Custom multicore cables are unique combinations of Raychem products built specifically to suit your special needs for size and performance. Try out this cost-effective system solution today!

**Components**

- Metal strength members
- Armor in steel / alloy and tin
- Controlled electrical cables
- Fabric and film tapes
- Full range of electrical shields
- Primary wires, pairs, triples, shielded and unstretched
- Optical fibers (fiber in steel tube)
- Special components
- Wraps and braids

**Size and Weight Savings**

- Up to 40% smaller than comparable products

**High Performance**

- Improved electrical, mechanical, and/or thermal performance
- Enhanced chemical and fluid resistance
- Ultra-flexible cables and components available
- Ability to include data, signal, and power in the same bundle

**Practical**

- Cost savings over hand-building bundles
- Available in small order quantities
- Special testing available upon request
- Cable design services provided free of charge

**Design Flexibility**

- CAD for quick response
- High product performance
- Optimization
- Rapid quotations
- Size and weight details

Raychem Custom Multicore Cables are specifically configured for your application and designed to meet your unique needs. Try out this cost-effective system solution today!
Expertise in Materials

Full range of custom formulated jacket materials give you a solution matched to the challenges of your application.

**Thick Wall**
- Thermafl F: flexible, general-purpose cross-linked polyethylene
- Thermafl G: general-purpose cross-linked polyethylene with improved fluid resistance
- Thermafl D: oil-resistant cross-linked chlorinated polyethylene
- Thermafl T: highly cross-linked, non-halogen cross-linked polyethylene
- Zerohal: non-halogen cross-linked polyethylene
- Raychem CPT: flexible, abrasion-resistant polyurethane
- Thermorad NTFR: oil-resistant, flexible chlorinated polyolefin copolymer

**Thin Wall**
- Thermafl 700: high-temperature, nuclear-biological-chemical resistant
- Thermafl K: abrasion-resistant PTFE
- Thermorad HT: solvent-resistant, high-temperature ETFE
- Thermorad FL: flexible, solvent-resistant ETFE

**Types of Shielding**

- Abnormalized Polymer Electrical: Single Braid
  - Low EMI Levels: Low Sensitivity
- Supershielded: Single Optimized Braid
  - High EMI Levels: Sensitive Lines
- Superphased: Double Optimized Braid
  - Low EMI Levels: Low Sensitivity
- Superphased: Double Optimized Braid
  - High EMI Levels: High Sensitivity
- Supershielded: Double Supershielded
  - EMP/TEMPEST
- Superphased: Highly Sensitive Lines
  - Severe EMI Levels
- Optimized Braid: Low Sensitivity
  - Low EMI Levels

**Shielding: Control the Noise for Better Signal Integrity**

Shielding of cables is important in many applications. Shielding helps to minimize crosstalk within the cable, prevent interference from external sources, or eliminate radiation from the cable itself. The design of cables to provide effective shielding over a broad frequency spectrum is complex, and cables must be tailored to specific electromagnetic environments. Choices range from simple aluminized polyester film that provides electrostatic shielding to progressively more complex shielding with plated copper braids and Mu metal wraps.

Performance of conventional braiding can be significantly improved by computer optimization. This tightly controlled process can significantly increase shielding performance of a basic braided shield with minimal weight penalty or increase in optical coverage. Supershielded cables combine Mu metal wraps with optimized braids to provide even further enhanced performance, especially at low frequencies.

**Performance of Conventional Braiding**

<table>
<thead>
<tr>
<th>Frequency (Hz)</th>
<th>Single Braid</th>
<th>Optimized Braid</th>
<th>Supershielded</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>175</td>
<td>165</td>
<td>155</td>
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<tr>
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</tr>
<tr>
<td>100000</td>
<td>75</td>
<td>65</td>
<td>55</td>
</tr>
</tbody>
</table>

Computer-Aided Design for Fast, Accurate Results

Every year, TE designs and builds several thousand custom, high-performance, multicore/multiconductor cables that meet unique product needs. Design staff can draw on an extensive range of high-performance cable components and jacket materials, while incorporating both color-coding and alphanumeric marking techniques for component identification. These options, combined with a full range of EMI shields, lead to a huge variety of construction possibilities.

TE developed computer-aided design tools to provide a fast response to design requests. The software, used by factory engineers and product specialists in the field, can generate cable design proposals with drawings and quotations in minutes. A design drawing details all the cable data and can be used as the input to harness or cable splice (joint) design. The resulting cables fit to the exact needs in an efficient design.

Quality Assurance

Better signal integrity and VSD cable specifications ensure that performance and quality standards are maintained to the highest level. TE manufacturing sites have obtained the highest available quality system approvals, including ISO 9000 and QS9000. Raychem cables are manufactured to meet industry standards.