

GORE® Shielded Twisted Pair Cables (Controlled Impedance, 100 Ohms)



Well-suited for aerospace harness applications, Gore's cables utilize low-voltage differential signals (LVDS). They deliver excellent signal integrity with controlled impedance for data transmission lines at speeds up to 1 GHz (Table 1).

The combination of durable materials in this construction enables a higher tolerance against typical aircraft conditions such as rapidly-changing environments at high altitudes for extended service life (Figure 1).

Gore's low-profile configuration also has a direct impact on saving weight in aircraft. These cables are 30% smaller and 50% lighter when compared to standard oval cables (Figure 2). When compared to alternative round cables, Gore's unique design is drastically smaller in size (Figure 3). This smaller diameter allows for more flexibility and easier routing in hard-to-reach places of an airframe for improved installation.

Typical Applications

- Avionics networks
- Cabin management systems
- Digital video systems
- Ethernet backbone
- LVDS devices
- Serial buses

Standards Compliance

- ABD0031 (AIM 2.0005); BSS7230; FAR Part 25, Appendix F, Part I: Flammability
- ABD0031 (AIM 3.0005); BSS7239: Toxicity
- ABD0031 (AIM 3.0008B); BSS7238; FAR Part 25, Appendix F, Part V: Smoke Density
- ANSI/NEMA WC 27500: Environmental Testing, Jacket and Marking
- RoHS and REACH Information (See Table 10)
- SAE AS4373™: Test Methods for Insulated Electric Wire (Contact Gore for available data)

Table 1: Cable Properties

Please contact a Gore representative for other impedance options.

Electrical

Property	Value
Standard Impedance (Ohms)	100 ± 10
Typical Operating Voltage (V)	< 15
Nominal Velocity of Propagation (%)	80
Nominal Time Delay ns/m (ns/ft)	4.10 (1.25)
Capacitance pF/m (pF/ft)	42.6 (13.0)
Dielectric Withstanding Voltage (Vrms)	
Conductor-to-Conductor	1500
Conductor-to-Shield	1000

Mechanical / Environmental

Property	Value
Jacket Material	Engineered Fluoropolymer
Jacket Color	White (Laser Markable)
Conductor	Silver-Plated Copper Alloy
Conductor Color-Coding	Blue/White
Dielectric Material	ePTFE/PTFE
Temperature Range (°C)	-65 to +200

