

## ENVIRONMENTAL PRODUCT DECLARATION

# BELDEN COPPER DATA NETWORKING CABLE

PLENUM RATED



At Belden, our core values include customers defining our success, and continuously improving. These are rooted in our culture and everyday business practices. These values provide the foundation of our commitment to corporate responsibility, human rights, environmental stewardship, employee health and safety, ethical business practices, philanthropy and equal opportunity.

As we continue to pursue transparency throughout our business operations, we are focused on the three pillars of sustainability: social, environmental, and economic factors.

To succeed with our customers we need to listen to our customers. Producing transparency documents is a priority and a significant part of our sustainability initiative.

As continuously improving is our way of life, the life cycle analysis data used in this report is carefully evaluated and interpreted, guiding our future product development strategy and manufacturing practices.

Belden Data Networking Plenum Copper Cabling



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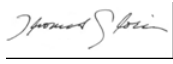
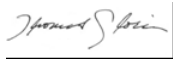
Belden: 10GXST™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™

According to ISO 14025

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025 and ISO 21930. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc. Accuracy of Results: EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.



PROGRAM OPERATOR	UL Environment	
DECLARATION HOLDER	Belden	
DECLARATION NUMBER	4787524121.101.1	
DECLARED PRODUCT	Plenum Rated Copper Data Networking Cable	
REFERENCE PCR	PCR for EPDs: Wire & Cable PCR 2013:1.0	
DATE OF ISSUE	October 5, 2016	
PERIOD OF VALIDITY	5 years	
CONTENTS OF THE DECLARATION	Product definition and information about building physics Information about basic material and the material's origin Description of the product's manufacture Indication of product processing Information about the in-use conditions Life cycle assessment results Testing results and verifications	
The PCR review was conducted by:	Environment and Development Foundation	
	PCR Addendum: UL Environment	
This declaration was independently verified in accordance with ISO 14025 by Underwriters Laboratories <input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL	 Wade Stout, ULE EPM	
	 Thomas Gloria, Life-Cycle Services, LLC	
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	 Thomas Gloria, Life-Cycle Services, LLC	



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Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™

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## Product Definition and Information

### Company Description

For more than 100 years, customers who have required unsurpassed performance and durability for signal transmission have counted on the Belden brand. In the 20th century that trust was built on high-performance wire and cable products. Today, Belden designs, manufactures and sells a comprehensive portfolio of cable, connectivity and networking products for the transmission of signals for data, sound and video applications.

Belden has a recognized reputation for doing business in a responsible and ethical manner. As we continue to pursue sustainability throughout our business operations, we are focused on the triple bottom line: social, environmental, and financial factors. One of our commitments is to innovate and continue to offer environmentally-friendly and LEED certified products to customers looking for sustainable alternatives to traditional products. This declaration is part of that commitment.

### Product Description

Thirty-two premise data cable product sets are listed below with their definitions and part number codes. The list includes CMP (plenum), FHC 25/50 (Limited Combustible) rated products. Their constructions include two and four pair horizontal cable. All conform to TIA standards, mainly TIA 568-C.2, and/or ISO/IEC 11801:2002 specifications. All products are third party verified to communications standards and to appropriate Category (TIA) or Class (ISO) requirements. All are available in a variety of packaging types including plastic reels, boxes and reel-in-boxes.

The following list divided up as follows:

Two brands - **Belden and Mohawk**

Two sections - **1-Indoor Products, 2-Limited Combustible**

Each section may contain:

- Category 6A UTP Products
- Category 6A Shielded Products
- Category 6 UTP Products
- Category 6 Shielded Products
- Category 5e UTP Products
- Category 5e Shielded Products
- Category 3 UTP Products



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## Belden Brand

### Indoor Products

- **Category 6A UTP Products**

- 10GXS - Part numbers: 10GXS13, 10GXS33  
10GXS Category 6A enhanced to 625MHz exemplifies simplicity and elegance in design. It is the smallest fully TIA Category 6A compliant horizontal cable product on the market that offers 10dB of alien crosstalk headroom while capable of delivering 100W of PoE. Belden's 10GX System using 10GXS cable is the gold standard for cabling infrastructure robustness. The cable construction is four pair (bond-pair optional), 23 AWG solid bare copper conductors, FEP insulation, patented EquiSpline™ & EquiBlock™ technologies, ripcord, and a Flamarrest® PVC jacket.
- 10GX - Part numbers: 10GX13, 10GX33  
10GX Category 6A horizontal cables are enhanced to 625MHz and improved performance over TIA Category 6A requirements. The cable construction is four pair (bond-pair optional), 23 AWG solid bare copper conductors, FEP insulation, patented Double-H spline technology, ripcord, and a Flamarrest® PVC jacket.

- **Category 6A Shielded Products**

- 10GX - Part numbers: 10GX63F  
10GX F/UTP Category 6A are horizontal cables enhanced to 625MHz with improved performance over TIA Category 6A requirements. The cable construction is four pair (bond-pair optional), 23 AWG solid bare copper conductors, FEP insulation, patented X-spline, overall foil tape with drain wire, ripcord, and a Flamarrest® PVC jacket.

- **Category 6 UTP Products**

- DataTwist 4800 (Category 6E+) – Part numbers: 4813, 7852A  
DataTwist 4800 UTP horizontal cables are guaranteed to 600MHz. They provide significant headroom and robust data transmission performance for today's most demanding applications. With 9% better insertion loss and PSNEXT 8dB better than TIA 568-C.2, these cables support the industry's most powerful Category 6 networking solution: Belden System 4800. Their large conductor size increases PoE efficiency and lowers temperature rise. The cable construction is four pair (bond-pair optional), 23 AWG solid bare copper conductors, dual FEP/FRPO insulation (bonded-pair is FEP), patented spline technology, ripcord, and a Flamarrest® PVC jacket.
- DataTwist 3600 (Category 6E) - Part numbers: 3613, 3633  
DataTwist 3600 UTP horizontal cables are guaranteed to 400MHz. They provide increased bandwidth and signal-to-noise margins. Their smaller diameter, low insertion loss, and 7.7dB PSACR headroom over TIA 568-C.2 make possible the unique Category 6 networking solution: Belden System 3600. The cable construction is four pair (bond-pair optional), 23 AWG solid bare copper conductors, dual FEP/FRPO insulation (bonded-pair is FEP), patented spline technology, ripcord, and a Flamarrest® PVC jacket.
- DataTwist 2400 (Category 6+) - Part numbers: 2413



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DataTwist 2400 UTP horizontal cables provide increased bandwidth and signal-to-noise margins and are guaranteed to 350MHz. Their smaller diameter, low insertion loss, and 3.7dB PSACR headroom over TIA 568-C.2 makes possible the unique Category 6 networking solution: Belden System 2400. The cable construction is four pair, 23 AWG solid bare copper conductors, dual FEP/FRPO insulation, patented separator tape technology, ripcord, and a Flamarrest® PVC jacket.

- MediaTwist (Category 6+) – Part number: 1874A  
MediaTwist UTP horizontal cables provide increased bandwidth and signal-to-noise margins and are guaranteed to 350MHz. Their unique crescent moon shape, low insertion loss, and 3dB PSNEXT headroom over TIA 568-C.2 make possible the unique Category 6 networking solution: Belden System 2400. The cable construction is four bonded-pair, 23 AWG solid bare copper conductors, FEP insulation, ripcord, and a Flamarrest® PVC jacket.
- DataTwist 6 (Category 6) – Part numbers: 6663U6, LAN6P, 7882A  
DataTwist 6 UTP horizontal cables provide compliance to TIA 568-C.2 up to 250MHz. The cable construction is four, 23 AWG solid bare copper conductors, dual FEP/FRPO insulation, ripcord, and a Flamarrest® PVC jacket.

- **Category 6 Shielded Products**

- DataTwist 2400 (Category 6+) - Part numbers: 2413F  
DataTwist 2400 F/UTP horizontal cables provide increased bandwidth and signal-to-noise margins and are guaranteed to 350MHz. The overall foil shield helps protect against unwanted EMI/RFI. Their smaller diameter, low insertion loss, and 2.7dB PSACR headroom over TIA 568-C.2 makes possible the unique Category 6 networking solution: Belden Shielded System 2400. The cable construction is four pair, 23 AWG solid bare copper conductors, FEP insulation, patented X-Spline technology, overall foil tape with drain wire, no ripcord, and a Flamarrest® PVC jacket.
- DataTwist 6 (Category 6) - Part numbers: 1352A  
DataTwist 6 F/UTP horizontal cables provide performance meeting TIA 568-C.2. The overall foil shield helps protect against unwanted EMI/RFI. The cable construction is four pair, 23 AWG solid bare copper conductors, FEP insulation, patented X-Spline technology, an overall foil tape with drain wire, no ripcord, and a Flamarrest® PVC jacket.

- **Category 5e UTP Products**

- DataTwist 1200 (Category 5E) - Part numbers: 1213, 1701A, 1703A (Siamese), 1701S6 (six 1701A's)  
DataTwist 1200 UTP horizontal cables are guaranteed to 350MHz and exceed the TIA Category 5e requirements. They have excellent PSNEXT (+6dB), PSACR (+8dB) and return loss characteristics. DataTwist 1200 cables are part of the industry's most powerful Category 5e solution: Belden System 1200. The cable construction is four pair (bonded-pair optional), 2x4pr (bonded-pair), 24 AWG solid bare copper conductors, polyolefin insulation, ripcord, and a Flamarrest® PVC jacket, 1701S6 is Banana Peel.
- DataTwist 5e (Category 5e) - Part numbers: 1585A, 1585B, 1590A (2pr), 6663U5, IFLEX  
DataTwist 5e UTP horizontal cables are guaranteed to 100MHz and exceed the TIA Category 5e





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requirements. The cable construction is two or four pair, 24 AWG solid bare copper conductors, dual FEP/FRPO insulation, ripcord, and a Flamarrest® PVC jacket.

