mm ²	10.1 mm	20.9 mm	76 mm	203 mm
8426-9	80610927669	70 - 120 mm ²	13.9 mm	30.1 mm	127 mm	229 mm
8426-11	80610927677	70 - 120 mm ²	13.9 mm	30.1 mm	178 mm	279 mm
8427-6*	80610456164	-	16.8 mm	35.1 mm	51 mm	152 mm
8427-12	80610134035	150 - 200 mm ²	16.8 mm	35.1 mm	203 mm	305 mm
8427-16	80610134043	150 - 200 mm ²	16.8 mm	35.1 mm	305 mm	406 mm
8428-6*	80610456172	-	24.0 mm	49.3 mm	51 mm	152 mm
8428-8	80611230212	240 - 400 mm ²	24.0 mm	49.3 mm	76 mm	203 mm
8428-12	80610154603	240 - 400 mm ²	24.0 mm	49.3 mm	203 mm	305 mm
8428-18	80610134050	240 - 400 mm ²	24.0 mm	49.3 mm	356 mm	457 mm
8429-6*	80610456180	-	32.2 mm	67.8 mm	51 mm	152 mm
8429-9*	80610456313	500 mm ²	32.2 mm	67.8 mm	127 mm	229 mm
8429-12	80610921910	500 mm ²	32.2 mm	67.8 mm	203 mm	305 mm
8429-15	80610970446	500 mm ²	32.2 mm	67.8 mm	280 mm	381 mm
8429-18	80610134068	500 mm ²	32.2 mm	67.8 mm	356 mm	457 mm
8430-9*	80610839492	630 - 1000 mm ²	42.6 mm	93.7 mm	127 mm	229 mm
8430-18	80610921902	630 - 1000 mm ²	42.6 mm	93.7 mm	356 mm	457 mm

*These sizes are not designed to be used as primary insulation. These shorter length tubes are for conduit sealing and breakouts. **8424-8 contains range-extending adapters (without adapters, 8424-8 and 8425-8 products are identical). Note: Insulation, connector and/or jacket can be overwrapped with Scotch® Rubber Mastic Tape 2228 to build up diameter if required.

For 8420 and 8430 Series Cold Shrink Tubes continuously exposed to high levels of UV radiation, 3M recommends overwrapping with Scotch® Super 33+ Vinyl Electrical Tape or Scotch® Self Fusing Silicone Rubber Tape 70. Other sizes of cold shrink tubes are available on request - please contact 3M.

3M™ Low Voltage Inline Joint Kits 5732-5735 Series

These kits are suitable for indoor and outdoor installations, including direct burial, aerial and submersible applications. For use with three core armoured cable up to 1000 V. Connectors are not included, pre-insulated crimp connectors preferred.



Product	3M Order Code	Cable Size	Cable Diameter
5732	80610981740	35 - 50 mm ²	24.1 – 61.0 mm
5733	80610981757	70 - 120 mm ²	29.2 – 83.8 mm
5734	80610981765	120 - 240 mm ²	39.4 – 101.6 mm
5735	80610981773	240 - 400 mm ²	39.4 – 101.6 mm

Note: If increased structural integrity is required, the joint can be overwrapped with two-half lapped layers of 3M™ Armorcast Structural Material (purchased separately). For 3 metre long rolls use the following number of rolls per kit: 5732 (2 rolls), 5733 & 5734 (3 rolls) and 5735 (5 rolls).

3M™ Cold Shrink Cable Abandonment Kits CSCAK

3M Cold Shrink Cable Abandonment Kits are a complete solution to abandon low voltage polymeric cables either temporarily or permanently. Environmental sealing and mechanical protection is provided using 3M Cold Shrink technology, eliminating the need for heat and special tools, making a quick, simple and reliable installation.

Kit Contents:

- > Cold shrink end cap
- > Armour/earth connection components
- > Cold shrink tube
- > Full installation Instructions
- > Self amalgamating insulating tape



Applications

- > Single and multi core low voltage polymeric power cables up to and including 1.9/3.3 kV (with or without lead sheath and/or armour)

Product	3M Order Code	Cable Diameter
CSCAK/1	TE100048780	12 - 18 mm
CSCAK/2	TE100048798	18 - 25 mm
CSCAK/3	TE100048806	25 - 42 mm
CSCAK/4	TE100048814	42 - 55 mm
CSCAK/5	TE100048822	56 - 81 mm

3M™ Cold Shrink End Caps EC-Series

3M Cold Shrink End Caps EC-Series are close-ended, tubular rubber sleeves that are factory expanded and loaded onto a removable core. When positioned over the end of a cable or other cylindrical object, the core is removed to provide a reliable environmental seal. Four different end caps are available to accommodate a wide range of sizes. They are easily installed and can be removed cleanly.

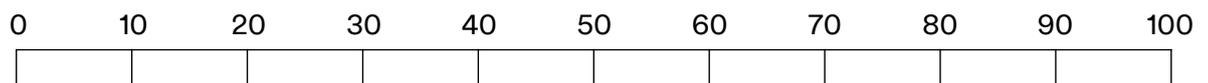


Applications

- > Environmentally seal and mechanically protect exposed cable ends using no tools, mastics or tapes
- > Protect cables and pipes from exposure to moisture, contamination, corrosion, ozone, ultra-violet radiation and other environmental hazards

Product	3M Order Code	Colour	Cable Diameter
EC-1	XA003895001	Black	11.6 – 20.9 mm
EC-2	XA003895019	Black	15.9 – 30.1 mm
EC-3	XA003895027	Black	26.0 – 49.2 mm
EC-4	XA003895035	Black	45.5 – 84.3 mm

Cable Diameter (mm)



EC-1	↔ 12-21 ↔
EC-2	↔ 16-30 ↔
EC-3	↔ 26-49 ↔
EC-4	↔ 45-84 ↔

3M™ Bore Pump Cable Jointing Kits

When a submersible pump is assembled, it is critical to remember the amount of time it will spend in and around water. 3M™ Bore Pump Cable Jointing Kits provide you with reliable, time efficient and flame free solutions for water cable splices, allowing you to successfully waterproof your electrical connections.



Applications:

- > Submersible cable splices

Kit No.	3M Order Code	Cross Section (mm ²)	Min Cable Diameter for Seal	Min Cable/Joint Diameter	Cable Configuration
91-CS-BPK-01-AU	AE010614723	1.5 – 2.5	14	30	2 to 4 Core Flat or Round Cables
91-CS-BPK-02-AU	AE010614731	4-6	17	35	
91-CS-BPK-03-AU	AE010614749	10-16	24	49	

3M™ Cable Accessories

If reliability and efficient performance is what matters, then put your trust in 3M™ Cable Accessories to meet your day to day electrical requirements. Our Cable Accessories range include the must-have essentials that every electrician needs within their toolkit.



3M™ Constant Force Springs

3M Constant Force Springs are a range of solderless connections for earthing or grounding use on:

- Lead and aluminium cable sheaths
- Cable screening tapes or wires
- Steel or aluminium armour wires

The spring is easily applied by rolling onto the cable core or outside diameter, whereupon it continues to exert a constant radial pressure.

Applications:

- > For power, control or telecom cables
- > For use on lead or aluminium sheaths and copper screened cables



Product	3M Order Code	Application Range	Country Availability
CFS 1	78801595196	12 - 20 mm	AU
CFS 2	78801595170	17 - 32 mm	AU
CFS 3	78801595188	20 - 37 mm	AU
CFS 4	78801899465	25 - 56 mm	AU
CFS 5	78801899820	38 - 74 mm	AU
CFS 6	78801899838	45 - 107 mm	AU
P59	DE713059009	4 - 10 mm	AU
P60	DE713060007	9 - 15 mm	NZ
P61	DE713061005	14 - 22 mm	NZ
P62	DE713062003	18.5 - 29 mm	AU, NZ
P63	DE713063001	23.5 - 37 mm	NZ
P64	DE713064009	31 - 50 mm	NZ
P65	DE713065006	44 - 70 mm	NZ
P66	DE713066004	58 - 94 mm	NZ

3M™ Cable Cleaning System CC Series

3M Cable Cleaning System CC Series cleans cable insulation, metal, electrical and mechanical parts. CC series solvent is suitable for use on transformers, generators, motors and metal parts of all sorts. It can be used for PCB cleanup and in parts cleaners for degreasing. It removes surface oils, tars and heavy greases. Use of solvent on carbon-containing semi conductive surfaces such as cable insulation shields is not recommended. 3M Cable Cleaning System CC Series solvent can effectively replace 1,1,1- trichloroethane and other hazardous solvents.



Product	3M Order Code	Description	Kit Contents
CC-2	80610592992	Cable Cleaning Preparation Kit	3 x solvent saturated cable cleaning pads 1 x Non-conductive grit abrasive cloth
CC-3	80610593008	Cable Cleaning Pad Kit	3 x solvent saturated pads
CC-4	AE010587481	Cable Cleaning Solvent	940 mL

3M™ Cable Cleaning/Degreasing Wipes

3M Cable Cleaning/Degreasing Wipes are designed specifically to remove contaminants such as grease, oil, sealants and cable gel from switchgear and cables. The product will even remove heavy or old deposits without hazard to the substrate or insulation materials.



Applications:

- > Cable cleaning prior to jointing
- > Removal of protective greases and gel from switchgear

Product	3M Order Code	Description	Kit Contents
Cleaning Wipes 1 L	GE700027966	1 L pail	75 wipes
Cleaning Wipes 3 L	GE700027974	3 L pail	250 wipes

3M™ Wire Pulling Lubricant Gel WL

3M Wire Pulling Lubricant is a clear, colourless, slow-drying, easy-to-apply gel which is an excellent lubricant for everyday pulling of both electrical and communication cable. The clear formula makes this an ideal choice where cleanliness is a concern. 3M Wire Pulling Lubricant has a low residue (less than 5% solids).

Agency Approvals:



Applications

- > For pulling a wide variety of cable types, such as power, control, instrumentation and communication cables, including coaxial and fibre optic cables



Product	3M Order Code	Size	Colour	Temperature Use Range
WL-QT	80610736623	950 mL	Clear	-6 to 43°C

3M™ Scotchkote™ Electrical Coating FD

3M Scotchkote™ Electrical Coating FD is designed as a fast-drying sealant and bonding agent intended for use on joints wrapped with vinyl electrical tape. For direct burial, direct water immersion or above-ground applications. A brush-on, fast drying sealant with self contained applicator for quick and easy application.



Applications:

- > Provides vinyl tapes with an extra oil, moisture and corrosion-resistant layer of flexible coating for problem areas

Product	3M Order Code	Size
Scotchkote™	80611615784	440 mL

3M™ Scotchcode™ Wire Marker Tape Dispensers STD

The 3M™ Scotchcode™ Tape Dispenser STD is a compact, carry-along dispenser with 10 refillable compartments that holds 2 metre rolls of non-smear polyester tape. Used for marking binder groups, wire or cable, the tapes' high-tack acrylic adhesive resists solvents, oil and water, and adheres firmly to insulation surfaces. An end-loop hooks the dispenser easily to a tool pouch or belt. Dispensers can be ordered empty or filled with 10 rolls of pre-printed numbers 0–9.



Product	3M Order Code	Description
STD-X	80610592554	Compact, carry-along dispenser with 10 refillable compartments that hold 20 cm rolls of non-smear polyester tape.
STD-0-9X	80610733901	Dispenser filled with 10 rolls of numbered tape (one each of 0-9)
STD-CX	80610733760	Dispenser filled with 10 rolls of coloured tape (one each of black, blue, brown, green, grey, orange, red, violet, white and yellow)

3M™ Scotchcode™ Write-On Dispenser and Pen

This self-laminating, write-on marker dispenser is handy for identifying wire and cable as well as household, automotive, plumbing and sporting equipment. It is easy to use, refillable and comes with a SMP permanent marking pen. The dispenser's design provides convenience and protects the die-cut adhesive markers. The pen performs well on nonporous surfaces, has an extra fine point with permanent, quick drying black ink. It has excellent UV and water resistance.



