

In today's world of sophisticated electronics, every application is critical! Computers efficiently monitor and control multi-million dollar production lines and processes.

The integrity of your system is only as solid as the electronic cable on which the control signals are communicated.

If the cable fails, your system is down.

Production time . . . efficiency . . . profits . . . lost.

If you think that wire and cable is just wire and cable . . . think again.

The cable you install must be capable of efficient signal transmission while it withstands the environmental abuses of heat or cold, intermittent or continuous motion, abrasion, exposure to oils or EMI/RFI interference.

Now **XTRA GUARD® 1, 2, 4, 5** and **XTRA GUARD® Flexible Cables** are **CE** compliant for use in the European Economic Community. (See document #7319 for more information on **CE** compliance.)

XTRA GUARD® cables are "hazard-matched" to survive in the most demanding environments. A wide range of designs are available including our newest design . . .

XTRA GUARD® Flexible Cables.

Remember, a cable is not just a cable.



Powerful Solutions For Critical Applications



Preferred Heat Shrink Products



Compliment XTRA GUARD® !

The **FIT®** Shrinkable Tubing products are the perfect solution to insure that the **XTRA GUARD®** cable you select will be protected against the extremes of temperature, abrasion, cut through and the effects of oils, water and chemicals.

To make this selection process easier, a suitable **FIT®** Shrinkable Tubing product has been recommended for every **XTRA GUARD®** cable type.

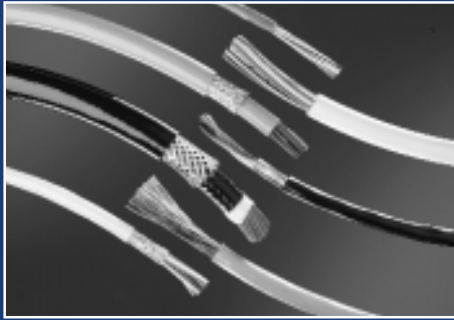
Product Type

Document No (s)

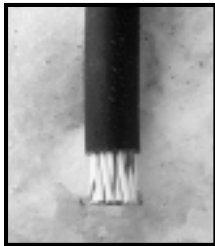
XTRA•GUARD® 1 Extra-Premium Grade PVC Jacket For Extended Cable Life	7311
XTRA•GUARD® 2 Industrial Strength, Extra-Rugged Polyurethane Jacket	7312
XTRA•GUARD® 3 Extra-Durable Outdoor Direct-Burial Jacket	7313
XTRA•GUARD® 4 Extra Protection, High/Low Temperature TPE Jacket	7314
XTRA•GUARD® 5 Extra High-Temperature/Chemical-Resistant FEP Teflon® Jacket	7315
XTRA•GUARD® Flexible Cables Permanent Solutions For Critical Flexible Applications	7316

Teflon® is a registered trademark of E.I. DuPont Co.

XTRA•GUARD® HIGH PERFORMANCE ELECTRONIC CABLES



POWERFUL SOLUTIONS FOR
CRITICAL APPLICATIONS



XTRA•GUARD® 4 Extra-Protection, High/Low Temperature TPE Jacket



SPECIFY AND CHOOSE **XTRA GUARD® 4** FOR:

- Unmatched Cable Performance in Both High and Low Temperature Cable Applications from -60°C to 125°C
- Three-times the Low-temperature Flexibility of PVC
- Outstanding Resistance to Oils, Fuels, Solvents and Water
- Low HCL Content for Safety
- Fully Flame-resistant Color-coded TPE (thermoplastic elastomer) Insulated Conductors and a TPE Jacket
- Passes the 210,000 BTU Flame Test (300 Volt Cables)
- Available in Both 300 Volt and 600 Volt Cable Styles
- UL Listed Type TC 600 Volt and Type PLTC 300 Volt for Cable Tray Applications
- Pennsylvania Bureau Deep Mine Safety Approved (P-MWMS-1-85) for Mine-wide Monitoring Systems
- Ultraviolet Light Stability (in all colors)
- Jacket Colors: Yellow, Orange, Blue, Green, Red, Black, White and Gray
- UL Recognition, UL Listing and CSA Certification