- **Category 5e Shielded Products**

- DataTwist 1200 (Category 5E) - Part numbers: 1213F  
DataTwist 1200 F/UTP horizontal cables provide increased bandwidth and signal-to-noise margins and are guaranteed to 350MHz. The overall foil shield helps protect against unwanted EMI/RFI. They have excellent PSNEXT (+6dB), PSACR (+8dB) and return loss characteristics. DataTwist 1200 F/UTP cables are part of the industry's most powerful Category 5e solution: Belden Shielded System 1200. The cable construction is four pair, 24 AWG solid bare copper conductors, FEP insulation, an overall foil tape with drain wire, no ripcord, and a Flamarrest® PVC jacket.
- DataTwist 5e (Category 5e) - Part numbers: 1533P, 1624P\*  
DataTwist 5e F/UTP horizontal cables provide performance meeting TIA 568-C.2. The overall foil shield helps protect against unwanted EMI/RFI. The cable construction is four or 2x4 pair, 24 AWG solid bare copper conductors, FEP insulation, an overall foil tape with drain wire, no ripcord, and a Flamarrest® PVC jacket. \*Cat5 not Cat5e

- **Category 3 UTP Products**

- DataTwist 3 (Category 3) - Part numbers: 1243A2 (2pr)  
Category 3 horizontal cables provide performance meeting TIA 568-C.2 Category 3. The cable construction is two pair, 24 AWG solid bare copper conductors, Flamarrest® PVC insulation, ripcord, and a Flamarrest® PVC jacket.

### **Limited Combustible Products**

- **Category 6 UTP Products**

- FHC 25/50 (Category 6) - Part numbers: 7813LC  
This cable passes TIA 568-C.2 Category 6 requirements and has a bandwidth of 250MHz. It is limited combustible rated (FHC 25/50) a superior flame test rating. With zero red listed ingredients, this cable may be used for the Living Building Challenge. The cable construction is four bonded-pair, 23 AWG solid bare copper conductors, FEP insulation, patented X-Spline technology, no ripcord, and an FEP jacket.

- **Category 5e UTP Products**

- FHC 25/50 (Category 5E) - Part numbers: 1701LC  
This cable passes TIA 568-C.2 Category 5e requirements and has a bandwidth of 350MHz. It is limited combustible rated (FHC 25/50) a superior flame test rating. With zero red listed ingredients, this cable may be used for the Living Building Challenge. The cable construction is four bonded-pair, 24 AWG solid bare copper conductors, FEP insulation, no ripcord, and an FEP jacket.
- FHC 25/50 (Category 5e) - Part numbers: 1585LC  
This cable passes TIA 568-C.2 Category 5e requirements and has a bandwidth of 100MHz. It is limited combustible rated (FHC 25/50) a superior flame test rating. With zero red listed ingredients, this cable may be used for the Living Building Challenge. The cable construction is four pair, 24 AWG



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solid bare copper conductors, FEP insulation, no ripcord, and an FEP jacket.

## **Mohawk Brand**

### **Indoor Products**

- **Category 6A UTP Products**

- GigaLAN 10 Small Diameter – Part Numbers: M59145 to M59154, M59169 to M59178  
Category 6A unshielded twisted pair (UTP) GigaLAN 10 SMALL DIAMETER is an open architecture cable design for use in horizontal cabling systems per ANSI/TIA-568-C and ISO/IEC 11801:2002 Class EA. The cable exceeds ANSI/TIA-568-C.2 and ISO/IEC 11801:2002 Category 6A alien crosstalk requirements by 7.5dB. This patented cable consists of #23 AWG solid bare copper FEP insulated conductors, assembled into four tightly twisted pairs, utilizing a patented FlexWeb® core separator, an alien crosstalk barrier, and ripcord under a ThermoPlen® PVC jacket.
- GigaLAN 10 - Part Numbers: M58646 to M58649, M58682 to M58687  
Category 6A unshielded twisted pair (UTP) GigaLAN 10 is an open architecture cable design for use in horizontal cabling systems per ANSI/TIA-568-C and ISO/IEC 11801:2002 Class EA. The cable exceeds ANSI/TIA-568-C.2 and ISO/IEC 11801:2002 Category 6A electrical requirements. This patented cable consists of #23 AWG solid bare copper, FEP insulated conductors, assembled into four tightly twisted pairs, utilizing a patented FlexWeb® core separator, and a ripcord under a ThermoPlen® PVC jacket.
- XGO - Part Numbers: M58865 to M58871, M58873 to M58875  
XGO Category 6A unshielded twisted pair (UTP) is an open architecture cable design for use in horizontal cabling systems per ANSI/TIA-568-C and ISO/IEC 11801:2002 Class EA. The cable exceeds ANSI/TIA-568-C.2 and ISO/IEC 11801:2002 Category 6A electrical requirements. This patented cable consists of #23 AWG solid bare copper, FEP insulated conductors, assembled into four tightly twisted pairs, utilizing a patented Flexweb® core separator, and a ripcord under a fluted, ThermoPlen® PVC jacket.

- **Category 6A Shielded Products**

- XGO F/UTP - Part Numbers: M58781, M58782, M58886 to M58893  
XGO F/UTP Category 6A is a robust, 500MHz high performance data cable that is designed, manufactured and tested to exceed ANSI/TIA-568-C.2 performance standards. A foil shield offers a cost-effective solution to block alien crosstalk. This patented cable consists of #23 AWG solid bare copper, FEP insulated conductors, assembled into four tightly twisted pairs, utilizing a patented Flexweb® core separator, overall foil shield with drain wire, and a ripcord under a ThermoPlen® PVC jacket.

- **Category 6 UTP Products**

- GigaLAN (Category 6E+) – Part Numbers: M57413 to M57417, M57620, M57750, M57860, M57861, M57866  
GigaLAN UTP horizontal cable is tested to 750MHz and one of the highest performing unshielded twisted pair cables available. Large conductor size increases PoE efficiency and lowers temperature



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rise. The cable construction is four pair, 23 AWG solid bare copper conductors, two layer FEP and flame retardant polyolefin insulation, patented FlexWeb® technology, ripcord, and a ThermoPlen® PVC jacket.

- AdvanceNet (Category 6E) - Part numbers: M56905, M57193 to M57201  
AdvanceNet UTP horizontal cable is tested to 650MHz and performs as a mid-grade unshielded twisted pair product. The cable construction is four pair, 23 AWG solid bare copper conductors, two layer FEP and flame retardant polyolefin insulation, patented FlexWeb® technology, ripcord, and a ThermoPlen® PVC jacket.
- 6Lan Plus (Category 6+) - Part numbers: M58794, M58801 to M58803, M58863, M58914 to M58918  
6LAN Plus UTP horizontal cable is tested to 625MHz and provides guaranteed 3dB crosstalk margin over TIA 568C.2. The cable construction is four pair, 23 AWG solid bare copper conductors, two layer FEP and flame retardant polyolefin insulation, flat separator tape, ripcord, and a ThermoPlen® PVC jacket.
- 6LAN (Category 6) – Part numbers: M58280 to M58283, M58285 to M58290  
6LAN UTP horizontal cables are tested to 550MHz and meet or exceed TIA 568-C.2 requirements. The cable construction is four pair, 23 AWG solid bare copper conductors, two layer FEP and flame retardant polyolefin insulation, ripcord, and a ThermoPlen® PVC jacket.
- **Category 6 Shielded Products**
  - Category 6 F/UTP (Category 6) - Part numbers: M58175 to M58184  
Category 6 F/UTP horizontal cables provide performance meeting TIA 568-C.2 and tested to 550MHz. The overall foil shield helps protect against unwanted EMI/RFI. The cable construction is four pair, 23 AWG solid bare copper conductors, FEP insulation, patented FlexWeb® technology, an overall foil tape with drain wire, no ripcord, and a ThermoPlen® PVC jacket.
- **Category 5e UTP Products**
  - MegaLAN (Category 5E) – Part numbers: M55988, M56092, M56093, M56072, M56166, M56168, M56876 to M56878, M56882  
MegaLAN UTP horizontal cable is tested to 400MHz and exceeds the TIA Category 5e requirements. The cable construction is four pair, 24 AWG solid bare copper conductors, two layer FEP and flame retardant polyolefin insulation, ripcord, and a ThermoPlen® PVC jacket.
  - 5e LAN (Category 5e) – Part numbers: M57545 to M57548, M57550, M57551, M57761, M57887, M57924, M57936  
5eLAN UTP horizontal cable is tested to 200MHz and exceeds the TIA Category 5e requirements. The cable construction is four pair, 24 AWG solid bare copper conductors, two layer FEP and flame retardant polyolefin insulation, ripcord, and a flame retardant PVC jacket.
- **Category 5e Shielded Products**
  - MegaLAN F/UTP (Category 5E) - Part numbers: M55986, M57360 to M57367, M57322  
MegaLAN F/UTP horizontal cable is tested to 400MHz and exceeds TIA Category 5e PSNEXT requirements by 5dB. The overall foil shield helps protect against unwanted EMI/RFI. The cable





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construction is four pair, 24 AWG solid bare copper conductors, FEP insulation, an overall foil shield, no ripcord, and a ThermoPlen® PVC jacket.

- 5e LAN F/UTP (Category 5e) - Part numbers: M58144, M58185 to M58193  
5e LAN F/UTP horizontal cable is tested to 200MHz and exceeds TIA 568-C.2 Category 5e requirements. The overall foil shield helps protect against unwanted EMI/RFI. The cable construction is four pair, 24 AWG solid bare copper conductors, FEP insulation, an overall foil shield with drain wire, no ripcord, and a ThermoPlen® PVC jacket.

## Limited Combustible Products

- **Category 6 UTP Products**

Coming Soon

- **Category 5e UTP Products**

Coming Soon

- 5e LAN FHC 25/50 (Category 5e) - Part numbers: M58003, M58104, M58476  
This cable passes TIA 568-C.2 Category 5e requirements and has a bandwidth of 100MHz. It is limited combustible rated (FHC 25/50) a superior flame test rating. With zero red listed ingredients, this cable may be used for the Living Building Challenge. The cable construction is four pair, 24 AWG solid bare copper conductors, FEP insulation, no ripcord, and a fluoropolymer jacket.