Applications:

- > Marking communications, security and sound system components
- > Marking pipes, hoses, tubes, parts, vents

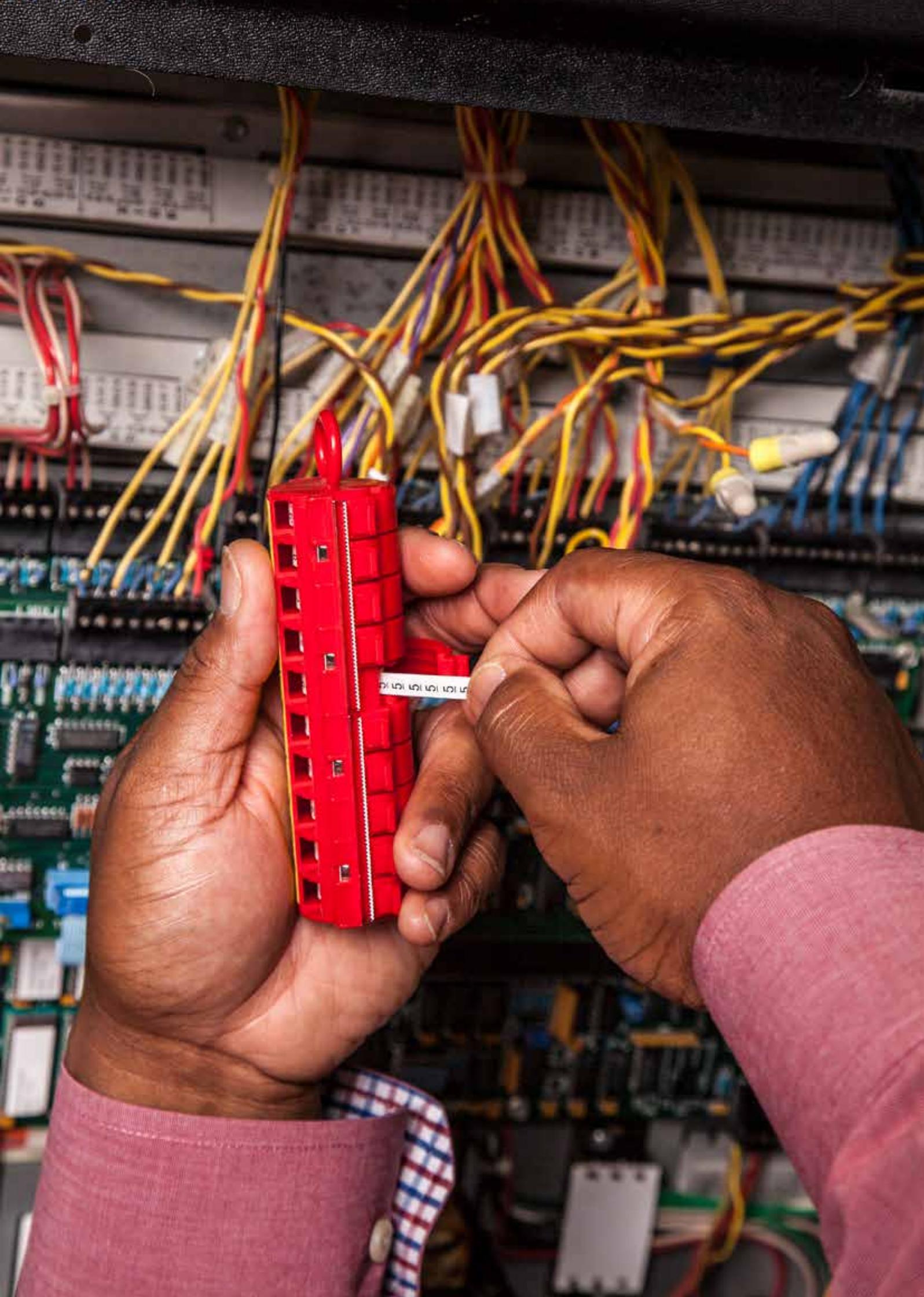
Product	3M Order Code	Description	Labels per roll	Write-on area	Marker Size	Recommended Wire Diameter
SLW	80610593917	Larger sized dispenser with tape and SMP marking pen	70	25 × 19 mm	25 × 127 mm	5.8 to 33.5 mm

3M™ Scotchcode™ Tape Refill Rolls

This aggressive adhesive system, combined with the flexible polyester film backing, provides a thin, conformable tape that is durable, and will hold up in most industrial electrical applications.



Product	3M Order Code	Printed Text Type	Printed Text	Write-on area
SDR-0-9	80611424617	Numeric	"0" through "9"	-
SDR-0	80610733919	Numeric	"0"	-
SDR-1	80610733927	Numeric	"1"	-
SDR-2	80610733935	Numeric	"2"	-
SDR-3	80610733943	Numeric	"3"	-
SDR-4	80610733950	Numeric	"4"	-
SDR-5	80610733968	Numeric	"5"	-
SDR-6	80610733976	Numeric	"6"	-
SDR-7	80610733984	Numeric	"7"	-
SDR-8	80610733992	Numeric	"8"	-
SDR-9	80610734008	Numeric	"9"	-
SLW-REFILL	80611428097	Write-on	-	25 × 19 mm



3M™ Heat Shrink Tubing

3M Heat Shrink Tubing products provide an effective means of applying skin tight insulating and protective coverings for a wide variety of electrical, electronic and mechanical applications. 3M heat shrink products offer the important advantages of simple installation, improved performance and long term reliability. They are abrasion resistant, and withstand heat, corrosion, moisture and other hostile environments whilst offering superior dielectric properties.



Typical Properties	IMCSN	ITCSN
		
Adhesive Lined?	Yes	Yes
Operating Temperature Range	-55 to 110°C	-55 to 110°C
Shrink Temperature (Minimum)	121°C	121°C
Shrink Ratio	3:1	up to 4:1
Standard Sizes Expanded Diameter	10 - 109 mm	10 - 152 mm
Dielectric Strength	19.7 kV/mm	19.7 kV/mm
Volume Resistivity	$1 \times 10^{14} \Omega\text{-cm}$	$1 \times 10^{14} \Omega\text{-cm}$
Tensile Strength	16 Mpa	16 Mpa
Elongation	475%	475%
Longitudinal Change	+1%,-10%	+1%,-10%
Flammability	n/a	n/a
Corrosivity or		
Corrosive Effect	Non-corrosive	Non-corrosive
Abrasion Resistance	Good	Good
Fuel and Oil Resistance	Good	Good
Solvent Resistance	Good	Good
Resistance to Acids and Alkalis	Excellent	Excellent
Agency Approvals		

3M™ Heat Shrink Medium-Wall Cable Sleeves IMCSN

Adhesive lined, medium wall cross-linked polyolefin tubing with a 3:1 shrink ratio. Split resistant tubing designed to provide reliable performance for electrical splices, connections, and terminations as well as mechanical and environmental protection. Rated to 1000 V.



Format: 1.2 m lengths
 Voltage: 1000V
 Operating Temperature -55°C to 110°C
 Shrink Temperature: 121°C
 Agency Approvals:  

Applications

> Insulation (rated to 1000 volts), Protection and moisture sealing of low and high voltage joints, connections and terminations in indoor and outdoor applications.

Product	3M Order Code	Colour	Cable Size	Cable Diameter (maximum – minimum)	Expanded Inner Diameter
IMCSN-0400-48A	80610677603	Black	4 - 10 mm ²	8.8 - 3.8 mm	10.2 mm
IMCSN-0800-48A	80610677611	Black	10 - 25 mm ²	18 - 5.6 mm	20.3 mm
IMCSN-1500-48A	AE010582920	Black	60 - 120 mm ²	33 - 12.1 mm	38.1 mm
IMCSN-2000-48A	80610677645	Black	185 - 250 mm ²	44.5 - 19 mm	50.8 mm
IMCSN-3000-48A	80610677652	Black	325 - 625 mm ²	63.5 - 25.4 mm	76.2 mm
IMCSN-4300-48A	80610677595	Black	625 - 1000 mm ²	91.5 - 38.1 mm	109.2 mm

3M™ Heat Shrink Heavy-Wall Cable Sleeves ITCSN

Adhesive lined, thick wall polyolefin tubing with a shrink ratio as high as 4:1. Split resistant tubing designed to provide reliable performance for electrical splices, connections and terminations, as well as mechanical and abrasion resistance. Rated to 1000 V.



Format: 1.2 m lengths
 Voltage: 1000V
 Operating Temperature -55°C to 110°C
 Shrink Temperature: 121°C
 Agency Approvals:  

Applications

> Insulation (rated to 1000 volts), Protection and moisture sealing of low and high voltage joints, connections and terminations in indoor and outdoor applications.

Product	3M Order Code	Colour	Cable Size	Cable Diameter (maximum – minimum)	Expanded Inner Diameter	Recovered Inner Diameter
ITCSN-0400 48A	80610229611	Black	4 - 10 mm ²	9 - 3.3 mm	10.2 mm	3.8 mm
ITCSN-0400 48A Bulk	80008007181	Black	4 - 10 mm ²	9 - 3.3 mm	10.2 mm	3.8 mm
ITCSN-0800 48A	80610229629	Black	10 - 15 mm ²	18 - 5.6 mm	20.3 mm	5.1 mm
ITCSN-0800 48A Bulk	80008007223	Black	10 - 15 mm ²	18 - 5.6 mm	20.3 mm	5.1 mm
ITCSN-1100 48A	80610229637	Black	35 - 95 mm ²	24 - 9.4 mm	27.9 mm	9.4 mm
ITCSN-1100 48A Bulk	80008007264	Black	35 - 95 mm ²	24 - 9.4 mm	27.9 mm	9.4 mm
ITCSN-1500 48A	80610229645	Black	95 - 185 mm ²	33 - 12.1 mm	38.1 mm	12.7 mm
ITCSN-2000 48A	80610229652	Black	150 - 300 mm ²	44 - 19.0 mm	50.8 mm	16.5 mm
ITCSN-2000 48A Bulk	80008007322	Black	150 - 300 mm ²	44 - 19.0 mm	50.8 mm	16.5 mm
ITCSN-3000 48A	80610229660	Black	400 - 625 mm ²	63.5 - 25.4 mm	76.2 mm	25.4 mm
ITCSN-3000 48A Bulk	80008007348	Black	400 - 625 mm ²	63.5 - 25.4 mm	76.2 mm	25.4 mm
ITCSN-4500 48A	80610858716	Black	800 - 1000 mm ²	101.6 - 38.1 mm	114.3 mm	38.1 mm
ITCSN-6000 48A Bulk	80008007363	Black		139.7 - 45.7 mm	152.4 mm	45.7 mm

3M™ Heat Shrink Wraparound Cable Repair Sleeve HDCW

3M Wraparound Heat Shrink Cable Repair Sleeve HDCW is designed to repair damaged cable sheaths. It is also suitable for use with cable joints and as additional corrosion protection on undamaged cables. Quick and easy to apply, it provides maximum protection against mechanical stress, even in the most aggressive environments. The inner wall of the sleeve is coated with hot melt adhesive to achieve a safe and watertight bond with the cable and give a perfect seal when heat is applied, while a corrosion proof metal clip is used to fully close the sleeve.



Applications

- > Quickly and safely repair damaged cable sheaths and as additional corrosion protection on joints or undamaged cables.