XTRA GUARD® 4 APPLICATIONS:

- Wood, Paper, Pulp, Plant Operations
- Mining Instruments and Controls
- Industrial Tray/Power Limited Tray Cable Applications
- Mass Transit Systems
- Military Electronic Applications
- Food and Beverage Plants
- Petrochemical Process Controls
- Arctic Pipeline Controls

FIT® TUBING RECOMMENDATIONS:

- **FIT®-600** – Highly Flexible, Irradiated Elastomer
- **FIT®-400** – Temperature/Chemical Resistant FEP Teflon®

Teflon® is a registered trademark of E.I. DuPont Co.



XTRA•GUARD® 1 Extra-Premium Grade PVC Jacket For Extended Cable Life



SPECIFY AND CHOOSE **XTRA GUARD® 1** FOR:

- A General Purpose Electronic Cable for Internal or External Wiring of OEM Equipment
- Unsurpassed Flame and Moisture Resistance
- Fast, Easy Stripping of Insulation and Jacket
- Fully Color-coded, Tinned Copper Conductors
- Premium Grade PVC Insulation and Jacket
- Jacket Colors: Gray and Black
- UL Recognition, UL Listing and CSA Certification
- Available in Both 300 Volt and 600 Volt Cable Styles
- Immediate Availability

XTRA GUARD® 1 APPLICATIONS:

- EIA RS 232C Interface (Shielded 24, 22 AWG)
- High Technology Applications in Controlled Environments
- Medical Electronics
- Point-Of-Sale Equipment
- Computer Peripherals
- Industrial Process Controls

FIT® TUBING RECOMMENDATION:

- **FIT®-221** – General Purpose, Irradiated Polyolefin (indoor)
- **FIT®-321** – Medium Wall, Adhesive Lined, Irradiated Polyolefin (outdoor)



XTRA•GUARD® 5 Extra High-Temperature/ Chemical-Resistant FEP Teflon® Jacket



SPECIFY AND CHOOSE **XTRA GUARD® 5** FOR:

- Suitable for Use in Class 1 Clean Rooms
- FDA Recognized as Food/Medical Grade (can be sterilized)
- FEP Teflon® Cables for Unmatched Performance at Temperatures from -80°C to 200°C
- 100% Impervious to All Chemicals, Acids, Fuels, Solvents and Water
- 20-30% Smaller Cable Diameter than Conventional Cables
- Extremely Low Friction Jacket for Ease of Cable Routing
- Excellent Ampacity Rating
- Low Dielectric Constant of 2.1
- Plenum-rated Applications
- Pennsylvania Bureau Deep Mine Safety Approved (P-MWMS-1-85) for Mine-wide Monitoring Systems
- UL Recognition, UL Listing and CSA Certification

XTRA GUARD® 5 APPLICATIONS:

- Military Electronic Applications
- Steel, Glass and Metal Foundries
- Mining Instruments and Controls
- Food and Beverage Plants
- Clean Room Environments
- Refinery Cracker Unit Controls

FIT® TUBING RECOMMENDATION:

- **FIT®-650** – Chemical and Temperature Resistant Irradiated Viton®
- **FIT®-400** – Temperature/Chemical Resistant FEP Teflon®

Teflon® is a registered trademark of E.I. DuPont Co. Viton® is a registered trademark of Dupont Dow Elastomers



XTRA•GUARD® 2 Industrial Strength, Extra-Rugged Polyurethane Jacket



SPECIFY AND CHOOSE **XTRA GUARD® 2** FOR:

- Now Rated to 90°C (300V) and 105°C (600V)!
- Unmatched Resistance to Oils, Fuels, Solvents and Water
- Twice the Tensile Strength of PVC
- Three-times the Tear and Abrasion Resistance of PVC
- Applications Requiring Ultraviolet Light Stability and Fungus Resistance
- Fully Color-coded PVC Insulated Tinned Copper Conductors With a Specially Formulated Extra-rugged Polyurethane Jacket
- Jacket Colors: Yellow, Orange, Blue, Green, Red, Black, White and Gray
- UL Recognition and CSA Certification
- Available in Both 300 Volt and 600 Volt Cable Styles