All Mohawk part numbers are referenced back to a primary code, which aligns with the blue jacketed product. If a code representing the blue product appears in the following tables of this document, all part numbers represented in this table are included into the LCA and resulting EPD. All parts referenced here are reel packaging. If you want reel-in-box, add a RB after the part number. If you want an Unreel package, add a B after the part number.

Trade Name	Primary Code	Associated Part Numbers								
	Blue	White	Pink	Yellow	Gray	Green	Red	Orange	Black	Violet
GigaLAN 10® Small Diameter	M59146	M59145	M59147	M59148	M59149	M59150	M59151	M59152	M59153	M59154
Category 6A (special)	M59170	M59169	M59171	M59172	M59173	M59174	M59175	M59176	M59177	M59178
GigaLAN®10	M58646	M58647	M58682	M58648	M58649	M58683	M58684	M58685	M58686	M58687
XGO™	M58865	M58866	M58869	M58867	M58868	M58870	M58871	M58873	M58874	M58875
XGO™F/UTP	M58781	M58782	M58888	M58886	M58887	M58889	M58890	M58891	M58892	M58893
GigaLAN®	M57414	M57413	M57750	M57415	M57417	M57416	M57620	M57861	M57866	M57860

Table 1. Mohawk Part Number Reference



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Trade Name	Primary Code	Associated Part Numbers								
	Blue	White	Pink	Yellow	Gray	Green	Red	Orange	Black	Violet
AdvanceNet™	M57193	M56905	M57194	M57195	M57196	M57197	M57198	M57199	M57200	M57201
6 LAN™ Plus	M58801	M58802	M58914	M58863	M58803	M58915	M58916	M58917	M58918	M58794
6 LAN™	M58281	M58280	M58282	M58283	M58285	M58286	M58287	M58288	M58289	M58290
Category 6 F/UTP	M58176	M58175	M58177	M58178	M58179	M58180	M58181	M58182	M58183	M58184
MegaLAN®	M56168	M55988	M56092	M56093	M56882	M56166	M56072	M56876	M56877	M56878
5e LAN®	M57546	M57547	M57548	M57550	M57545	M57551	M57887	M57924	M57936	M57761
MegaLAN® F/UTP	M57360	M55986	M57322	M57361	M57362	M57363	M57364	M57365	M57366	M57367
5e LAN® F/UTP	M58186	M58185	M58187	M58188	M58144	M58189	M58190	M58191	M58192	M58193

Table 1. Mohawk Part Number Reference Continued

## Manufacturing Locations

These data cables are manufactured in the Monticello, Kentucky; Richmond, Indiana; and Nogales, Mexico. Primary data for the life cycle assessment has been provided by each of these facilities and a weighted average has been conducted for each product.

## Applications and Uses

These products are used in the plenum spaces of buildings. Applications for the plenum products include IEEE 802.3: 10BASE-T through 10GBASE-T LAN and Wireless LAN applications; 100BaseVG ANYLAN; CDDI; Token Ring; 155 & 622 ATM; broadband and baseband analog video; voice and multimedia systems; data center I/O consolidation; data center server virtualization and streaming video; TSC/PAL Component or Composite Video, AES/EBU Digital Audio AES51, HDBaseT, RS-422, PoE, and PoE Plus

## Material Inputs

The raw materials for these plenum data networking cables are listed in Table 2. Table 3 details the average packaging materials associated with each product. Table one is a reference to convert to SI units.

Conversion	Lbs.	Kg
Pounds to Kilograms	1	0.4536

Table 2: SI Unit Conversion (0.4536kg/lb.)



# ENVIRONMENTAL PRODUCT DECLARATION



Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™

According to ISO 14025

Material (lb/100ft)	1243A2	1213/ M56168	1585A/ 6663U5/ M57546	1585B	1585LC/ M58003/ M58104/ M58476	1590A	1624P/ 1533P/ 1213F/ M58186	1701A
<b>Jacket</b>	0.48	0.69	0.64	0.61	0.61	0.52	1.00	0.62
<b>PVC Colorant</b>	0.01	<0.01	<0.01	<0.01	-	0.01	0.01	0.01
<b>Insulation</b>	0.21	0.40	0.41	0.39	0.45	0.29	0.67	0.49
<b>HDPE Colorant</b>	-	<0.01	0.01	<0.01	-	-	-	-
<b>FEP Colorant</b>	-	-	-	-	0.03	<0.01	0.01	<0.01
<b>Binder/Ripcord</b>	-	0.01	0.01	0.01	-	0.01	-	0.01
<b>Conductor</b>	0.51	1.01	1.04	0.98	1.12	0.58	1.26	1.07
<b>Crossweb/Filler</b>	-	-	-	-	-	-	-	-
<b>Tape</b>	-	-	-	-	-	-	0.25	-
<b>Total</b>	1.20	2.11	2.10	2.00	2.20	1.40	3.20	2.20
Material (lb/100ft)	1701LC	1701S6	1703A	IFLEX	10GX13/ M58646	10GX33	10GX63F	10GXS13/ 10GXS33/ M59146/ M59170
<b>Jacket</b>	0.61	0.74	1.23	1.35	1.23	1.19	2.00	0.94
<b>PVC Colorant</b>	-	<0.01	0.01	0.01	0.01	0.01	0.01	0.01
<b>Insulation</b>	0.49	0.45	0.95	0.86	0.68	0.77	0.71	0.80
<b>HDPE Colorant</b>	-	-	-	0.01	-	-	-	-
<b>FEP Colorant</b>	0.03	<0.01	0.01	-	0.01	0.01	0.01	0.01
<b>Binder/Ripcord</b>	-	0.01	0.01	0.01	0.01	0.01	0.04	0.01
<b>Conductor</b>	1.07	0.99	2.08	2.06	1.40	1.39	1.43	1.30
<b>Crossweb/Filler</b>	-	-	-	-	0.97	0.94	0.40	0.75
<b>Tape</b>	-	-	-	-	-	-	0.21	0.20
<b>Total</b>	2.20	2.20	4.30	4.30	4.30	4.30	4.80	4.00

Table 3: Material Inputs for Plenum Copper Data Networking Cables (lbs/100 ft)



# ENVIRONMENTAL PRODUCT DECLARATION



Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™

According to ISO 14025

Material (lb/100ft)	1874A	2413	2413F/ M58176/ 1352A/ M58781	3613/ M57414/ M57193	3633	4813	6663U6/ M58281/ 7882A/ LAN6P	7813LC
<b>Jacket</b>	1.56	0.77	1.09	0.94	0.95	0.95	0.73	0.82
<b>PVC Colorant</b>	0.02	0.01	0.01	0.01	0.01	0.01	0.01	-
<b>Insulation</b>	0.62	0.56	0.95	0.57	0.75	0.58	0.54	0.81
<b>HDPE Colorant</b>	-	<0.01	-	<0.01	-	<0.01	<0.01	-
<b>FEP Colorant</b>	<0.01	-	0.01	-	0.01	-	-	0.04
<b>Binder/Ripcord</b>	0.01	0.01	-	0.01	0.01	0.01	0.01	-
<b>Conductor</b>	1.28	1.25	1.68	1.27	1.58	1.36	1.21	1.33
<b>Crossweb/Filler</b>	-	-	0.41	-	0.40	0.39	-	0.10
<b>Tape</b>	-	-	0.26	-	-	-	-	-
<b>Total</b>	3.50	2.60	4.40	2.80	3.70	3.30	2.50	3.10
Material (lb/100ft)	7852A	M58801	M58865	M59048/ M59051	M57360	XCGB4		
<b>Jacket</b>	0.85	0.76	2.82	0.81	1.00	-		
<b>PVC Colorant</b>	0.01	0.01	0.02	<0.01	0.01	-		
<b>Insulation</b>	0.75	0.53	0.81	0.48	0.68	0.56		
<b>HDPE Colorant</b>	-	0.01	-	0.01	-	<0.01		
<b>FEP Colorant</b>	0.01	-	0.01	-	0.01	-		
<b>Binder/Ripcord</b>	0.01	0.01	0.01	0.01	-	-		
<b>Conductor</b>	1.50	1.16	1.54	1.05	1.25	1.23		
<b>Crossweb/Filler</b>	0.68	0.12	-	0.25	-	-		
<b>Tape</b>	-	-	-	-	0.25	-		
<b>Total</b>	3.80	2.60	5.20	2.60	3.20	1.80		

Table 3: Material Inputs for Plenum Copper Data Networking Cables (lbs/100 ft) Continued



# ENVIRONMENTAL PRODUCT DECLARATION



Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™

According to ISO 14025

Material (lb/100ft)	1243A2	1213/ M56168	1585A/ 6663U5/ M57546	1585B	1585LC/ M58003/ M58104/ M58476	1590A	1624P/ 1533P/ 1213F/ M58186	1701A
<b>Wood Pallets</b>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
<b>Wood Reels</b>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
<b>Plastic Reels</b>	<0.01	0.07	0.07	0.07	0.07	<0.01	0.11	0.07
<b>Stretch Wrap</b>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.07	<0.01
<b>Labels</b>	<0.01	0.08	0.08	0.07	0.08	0.05	0.12	0.08
<b>Cardboard</b>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	<0.01
Material (lb/100ft)	1701LC	1701S6	1703A	IFLEX	10GX13/ M58646	10GX33	10GX63F	10GXS13/ 10GXS33/ M59146/ M59170
<b>Wood Pallets</b>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
<b>Wood Reels</b>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
<b>Plastic Reels</b>	0.07	0.07	0.14	0.14	0.14	0.14	0.16	0.13
<b>Stretch Wrap</b>	<0.01	<0.01	0.10	0.10	0.10	0.10	0.11	0.09
<b>Labels</b>	0.08	0.08	0.16	0.16	0.16	0.16	0.18	0.15
<b>Cardboard</b>	<0.01	<0.01	0.08	0.08	0.08	0.08	0.09	0.07
Material (lb/100ft)	1874A	2413	2413F/ M58176/ 1352A/ M58781	3613/ M57414/ M57193	3633	4813	6663U6/ M58281 6663U5/ 7882A/ LAN6P	7813LC
<b>Wood Pallets</b>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
<b>Wood Reels</b>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
<b>Plastic Reels</b>	0.12	0.09	0.14	0.09	0.12	0.11	0.08	0.10
<b>Stretch Wrap</b>	0.08	0.06	0.10	0.06	0.08	0.07	0.06	0.07
<b>Labels</b>	0.13	0.10	0.16	0.10	0.14	0.12	0.09	0.12
<b>Cardboard</b>	0.07	<0.01	0.08	0.05	0.07	0.06	<0.01	0.06