Product	3M Order Code	Cable Diameter (maximum - minimum)	Length	Expanded Inner Diameter	Recovered Inner Diameter	Minimum Recovered Wall Thickness
HDCW 35/10-250	DE272920799	35 - 10 mm	250 mm	50 mm	8 mm	2.0 mm
HDCW 35/10-500	DE272920781	35 - 10 mm	500 mm	50 mm	8 mm	2.0 mm
HDCW 35/10-750	DE272920773	35 - 10 mm	750 mm	50 mm	8 mm	2.0 mm
HDCW 35/10-1000	DE272920765	35 - 10 mm	1000 mm	50 mm	8 mm	2.0 mm
HDCW 55/15-250	DE272909834	55 - 15 mm	250 mm	75 mm	13 mm	2.0 mm
HDCW 55/15-500	DE272909842	55 - 15 mm	500 mm	75 mm	13 mm	2.0 mm
HDCW 55/15-750	DE272909859	55 - 15 mm	750 mm	75 mm	13 mm	2.0 mm
HDCW 55/15-1000	DE272909867	55 - 15 mm	1000 mm	75 mm	13 mm	2.0 mm
HDCW 80/25-250	DE272909883	80 - 25 mm	250 mm	100 mm	23 mm	2.0 mm
HDCW 80/25-500	DE272909891	80 - 25 mm	500 mm	100 mm	23 mm	2.0 mm
HDCW 80/25-750	DE272909909	80 - 25 mm	750 mm	100 mm	23 mm	2.0 mm
HDCW 80/25-1000	DE272909917	80 - 25 mm	1000 mm	100 mm	23 mm	2.0 mm
HDCW 110/30-500	DE272909941	110 - 30 mm	500 mm	132 mm	25 mm	2.0 mm
HDCW 110/30-1000	DE272909966	110 - 30 mm	1000 mm	132 mm	25 mm	2.0 mm
HDCW 140/40-250	DE272909982	140 - 40 mm	250 mm	145 mm	32 mm	1.8 mm
HDCW 140/40-500	DE272909990	140 - 40 mm	500 mm	145 mm	32 mm	1.8 mm
HDCW 140/40-1000	DE272910014	140 - 40 mm	1000 mm	145 mm	32 mm	1.8 mm

3M™ Heat Shrink Thin-Wall Tubing FP-301 Assorted Sizes Kits

The 3M Heat Shrink Thin-Wall Tubing FP-301 Kits are a versatile assortment of flexible polyolefin heat shrink tubing, and are available in black or assorted colours. These rugged plastic kits include product and installation information on the cover and allow an engineer, designer or technician to have a complete selection of popular sizes and colours for small projects and product development programs. FP-301 tubing has a 2:1 shrink ratio and is rated for continuous operation from -55 to 135°C.



Voltage: 600V
 Operating Temperature -55°C to 135°C
 Shrink Temperature: 100°C
 Agency Approvals: 

Applications

- > Electrical insulation over cable splices and terminations Lightweight wire harness covering, wire marking, wire bundling, component packaging and fire resistant covering.

Product	3M Order Code	Description	Colour (s)	Sizes	Format
FP-301 Kit Assorted Colours	80610855779	133 pieces/kit, 7 colours and 6 sizes	Black, red, white, yellow, blue, green, and clear	2.4, 3.2, 4.8, 6.4, 9.5, 12.7 mm	152 mm long pieces
FP-301 Kit Black	80610906317	102 pieces/kit, 6 sizes	Black	4.8, 6.4, 9.5, 12.7, 19.1, 25.4 mm	152 mm long pieces

3M™ Heat Shrink Cable Breakouts

3M Heat Shrink Cable Breakouts are designed for quick and easy insulation and sealing of cable breakout areas, and provide resistance to abrasion, weathering and chemical attack. The parts are made from semi-rigid, cross-linked modified polyolefin material that is coated internally with hot melt adhesive. The materials used are halogen free. On application of heat the adhesive melts and the part shrinks forming a watertight seal.



Applications

- > Cable breakout area sealing.

Product	3M Order Code	Description	Conductor Size Range (LV cable)	Neck Expanded Diameter	Neck Recovered Diameter	Finger Expanded Diameter	Finger Recovered Diameter	Recovered Length	Neck Recovered Wall Thickness	Finger Recovered Wall Thickness
SKE-3F/1-1.5	DE272919734	3 way outlet	6 - 16 mm ²	25 mm	9 mm	9 mm	3 mm	70 mm	2.5 mm	1.8 mm
SKE-3F/2	DE272919577	3 way outlet	10 - 50 mm ²	35 mm	15 mm	13 mm	4 mm	100 mm	2.5 mm	1.8 mm
SKE-4F/1+2	DE272919528	4 way outlet	4 - 35 mm ²	35 mm	15 mm	15 mm	4 mm	100 mm	3.8 mm	1.8 mm
SKE-4F/3+4	DE272919536	4 way outlet	25 - 150 mm ²	57 mm	23 mm	30 mm	6 mm	170 mm	4.0 mm	3.0 mm
SKE-4F/5	DE272919601	4 way outlet	120 - 400 mm ²	95 mm	36 mm	38 mm	14 mm	220 mm	3.5 mm	2.5 mm

3M™ Connectors & 3M™ Scotchlok™ Wire Connectors & Tools

3M™ Connectors and 3M™ Scotchlok™ Connectors offer the quick installation and reliability that contractors demand. They come in a variety of shapes and sizes with different properties to fit a wide range of applications and cable sizes.



Electrical Wire Connectors

Spring Connectors – 3M™ Performance Plus Wire Connectors

Because of their increased wire range, just three 3M™ Performance Plus Wire Connectors do the work of eight standard connectors and are suitable for commercial, residential, industrial and maintenance applications. The rounded wings make 3M wire connectors exceptionally easy to handle. The flexible skirt covers over-strips yet conforms to whatever space is available in a box. Inside, the unique spring grips quickly and bites into conductors for solid, secure connections.

Product	B/G+BOX	O/B+BOX	R/Y+BOX
			
3M Order Code	80000209769	80000209777	80000209785
Colour	Blue/Grey	Orange/Blue	Red/Yellow
Conductor Size Combinations*	3 × 2.5 mm ² to 2 × 10 mm ² Solid/Stranded	2 × 0.5 mm ² Solid/Stranded to 3 × 2.5 mm ² Solid	2 × 1.0 mm ² to 2 × 6 mm ² Solid/Stranded
Connector Style	Twist On	Twist On	Twist On
Flame Retardant	Yes	Yes	Yes
Maximum Voltage Rating	600 V (1000 V in signs, lighting fixtures and luminaries)	600 V (1000 V in signs, lighting fixtures and luminaries)	600 V (1000 V in signs, lighting fixtures and luminaries)
Maximum Operating Temperature	105°C	105°C	105°C

Agency Approvals:  

* See data sheet for all combinations

Insulation Displacement Connectors and Tools for Electrical Applications

3M™ Scotchlok™ IDC Electrical Double Run or Tap Connectors 560,560B and 564

Product	560	560B	564
			
3M Order Code	80610031058	80610052773	80601103031
Colour	Light Blue	Blue	White
Conductor Size	0.75 - 1.0 mm ² Solid/Stranded 1.5 mm ² Stranded	0.75 - 1.0 mm ² Solid/Stranded 1.5 mm ² Stranded	0.75 - 1.5 mm ² Solid/Stranded
Connector Style	Insulation Displacement (IDC)	Insulation Displacement (IDC)	Insulation Displacement (IDC)
Maximum Insulation Diameter	3.7 mm	3.7 mm	3.7 mm
Flame Retardant	Yes	Yes	No
Maximum Voltage Rating	600 V (1000 V in signs, lighting fixtures and luminaries)	600 V (1000 V in signs, lighting fixtures and luminaries)	32 V
Maximum Operating Temperature	105°C	90°C	90°C
Recommended Installation Tools	3M™ Crimping Tool E-9BM Linesman Pliers	3M™ Crimping Tool E-9BM Linesman Pliers	3M™ Crimping Tool E-9BM Linesman Pliers Multigrip (Slip Joint) Pliers

Agency Approvals:  

3M™ Scotchlok™ IDC Run and Tap Connectors 558 and 567

Electrically connects a (tap) wire end to a through (run) wire and insulates the connection. Designed for control circuit wiring, fixture wiring, appliance wiring, signal and PA systems, and automotive, boat or recreational vehicle wiring. Flame retardant.

Agency Approvals:  

Product	558	567
		
3M Order Code	80014000808	80610031439
Colour	Red	Brown
Conductor Size	0.5 - 1.5 mm ² Solid/Stranded	Tap: 0.75 - 1.5 mm ² Run: 3.5 - 4.0 mm ² Solid/Stranded
Connector Style	Insulation Displacement (IDC)	Insulation Displacement (IDC)
Maximum Insulation Diameter	3.0 mm	Tap: 3.7 mm Run: 4.8 mm
Flame Retardant	Yes	Yes
Maximum Voltage Rating	105°C	
Maximum Operating Temperature	600 V (1000 V in signs, lighting fixtures and luminaries)	600 V (1000 V in signs, lighting fixtures and luminaries)
Recommended Installation Tools	3M™ Crimping Tool E-9BM Linesman Pliers	3M™ Crimping Tool E-9BM Linesman Pliers

3M™ Scotchlok™ Fuse Holder 972-A

The 3M Scotchlok™ Fuse Holder 972-A is used to install a blade-type automotive fuse between power source and device.

Recommended installation tool: Multigrip (Slip Joint) Pliers

Product	567
	
3M Order Code	80611441579
Colour	Blue
Conductor Size	0.75 - 1.5 mm ² Solid/Stranded
Connector Style	Insulation Displacement (IDC)
Maximum Insulation Diameter	3.8 mm
Flame Retardant	No
Operating Temperature	105°C

3M™ Scotchlok™ Moisture Guard Connector (MGC)

The 3M™ Scotchlok™ Moisture Guard Connector MGC provides a convenient way to connect wires for landscape irrigation and lighting applications. Just press the MGC cap and a metal element inside pushes through the wire insulation to make a secure, reliable connection. The grease in the MGC protects against moisture while the MGC housing is UV resistant for above-ground applications.



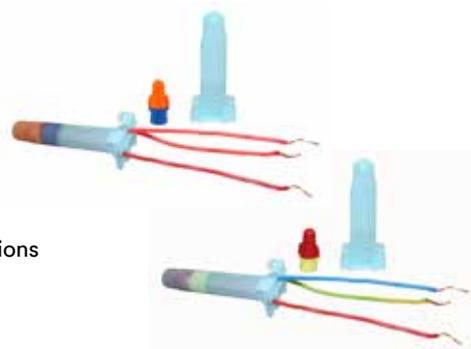
Recommended installation tool: Multigrip (Slip Joint) Pliers

Applications: Residential and commercial landscape lighting Irrigation applications

Product Name	3M Order Code	Connector Style	Outside Port		Inside Port		Flame Retardant	Maximum Voltage Rating	Maximum Operating Temperature
			Wire Range	Insulation Diameter	Wire Range	Insulation Diameter			
MGC (25/Bag)	80611434152	Insulation Displacement (IDC)	1.0 mm ² - 2.5 mm ² Solid/Stranded	5.3 mm	0.5 mm ² Stranded, 0.75 mm ² Solid/Stranded	3.8 mm	Yes	600 V (1000 V in signs, lighting fixtures and luminaries)	105°C
MGC (100/Jar)	80611434160	Insulation Displacement (IDC)	1.0 mm ² - 2.5 mm ² Solid/Stranded	5.3 mm	0.5 mm ² Stranded, 0.75 mm ² Solid/Stranded	3.8 mm	Yes	600 V (1000 V in signs, lighting fixtures and luminaries)	105°C

3M™ Direct Bury Splice Kits DBO/B-6 and DBR/Y-6

The 3M™ Direct Bury Splice Kits DBO/B-6 and DBR/Y-6 are used to electrically connect two or more pre-stripped copper wires and moisture seal the connection for direct burial. The DBO/B-6 kit includes a 3M™ Performance Plus Wire Connector O/B+ and a high impact, UV-resistant polypropylene tube prefilled with moisture-resistant grease and is flame retardant. The DBR/Y-6 kit includes a 3M™ Performance Plus Wire Connector R/Y+ and a high impact, UV-resistant polypropylene tube prefilled with moisture-resistant grease.



Applications: Wiring up to 600 V in water-intensive applications such as golf courses, irrigation controls and outdoor lighting.

