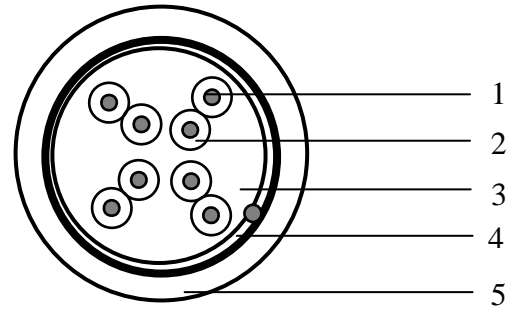


## 1633ES

**Networking Cables**  
**Datatwist® cable**  
**CAT 5E SF/UTP PVC**

2017-05-04 V3



### Applications

- Horizontal and building backbone cable
- Support current and future Category 5e applications, such as:  
1000Base-T (Gigabit Ethernet), 100 Base-T, 10 Base-T, FDDI, ATM

### General standards

- International standard: ISO/IEC 11801 2nd edition (2002) and ISO/IEC 11801 Amendment 2 (2010)
- European standard: EN 50173-1 (2002) and EN 50173-1 Amendment 1 (2009)
- U.S. Standards: ANSI/TIA/EIA 568-B.2-1 (2002)

### Construction & Dimensions

<b>1. Conductor</b>	
Material	Solid bare copper ETP
Diameter	AWG 24
<b>2. Insulation</b>	
Material	Polyethylene
Nominal diameter over insulation	1.05 mm
<b>3. Cable core</b>	
Pair	2 twisted insulated conductors
Number of pairs	4, all twisted together
Colour code pair 1	White / Blue & Blue
Colour code pair 2	White / Orange & Orange
Colour code pair 3	White / Green & Green
Colour code pair 4	White / Brown & Brown
Foil	Overlapping polyester foil over cable core
<b>4. Foil shielding</b>	
Material	Laminated Aluminium / Polyester
Position aluminium	Facing outside, in contact with drain wire
Drain wire material	Solid tinned copper
Drain wire diameter	AWG 26
Braid material	solid tinned copper
Coverage	≥ 30 %
<b>5. Jacket</b>	
Material	PVC
Diameter	6.0 ± 0.3 mm

## Electrical characteristics

Reference standard: ISO/IEC 61156-5 edition 2.0 (2009)

Low frequency and D.C. (at 20°C)	Specification	Unit
D.C. resistance conductor	< 9,5	Ω/100m
Resistance unbalance: within a pair / between pairs	< 2 / < 4	%
Insulation resistance	≥ 5000	MΩ.km
Dielectric strength conductor-conductor and conductor-screen (2 sec.)	2.5	kV DC
Mutual capacitance	< 56	nF/km
Capacitance unbalance pair to ground	< 1600	pF/km
Nominal velocity of propagation (for information only)	> 0.6	c
Delay skew (differential delay)	≤ 40	ns/100m
Transfer impedance according IEC 61156-5	Grade 2	
Coupling attenuation according IEC 61156-5	Type II	

High frequency (at 20°), reference standard: ISO/IEC61156-5									
TYPE	1*	4	10	16	20	31.25	62.5	100	MHz
Attenuation	2.1	4.0	6.3	8.0	9.0	11.4	16.5	21.3	dB/100m
NEXT	65.3	56.3	50.3	47.2	45.8	42.9	38.4	35.3	dB/100m
PS NEXT	62.3	53.3	47.3	44.2	42.8	39.9	35.4	32.3	dB/100m
ACR	63.2	52.32	44.0	39.2	36.8	31.5	21.9	14.0	dB/100m
PS ACR	60.2	49.3	41.0	36.2	33.8	28.5	18.9	11.0	dB/100m
ACR-F	64.0	52.0	44.0	39.9	38.0	34.1	28.1	24.0	dB/100m
PS ACR-F	61.0	49.0	41.0	36.9	35.0	31.5	25.1	21.0	dB/100m
Return Loss	20.0	23.0	25.0	25.0	25.0	23.6	21.5	20.1	dB/100m
TCL level 1	40.0	34.0	30.0	28.0	27.0	25.1	22.0	20.0	dB/100m
EL TCTL	35.0	23.0	15.0	10.9	9.0	5.5			dB/100m
Impedance upper limit	122.2	115.2	111.9	111.9	111.9	114.1	118.3	121.9	Ω
Impedance lower limit	81.8	86.8	89.4	89.4	89.4	87.7	84.5	82.0	Ω
Propagation delay	570	552	545	543	540	539	538	537	ns/100m

NOTE: Limits below 4MHz are for information only

## Mechanical characteristics

	Specification	Unit
Elongation at break of the conductors	10	%
Minimum elongation at break of the insulation	≥ 100	%
Minimum elongation at break of the sheath	≥ 100	%
Tensile strength of sheath	> 9	MPa

**Environmental and overall characteristics**

	<b>Specification</b>	<b>Unit</b>
Maximum operating voltage (for all temperatures cable is intended to be used)	72	V D.C.
Maximum continuous current per conductor (@25°C)	1.5	A
Temperature rating installation	0 / 50	°C
Temperature rating operation	- 30 / 60	°C
Total cable weight	45	kg/km
Minimum bending radius (during operation and installation)	24 / 48	mm
Maximum pulling strength	72	N
Burning load	455	kJ/m
Reaction to fire according IEC 60332-1	Pass	
Reaction to fire according EN 50575	Eca	



Belden declares this product to be in compliance with the environmental regulations EU RoHS (Directive 2002/95/EC, 27 January 2003); this is valid for all material produced after the RoHS compliant date for this product.