Table 4: Average Packaging Material Inputs





# ENVIRONMENTAL PRODUCT DECLARATION



Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™

According to ISO 14025

Material (lb/100ft)	7852A	M58801	M58865	M59048/ M59051	M57360	XCGB4
Wood Pallets	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Wood Reels	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Plastic Reels	0.12	0.09	0.17	0.09	0.11	0.06
Stretch Wrap	0.08	0.06	0.11	0.06	0.07	<0.01
Labels	0.14	0.10	0.19	0.10	0.12	0.07
Cardboard	0.07	<0.01	0.10	<0.01	0.06	<0.01

Table 4: Average Packaging Material Inputs Continued

## Manufacturing Process

Copper wire goes through a wire mill process to draw the wire to a specified gauge. The copper is then drawn a second time to a specified diameter. The wire continues down the line to an extruder where insulation is applied to the wire. Cooling and drying of the insulated wire then occurs. For paired cables, two of these insulated wires are then twinned. For bonded pairs, the twinned cables are bonded together. Four twinned wire pairs, along with other cable components such as crosswebs, ripcords and/or shielding material, are then stranded together. Subsequently, the stranded wire has a jacket extruded around the stranded cable. After the jacket is applied, the cable is cooled and packaged. Various packaging options exist, but most product is shipped in 1000-foot length spools and/or boxes.

## Life Cycle Assessment Description

### Functional Unit

Environmental impacts are reported per functional unit of a product and the functional unit is the basis for comparison in an LCA. For copper data cable, the functional unit is 100 feet of cable.

### Life Cycle Stages Assessed

Life Cycle Boundary	EPD Life Cycle Stage
Belden Plenum Cable Business-to-Business	Raw Material Acquisition
	Manufacturing
	Packaging/Storage
Belden Plenum Cable Business-to-Consumer	Marketing and Distribution
	Installation and Use
	Waste Disposal

Table 5: Life Cycle Stages Assessed



# ENVIRONMENTAL PRODUCT DECLARATION



Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™

According to ISO 14025

## System Boundary

This project considers the life cycle activities from resource extraction through installation and end-of-life effects. The boundary covers raw material acquisition, manufacturing, marketing, use and waste disposal as seen in Figure 1.

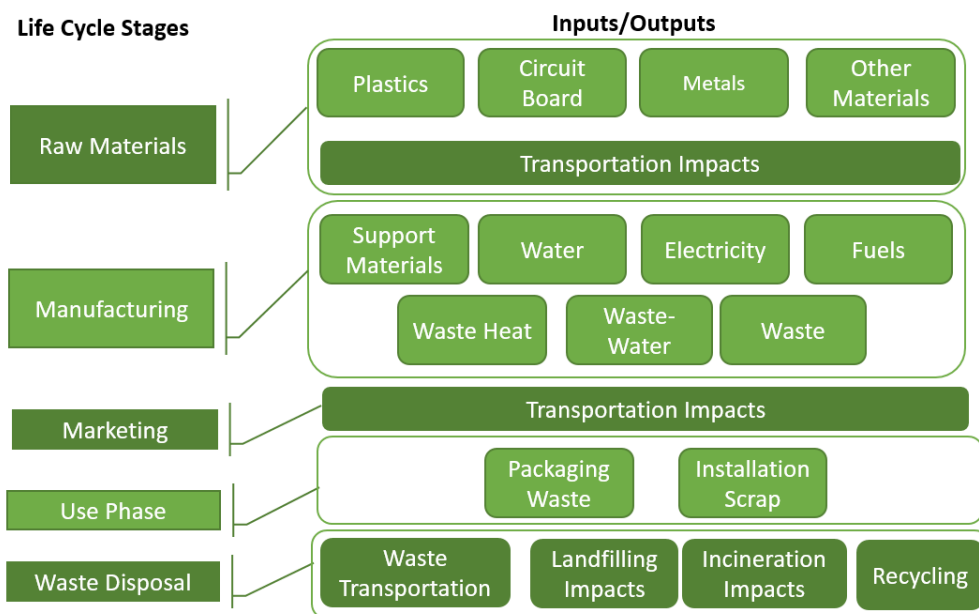


Figure 1: System Boundary

## Allocation

Allocation for manufacturing energy, water, and waste items was conducted per length of production based on allocation of resources per product groups produced at each facility.

## Cut-off Criteria

For any impact category, should the sum of various impacts from a specific process/activity be less than 1% of the impact equivalent in that category, the process/activity may be neglected during the inventory analysis. Nonetheless, the accumulated impact of neglected process/activity may not exceed 5%. Components and materials omitted from the LCA shall be documented.



# ENVIRONMENTAL PRODUCT DECLARATION



Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™

According to ISO 14025

This EPD is in compliance with the cut-off criteria. Components and materials omitted from the LCA shall be documented and include installation energy from signal testing devices in the installation of data networking cable. Capital items for the production processes (machines, buildings, etc.) were not taken into consideration.

## Period under Consideration

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Primary data used refer to the production processes of the manufacturing facility and were derived from calendar year 2015.

## Software and Background Data

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SimaPro v8.02 Software System for Life Cycle Engineering, an internationally recognized LCA modeling software program, was used for life cycle impact assessment modeling. Background and secondary datasets were modeled using the US LCI database, developed by the National Renewable Energy Laboratory, as well as the ecoinvent v3 database, which is developed by the Swiss Centre for Life Cycle Inventories. FEP material impact data was obtained from an LCA on data cable conducted for the Environmental Protection Agency.

## Marketing and Distribution

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The plenum cable products are distributed globally, but primarily throughout the United States and Canada. The final products were modeled as being shipped 500 miles (800 kilometers) by truck, based on the location of Belden manufacturing locations and distribution centers.

## Transportation

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Belden provided resource transportation mode and location data to support the calculation of raw material transportation flows. The transportation LCI data from the US LCI database (kg-km basis) were used to develop the resource transportation LCI profile.

## Installation and Use Stage

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Based on industry expertise from Belden, a scrap rate of 5% was assumed in the installation of the product in the use stage for this study. This rate was based on the expertise of Belden. In some installations, cables may be hung on J-hooks or attached to a surface with Velcro. However, in many cases the cable is simply laid in the plenum or other inaccessible area with no attachment. Thus no J-hooks, Velcro, or other attachment materials were included in the boundary. Grounding is often required in data systems, but the grounding function is required for the server racks and cable trays, not for the cables themselves, so grounding materials were not considered as an input to the cable product. The cables often connect to outlets installed in a wall or floor. These outlets were considered a separate product system and not included in the boundary of this study. No other materials are required for installation.



# ENVIRONMENTAL PRODUCT DECLARATION



Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™

According to ISO 14025

Copper data networking cable are considered passive product after installation and during the use stage, meaning no energy is consumed during the products' use. Therefore, no use stage impacts were measured, and thus none are presented in these results. No maintenance is required. The lifetimes of these products are vary and data cable is replaced more commonly due to increased bandwidth and data speed requirements, and not because of product performance or degradation.

## End-of-Life

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A distance of 20 miles to the recycling facility was assumed for products at the end-of-life. A 95% recycling rate was assumed with the remaining 5% being disposed as the average US municipal solid waste disposition, as cited in a study conducted by DuPont (Krieger, 2007). The US disposition rates of 82% landfill and 18% incineration were assumed for the remaining 5% of product material. The cut-off methodology (also known as the recycled content method) was used for any materials that were sent to recycling such as scrap and the end-of-life disposition. This methodology assumes the processing of the recycled material at the recycler will be applied to the next product life cycle. Data not available in life cycle databases used models found in the Waste Reduction Model (WARM), developed by the US EPA.



# ENVIRONMENTAL PRODUCT DECLARATION



Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™

According to ISO 14025

## Life Cycle Inventory

### Energy Use

The following table and figure details the cumulative energy demand of the Belden plenum copper cables through each life cycle stage of the product.