Product name	3M Order Code	Conductor Size	Connector Style	Common Wire Combinations (Copper only)*	Flame Retardant	Maximum Voltage Rating	Maximum Operating Temperature
DBO/B-6 BULK	80611467293	0.75 mm ² - 2.5 mm ²	Direct Bury	2 × 1.0 mm ² to 3 × 2.5 mm ²	Yes	600 V	105°C
DBR/Y-6 BULK	80611457195	1.0 mm ² - 6.0 mm ²	Direct Bury	2 × 1.0 mm ² to 3 × 4.0 mm ²	Yes	600 V	105°C

3M™ Scotchlok™ Moisture Resistant Connectors 314 and 316IR

3M™ Scotchlok™ Connectors 314 and 316IR are used to electrically connect two or three wire ends, insulate the connection, and provide a moisture resistant seal. 316-IR is recommended for use with low energy underground circuit wires, sprinkler systems, landscape lighting or other moisture-resistant applications less than 600 volts.



Recommended installation tool: 3M™ Scotchlok™ Crimp Tool E-9BM or Multigrip (Slip Joint) Pliers

Product	3M Order Code	Colour	Conductor Size	Maximum Insulation Diameter	Flame Retardant	Maximum Voltage Rating	Maximum Operating Temperature
314	80000209561	Blue Cap, White Body	0.5 - 1.5 mm ² Solid/Stranded)	3.8 mm	Yes	600 V	105°C
314 (bulk)	80610253678	Blue Cap, White Body	0.5 - 1.5 mm ² Solid/Stranded)	3.8 mm	Yes	600 V	105°C
316IR	80610734537	Black Cap, White Body	0.5 - 1.0 mm ² Solid/Stranded)	3.9 mm	Yes	600 V	105°C

3M™ Scotchlok™ Butt Connector UAL

The UAL connector is a sealed, moisture resistant two or three wire insulation displacement connector. Outside ports accept solid copper, aluminium or a combination of both.



Recommended installation tool: 3M Crimping Tools E-9BM, E-9J or E-9Y

Product	3M Order Code	Colour	Conductor Size	Maximum Insulation Diameter	Flame Retardant	Maximum Operating Temperature
UAL	80611327463	Clear	0.5 - 1.2 mm	Outside port: 2.1 mm Centre port: 1.9 mm	No	140°C

Communication Connectors

3M™ Scotchlok™ IDC Butt Connectors UR2 and UY2

3M™ Scotchlok™ IDC Butt Connectors employ a specially designed, wire insulation displacement contact to make a reliable electrical connection to each wire. A “live-spring” joint is made by driving the wire down into the “U” contact connector. This simple process displaces the insulation and grasps all conductors with a firm, resilient pressure, all in one motion. No stripping of wire insulation is required. Scotchlok™ butt connectors include a factory-installed sealant to protect against corrosion and seal out moisture.

3M™ Scotchlok™ IDC Butt Connector UR2

The UR2 connector accepts two or three solid copper conductors for butt splicing. The connector is filled with a sealant to provide moisture resistance.

Recommended installation tool: 3M™ Crimping Tools E-9BM, E-9J or E-9Y

Agency Approvals:



Product	3M Order Code	Connector Type	Colour	Conductor Diameter	Maximum Insulation Diameter
UR2 100/pk AU	AE010419032	Butt, 2 or 3 Conductor, IDC	Red (top)	0.4 - 0.9 mm	2.1 mm
UR2 500/jar AU	80611327653	Butt, 2 or 3 Conductor, IDC	Red (top)	0.4 - 0.9 mm	2.1 mm
UR2 100/box NZ	80611327596	Butt, 2 or 3 Conductor, IDC	Red (top)	0.4 - 0.9 mm	2.1 mm
UR2 500/jar NZ	80611327653	Butt, 2 or 3 Conductor, IDC	Red (top)	0.4 - 0.9 mm	2.1 mm

3M™ Scotchlok™ Butt Connector UY2

The small size of the UY2 connector reduces the splicing bundle size to a minimum. The connector’s two ports accept two solid copper conductors. The connector is filled with a sealant to provide moisture resistance.

Recommended installation tool: 3M™ Crimping Tools E-9BM

Agency Approvals:



Product	3M Order Code	Connector Type	Colour	Conductor Diameter	Maximum Insulation Diameter
UY2 100/pk AU	AE010419024	Butt, 2 Conductor, IDC	Yellow (top)	0.4 - 0.9 mm	2.1 mm
UY2 100/box NZ	80611326796	Butt, 2 Conductor, IDC	Yellow (top)	0.4 - 0.9 mm	2.1 mm
UY2 500/jar	80611327869	Butt, 2 Conductor, IDC	Yellow (top)	0.4 - 0.9 mm	2.1 mm

3M™ Scotchlok™ Self Stripping Drop Wire Connector 557-TG2

Use the 557-TG2 aerial dropwire connector to electrically connect two solid copper conductors, insulate the connection and provide moisture protection. Available in NZ only.

Recommended installation tool: 3M™ Crimping Tools E-9BM or E-9J



Product	557-TG2 100/Jar	557-TG2 500/Box	Conductor Size	Maximum Insulation Diameter
557-TG2	XE000700049	80611322076	0.6 - 1.3 mm	3.0 mm

3M™ Scotchlok™ Inline Connectors U1R and U1B

The U1R and U1B connectors are sealed moisture-resistant four-wire (1 full pair) inline connectors for larger gauge solid copper conductors.



Recommended installation tool: 3M™ Crimping Tools E-9BM

Product	3M Order Code	Colour	Wire Range	Maximum Insulation Diameter
U1R	FQ100057535	Red (top)	0.5 - 0.9 mm	3.2 mm
U1B	FQ100057527	Blue (top)	0.9 - 1.3 mm	3.2 mm

3M™ Scotchlok™ Tap Connector UB2A

By positioning the 3M Scotchlok™ IDC Tap Connector UB2A on the conductor and pre-crimping, the conductor is prevented from slipping out of the connector before the crimp is completed. The UB2A permits tapping directly onto an existing conductor without interrupting service. In ready access closures, the UB2A eliminates cutting cable pairs, opening pairs, and piecing out wires. The conductors joined can be different sizes.



Recommended installation tool: 3M™ Crimping Tools E-9BM, E-9J or E-9Y

Agency Approvals: 

Product	3M Order Code	Conductor Size	Maximum Insulation Diameter
UB2A	80611327471	0.4 - 0.9 mm	2.1 mm

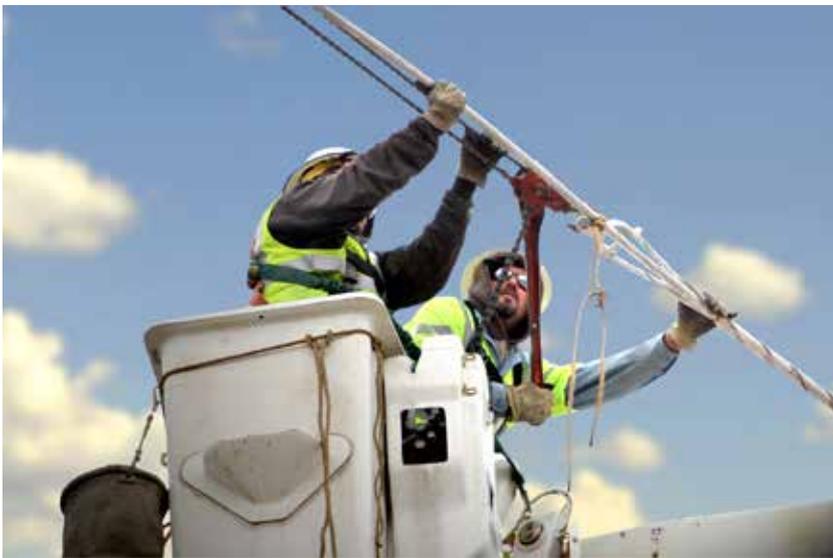
3M™ Scotchlok™ Crimping Tools

3M™ recommends the use of 3M™ Scotchlok™ Crimping Tools when installing 3M™ Scotchlok™ IDC Connectors. These tools ensure repeated fast, reliable connections. In projects where large numbers of connectors are being used, the high mechanical advantage designed into the tool will ensure minimal operator fatigue.

Product	E-9BM	E-9J
		
3M Order Code	80611141294	80611314065
Product name	3M™ Scotchlok™ Hand Crimping Tool E-9BM	3M™ Scotchlok™ Hand Crimping Tool E-9J
Description	This heavy duty tool is capable of crimping all Scotchlok™ connectors. Its closing action and adjustable jaws provide a 10 to 1 mechanical advantage, allowing it to handle all wire gauges.	The E-9J tool is a lightweight, handheld tool featuring a single stroke, with a work-saving 10 to 1 mechanical advantage over applied hand force. For use with Scotchlok™ butt and tap connectors.

3M™ Aluminium Conductor Composite Reinforced (ACCR)

In today's complex world, protecting grid integrity is a growing challenge. Aging infrastructure is burdened with changing power flows as renewable generation is integrated and traditional sources are retired. All of this is happening amid growing environmental and regulatory concerns. 3M offers a fast and potentially cost-saving way to increase capacity, achieve greater clearances and meet today's strict reliability standards – helping you keep the lights on for years to come.



Advanced technology to protect your grid

To help solve today's toughest transmission challenges, 3M developed an advanced, high-capacity overhead transmission conductor: 3M™ ACCR (Aluminium Conductor Composite Reinforced). It is engineered to maximize the capacity of existing lines, helping you provide a more robust and flexible grid. Reconductoring with 3M™ ACCR can help you alleviate the scheduling, budgetary and regulatory risks of upgrading lines in areas with dense populations, strict permitting requirements or limited land availability.

3M ACCR is designed to replace ACSR or ACSS on existing structures at the same tensions and clearances, giving you up to twice the ampacity without the risks of a major construction project. Your line can be back in service fast, within budget, and with minimal community and environmental impacts. And 3M ACCR has proven its reliability in installations around the world – so you can be confident in the integrity of your transmission lines, even in challenging environments.

Maximize the value of your grid

Running more amps on existing structures can reduce ratepayer impacts from major upgrade projects while delivering more value to shareholders from existing assets. Upgrading with 3M ACCR can also help relieve transmission constraints, simplify compliance with regulatory standards, enhance reliability and provide a robust system to support your advanced grid investments.

Most importantly, 3M ACCR's dependable operation helps protect the integrity of your grid – for long-term value you can count on.





What is 3M ACCR?

This high-capacity transmission conductor has a high-strength, lightweight aluminium matrix core. The outer, current-carrying strands are composed of a hardened aluminium-zirconium alloy. 3M ACCR's core and outer wires are both helically stranded for greater strength and conductivity.

3M ACCR is similar in construction and dimensions to ACSR. 3M ACCR, however, has a higher strength-to-weight ratio and lower thermal expansion than comparably sized steel core conductors – so it is lighter and sags less, even at higher operating temperatures. This in turn allows higher ampacities at equivalent tensions and clearances. 3M ACCR retains its performance over decades of high temperature use and is stable in a wide range of environmental conditions.

Maximize the value of your grid

Running more amps on existing structures can reduce ratepayer impacts from major upgrade projects while delivering more value to shareholders from existing assets. Upgrading with 3M ACCR can also help relieve transmission constraints, simplify compliance with regulatory standards, enhance reliability and provide a robust system to support your advanced grid investments.

Most importantly, 3M ACCR's dependable operation helps protect the integrity of your grid – for long-term value you can count on.

Inside the technology 3M™ Aluminium Matrix Core



Maximum ampacity with less sag

Compared to the same diameter steel core conductor, 3M™ ACCR can offer:

- > Up to 2 times the ampacity or more
- > Less thermal expansion, for less sag at high energy levels
- > Higher strength-to-weight ratio
- > Operating temperatures up to 210°C continuous and 240°C emergency*

*Emergency operating temperature for up to 1,000 hours cumulative.