XTRA GUARD® 2 APPLICATIONS:

- CNC Machine Centers
- Automotive Assembly Plant Operations
- Military Ground Support Systems
- Packaging Machinery
- Petrochemical Plant Operations
- Geophysical Exploration Equipment

FIT® TUBING RECOMMENDATION:

- **FIT®-750** – Bonding, Adhesive Lined, Irradiated Polyolefin



XTRA•GUARD® 3 Extra-Durable Outdoor Direct-Burial Jacket



SPECIFY AND CHOOSE **XTRA GUARD® 3** FOR:

- Direct Burial Applications in Wet Earth Without the Costly Use of Conduit
- Five-times the Water Resistance of Conventional PVC
- A Specially Formulated Ethylene Propylene Copolymer Jacket for Outstanding Service Life in Outdoor Use
- Unmatched Ultraviolet Light Stability
- Available in Both 300 Volt and 600 Volt Cable Styles
- Jacket Color: Black

XTRA GUARD® 3 APPLICATIONS:

- Inter-building Communications
- Satellite Communications Equipment
- Land Irrigation Systems
- Outdoor Security Systems
- Outdoor Scoreboards and Displays
- Pipeline Sensor Controls

FIT® TUBING RECOMMENDATION:

- **FIT®-700** – Bonding, Mastic Lined, Irradiated Polyolefin

▼ PERMANENT SOLUTIONS FOR CRITICAL FLEXING APPLICATIONS! ▼



XTRA•GUARD® *Flexible Cables* High-Flex Mini Diameter Data Cable / High-Flex Torsion Robotic Cable



SPECIFY AND CHOOSE **XTRA GUARD® HIGH-FLEX MINI DIAMETER DATA CABLE** FOR:

- Extreme Flexibility in Small Spaces
- Continual Flexible in Cable Tracks
- UL Listed, UL Recognized, CSA Certified and CE Marked
- Outstanding EMI Protection
- Jacket Meets VDE 0472, Section 803 Oil Test

MANUFACTURED
IN THE U.S.A.

SPECIFY AND CHOOSE **XTRA GUARD® HIGH-FLEX TORSION ROBOTIC CABLE** FOR:

- Twisting and Random Robotic Flexing Motions
- Extreme Oil Resistance
- UL Recognized and CSA Certified, CE Marked

XTRA GUARD® FLEXIBLE CABLE APPLICATIONS:

HIGH-FLEX MINI DIAMETER DATA CABLE

- Industrial Electronic Processing Equipment
- DataComm Connections
- Connecting Sensors and Actuators to Controllers
- Sensor and I/O Interconnects
- Automation Networking
- PLC, Microprocessor and Computer Interconnects

HIGH-FLEX TORSION ROBOTIC CABLE

- Twisting and Random Robotic Flexing Applications
- Power Supply to Welding, Painting and Articulating Robots
- Automation Networking
- Connecting Sensors and Actuators to Controllers

FIT® TUBING RECOMMENDATION:

- **FIT®-FLEX** – Highly Flexible, Irradiated Silicone Rubber
- **FIT®-650** – Chemical and Temperature Resistant Irradiated Viton®

Viton® is a registered trademark of Dupont Dow Elastomers



XTRA•GUARD® *Flexible Cables* Standard-Flex Control Cable / High-Flex Control Cable



SPECIFY AND CHOOSE **XTRA GUARD® STANDARD-FLEX CONTROL CABLE** FOR:

- Outstanding Oil and Chemical Resistance
- UL Recognized and CSA Certified, CE Marked
- Jacket Meets VDE 0472, Section 803 Oil Test
- Ease of Installation
- NOT FOR USE IN HIGH-FLEX APPLICATIONS

MANUFACTURED
IN THE U.S.A.