Life Cycle Stage	1243A2	1213/ M56168	1585A/ 6663U5/ M57546	1585B	1585LC/ M58003/ M58104/ M58476	1590A	1624P/ 1533P/ 1213F/ M58186
<b>Materials</b>	3.9E+01	8.7E+01	1.3E+02	8.3E+01	1.4E+02	6.3E+01	1.4E+02
<b>Manufacturing</b>	9.5E+00	2.1E+01	1.7E+01	1.6E+01	5.5E+00	1.1E+01	2.5E+01
<b>Marketing</b>	2.7E+00	4.5E+00	4.7E+00	4.4E+00	2.5E+00	3.1E+00	7.1E+00
<b>Use</b>	2.0E+00	5.7E+00	7.6E+00	5.3E+00	7.5E+00	3.9E+00	8.7E+00
<b>Waste Disposal</b>	9.7E-03	1.7E-02	1.7E-02	1.6E-02	1.8E-02	1.1E-02	2.6E-02
<b>Cradle to Grave</b>	4.1E+01	1.2E+02	1.6E+02	1.1E+02	1.6E+02	8.3E+01	1.8E+02
Life Cycle Stage	1701A	1701LC	1701S6	1703A	IFLEX	M57562	10GX13/ M58646
<b>Materials</b>	1.0E+02	1.4E+02	9.6E+01	2.0E+02	1.8E+02	2.6E+02	2.2E+02
<b>Manufacturing</b>	3.2E+01	5.5E+00	3.2E+01	6.2E+01	6.2E+01	1.0E+02	3.4E+01
<b>Marketing</b>	4.2E+00	2.5E+00	4.2E+00	8.2E+00	8.2E+00	1.4E+01	9.5E+00
<b>Use</b>	6.9E+00	7.6E+00	6.7E+00	1.4E+01	1.3E+01	1.9E+01	1.4E+01
<b>Waste Disposal</b>	1.8E-02	1.8E-02	1.8E-02	3.5E-02	3.5E-02	5.8E-02	3.5E-02
<b>Cradle to Grave</b>	1.5E+02	1.6E+02	1.4E+02	2.8E+02	2.7E+02	4.0E+02	2.8E+02
Life Cycle Stage	10GX33	10GX63F	10GXS13/ 10GXS33/ M59146/ M59170	1874A	2413	2413F/ M58176/ 1352A/ M58781	3613/ M57414/ M57193
<b>Materials</b>	2.3E+02	2.0E+02	2.1E+02	1.4E+02	1.1E+02	2.2E+02	1.2E+02
<b>Manufacturing</b>	3.4E+01	3.8E+01	3.2E+01	5.0E+01	3.7E+01	3.5E+01	3.5E+01
<b>Marketing</b>	9.5E+00	1.1E+01	8.9E+00	6.7E+00	5.0E+00	9.8E+00	5.6E+00
<b>Use</b>	1.4E+01	1.3E+01	1.3E+01	1.0E+01	7.8E+00	1.3E+01	8.0E+00
<b>Waste Disposal</b>	3.5E-02	3.9E-02	3.2E-02	2.8E-02	2.1E-02	3.6E-02	2.3E-02
<b>Cradle to Grave</b>	2.9E+02	2.7E+02	2.7E+02	2.1E+02	1.6E+02	2.8E+02	1.7E+02

Table 6: Cradle to Grave Cumulative Energy Demand (MJ) per 100 feet of Cable





# ENVIRONMENTAL PRODUCT DECLARATION



Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™

According to ISO 14025

Life Cycle Stage	3633	4813	6663U6/ M58281 6663U5/ 7882A/ LAN6P	7813LC	7852A	M58801	M58865
<b>Materials</b>	1.9E+02	1.6E+02	1.1E+02	2.1E+02	2.1E+02	1.0E+02	2.0E+02
<b>Manufacturing</b>	5.2E+01	2.6E+01	3.6E+01	7.7E+00	3.0E+01	3.7E+01	7.5E+01
<b>Marketing</b>	7.1E+00	7.3E+00	4.8E+00	3.5E+00	8.4E+00	5.0E+00	9.9E+00
<b>Use</b>	1.2E+01	9.6E+00	7.6E+00	1.1E+01	1.2E+01	7.5E+00	1.4E+01
<b>Waste Disposal</b>	3.0E-02	2.7E-02	2.0E-02	2.5E-02	3.1E-02	2.1E-02	4.2E-02
<b>Cradle to Grave</b>	2.6E+02	2.0E+02	1.6E+02	2.3E+02	2.6E+02	1.6E+02	3.0E+02

Table 6: Cradle to Grave Cumulative Energy Demand (MJ) per 100 feet of Cable Continued

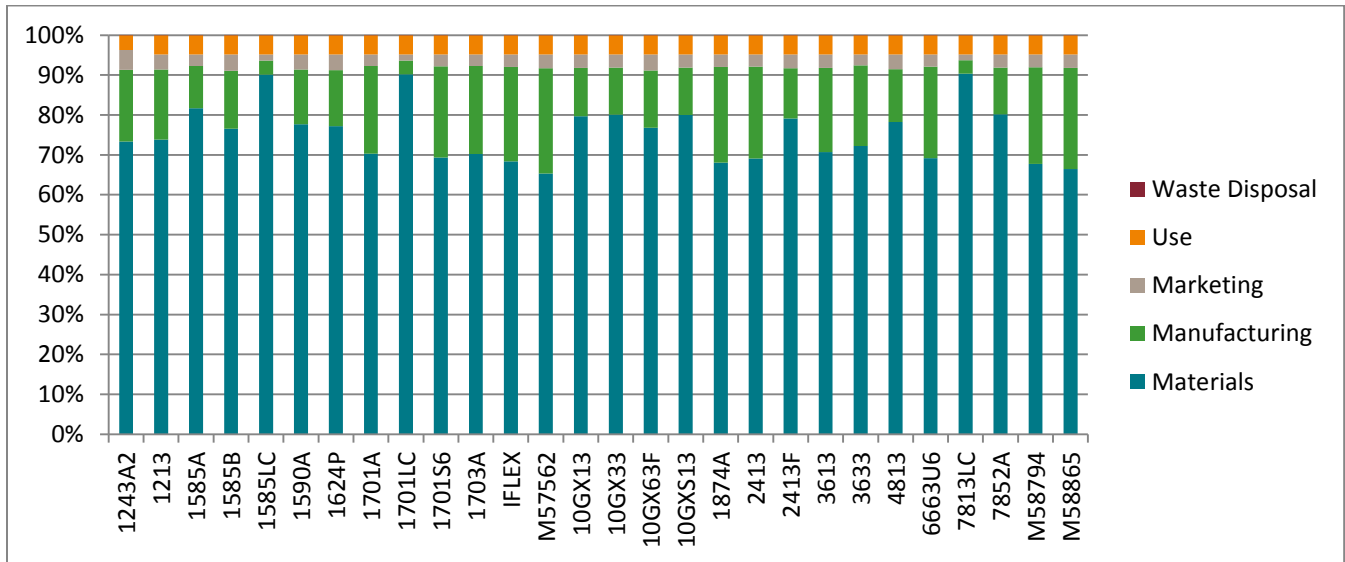


Figure 2: Cradle to Grave Cumulative Energy Demand

## Waste Management

Methods of waste handling are detailed for the Belden plenum copper cables for the entire life cycle of the products per 100 feet of cable.



# ENVIRONMENTAL PRODUCT DECLARATION



Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™

According to ISO 14025

Waste Category	1243A2	1213/ M56168	1585A/ 6663U5/ M57546	1585B	1585LC/ M58003/ M58104/ M58476	1590A	1624P/ 1533P/ 1213F/ M58186	1701A	1701LC	1701S6
<b>Incineration (with and without energy recovery)</b>	1.2E-02	2.1E-02	2.1E-02	2.0E-02	2.2E-02	1.4E-02	3.2E-02	2.2E-02	2.2E-02	2.2E-02
<b>Landfill (non- hazardous waste)</b>	7.1E-01	7.1E-01	7.1E-01	7.1E-01	7.1E-01	7.1E-01	7.1E-01	7.1E-01	7.1E-01	7.1E-01
<b>Hazardous Waste</b>	1.7E-03	1.7E-03	1.7E-03	1.7E-03	1.7E-03	1.7E-03	1.7E-03	1.7E-03	1.7E-03	1.7E-03
<b>Landfill Avoidance (recycling)</b>	1.7E+00	2.2E+00	3.1E+00	2.9E+00	2.3E+00	2.0E+00	4.7E+00	2.3E+00	2.3E+00	2.3E+00
Waste Category	1703A	IFLEX	M57562	10GX13/ M58646	10GX33	10GX63F	10GXS13/ 10GXS33/ M59146/ M59170	1874A	2413	2413F/ M58176/ 1352A/ M58781
<b>Incineration (with and without energy recovery)</b>	4.3E-02	4.3E-02	7.2E-02	4.3E-02	4.3E-02	4.8E-02	4.0E-02	3.5E-02	2.6E-02	4.4E-02
<b>Landfill (non- hazardous waste)</b>	7.1E-01	7.1E-01	7.1E-01	7.1E-01	7.1E-01	7.1E-01	7.1E-01	7.1E-01	7.1E-01	7.1E-01
<b>Hazardous Waste</b>	1.7E-03	1.7E-03	1.7E-03	1.7E-03	1.7E-03	1.7E-03	1.7E-03	1.7E-03	1.7E-03	1.7E-03
<b>Landfill Avoidance (recycling)</b>	4.6E+00	4.6E+00	7.7E+00	6.3E+00	6.3E+00	7.0E+00	5.8E+00	3.7E+00	2.8E+00	6.4E+00
Waste Category	3613/ M57414/ M57193	3633	4813	6663U6/ M58281/ 6663U5/ 7882A/ LAN6P	7813LC	7852A	M58801	M58865		
<b>Incineration (with and without energy recovery)</b>	2.8E-02	3.7E-02	3.3E-02	2.5E-02	3.1E-02	3.8E-02	2.6E-02	5.2E-02		
<b>Landfill (non- hazardous waste)</b>	7.1E-01	7.1E-01	7.1E-01	7.1E-01	7.1E-01	7.1E-01	7.1E-01	7.1E-01		
<b>Hazardous Waste</b>	1.7E-03	1.7E-03	1.7E-03	1.7E-03	1.7E-03	1.7E-03	1.7E-03	1.7E-03		
<b>Landfill Avoidance (recycling)</b>	3.0E+00	3.9E+00	4.8E+00	2.7E+00	3.2E+00	5.5E+00	2.8E+00	5.5E+00		