Maximum ampacity with less sag

With 3M ACCR, you make no compromises on your tension and clearance standards. Its reliability has been demonstrated around the world, with:

- > Large capacity increases at the same clearances, tensions and mechanical loads
- > Corrosion resistance without coatings or barriers around the core
- > Durability similar to ACSR, even when operated at high temperatures over long periods in extreme environments
- > Over a decade of successful, reliable operations

Fast and easy to use

3M ACCR was designed as a replacement for ACSR and ACSS to quickly and dramatically increase capacity on existing structures – while minimizing lengthy construction and permitting processes. Core stranding, hardware and construction procedures are similar to those for ACSR and are familiar to installers. And with shorter installation times, ACCR can help you get back to service more quickly.



Lower total project cost

By eliminating the need for expensive new towers, land acquisitions and other factors, upgrading with 3M ACCR can offer substantial savings over ACSR and ACSS – even at a higher conductor cost-per-kilo meter. For many thermal upgrades, ACCR can give you the high-performance, cost-effective solution you’ve been looking for.

Commitment to quality

3M ACCR and its accessories have been rigorously tested and verified to ASTM, IEEE and ANSI specifications, both in the laboratory and in the field. Test conditions included extreme temperatures, heavy icing, heavy loading and corrosive atmospheres. In all cases, 3M ACCR performed up to specifications and showed that the design coefficients accurately predict performance in the field.



Tackle the toughest jobs with confidence using 3M™ ACCR!

Changing clearance requirements

NERC reliability standards and clearance requirements over highways, railroads or other shipping lanes may require upgrades. 3M ACCR can provide more capacity with no change in wire diameter or tower load, and often with reduced tension. Because 3M ACCR sags less, line clearances can be significantly improved while delivering the same or greater power, even at high temperatures.

Densely populated or underbuilt areas

In areas that are densely populated, upgrading with 3M™ ACCR can increase capacity by reusing existing structures with less disruption to the community, and without needing to site new structures. Transmission lines can also be upgraded without having to impact distribution lines underbuilt on the same structures, which means less expense and system disruption.

Environmentally sensitive areas

Transmission lines through environmentally sensitive areas require extensive and lengthy reviews and debate before approval. Upgrading with 3M ACCR allows existing structures to be used, avoiding or simplifying those reviews. The appearance of the line does not change.

Short timelines

3M ACCR can help you avoid construction projects, with their long lead times and permitting delays. Your project could be done faster, relieving constraints and getting the power flowing in record time.





Long spans/river crossings

Rivers and gorges are among the most difficult challenges, because it may not be possible to put a tower in the middle of the water or to change out existing towers for taller ones. The low sag, high strength and low weight of 3M ACCR can allow longer spans while giving you the capacity increase you need and maintaining or improving clearance and mechanical loads on the existing structures.



Heavy ice or wind loads

A high strength-to-weight ratio and modulus make 3M ACCR ideal for areas that experience high mechanical loads such as icing. In some cases, a smaller conductor can be used, reducing the conductor profile and mechanical loads during major wind and ice events. 3M ACCR can increase reliability during demanding loading conditions.



Corrosive environments

Because both the wire and the core are made from aluminium, 3M ACCR is resistant to corrosive environments such as high-pollution areas or the damp, salty air near seashores. Unlike steel- or carbon-polymer-core conductors, no special coating is required to avoid chemical interaction between the core and the conductor.

3M™ Dynatel Locating & Marking Systems

3M™ Dynatel Locating and Marking Systems, comprising 3M™ Dynatel™ Locators, 3M Electronic Marking System and 3M EMS Caution Tape, provide accurate marking and locating of critical underground assets. Sophisticated systems allow programming of identifying features into intelligent markers using RFID technology and interfaces with GPS/GIS systems for accurate mapping.

3M™ Dynatel™ Locators



3M Dynatel™ utility locators combine simple interfaces and high-resolution graphics with precision locating to help you quickly and accurately identify underground assets. Easy to use units available in a range of configurations up to fully featured pipe, cable and electronic marker and tape locators.

3M™ Electronic Marker System



Colour coded by industry and available in programmable iD versions to capture customer specific information. 3M utility markers help accelerate location and identification and avoid costly mistakes.

3M™ EMS Caution Tape



3M's next generation of underground infrastructure asset management - a revolutionary approach to locating plastic pipes and conduits that eliminates the need, problems and costs associated with tracer wire and associated surface test points.



3M™ Dynatel™ Locators

3M™ Dynatel™ Locator Features by Model

Model	7420	7550	7573
Purpose	Marker/Tape/Rope	Marker/Tape/Rope	Pipe/Cable/Marker/Tape/Fault/Rope
Country	AU & NZ	AU & NZ*	AU & NZ*
			
Pipe and cable locate		✓	✓
Electronic marker locate/read/write	✓	✓	✓
EMS Caution Tape locate	✓	✓	✓
GPS compatible	✓	✓	✓
Active frequencies		6	6
Passive power		✓	✓
Passive LF		✓	✓
Sonde locating		✓	✓
Fault locate (A-frame)			✓
Transmitter output		12W	12W
Dyna-coupler size		114 mm	114 mm
Direct connect cable (S/L Clips)		Large	Large
Ground rod and pouch		✓	✓
USB to Serial Adaptor Cable	✓	✓	✓
7000RB rechargeable battery (locator)	✓	✓	✓
2200RB rechargeable battery (transmitter)		✓	✓
Cigarette lighter adapter cable		✓	✓
Carry bag	✓	✓	✓
Replaces earlier models	1420	2250,2250M	2273,2573

*Different models in each country. Australian models are not permitted to be sold in New Zealand.

3M™ Dynatel™ Marker/Tape/Rope Locator 7420

3M™ Dynatel™ Marker/Tape/Rope Locator 7420 is a performance locator that quickly and efficiently locates all frequencies of 3M EMS Caution Tape/Rope and Electronic Markers. It has the capability to read/write to 3M™ Dynatel™ iD Enabled Markers and can locate most other conventional electronic markers.

Designed to be accurate, fast and integrated, the 7420 EMS Marker/Tape/Rope Locator with iD Read/Write allows you to accurately and easily:

- > Locate and follow the path of EMS Caution Tape/Rope
- > Locate and read 3M iD Markers
- > Write to 3M iD Markers
- > Pinpoint the depth and location of all existing models of properly installed underground passive EMS Markers
- > Identifies depth and direction of EMS Caution Tape and Rope



Cable/Pipe Locate	No
Ball and Marker Locate	Yes
3M EMS Caution Tape and Rope Locate Trace	Yes
Earth Return Fault Locate	No
GPS Adaptable	Yes

Product	Country	3M Order Code	7000RB Rechargeable Battery	Carrying Bag Included
7420-ANZ	AU & NZ	80611611460	Yes	Yes

3M™ Dynatel™ Pipe/Cable/EMS Locator 7550-iD

The 3M™ Dynatel™ 7550-iD locator represents an advancement in locating technology for the field professional. The 7550-iD locator allows users to locate the new 3M EMS Caution Tape and Rope, along with cables, pipes and the ability to read/write to 3M iD markers.

Features Include:

- > Locate and follow the path of 3M EMS Caution Tape and Rope
- > Six active frequencies (577 Hz, 1 kHz, 8 kHz, 33 kHz, 82 kHz, 133 kHz (NZ only), 200 kHz (AU only))
- > Maximum transmitter output of 12 watts
- > Trace view mapping interface that provides intuitive mapping display
- > Five modes of operation
- > Locate, write and read information into the 3M™ iD Electronic Marker System
- > Compatible with GPS
- > Lightweight, compact and well balanced
- > Rugged and durable

Cable/Pipe Locate	Yes
Ball and Marker Locate	Yes
3M EMS Caution Tape and Rope Locate Trace	Yes
Earth Return Fault Locate	No
GPS Adaptable	Yes



Product	Country	3M Order Code	Transmitter	Direct Connect Cable	Coupler Size	7000RB Rechargeable Battery (Locator)	2200RB Rechargeable Battery (Transmitter)	Carrying Bag Included
7550-ID/U12-AU	AU*	80611611478	12 watt	Large clips	114 mm	Yes	Yes	Yes

*Australian model is not permitted to be sold in New Zealand

3M™ Dynatel™ Pipe/Cable/Fault/EMS Locator 7573-iD

The 3M™ Dynatel™ 7573-iD locator represents an advancement in locating technology for the field professional. The 7573-iD locator allows users to locate the new 3M EMS Caution Tape and Rope, along with cables, pipes and the ability to read/write to 3M iD markers. It can also be used for locating earth return faults.



Features Include:

- > Locate and follow the path of 3M EMS Caution Tape and Rope
- > Six active frequencies (577 Hz, 1 kHz, 8 kHz, 33kHz, 82 kHz, 133 kHz (NZ only), 200 kHz (AU only))
- > Maximum transmitter output of 12 watts
- > Trace view mapping interface that provides intuitive mapping display
- > Five modes of operation
- > Locate, write and read information into the 3M™ iD Electronic Marker System
- > Compatible with GPS
- > Lightweight, compact and well balanced
- > Rugged and durable
- > Precisely locates sheath or ground faults on both short and long cable sections

Cable/Pipe Locate	Yes
Ball and Marker Locate	Yes
3M EMS Caution Tape and Rope Locate Trace	Yes
Earth Return Fault Locate	Yes
GPS Adaptable	Yes

Product	Country	3M Order Code	Transmitter	Direct Connect Cable	Coupler Size	700RB Rechargeable Battery (Locator)	220RB Rechargeable Battery (Transmitter)	Carrying Bag Included
7573-ID/U12-AU	AU*	80611611486	12 watt	Large clips	114 mm	Yes	Yes	Yes
7573-IDE/E12 - NZ	NZ	80611612401	12 watt	Large clips	114 mm	Yes	Yes	Yes

*Australian model is not permitted to be sold in New Zealand

3M™ Electronic Marker System

3M Electronic Markers provide accurate identification of underground assets, helping to reduce the risk of accidentally excavating other buried facilities. All markers function without the need for an external power source. Their water resistant polyethylene shells are impervious to minerals, chemicals and the temperature extremes normally found underground.

iD Markers can be programmed to include customer-specific information about the asset, such as the facility owner, conduit size, placement date, and other important details. This information can be accessed using 3M locators with the iD function.



The 3M™ Electronic Marker System (EMS) helps save utility companies time and money by enabling field crews to quickly pinpoint the location of buried facilities including cable runs, splices and joints, valves, bends, road crossings, service drops and manholes. Using EMS Markers during construction, installation and maintenance virtually eliminates the time consuming search for hard-to-locate facilities.

3M™ Electronic Marker System Overview

		Telephone	Power	CATV	General	Water	Wastewater	Gas	3M iD and EMS Markers Read Range	
		Orange	Red	Black Orange	Purple	Blue	Green	Yellow	Using 7420-ANZ or 7550 or 7573 AU models	Using 7550 or 7573 NZ models
iD (Programmable)	1421-XR/ID	1421-XR/ID	1422-XR/ID	1427-XR/ID	1428-XR/ID	1423-XR/ID	1424-XR/ID	1425-XR/ID	1.5 m	1.2 m (Tel, Gas, WW, CATV) 1.0 m (Power, water)
	1432-XR/ID	1432-XR/ID	1433-XR/ID		1438-XR/ID	1434-XR/ID	1435-XR/ID	1436-X/ID	0.9 m	0.6 m
	1250-XR/ID	1250-XR/ID	1251-XR/ID		1248-XR/ID	1252-XR/ID	1253-XR/ID	1254-XR/ID	2.4 m	2.0 m
Passive	1401-XR	1401-XR	1402-XR	1407-XR	1408-XR	1403-XR	1404-XR	1405-XR	1.5 m	1.5 m
	1432	1432	1433			1434	1435	1436	0.6 m	0.6 m
	1250	1250	1251			1252	1253	1254	2.4 m	2.4 m

*0.9 m for passive near-surface markers, 0.6 m for iD (programmable) near surface markers

3M™ EMS Near Surface Markers

3M EMS Near-Surface Markers provide an accurate, long lasting method of marking underground facilities. The markers have a range of up to 1 metre from marker to locator and can be programmed to include customer specific information (iD version).