SPECIFY AND CHOOSE **XTRA GUARD® HIGH-FLEX CONTROL CABLE** FOR:

- Extra Flexibility and Durability for Continuous Motion
- Extended Flex Life, 13.8 Million Cycles
- Outstanding Oil and Chemical Resistance
- Jacket Meets VDE 0472, Section 803 Oil Test
- UL Recognized and CSA Certified, CE Marked

XTRA GUARD® FLEXIBLE CABLE APPLICATIONS:

STANDARD-FLEX CONTROL CABLE

- Applications Requiring Increased Flexibility
- Machine Tools
- CNC Machine Centers
- Data Processing Equipment
- Automation Equipment
- Material Handling Equipment

HIGH-FLEX CONTROL CABLE

- Applications Requiring Continuous Flexing
- Robotics
- Installation in Cable Track
- Data Processing Equipment
- Assembly Lines
- Automation Equipment
- Material Handling Equipment

FIT® TUBING RECOMMENDATION:

- **FIT®-FLEX** – Highly Flexible, Irradiated Silicone Rubber
- **FIT®-650** – Chemical and Temperature Resistant Irradiated Viton®

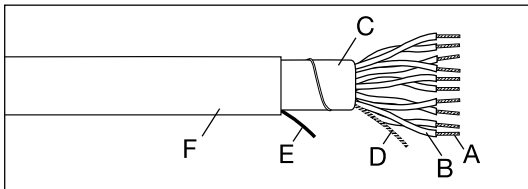
Viton® is a registered trademark of Dupont Dow Elastomers

XTRA•GUARD® SHIELDING and ARMORING OPTIONS

CHOOSE ALUMINUM POLYESTER FOIL SHIELDING FOR:

- Lightweight Shielding
- Low Cost
- Ease of Termination With Use of Stranded Tinned Copper Drain Wire
- Low Frequency Interference Applications
- 100% Coverage Over the Core of Cable Conductors

Aluminum/Polyester Foil Shielding consists of an aluminum polyester tape, foil side facing inward, with a 25% overlap and in contact with a stranded, tinned copper drain wire equal in size to insulated cable conductors.



LEGEND:

- | | |
|----------------------------|---------------|
| A. Conductor | D. Drain Wire |
| B. Insulation | E. Rip Cord |
| C. Aluminum/Polyester Foil | F. Jacket |



CHOOSE XTRA•GUARD® FLEXIBLE CABLE BRAID SHIELDING FOR:

- EMI/RFI Resistance in Power, Control and Data Applications
- Continuous Shield Continuity in Flexing Applications
- High Physical Strength

XTRA GUARD® Flexible Cables have specific shielding requirements resulting from the stresses of motion and flexing. Where foil shields will tear and lose continuity, **XTRA GUARD® Flexible Cables** use a flexible, 85% coverage, tinned copper braid with a double jacket isolating the shield from the cable's inner core.



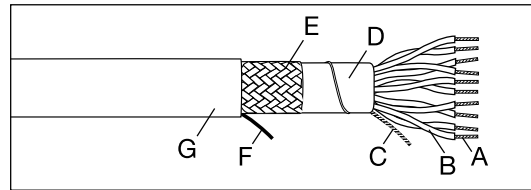
CHOOSE ALPHA-LOC® ARMORING FOR:

- Protection from Mechanical Abuse
- Increased Protection from Water Exposure
- Crush Resistance
- Protection from Chemical Attack

CHOOSE SUPRASHIELD® (FOIL/BRAID) SHIELDING FOR:

- Ease of Termination With Use of Stranded Tinned Copper Drain Wire
- High-Frequency Interference Applications
- High Physical Strength

SUPRASHIELD® (foil/braid) Shielding System consists of a unique triple-laminate tape. An aluminum/polyester/aluminum tape is bonded in one layer with a 25% overlap and in contact with a stranded tinned copper drain wire equal in size to the insulated cable conductors. A 70% coverage tinned copper braid shield is applied overall.



LEGEND:

- | | |
|---------------|--------------------------------|
| A. Conductor | D. Triple-Laminate Foil Shield |
| B. Insulation | E. Braided Shield |
| C. Drain Wire | F. Rip Cord |
| | G. Jacket |