Table 7: Cradle to Grave Waste (kg) per 100ft of Cable



# ENVIRONMENTAL PRODUCT DECLARATION



Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™

According to ISO 14025

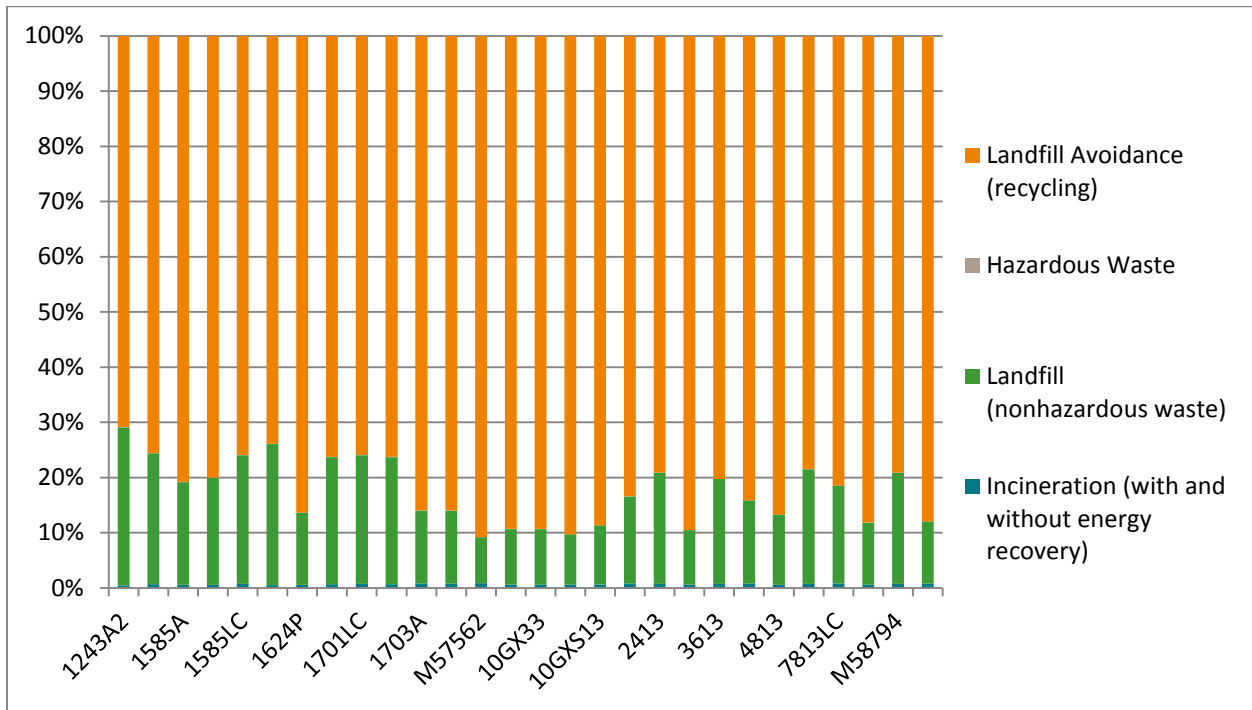


Figure 3: Cradle to Grave Waste



# ENVIRONMENTAL PRODUCT DECLARATION



SENDING ALL THE RIGHT SIGNALS

Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™ According to ISO 14025

## Life Cycle Impact Assessment

The environmental impacts listed below were assessed throughout the life cycle of the plenum data cable products as defined above, per 100 feet of cable. The environmental impacts were analyzed using TRACI 2.1 methodology.

Impact Category	1243A2						1213/ M56168						1585A/ 6663U5/ M57546					
	Raw Material	Manufacturing	Marketing	Use	Waste Disposal	Cradle to Grave	Raw Material	Manufacturing	Marketing	Use	Waste Disposal	Cradle to Grave	Raw Material	Manufacturing	Marketing	Use	Waste Disposal	Cradle to Grave
Global Warming (kg CO <sub>2</sub> eq)	2.2E+00	5.6E-01	1.9E-01	1.1E-01	3.1E-03	2.3E+00	4.8E+00	1.2E+00	3.2E-01	3.2E-01	5.4E-03	6.8E+00	7.2E+00	9.8E-01	3.3E-01	4.3E-01	5.4E-03	9.1E+00
Fossil Fuel Depletion (MJ surplus)	3.0E+00	5.5E-01	2.7E-01	1.5E-01	1.1E-03	3.2E+00	5.1E+00	1.7E+00	4.6E-01	3.7E-01	1.9E-03	7.8E+00	7.5E+00	9.6E-01	4.8E-01	4.5E-01	1.9E-03	9.5E+00
Eutrophication (kg N eq)	4.7E-01	9.9E-03	5.1E-05	2.4E-02	9.3E-06	5.0E-01	9.3E-01	1.3E-02	8.7E-05	4.7E-02	1.6E-05	9.9E-01	1.4E+00	1.7E-02	9.0E-05	7.2E-02	1.6E-05	1.5E+00
Smog (kg O <sub>3</sub> eq)	5.5E-01	4.3E-02	2.3E-02	2.7E-02	1.2E-04	5.7E-01	1.0E+00	7.5E-02	3.9E-02	5.9E-02	2.2E-04	1.2E+00	1.6E+00	7.5E-02	4.0E-02	8.5E-02	2.2E-04	1.8E+00
Acidification (kg SO <sub>2</sub> eq)	1.1E-01	6.7E-03	1.2E-03	5.4E-03	4.7E-06	1.1E-01	2.1E-01	1.1E-02	2.1E-03	1.1E-02	8.3E-06	2.3E-01	3.1E-01	1.2E-02	2.1E-03	1.6E-02	8.2E-06	3.5E-01
Ozone Depletion (kg CFC <sub>11</sub> eq)	6.9E-07	5.6E-09	6.8E-10	3.4E-08	1.1E-10	7.2E-07	2.0E-05	3.3E-08	1.2E-09	1.0E-06	1.9E-10	2.2E-05	3.1E-05	9.8E-09	1.2E-09	1.6E-06	1.9E-10	3.3E-05

Table 8: Cradle to Grave Life Cycle Impact Assessment Results per 100 ft of Cable

# ENVIRONMENTAL PRODUCT DECLARATION



SENDING ALL THE RIGHT SIGNALS

Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™ According to ISO 14025

Impact Category	1585B						1585LC/ M58003/ M58104/ M58476						1590A					
	Raw Material	Manufacturing	Marketing	Use	Waste Disposal	Cradle to Grave	Raw Material	Manufacturing	Marketing	Use	Waste Disposal	Cradle to Grave	Raw Material	Manufacturing	Marketing	Use	Waste Disposal	Cradle to Grave
Global Warming (kg CO <sub>2</sub> eq)	4.6E+00	9.3E-01	3.1E-01	3.0E-01	5.1E-03	6.3E+00	8.1E+00	4.1E-01	1.8E-01	4.4E-01	5.6E-03	9.2E+00	3.6E+00	6.5E-01	2.2E-01	2.3E-01	3.6E-03	4.7E+00
Fossil Fuel Depletion (MJ surplus)	4.8E+00	9.1E-01	4.6E-01	3.2E-01	1.8E-03	6.7E+00	3.1E+00	2.1E-01	1.8E-01	1.8E-01	2.0E-03	3.9E+00	3.1E+00	6.4E-01	3.2E-01	2.1E-01	1.3E-03	4.3E+00
Eutrophication (kg N eq)	9.1E-01	1.7E-02	8.5E-05	4.6E-02	1.6E-05	9.7E-01	1.0E+00	4.2E-03	4.4E-05	5.1E-02	1.7E-05	1.1E+00	5.3E-01	1.2E-02	6.0E-05	2.7E-02	1.1E-05	5.7E-01
Smog (kg O <sub>3</sub> eq)	1.0E+00	7.1E-02	3.9E-02	5.7E-02	2.1E-04	1.2E+00	1.1E+00	3.1E-02	1.9E-02	5.8E-02	2.3E-04	1.2E+00	5.9E-01	5.0E-02	2.7E-02	3.4E-02	1.4E-04	7.1E-01
Acidification (kg SO <sub>2</sub> eq)	2.0E-01	1.1E-02	2.0E-03	1.1E-02	7.8E-06	2.3E-01	2.2E-01	3.5E-03	1.3E-03	1.1E-02	8.6E-06	2.4E-01	1.2E-01	7.8E-03	1.4E-03	6.4E-03	5.5E-06	1.3E-01
Ozone Depletion (kg CFC <sub>11</sub> eq)	2.0E-05	9.3E-09	1.1E-09	1.0E-06	1.8E-10	2.1E-05	8.5E-05	1.1E-08	1.2E-09	4.3E-06	2.0E-10	8.9E-05	2.4E-05	6.5E-09	7.9E-10	1.2E-06	1.3E-10	2.5E-05
Impact Category	1624P/ 1533P/ 1213F/ M58186						1701A						1701LC					
	Raw Material	Manufacturing	Marketing	Use	Waste Disposal	Cradle to Grave	Raw Material	Manufacturing	Marketing	Use	Waste Disposal	Cradle to Grave	Raw Material	Manufacturing	Marketing	Use	Waste Disposal	Cradle to Grave
Global Warming (kg CO <sub>2</sub> eq)	8.0E+00	1.5E+00	5.0E-01	5.1E-01	8.2E-03	1.1E+01	5.8E+00	1.8E+00	3.0E-01	4.0E-01	5.6E-03	8.4E+00	8.2E+00	4.1E-01	1.8E-01	4.4E-01	5.6E-03	9.3E+00
Fossil Fuel Depletion (MJ surplus)	6.2E+00	1.5E+00	7.3E-01	4.3E-01	2.9E-03	9.1E+00	4.3E+00	3.8E+00	4.1E-01	4.3E-01	2.0E-03	9.1E+00	3.0E+00	2.1E-01	1.8E-01	1.8E-01	2.0E-03	3.7E+00
Eutrophication (kg N eq)	1.1E+00	2.6E-02	1.4E-04	5.9E-02	2.5E-05	1.2E+00	9.7E-01	8.3E-04	8.2E-05	4.9E-02	1.7E-05	1.0E+00	9.8E-01	4.2E-03	4.4E-05	4.9E-02	1.7E-05	1.0E+00
Smog (kg O <sub>3</sub> eq)	1.3E+00	1.1E-01	6.2E-02	7.5E-02	3.3E-04	1.6E+00	1.1E+00	7.7E-02	3.7E-02	6.0E-02	2.3E-04	1.3E+00	1.1E+00	3.1E-02	1.9E-02	5.6E-02	2.3E-04	1.2E+00
Acidification (kg SO <sub>2</sub> eq)	2.6E-01	1.8E-02	3.2E-03	1.4E-02	1.3E-05	2.9E-01	2.1E-01	9.8E-03	2.0E-03	1.1E-02	8.6E-06	2.4E-01	2.1E-01	3.5E-03	1.3E-03	1.1E-02	8.6E-06	2.3E-01
Ozone Depletion (kg CFC <sub>11</sub> eq)	5.5E-05	1.5E-08	1.8E-09	2.7E-06	2.9E-10	5.8E-05	4.0E-05	9.6E-08	1.2E-09	2.0E-06	2.0E-10	4.2E-05	8.8E-05	1.1E-08	1.2E-09	4.4E-06	2.0E-10	9.3E-05