Product	3M Order Code	Programmable/Passive	Application	Colour	Depth	Height x Diameter
1432	80610230312	Passive	Telephone	Orange	0.9 m	76 mm x 20 mm
1433	80610230379	Passive	Power	Red	0.9 m	76 mm x 20 mm
1434	80610230387	Passive	Water	Blue	0.9 m	76 mm x 20 mm
1435	80610230395	Passive	Wastewater	Green	0.9 m	76 mm x 20 mm
1436	80610230403	Passive	Gas	Yellow	0.9 m	76 mm x 20 mm
1432-XR/ID	80611321292	Programmable	Telephone	Orange	0.6 m	76 mm x 20 mm
1433-XR/ID	80611321300	Programmable	Power	Red	0.6 m	76 mm x 20 mm
1434-XR/ID	80611321318	Programmable	Water	Blue	0.6 m	76 mm x 20 mm
1435-XR/ID	80611321326	Programmable	Wastewater	Green	0.6 m	76 mm x 20 mm
1436-XR/ID	80611321334	Programmable	Gas	Yellow	0.6 m	76 mm x 20 mm
1438-XR/ID	80611321342	Programmable	General Purpose/ Recyclable Water	Purple	0.6 m	76 mm x 20 mm

3M™ EMS Ball Markers

The 3M EMS Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how the ball is placed in the ground, making the job of precisely locating underground facilities easier.



Product	3M Order Code	Programmable	Application	Colour	Depth	Diameter
1421-XR/ID	8061142193	Programmable	Telephone	Orange	1.5 m	102 mm
1422-XR/ID	8061142201	Programmable	Power	Red	1.5 m	102 mm
1423-XR/ID	8061143225	Programmable	Water	Blue	1.5 m	102 mm
1424-XR/ID	8061143233	Programmable	Wastewater	Green	1.5 m	102 mm
1425-XR/ID	8061143241	Programmable	Gas	Yellow	1.5 m	102 mm
1427-XR/ID	8061142219	Programmable	CATV	Orange/ Black	1.5 m	102 mm
1428-XR/ID	8061142227	Programmable	General Purpose/ Recycled Water	Purple	1.5 m	102 mm

3M™ EMS Full-Range Markers

3M EMS Full-Range Markers provide an accurate, convenient, long lasting method of marking underground facilities. The marker has a range of up to 2.4 metres from marker to locator.



Product	3M Order Code	Programmable/Passive	Application	Colour	Depth	Diameter x Thickness
1250	80610221071	Passive	Telephone	Orange	2.7 m	381 mm x 17 mm
1251	80610221295	Passive	Power	Red	2.7 m	381 mm x 17 mm
1252	80610221519	Passive	Water	Blue	2.7 m	381 mm x 17 mm
1253	80610221501	Passive	Wastewater	Green	2.7 m	381 mm x 17 mm
1254	80610221550	Passive	Gas	Yellow	2.7 m	381 mm x 17 mm
1248-XR/ID	80611321284	Programmable	General Purpose/ Recyclable Water	Purple	2.4 m	381 mm x 17 mm
1250-XR/ID	80611321235	Programmable	Telephone	Orange	2.4 m	381 mm x 17 mm
1251-XR/ID	80611321243	Programmable	Power	Red	2.4 m	381 mm x 17 mm
1252-XR/ID	80611321250	Programmable	Water	Blue	2.4 m	381 mm x 17 mm
1253-XR/ID	80611321268	Programmable	Wastewater	Green	2.4 m	381 mm x 17 mm
1254-XR/ID	80611321276	Programmable	Gas	Yellow	2.4 m	381 mm x 17 mm

3M™ EMS Path Marking Tape and Rope

A new approach to path marking

Our latest innovation, 3M™ EMS Path Marking Tape and Rope, is virtually a maintenance-free solution for marking and locating the path of underground plastic pipes and conduits that helps eliminate the problems and costs associated with tracer wire and test stations.

3M EMS marking tapes and ropes are embedded with markers that are activated using a 3M™ Dynatel™ Locators 7000 Series. Their intrinsic benefits save time and money.

- > They can be installed near or above buried assets
- > They are easy to follow, creating a detectable path above ground
- > For use in open trench and HDD (Horizontal Directional Drilling) applications
- > They do not require batteries and there is no need to hook up an external transmitter or spend time searching for access points
- > The markers work independently, so even if a section of path marking tape/ rope is cut or removed, the other markers on the tape/rope will continue to provide an accurate location
- > They come in 5 frequencies, creating a unique identification for each utility type

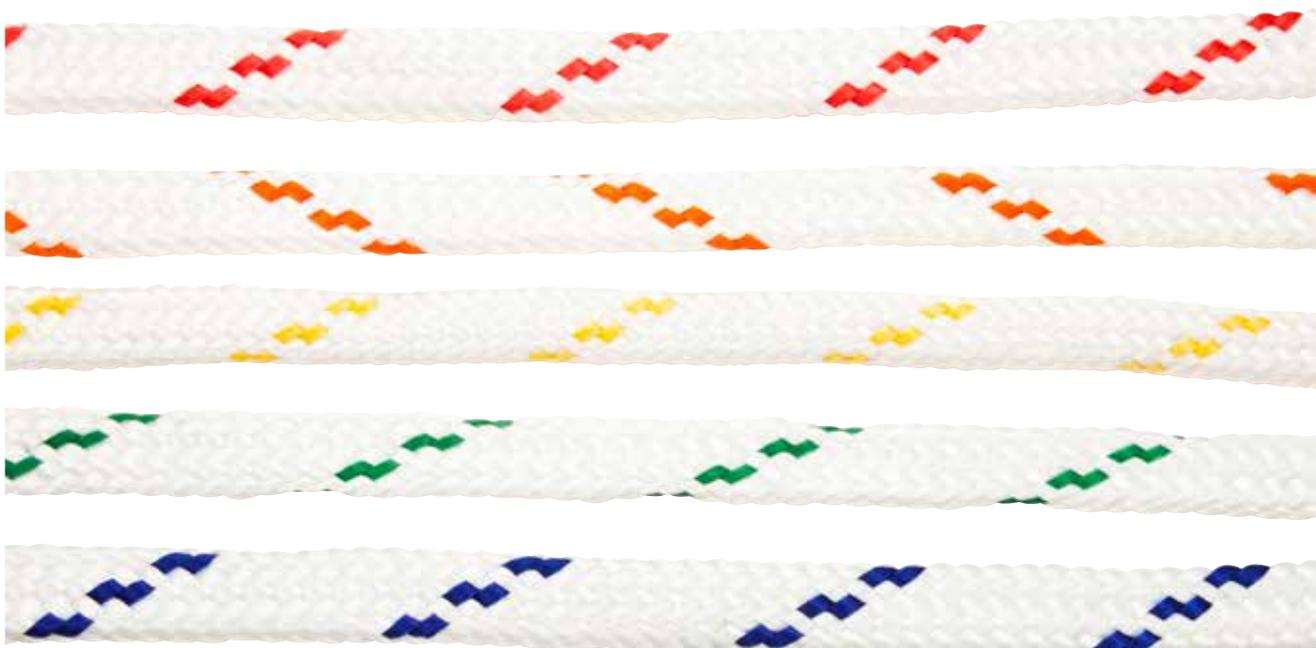


	Depth	Roll Length	Marker Spacing	Telephone	Power	Water	Wastewater	Gas
Tape	Up to 1.2 m	400 m	2.5 m	7611XR	7612XR	7613XR	7614XR	7615XR
	Up to 0.9 m	400 m	3.6 m	7611	7612	7613	7614	7615
Rope	Up to 1.2 m	300 m	2.5 m	7701-HTS	7702-HTS	7703-HTS	7704-HTS	7705-HTS
	Up to 1.2 m	300 m	2.5 m	7701-R	-	-	-	-

HTS = High Tensile Strength

XR = Extended Range

R = In-Conduit



3M™ Direct Connect Accessories

Product & Country	2876 AU & NZ	2892 AU	8006 AU & NZ	9043 AU & NZ
				
3M Order Code	80610598130	80610598668	80610126841	80610126833
Product Name	3M™ Large Clip Direct-Connect Transmitter Cable for Most Cable/Fault Locators 2876	3M™ Small Clip Direct-Connect Transmitter Cable for All Cable/Fault Locators 2892	3M™ Ground Rod 8006	3M™ Ground Extension Cable 9043
Description	Two lead, 3 m cables used for direct connection to cable and ground	Two lead, 3 m cables used for direct connection to cable and ground	For applying ground capability. Stainless steel	Extends ground capability to 3.6 m
Compatible with	2250/2273, 2220M, 2250M/2273M, 2550/2573, 7550, 7573	2250/2273, 2220M, 2250M/2273M, 2550/2573, 7550, 7573	2250/2273, 2220M, 2250M/2273M, 2550/2573, 7550, 7573	2250/2273, 2220M, 2250M/2273M, 2550/2573, 7550, 7573

Not in NZ

3M™ Couplers

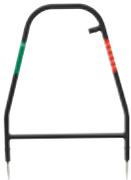
Product & Country	1196 AU	1196/C NZ	4001 AU	9011 AU & NZ
				
3M Order Code	80610411185	80611312499	80611325830	80610074843
Product Name	3M™ Dyna Coupler 1196 152 mm with Pouch	3M™ 152 mm Dyna-Coupler 1196/C	3M™ Ground Rod 8006	3M™ Ground Extension Cable 9043
Description	Permits coupling of RF trace tone to large diameter cables, bundle cables, and cables enclosed in accessible non-metallic ducts. For use on cables and conduits with a maximum diameter of 175 mm.	Permits coupling of RF trace tone to large diameter cables, bundle cables, and cables enclosed in accessible non-metallic ducts. For use on cables and conduits with a maximum diameter of 175 mm.	Permits coupling of RF trace tone to cables with a maximum diameter	For use with any Dynatel Transmitter, Receiver, or Coupler: length of 3.6 m
Compatible with	2250/2273, 2220M, 2250M/2273M, 2550/2573, 7550, 7573		2250/2273, 2220M, 2250M/2273M, 2550/2573, 7550, 7573	2250/2273, 2220M, 2250M/2273M, 2550/2573, 7550, 7573

3M™ Sondes

Product	3229	
3M Order Code	80610757785	
Product Name	3M™ ADP 33KHZ Sonde 3229 for use with Dynatel Series Locators	
Dimension	150 mm length x 42 mm width	
Weight	260 grams (with battery) and 215 grams (without battery)	
Description	The 3200 Series Active Duct Probe is an active mini-transmitter (sonde) which allows the user to trace the path of conduit. The ADP can help the user pinpoint key points, such as J-boxes, handholes and stubs	
Compatible with	2250/2273, 2220M, 2250M/2273M, 2550/2573, 7550, 7573	



3M™ Fault Finding Accessories

Product	3014	9026
		
3M Order Code	80610074777	80610074942
Product Name	3M™ Earth Contact Frame 3014	3M™ Earth Contact Frame Cable 9026
Description	Used only when locating sheath (earth return) faults. It indicates direction to the fault and is colour coded to correspond with the receivers indicator	For use with the 3014 Earth Contact Frame for sheath (earth return) fault location; length of 1.2 m
Compatible with	2273, 2273M, 2573, 7573	2273, 2273M, 2573, 7573

3M™ Dynatel Transmitters

Product & Country	12 Watt Transmitter - AU*
	
3M Order Code	80611331085
Product Name	3M™ Dynatel™ 12 Watt Transmitter
Description	Includes 12 watt transmitter, grounding rod and rechargeable battery
Compatible with	2550, 2573, 7550, 7573

*Australian model is not permitted to be sold in New Zealand

3M™ Locator Carry Bags, Batteries and Chargers

Product & Country	2200M	2200RB	2200RB Adaptor	7000RB	7000RB Adaptor
					
3M Order Code	80611146715	78900051927	AE010603684	80630002535	78900051810
Product Name	3M™ Soft Carrying Bag	3M™ Dynatel™ ANZ Transmitter Battery 2200RB	3M™ Dynatel™ ANZ Power Adaptor for 2200RB Transmitter Battery	3M™ Rechargeable Battery 7000RB	3M™ Dynatel ANZ Power
Description	Soft carrying bag for the 1420, 2200M, 2500M, 2273M and 7000 series locators	Rechargeable lead acid battery for 5 watt and 12 watt transmitter units	Power adaptor for 2200RB battery	Rechargeable battery for 7000 series locators (receivers)	Power adaptor for 7000RB battery
Compatible with	1420, 2200M, 2250M/2273M, 7420, 7550, 7573	2273, 2250, 7550, 7573	2273, 2250, 7550, 7573	7420, 7550, 7573	7420, 7550, 7573



3M™ Personal Safety

3M provides solutions for work situations requiring basic Personal Protective Equipment (PPE) through to environments that call for the most sophisticated and comprehensive protection. From an individual tradesperson to medium sized businesses to organisations employing thousands of workers, 3M has a workplace safety solution to meet your needs.