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Figure 1: Durable Package

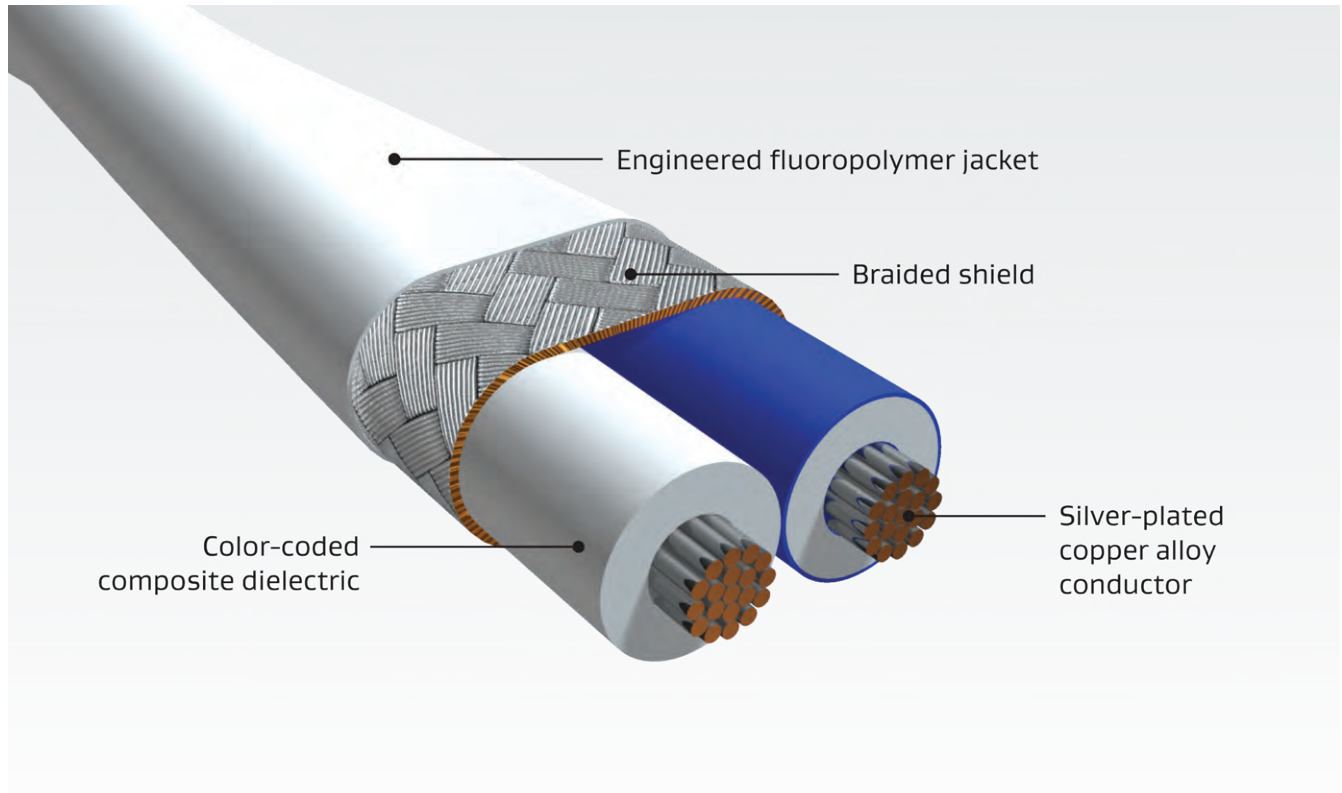


Figure 2: Low-Profile Configuration

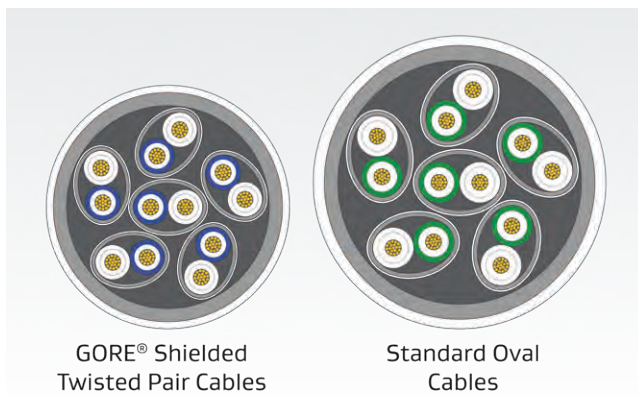


Figure 3: Smaller Diameter

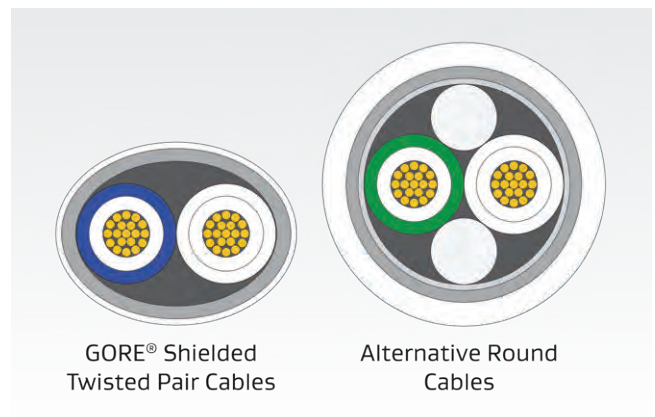


Table 2: Cable Characteristics

Gore alternative part numbers for GORE® Shielded Twisted Pair Cables meet the substance requirements according to the RoHS Directive 2011/65/EU that also includes Commission Delegated Directive 2015/863. These products do not contain any substances on the Candidate List of Substances of Very High Concern (SVHC) at concentrations above 0.1% (w/w) currently published on the ECHA website as of January 15, 2019.