Table 8: Cradle to Grave Life Cycle Impact Assessment Results per 100 ft of Cable Continued



# ENVIRONMENTAL PRODUCT DECLARATION



SENDING ALL THE RIGHT SIGNALS

Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™ According to ISO 14025

Impact Category	1701S6						1703A						IFLEX					
	Raw Material	Manufacturing	Marketing	Use	Waste Disposal	Cradle to Grave	Raw Material	Manufacturing	Marketing	Use	Waste Disposal	Cradle to Grave	Raw Material	Manufacturing	Marketing	Use	Waste Disposal	Cradle to Grave
Global Warming (kg CO <sub>2</sub> eq)	5.5E+00	1.8E+00	3.0E-01	3.8E-01	5.6E-03	8.1E+00	1.1E+01	3.5E+00	5.8E-01	7.8E-01	1.1E-02	1.6E+01	9.9E+00	3.5E+00	5.8E-01	7.1E-01	1.1E-02	1.5E+01
Fossil Fuel Depletion (MJ surplus)	4.3E+00	3.8E+00	4.1E-01	4.3E-01	2.0E-03	9.1E+00	8.3E+00	7.4E+00	8.0E-01	8.4E-01	3.8E-03	1.8E+01	1.0E+01	7.4E+00	8.0E-01	9.4E-01	3.8E-03	2.0E+01
Eutrophication (kg N eq)	9.0E-01	8.3E-04	8.2E-05	4.5E-02	1.7E-05	9.5E-01	1.9E+00	1.6E-03	1.6E-04	9.5E-02	3.3E-05	2.0E+00	1.9E+00	1.6E-03	1.6E-04	9.6E-02	3.3E-05	2.0E+00
Smog (kg O <sub>3</sub> eq)	9.9E-01	7.7E-02	3.7E-02	5.6E-02	2.3E-04	1.2E+00	2.1E+00	1.5E-01	7.2E-02	1.2E-01	4.4E-04	2.5E+00	2.1E+00	1.5E-01	7.2E-02	1.2E-01	4.4E-04	2.5E+00
Acidification (kg SO <sub>2</sub> eq)	2.0E-01	9.8E-03	2.0E-03	1.1E-02	8.6E-06	2.2E-01	4.2E-01	1.9E-02	3.9E-03	2.2E-02	1.7E-05	4.6E-01	4.2E-01	1.9E-02	3.9E-03	2.3E-02	1.7E-05	4.7E-01
Ozone Depletion (kg CFC <sub>11</sub> eq)	3.7E-05	9.6E-08	1.2E-09	1.9E-06	2.0E-10	3.9E-05	7.7E-05	1.9E-07	2.4E-09	3.9E-06	4.0E-10	8.2E-05	4.4E-05	1.9E-07	2.4E-09	2.2E-06	4.0E-10	4.6E-05
Impact Category	M57562						10GX13/ M58646						10GX33					
	Raw Material	Manufacturing	Marketing	Use	Waste Disposal	Cradle to Grave	Raw Material	Manufacturing	Marketing	Use	Waste Disposal	Cradle to Grave	Raw Material	Manufacturing	Marketing	Use	Waste Disposal	Cradle to Grave
Global Warming (kg CO <sub>2</sub> eq)	1.0E+01	5.8E+00	9.7E-01	8.8E-01	1.8E-02	1.8E+01	1.3E+01	2.0E+00	6.7E-01	7.9E-01	1.1E-02	1.7E+01	1.3E+01	2.0E+00	6.7E-01	8.1E-01	1.1E-02	1.7E+01
Fossil Fuel Depletion (MJ surplus)	2.6E+01	1.2E+01	1.3E+00	2.0E+00	6.4E-03	4.2E+01	6.4E+00	2.0E+00	9.8E-01	4.9E-01	3.8E-03	1.0E+01	6.3E+00	2.0E+00	9.8E-01	4.8E-01	3.8E-03	1.0E+01
Eutrophication (kg N eq)	1.2E+00	2.7E-03	2.7E-04	6.3E-02	5.6E-05	1.3E+00	1.3E+00	3.6E-02	1.8E-04	6.6E-02	3.3E-05	1.4E+00	1.3E+00	3.6E-02	1.8E-04	6.6E-02	3.3E-05	1.4E+00
Smog (kg O <sub>3</sub> eq)	1.7E+00	2.5E-01	1.2E-01	1.1E-01	7.4E-04	2.2E+00	1.5E+00	1.5E-01	8.3E-02	8.6E-02	4.4E-04	1.8E+00	1.5E+00	1.5E-01	8.3E-02	8.6E-02	4.4E-04	1.8E+00
Acidification (kg SO <sub>2</sub> eq)	3.1E-01	3.2E-02	6.6E-03	1.8E-02	2.8E-05	3.7E-01	2.9E-01	2.4E-02	4.4E-03	1.6E-02	1.7E-05	3.4E-01	2.9E-01	2.4E-02	4.4E-03	1.6E-02	1.7E-05	3.4E-01
Ozone Depletion (kg CFC <sub>11</sub> eq)	5.8E-07	3.1E-07	4.1E-09	4.5E-08	6.6E-10	9.5E-07	1.3E-04	2.0E-08	2.4E-09	6.5E-06	4.0E-10	1.4E-04	1.4E-04	2.0E-08	2.4E-09	7.0E-06	4.0E-10	1.5E-04

Table 8: Cradle to Grave Life Cycle Impact Assessment Results per 100 ft of Cable Continued

# ENVIRONMENTAL PRODUCT DECLARATION



SENDING ALL THE RIGHT SIGNALS

Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™ According to ISO 14025

Impact Category	10GX63F						10GXS13/ 10GXS33/ M59146/ M59170						1874A					
	Raw Material	Manu- facturing	Mark- eting	Use	Waste Disposal	Cradle to Grave	Raw Material	Manu- facturing	Mark- eting	Use	Waste Disposal	Cradle to Grave	Raw Material	Manu- facturing	Mark- eting	Use	Waste Disposal	Cradle to Grave
Global Warming (kg CO <sub>2</sub> eq)	1.2E+01	2.2E+00	7.5E-01	7.5E-01	1.2E-02	1.6E+01	1.2E+01	1.9E+00	6.2E-01	7.5E-01	1.0E-02	1.6E+01	8.2E+00	2.8E+00	4.7E-01	5.8E-01	9.0E-03	1.2E+01
Fossil Fuel Depletion (MJ surplus)	9.4E+00	2.2E+00	1.1E+00	6.6E-01	4.3E-03	1.4E+01	6.3E+00	1.8E+00	9.1E-01	4.7E-01	3.6E-03	9.8E+00	7.5E+00	6.0E+00	6.5E-01	7.2E-01	3.1E-03	1.5E+01
Eutrophication (kg N eq)	1.2E+00	4.0E-02	2.1E-04	6.3E-02	3.7E-05	1.3E+00	1.2E+00	3.3E-02	1.7E-04	6.2E-02	3.1E-05	1.3E+00	1.2E+00	1.3E-03	1.3E-04	5.9E-02	2.7E-05	1.2E+00
Smog (kg O <sub>3</sub> eq)	1.5E+00	1.7E-01	9.2E-02	8.8E-02	4.9E-04	1.8E+00	1.4E+00	1.4E-01	7.7E-02	8.1E-02	4.1E-04	1.7E+00	1.3E+00	1.2E-01	5.9E-02	7.7E-02	3.6E-04	1.6E+00
Acidification (kg SO <sub>2</sub> eq)	2.8E-01	2.7E-02	4.9E-03	1.6E-02	1.9E-05	3.3E-01	2.7E-01	2.2E-02	4.1E-03	1.5E-02	1.6E-05	3.1E-01	2.6E-01	1.6E-02	3.2E-03	1.4E-02	1.4E-05	3.0E-01
Ozone Depletion (kg CFC <sub>-11</sub> eq)	8.9E-05	2.2E-08	2.7E-09	4.5E-06	4.4E-10	9.4E-05	1.2E-04	1.9E-08	2.3E-09	6.2E-06	3.7E-10	1.3E-04	4.9E-05	1.5E-07	2.0E-09	2.5E-06	3.2E-10	5.2E-05
Impact Category	2413						2413F/ M58176/ 1352A/ M58781						3613/ M57414/ M57193					
	Raw Material	Manu- facturing	Mark- eting	Use	Waste Disposal	Cradle to Grave	Raw Material	Manu- facturing	Mark- eting	Use	Waste Disposal	Cradle to Grave	Raw Material	Manu- facturing	Mark- eting	Use	Waste Disposal	Cradle to Grave
Global Warming (kg CO <sub>2</sub> eq)	6.3E+00	2.1E+00	3.5E-01	4.4E-01	6.7E-03	9.3E+00	1.3E+01	2.1E+00	6.9E-01	7.9E-01	1.1E-02	1.7E+01	6.6E+00	2.0E+00	3.9E-01	4.6E-01	7.2E-03	9.6E+00
Fossil Fuel Depletion (MJ surplus)	6.0E+00	4.5E+00	4.8E-01	5.6E-01	2.3E-03	1.2E+01	7.8E+00	2.0E+00	1.0E+00	5.6E-01	3.9E-03	1.2E+01	6.5E+00	3.8E+00	5.5E-01	5.5E-01	2.5E-03	1.2E+01
Eutrophication (kg N eq)	1.2E+00	9.8E-04	9.7E-05	5.8E-02	2.0E-05	1.2E+00	1.5E+00	3.6E-02	1.9E-04	7.9E-02	3.4E-05	1.7E+00	1.2E+00	7.4E-03	1.1E-04	5.9E-02	2.2E-05	1.2E+00
Smog (kg O <sub>3</sub> eq)	1.3E+00	9.1E-02	4.4E-02	7.2E-02	2.7E-04	1.5E+00	1.8E+00	1.6E-01	8.5E-02	1.0E-01	4.5E-04	2.1E+00	1.3E+00	9.9E-02	4.9E-02	7.5E-02	2.9E-04	1.6E+00
Acidification (kg SO <sub>2</sub> eq)	2.6E-01	1.2E-02	2.4E-03	1.4E-02	1.0E-05	2.9E-01	3.5E-01	2.5E-02	4.5E-03	1.9E-02	1.7E-05	4.0E-01	2.6E-01	1.3E-02	2.6E-03	1.4E-02	1.1E-05	3.0E-01
Ozone Depletion (kg CFC <sub>-11</sub> eq)	3.2E-05	1.1E-07	1.5E-09	1.6E-06	2.4E-10	3.4E-05	1.1E-04	2.0E-08	2.5E-09	5.4E-06	4.0E-10	1.1E-04	3.3E-05	9.1E-08	1.6E-09	1.6E-06	2.6E-10	3.5E-05