- Respiratory Protection
- Hearing Protection
- Communications
- Head, Eye and Face Protection
- Spill Management
- Worker Visibility
- Detection and Monitoring
- Body Protection



Training and Support

3M's team of Specialist Representatives are available nationally to provide support and training that meets the needs of our customers. Furthermore, our qualified and highly experienced team are able to assist customers by:

- > Conducting initial and ongoing assessments of the workplace
- > Recommending appropriate respiratory, hearing, eye protection, communication and spill management solutions required to maintain a safe work environment
- > Providing technical advice about the correct use and maintenance of the solution that has been selected
- > Facilitating on-site fit testing for both respiratory and hearing protection solutions as required



Technical Assistance

3M TechAssist is the ideal point of contact for your questions, especially when you require a prompt answer. Customers can contact TechAssist to obtain answers to questions on product information, technical advice, guidance with product selection, Australia/New Zealand Standards advice and other important information they need to know on a day-to-day basis.

3M Tech Assist Helpline
1800 024 464 (AU)
0800 364 357 (NZ)



3M Safety brands you can trust:



3M™ Hearing Protection

The 3M™, E-A-R™ and Peltor™ brands offer a hearing protection solution for anyone who spends time in noisy environments. The comprehensive range of 3M and E-A-R earplugs includes disposable, reusable, no-roll down and banded models. They are available in multiple shapes and sizes to comfortably accommodate different wearer and workplace needs. Many 3M and Peltor earmuffs are available in headband, neckband, helmet attachable and folded models to meet virtually every application need and wearer preference.

3M™ E-A-R™ Classic™ Disposable Earplugs

- > PVC foam provides a comfortable seal with high protection levels
- > Superior in-ear comfort, hydrophobic and flame retardant
- > SLC80: 21 dB (Class 3 Corded)
- > SLC80 23 dB (Class 4)



Product Code	3M Order Code	Type	Colour	Pack	Protection Rating
312-1201	AT019317398	Uncorded	Yellow	Poly Bag	Class 4
311-1101	70071514940	Corded	Yellow	Poly Bag	Class 4

3M™ E-A-R soft™ Superfit™ Disposable Earplugs

- > Soft foam and red indicator line delivers protection and comfort
- > Large size option for larger ear canals
- > The bullet design of the earplug provides high protection levels
- > Available in corded and uncorded formats



Product Code	3M Order Code	Type	Colour	Pack	Protection Rating
311-1254	70071515145	Corded	Yellow	Poly Bag	Class 4
312-1256	70071515038	Uncorded	Yellow	Poly Bag	Class 4

3M™ E-A-R™ Taperfit II™ Disposable Earplugs

- > Tapered shape provides high attenuation and all day comfort
- > Plus size option for larger ear canals
- > May be worn with Ear Muffs for added protection
- > Available in corded and uncorded formats



Product Code	3M Order Code	Type	Colour	Pack	Protection Rating
312-1219	70071515228	Uncorded	Yellow	Poly Bag	Class 5
312-1224	70071515251	Corded	Yellow	Poly Bag	Class 5

3M™ E-A-R™ Push Ins™ No Roll Down Earplugs

- > Patented foam softens with usage to improve seal and comfort
- > The stem and plug are made of two materials to ensure great fit with a rigid stem and comfort with a soft foam
- > No roll down provides a quick and easy way to use earplugs
- > The convenient stem provides a quick and hygienic insertion method



Product Code	3M Order Code	Type	Colour	Pack	Protection Rating
318-1002	70071515673	Uncorded	Yellow	Poly Bag	Class 4
318-1003	70071515707	Corded	Yellow	Poly Bag	Class 4

3M™ E-A-R™ Ultrafit™ Reusable Earplugs

- > Reusable triple flange design ensures high protection levels
- > Product available in either polybags or cases for safe storage
- > Premoulding delivers performance in a variety of work environments
- > Available in corded and uncorded formats



Product Code	3M Order Code	Type	Colour	Pack	Protection Rating
340-4004	70071515772	Corded	Yellow	Poly Bag	Class 3

3M™ E-A-R™ Swerve™ Banded Earplugs

- > Adjustable ergonomic design minimises collar interference
- > Lightweight and durable plastic flexes for constant on and off wearings
- > Product comes with both Comfort Pod and Flex 28 tip options



Product Code	3M Order Code	Type	Colour	Pack	Protection Rating
322-2000	70071529450	Band	Yellow	Poly Bag	Class 4

3M™ Peltor™ H7 Deluxe Earmuffs

- > Versatile high quality earmuffs meet the protection needs of almost any working environment
- > Available in headband, neckband and helmet attachment formats
- > Liquid and foam filled cushions provide a quality noise seal with low pressure for all day wearer comfort
- > Stainless steel headband wires with four point suspension helps distribute cushion pressure evenly and earcups pivot for consistent fit



Product Code	3M Order Code	Type	Colour	Pack	Protection Rating
H7A	70071516226	Head Band	Olive Green	Box	Class 5
H7B	70071516317	Neck Band	Olive Green	Box	Class 5
H7P3E	70071516283	Hard Hat Attached	Olive Green	Box	Class 5
H7P3G	70071516275	Hard Hat Attached	Olive Green	Box	Class 5

3M™ Peltor™ X4 Premium Earmuffs

- > Modern, attractive low-profile design
- > Incredibly thin and light weight
- > Electrically-insulated (dielectric) wire headband
- > Twin headband design reduces heat buildup and offers outstanding balance and comfort for prolonged use



Product Code	3M Order Code	Type	Colour	Pack	Protection Rating
X4A	XA007707947	Head Band	Black/Green	Box	Class 5

3M™ Peltor™ WorkTunes™ Pro AM/FM Radio Headset

- > Protect your hearing and listen to AM/FM radio at the same time with built-in antenna.
- > Digital station search and voice guided menu system with announced frequencies
- > 3.5 mm listen only stereo input (limited to 82 dB) for connection to external devices (e.g. mobile phone, radio, two-way radio and iPod)
- > Auto power off turns headset off after 4 hours of non-use, to save energy and a low-battery warning informs you when to change batteries



Product Code	3M Order Code	Type	Colour	Pack	Battery Life
HRXS221A	UU004690713	Headset	Black	Box	40 hours

3M™ Peltor™ Protac™ III Headset

- > Built-in level-dependent function allows the wearer to hear ambient sounds, such as conversations, machine sounds and warning signals
- > 3.5 mm listen-only stereo input (limited to 82 dB) for connection to external devices (e.g. mobile phone, radio, two-way radio and iPod)
- > Voice-guided menu system avoids the need to remove the headset for setting changes
- > Auto power off turns headset off after 4 hours of non-use, to save energy and a low-battery warning informs you when to change batteries



Product Code	3M Order Code	Type	Cup Style	Colour	Pack	Battery Life
MT13H220A	UU004637789	Headband/Headset	Standard	Black	Box	100 Hours
MT13H221A	UU004690622	Headband/Headset	Slim	Black	Box	100 Hours

3M™ Eye Protection

3M safety eyewear combines superior technologies and design to provide a range of solutions that span the function and price spectrum, providing high performance eyewear for most work situations as well as a variety of outdoor recreational activities. 3M safety glasses and goggles provide high quality optics and reliable UV protection.

3M™ Virtua™ AP Series

- > Sleek unisex styling, lightweight, comfortable and exceptional value
- > Wrap around polycarbonate lenses and integral side shields to provide comfortable fit and ultimate protection
- > All lenses deliver greater than 99% UV protection
- > AS/NZS 1337.1 Medium Impact



Product Code	3M Order Code	Lens Colour	Coating	Pack	Protection Rating
11818-00000-100AS	70071649464	Clear	Anti-Fog	Bag	Medium Impact
11815-00000-100AS	70071649449	Grey	Hard Coat	Bag	Medium Impact
11817-00000-100AS	70071649456	Amber	Hard Coat	Bag	Medium Impact
11847-00000-100AS	70071649472	Mirror	Hard Coat	Bag	Medium Impact

3M™ Maxim GT™ Series

- > Lightweight elastomeric browguard, wrap around lens with anti-fog coating
- > Style and comfort
- > Dual-injected brow bar and temples
- > 3-position lens adjustment and adjustable temple lengths
- > AS/NZS 1337.1 Medium Impact



Product Code	3M Order Code	Lens Colour	Coating	Pack	Protection Rating
14246-00000-100AS	70071649357	Clear	Anti-Fog/Hard Coat	Bag	Medium Impact
14247-00000-100AS	70071649365	Grey	Anti-Fog/Hard Coat	Bag	Medium Impact

3M™ Securefit™ 200 Series

- > Self-adjusts to fit a wide array of head sizes reducing the need to stock multiple frame sizes
- > Provides a secure, snug fit without compromising comfort
- > Helps reduce eyewear/frame slippage during workplace head movements
- > Enhances frame comfort without sacrificing the security of fit
- > AS/NZS 1337.1 Medium Impact



Product Code	3M Order Code	Lens Colour	Coating	Pack	Protection Rating
SF201AF-AS	70071676269	Clear	Anti-Fog	Bag	Medium Impact
SF202AF-AS	70071695509	Grey	Anti-Fog	Bag	Medium Impact

3M™ Light Vision II™ Series

Light Vision II provides workers with hands-free direct lighting

- > Ideal for intricate work where extra lighting and both hands are required
- > Dual LED lights are adjustable so light is directed where needed
- > LED lights have a long battery life of up to 50 hours
- > Wrap around design provides high wearer protection levels
- > AS/NZS 1337.1 Medium Impact



Product Code	3M Order Code	Lens Colour	Coating	Pack	Protection Rating
10425-00000-100AS	70071561875	Clear	Anti-Fog	Bag	Medium Impact

3M™ Lexa™ Splash Goggle Series

- > Soft frames combine with the Lexa lens for a lightweight, stylish and comfortable goggle solution
- > Soft PVC frame delivers ideal splash protection
- > Top and bottom vent channels improve air flow
- > Lenses feature DX anti-fog and deliver greater than 99% UV protection
- > AS/NZS 1337.1 Medium Impact



Product Code	3M Order Code	Lens Colour	Coating	Pack	Protection Rating
16645-00000-100AS	70071649555	Clear	Anti-Fog/Hard Coat	Bag	Medium Impact

3M™ Fahrenheit™ Goggle Series

- > Aerodynamic design for 180 degrees of distortion free vision
- > Built-in channel designed to fit prescription frames
- > Market leading DX anti-fog coating on selected models
- > AS/NZS 1337.1 Medium Impact



Product Code	3M Order Code	Lens Colour	Coating	Pack	Protection Rating
40170-00000	70071531621	Clear	Anti-Fog	Bag	Medium Impact

3M™ Solus™ 1000 Series with 3M™ Scotchgard™ Anti-Fog Coating

- > Colour accented soft temple components for a stylish modern look
- > Strong PC lenses for premium protection
- > 3M™ Scotchgard™ Anti-Fog Coating provides scratch resistance and durability
- > Provides comfort with soft cushioning on nose bridge and inner padding on temples



Product Code	3M Order Code	Lens Colour	Coating	Standard	Pack
S1201SGAF-AS	70071676533	Clear	Anti-Fog	AS/NZS1337.1 Medium Impact Rating	Box
S1202SGAF-AS	70071676541	Clear	Anti-Fog	AS/NZS1337.1 Medium Impact Rating	Box

3M™ GoggleGear 500 Series with 3M™ Scotchgard™ Anti-Fog Coating

- > Modern and lightweight design for an excellent fit
- > Offers premium protection against UV radiation
- > 3M™ Scotchgard™ Anti-Fog Coating provide scratch resistance and durability.
- > Easy-to-adjust elastic Nylon headband for stable and comfortable wear



Product Code	3M Order Code	Lens Colour	Coating	Pack	Standard
GG501NSGAF-AS	70071676582	Clear	Anti-Fog	Bag	Add AS/NZS1337.1 medium impact

Disposable Respiratory Protection

3M offers respirators that fit well, are comfortable and provide the protection you need. 3M disposable respirators are compatible with eyewear and hearing protection products from 3M. Additionally, 3M disposable respirators meet the performance requirements of AS/NZS 1716:2012 'Respiratory protective devices'. To achieve the assigned protection of a tight fitting face-piece there must be a good seal between the edges of the respirator and your face. Conducting a fit test to AS/NZS 1715:2009 is considered best practice as part of a general respiratory protection program.