Gore Part Number	Gore Alternative Part Number	AWG Size (Stranding)	Nominal Outer Diameter mm (in)	Minimum Bend Radius mm (in)	Nominal Weight kg/km (lb/1000 ft)	Maximum Insertion Loss dB/30 m (100 ft)			
						100 MHz	200 MHz	500 MHz	1 GHz
DXN2600	GSC-03-84879-00	20 (19/32)	5.1 (0.20)	25.0 (0.98)	31.7 (21.3)	4.8	6.8	11.3	16.4
DXN2601	GSC-03-84880-00	22 (19/34)	3.8 (0.15)	19.1 (0.75)	23.2 (15.6)	6.6	9.8	15.7	23.5
DXN2602	GSC-03-84557-00	24 (19/36)	3.3 (0.13)	16.2 (0.64)	16.8 (11.3)	7.6	10.7	17.3	25.0
DXN2603	GSC-03-84823-00	26 (19/38)	2.5 (0.10)	12.6 (0.49)	12.8 (8.6)	9.4	13.8	21.5	31.2
DXN2604	GSC-03-84881-00	28 (19/40)	2.0 (0.08)	9.9 (0.39)	8.6 (5.8)	13.2	19.2	32.0	46.8
DXN2605	GSC-03-84710-00	30 (19/42)	1.8 (0.07)	8.9 (0.35)	7.1 (4.8)	20.9	23.6	38.3	56.9
DXN2606	—	32 (19/44)	1.7 (0.07)	8.6 (0.34)	5.0 (3.4)	27.0	39.0	60.0	—

Ordering Information

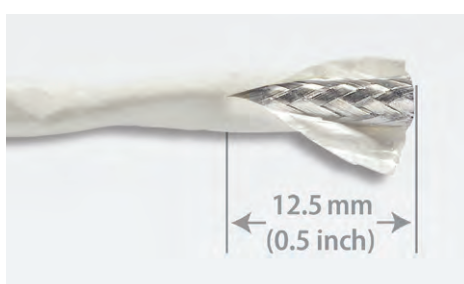
GORE® Shielded Twisted Pair Cables are available in standard sizes (Table 2). Visit gore.com/cable-distributors for the list of distributors. In addition, visit gore.com/hdrsamplerflyer regarding Gore’s full inventory of sample products and lead times.

For more information or to discuss specific characteristic limits and application needs, please contact a Gore representative.

Cable Preparation

Laser stripping is the ideal method to prep GORE® Shielded Twisted Pair Cables. Alternatively, Gore recommends using thermal or sharp mechanical strippers. Also, a unique method is to make a short, horizontal slit in the jacket material, peel it back to allow for contact termination and return the jacket to its original position for a neat closure (Figure 4). For more information regarding cable preparation, please contact a Gore representative.

Figure 4: Peel-Back Method



Contact-Connector Options

GORE® Shielded Twisted Pair Cables are designed to fit a variety of high-speed aerospace connector systems and backshells such as ARINC and MIL-STD-38999 with differential Twinax sizes 8 and 22D contacts. Please contact the specific manufacturer such as Amphenol® and Glenair for exact part numbers, tooling information, and termination instructions.

Information in this publication corresponds to W. L. Gore & Associates' current knowledge on the subject. It is offered solely to provide possible suggestions for user experimentations. It is NOT intended, however, to substitute for any testing the user may need to conduct to determine the suitability of the product for the user's particular purposes. Due to the unlimited variety of potential applications for the product, the user must BEFORE production use, determine that the product is suitable for the intended application and is compatible with other component materials. The user is solely responsible for determining the proper amount and placement of the product. Information in this publication may be subject to revision as new knowledge and experience become available. W. L. Gore & Associates cannot anticipate all variations in actual end user conditions, and therefore, makes no warranties and assumes no liability in connection with any use of this information. No information in this publication is to be considered as a license to operate under or a recommendation to infringe any patent right.

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