Table 8: Cradle to Grave Life Cycle Impact Assessment Results per 100 ft of Cable Continued

# ENVIRONMENTAL PRODUCT DECLARATION



SENDING ALL THE RIGHT SIGNALS

Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™ According to ISO 14025

Impact Category	3633						4813						6663U6/ M58281/ 6663U5/ 7882A/ LAN6P					
	Raw Material	Manu- facturing	Mark- eting	Use	Waste Disposal	Cradle to Grave	Raw Material	Manu- facturing	Mark- eting	Use	Waste Disposal	Cradle to Grave	Raw Material	Manu- facturing	Mark- eting	Use	Waste Disposal	Cradle to Grave
Global Warming (kg CO <sub>2</sub> eq)	1.1E+01	2.9E+00	5.0E-01	7.2E-01	9.5E-03	1.5E+01	8.7E+00	1.5E+00	5.1E-01	5.5E-01	8.5E-03	1.2E+01	6.1E+00	2.0E+00	3.4E-01	4.3E-01	6.4E-03	9.0E+00
Fossil Fuel Depletion (MJ surplus)	6.4E+00	6.1E+00	7.0E-01	6.7E-01	3.3E-03	1.4E+01	6.8E+00	1.5E+00	7.5E-01	4.6E-01	3.0E-03	9.8E+00	5.8E+00	4.3E+00	4.7E-01	5.4E-01	2.2E-03	1.1E+01
Eutrophication (kg N eq)	1.4E+00	2.8E-03	1.4E-04	7.3E-02	2.9E-05	1.5E+00	1.3E+00	2.7E-02	1.4E-04	6.4E-02	2.6E-05	1.4E+00	1.1E+00	9.5E-04	9.3E-05	5.6E-02	1.9E-05	1.2E+00
Smog (kg O <sub>3</sub> eq)	1.6E+00	1.3E-01	6.3E-02	9.1E-02	3.8E-04	1.9E+00	1.4E+00	1.2E-01	6.4E-02	8.1E-02	3.4E-04	1.7E+00	1.2E+00	8.8E-02	4.2E-02	7.0E-02	2.6E-04	1.5E+00
Acidification (kg SO <sub>2</sub> eq)	3.2E-01	1.7E-02	3.4E-03	1.7E-02	1.4E-05	3.6E-01	2.8E-01	1.8E-02	3.3E-03	1.5E-02	1.3E-05	3.2E-01	2.5E-01	1.1E-02	2.3E-03	1.3E-02	9.8E-06	2.8E-01
Ozone Depletion (kg CFC <sub>11</sub> eq)	9.2E-05	1.5E-07	2.1E-09	4.6E-06	3.4E-10	9.7E-05	6.4E-05	1.5E-08	1.9E-09	3.2E-06	3.0E-10	6.7E-05	3.1E-05	1.1E-07	1.4E-09	1.6E-06	2.3E-10	3.3E-05
Impact Category	7813LC						7852A						M58801					
	Raw Material	Manu- facturing	Mark- eting	Use	Waste Disposal	Cradle to Grave	Raw Material	Manu- facturing	Mark- eting	Use	Waste Disposal	Cradle to Grave	Raw Material	Manu- facturing	Mark- eting	Use	Waste Disposal	Cradle to Grave
Global Warming (kg CO <sub>2</sub> eq)	1.2E+01	5.8E-01	2.6E-01	6.5E-01	7.9E-03	1.4E+01	1.2E+01	1.8E+00	5.9E-01	7.2E-01	9.7E-03	1.5E+01	5.8E+00	2.1E+00	3.5E-01	4.2E-01	6.7E-03	8.8E+00
Fossil Fuel Depletion (MJ surplus)	3.7E+00	2.9E-01	2.6E-01	2.3E-01	2.8E-03	4.7E+00	6.3E+00	1.7E+00	8.7E-01	4.6E-01	3.4E-03	9.7E+00	5.9E+00	4.5E+00	4.8E-01	5.5E-01	2.3E-03	1.2E+01
Eutrophication (kg N eq)	1.2E+00	5.9E-03	6.2E-05	6.1E-02	2.4E-05	1.3E+00	1.4E+00	3.1E-02	1.6E-04	7.0E-02	3.0E-05	1.5E+00	1.1E+00	9.8E-04	9.7E-05	5.4E-02	2.0E-05	1.1E+00
Smog (kg O <sub>3</sub> eq)	1.3E+00	4.4E-02	2.7E-02	7.0E-02	3.2E-04	1.5E+00	1.5E+00	1.4E-01	7.3E-02	8.7E-02	3.9E-04	1.8E+00	1.2E+00	9.1E-02	4.4E-02	6.8E-02	2.7E-04	1.4E+00
Acidification (kg SO <sub>2</sub> eq)	2.6E-01	4.9E-03	1.9E-03	1.4E-02	1.2E-05	2.8E-01	3.0E-01	2.1E-02	3.9E-03	1.6E-02	1.5E-05	3.4E-01	2.4E-01	1.2E-02	2.4E-03	1.3E-02	1.0E-05	2.7E-01
Ozone Depletion (kg CFC <sub>11</sub> eq)	1.4E-04	1.5E-08	1.7E-09	7.0E-06	2.8E-10	1.5E-04	1.1E-04	1.8E-08	2.1E-09	5.7E-06	3.5E-10	1.2E-04	2.8E-05	1.1E-07	1.5E-09	1.4E-06	2.4E-10	2.9E-05

Table 8: Cradle to Grave Life Cycle Impact Assessment Results per 100 ft of Cable Continued

# ENVIRONMENTAL PRODUCT DECLARATION



Belden: 10GXS™, 10GX™, DataTwist® 1200, DataTwist® 2400, DataTwist® 3600, DataTwist® 4800, DataTwist® 600e, DataTwist® 350, DataTwist® 6, DataTwist® 5e, DataTwist® 3

Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™ According to ISO 14025

Impact Category	M58865					
	Raw Material	Manufacturing	Marketing	Use	Waste Disposal	Cradle to Grave
Global Warming (kg CO <sub>2</sub> eq)	1.2E+01	4.2E+00	7.0E-01	8.4E-01	1.3E-02	1.8E+01
Fossil Fuel Depletion (MJ surplus)	1.1E+01	8.9E+00	9.7E-01	1.0E+00	4.6E-03	2.2E+01
Eutrophication (kg N eq)	1.5E+00	2.0E-03	1.9E-04	7.3E-02	4.0E-05	1.5E+00
Smog (kg O <sub>3</sub> eq)	1.7E+00	1.8E-01	8.7E-02	1.0E-01	5.3E-04	2.2E+00
Acidification (kg SO <sub>2</sub> eq)	3.4E-01	2.3E-02	4.8E-03	1.8E-02	2.0E-05	3.9E-01
Ozone Depletion (kg CFC-11 eq)	6.7E-05	2.3E-07	2.9E-09	3.4E-06	4.8E-10	7.1E-05

**Table 8: Cradle to Grave Life Cycle Impact Assessment Results per 100 ft of Cable Continued**

# ENVIRONMENTAL PRODUCT DECLARATION

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Mohawk: GigaLAN 10® Small Diameter, GigaLAN 10®, GigaLAN®, AdvanceNet™, 6 LAN Plus™, 6 LAN™, MegaLAN®, 5e LAN®, XGO™

According to ISO 14025

## References

- ANSI/TIA-568-C.2 Commercial Building Telecommunications Cabling
- C22.2 NO. 214-08 (R2013) - Communications cables (Bi-national standard, with UL 444)
- ISO 21930: Sustainability in building construction – Environmental declaration of building products
- EPA, Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI)
- EPA, Wire and Cable Insulation and Jacketing: Life-Cycle Assessments for Selected Applications, June 2008, EPA 744-R-08-001
- FTC Part 260, Green guides
- (ILCD, 2010) Joint Research Commission, 2010, ILCD Handbook: General Guide for Life Cycle Assessment
- Intergovernmental Panel on Climate Change (IPCC)
- ISO 14025:2006 *Environmental labels and declarations – Type III environmental declarations – Principles and procedures*
- ISO 14040:2006 *Environmental management - Life cycle assessment – Principles and framework*
- ISO 14044:2006 *Environmental management - Life cycle assessment – Requirements and guidelines*
- NFPA 262: Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces
- NFPA 70®: National Electrical Code
- UL 44 Standard Thermoset-Insulated Wires and Cables
- UL 1666 Test for Flame Propagation Height of Electrical and Optical-Fiber Cables Installed Vertically in Shafts
- USEPA Waste Reduction Model (WARM)
- Krieger, T. et al. *New Fire Hazard and Environmental Burden Evaluations of Electrical Cable Installations Utilizing ISO 14040 Environmental Methodologies*. DuPont. November 10, 2007.

## LCA Development

This EPD and corresponding LCA were prepared by Sustainable Solutions Corporation of Royersford, Pennsylvania.



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