3M™ 9300A+ Aura™ Particulate Respirators

- > Low breathing resistance - combines the benefits of 3M's electret particulate filter material with advanced low breathing resistance filter technology
- > Clear Vision - the new embossed top panel helps reduce fogging of eyewear
- > Sculpted Nose Panel utilises curved, low profile design to conform well to nose and eye contours and helps provide a good field of vision
- > Innovative chin tab improves ease of donning and adjustment to help achieve a comfortable fit



Applications

- > P1 respirators protect against dusts and mists, while P2 also protects against smoke and fume

Product Code	3M Order Code	Description	Valve	Weight	Nose Clip	Staples	Standard
9322A+	XA010017854	P2	Valved	15 g	Aluminium	Steel	AS/NZS 1716:2012
9320A+	XA010017847	P2	Unvalved	10 g	Aluminium	Steel	AS/NZS 1716:2012
9312A+	XA010017870	P1	Valved	15 g	Aluminium	Steel	AS/NZS 1716:2012
9310A+	XA010017839	P1	Unvalved	10 g	Aluminium	Steel	AS/NZS 1716:2012

3M™ Cupped Particulate Respirators 8000 Series

- > Lightweight construction for added comfort and help increase wearer compliance
- > Galvanised steel nose clip for use in intrinsically safe environment (8812 and 8710)
- > Adjustable nose clip helps reduce eyewear fogging



Applications

- > P1 respirators protect against dusts and mists, while P2 also protects against smoke and fume

Product Code	3M Order Code	Description	Valve	Weight	Nose Clip	Staples	Standard
8210	WX700900011	P2	Unvalved	8 g	Aluminium	No staples	AS/NZS 1716:2012
8710	WX700900029	P1	Unvalved	8 g	Galvanised Steel	No staples	AS/NZS 1716:2012
8822	WX700900359	P2	Valved	13 g	Galvanised Steel	Steel	AS/NZS 1716:2012
8812	WX700900243	P1	Valved	13 g	Galvanised Steel	Steel	AS/NZS 1716:2012

3M™ Particulate Respirators with Nuisance Level* Organic Vapour Relief

- > Activated carbon layer provides protection against nuisance levels* of organic vapours and odours
- > Galvanised steel nose clip for use in intrinsically safe environment e.g. underground use (9913V and 9913)
- > 9542A is individually wrapped and has folded design for easy storage and dispensing in the workplace



Applications

- > e.g. metal processing, foundry operations, waste disposal and recycling

Product Code	3M Order Code	Protection Type	Valve	Weight	Nose Clip	Staples	Standard
9913V	WX700900037	GP1	Valved	16 g	Galvanised Steel	Steel	AS/NZS 1716:2012
9913	WX700900284	GP1	Unvalved	13 g	Galvanised Steel	Steel	AS/NZS 1716:2012
9542A	XH003821101	P2	Unvalved	13 g	Aluminium	Steel	AS/NZS 1716:2012

3M™ Economy Particulate Respirators

- > Adjustable nose clip enables wearer to customise for a better seal and secure feel
- > Light weight construction helps with wearer compliance
- > Dual latex free straps provide even strap pressure and help to improve comfort on the neck, face and head



Product Code	3M Order Code	Protection Type	Valve	Weight	Nose Clip	Staples	Standard
8205	WX700900797	P2	Unvalved	8 g	Aluminium	Steel	AS/NZS 1716:2012
8000	70071094703	P1	Unvalved	8 g	Aluminium	Steel	AS/NZS 1716:2012



3M™ Reusable Respiratory Protection

With the ability to reuse the facepiece, the 3M range of reusable half and full face respirators offer value and versatility for a wide variety of environments and hazards, while giving you the confidence in protection you deserve. 3M gas and vapour cartridges and particulate filters are lightweight, well balanced and provide excellent field of vision when fitted to a respirator.

3M™ Respirator Starter Kits

3M Respirator Starter Kits are convenient and easy to use providing an ideal solution to get you started. All kits include a pair of 3M™ Earplugs, 3M™ Respirator Cleaning Wipes and a 3M Respiratory Protection Guide. To avoid moisture and contaminant exposure, store the respirator in the handy, sealable storage container.

3M™ Dust/Particle Respirator Kit 6225

Kit contains:

- > 1 x 3M™ Half Face Respirator 6000 Series - Medium
- > 1 x pair of 3M™ Particulate Filters 2125, P2
- > 1 x 3M™ No-Touch™ Foam Earplugs P2000, Class 4
- > 4 x 3M™ Respirator Cleaning Wipes 504
- > 1 x 3M Respiratory Protection Guide
- > 1 x Storage Container

Applications:

- > Sanding/Sawing - Wood/plaster dust
- > Lead Paint Removal - Metal fume and/or particles
- > Food Manufacturing - Fine food powders
- > Insulation - Fibreglass particles
- > Drilling/Cutting - Metal/wood/plastic particles
- > Masonry - Stone particles
- > Grinding - Metal dust and particles
- > Powder Coating – Dust



Product Code	3M Order Code	Protection Type	Standards	Respirator Size
6225	AT010590613	P2	AS/NZS 1716:2012	Medium
2125	70071486180	P2	AS/NZS 1716:2012	N/A

3M™ Asbestos/Dust Respirator Kit 7535

Kit contains:

- > 1 x 3M™ Half Face Respirator 7500 Series
- > 2 x pair of 3M™ Particulate Filters 6035 P2/P3*
- > 1 x pair of 3M™ SecureFit™ 200 Series Safety Glasses, AS/NZS1337.1 Medium Impact
- > 4 x 3M™ Respirator Cleaning Wipes 504
- > 1 x 3M™ No-Touch™ Foam Earplugs P2000, Class 4 (SLC80: 25dB)
- > Handy Storage Container

Applications:

- > Suitable for certain asbestos work: Refer to local asbestos government guidelines (Safework Australia or Worksafe NZ)
- > Also for lead paint removal, sanding, sawing, drilling, cutting, grinding, masonry, insulation, food manufacturing and powder coating



Product Code	3M Order Code	Protection Type	Standards	Respirator Size
7535	AT010601592	P2	AS/NZS 1716:2012	Small
7535	AT010601600	P2	AS/NZS 1716:2012	Medium
7535	AT010601618	P2	AS/NZS 1716:2012	Large

3M™ Body Protection

3M offers a comprehensive range of disposable coveralls that provide protection for a variety of applications. Harmful dust, light liquid splashes, and biological contaminants are just some of the dangers in today's industrial workplace. The 3M line of quality disposable coveralls help protect at-risk workers and offers quality and reliability, helping workers to manoeuvre freely and operate efficiently.

3M™ Protective Coverall 4515

The 4515 coverall is made from a breathable material and is ideal for a wide range of applications, particularly those requiring protection from hazardous dusts. A two-way zipper provides on-off convenience and elasticated hood, cuffs, waist and ankles allow for a comfortable fit.

Product Code	3M Order Code	3M Order Code NZ	Colour	Size	Type Rating
4515	GT700004127	GT700004127	White	M	Type 5/6 - for hazardous dust and splash
4515	AT010588898	GT700004135	White	L	Type 5/6 - for hazardous dust and splash
4515	AT010588906	GT700004143	White	XL	Type 5/6 - for hazardous dust and splash
4515	AT010588914	AT010588914	White	XXL	Type 5/6 - for hazardous dust and splash
4515	GT700004168	GT700000265	White	3XL	Type 5/6 - for hazardous dust and splash



3M™ Protective Coverall 4510

The 4510 coverall is constructed of high quality, ultra low-linting, laminated microporous material and is designed to offer cost effective protection against hazardous dusts and light liquid chemical splashes. The 4510 also has a two-way zipper with storm flap for added convenience and extra protection. Elasticated hood, cuffs, waist and ankles provide for a comfortable fit.

Product Code	3M Order Code	Colour	Size	Type Rating	Treatment
4510	XL451000050	White	M	Type 5/6 - for hazardous dust and splash	Anti-static - EN 1149- 5:2008
4510	AT010588864	White	L	Type 5/6 - for hazardous dust and splash	Anti-static - EN 1149- 5:2008
4510	AT010588872	White	XL	Type 5/6 - for hazardous dust and splash	Anti-static - EN 1149- 5:2008
4510	AT010588880	White	XXL	Type 5/6 - for hazardous dust and splash	Anti-static - EN 1149- 5:2008
4510	XL451000092	White	3XL	Type 5/6 - for hazardous dust and splash	Anti-static - EN 1149- 5:2008



3M™ Comfort Grip General Use Gloves

3M Comfort Grip General Use Gloves offer a comfortable alternative to the traditional cotton and leather work glove. Nitrile palm coating makes this glove light, flexible, abrasion-resistant and long lasting. The gloves are constructed from a nylon knit material with a stretch liner that gives you a breathable "second skin" fit - perfectly suited for applications where hand flexibility and dexterity are needed.



Applications:

- > General material handling
- > Handling small parts
- > Electrical component assembly
- > Carpentry, plumbing, roofing

Agency Approvals:



Product Code	3M Order Code	Size	Blade Cut Resistance	Abrasion Resistance	Tear Resistance	Puncture Resistance
CGM-GU	WX300942173	M	Level 1	Level 4	Level 2	Level 2
CGL-GU	WX300942181	L	Level 1	Level 4	Level 2	Level 2
CGXL-GU	WX300942199	XL	Level 1	Level 4	Level 2	Level 2

3M™ Head and Face Protection

3M is the trusted leader in the head and face protection market providing robust, comfortable and easy-to-use products to a wide spectrum of industries. These products are designed for strength, all day comfort, enhanced visibility, and sometimes serve as a “carrier” to other personal protective equipment (PPE) products.

3M™ Peltor™ G2000 Hard Hat

Attractive design and excellent protection is the best way to summarise the Peltor G2000 Hard Hat. The hard hat goes well beyond the requirements for formal testing and is comfortable with its low back and relatively low profile. It was designed to accommodate additional accessories, visor and hearing protection. The G2000 also incorporates the 3M™ Peltor™ Uvicator™ which provides a visible indication of the damage caused by UV radiation from the sun. The Uvicator gradually turns from Red to White to show when it is time to replace your hard hat.



Product Code	3M Order Code	Colour	Material	Weight	Size	Standard
G2000CUV-GU	GT600000498	Yellow	UV-stabilised ABS	340 g	54 - 62 cm	AS/NZS 1801
G2000CUV-OR	XH001650122	Orange	UV-stabilised ABS	340 g	54 - 62 cm	AS/NZS 1801
G2000NUV-VI	XH001675053	White	UV-stabilised ABS	340 g	54 - 62 cm	AS/NZS 1801





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