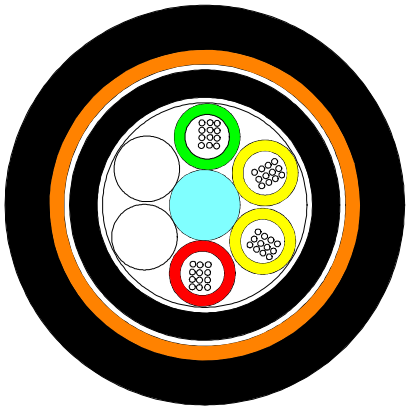
UC$^{FIBRE™}$ ADSS

Round aramid reinforced ADSS cable for intermediate and long spans, 4 – 96 fibres. VDE: A- DF 2Y (ZN) 2Y



Application and installation

Telecom trunk and access lines, CATV trunk lines, data communication connections

The cable may be installed on poles with a span length of from 50 m to 250 m, depending on climatic conditions and the grade

Standards

IEC 60794-3, IEC 60794-3-20, IEC 60794-4, ISO 11801 2nd edition, EN 50173-1: 2002

General

This specification covers a family of optical cables with 4 - 96 fibres for intermediate and long spans. The expected installation conditions for this family of optical cables are the power grid poles of utilities.
The cables are designed with two different grades of reinforcement, thus making the cables suitable for different span lengths and loads.
The cables have a sheathing of weatherproof black polyethylene. The cables can resist high voltage of up to 132 kV by suitable positioning of the cable with regard to the conductors.

Grades, overview

Grade	Cable stiffness; EA	Cable ultimate tensile strength
T-028-1100	1100 kN	>30 kN
T-028-1900	1900 kN	>45 kN

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Construction

Central strength member	Ø 3.0 mm FRP rod
Loose tube	Ø 2.8 mm loose tubes with 4 – 12 fibres
Water blocking	Jelly filling
Wrapping	Polyester tape
Inner sheath	1.3 mm black HDPE, IEC 60811, IEC 60708
Water blocking of yarn layer	Swelling tape
Reinforcement	High modulus aramid yarns
Outer sheath	1.4 mm black HDPE, IEC 60811, IEC 60708
Print legend	Draka UC^{FIBRE} ADSS <Fibre count> <Fibre type><Fibre brand> <Item No>05<Batch Number><Meter mark> A-DF 2Y(ZN)2Y <Number of Elements> x <Fibre count per element><Fibre family> <Mode field diameter> /125 <Transmission Class>

Physical properties

IEC 60974-1-2

Property	IEC 60794-1	T-028-1100		T-028-1900	
		6 units	8 units	6 units	8 units
Outer diameter of cable	-	16 mm	17.5 mm	16.5 mm	18.5 mm
Nominal weight		200 kg/km	235 kg/km	220 kg/km	255 kg/km
Min. bending radius	E11	320 mm	350 mm	330 mm	370 mm
Coefficient of thermal expansion	-	12 · 10-6	14 · 10-6	6.2 · 10-6	7.9 · 10-6
Tensile strength (permanent)	E1	8.5 kN		14.5 kN	
Tensile strength (dynamic)	E1	13 kN		21 kN	
Cable breaking strength (UTS)	(E1)	>30 kN		>45 kN	
Cable stiffness (EA)	(E1)	1100 kN		1900 kN	
Compressive strength (crush)	E3	3000 N/100 mm			
Impact	E4	25 J			
Torsion	E11	1/m 5 times			
Temperature range	F1	-40°C to +70°C			
Water penetration	F5	No water on free end			

Stringing example for cable type T-028-1100 and 100 m span

External loading For 100 m span And 2% (= 2 m) initial sag	Number of optical units in cable	Initial cable load without external load	Sag with external load	Cable load with external load
25 m/s (90 km/h) wind load	6	1.2 kN	3.1 m	3.1 kN
	8	1.5 kN	3.3 m	3.4 kN
50 m/s (180 km/h) wind load	6	1.2 kN	5.1 m	7.7 kN
	8	1.5 kN	5.2 m	8.3 kN
1 kg/m ice load	6	1.2 kN	3.7 m	4.0 kN
	8	1.5 kN	4.2 m	6.2 kN
2 kg/m ice load	6	1.2 kN	4.5 m	6.1 kN
	8	1.5 kN	4.5 m	6.2 kN
3 kg/m ice load	6	1.2 kN	5.1 m	7.8 kN
	8	1.5 kN	5.1 m	7.9 kN

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Stringing example for cable type T-028-1100 and 150 m span

External loading For 150 m span And 2% (= 3 m) initial sag	Number of optical units in cable	Initial cable load without external load	Sag with external load	Cable load with external load
25 m/s (90 km/h) wind load	6	1.8 kN	5.2 m	4.3 kN
	8	2.2 kN	5.3 m	4.7 kN
50 m/s (180 km/h) wind load	6	1.8 kN	8.6 m	10.4 kN *)
	8	2.2 kN	8.8 m	11.1 kN *)
1 kg/m ice load	6	1.8 kN	6.1 m	5.5 kN
	8	2.2 kN	6.0 m	5.7 kN
2 kg/m ice load	6	1.8 kN	7.6 m	8.1 kN
	8	2.2 kN	7.5 m	8.4 kN

*) The dynamic tensile strength may be used as maximum acceptable tension in this case

Stringing example for cable type T-028-1900 and 150 m span

External loading For 150 m span And 2% (= 3 m) initial sag	Number of optical units in cable	Initial cable load without external load	Sag with external load	Cable load with external load
25 m/s (90 km/h) wind load	6	2.0 kN	4.7 m	5.0 kN
	8	2.4 kN	4.8 m	5.5 kN
50 m/s (180 km/h) wind load	6	2.0 kN	7.4 m	12.4 kN
	8	2.4 kN	7.6 m	13.5 kN
1 kg/m ice load	6	2.0 kN	5.3 m	6.4 kN
	8	2.4 kN	5.3 m	6.6 kN
2 kg/m ice load	6	2.0 kN	6.5 m	9.5 kN
	8	2.4 kN	6.5 m	9.7 kN
3 kg/m ice load	6	2.0 kN	7.4 m	12.2 kN
	8	2.4 kN	7.5 m	12.5 kN

Stringing example for cable type T-028-1900 and 200 m span

External loading For 200 m span And 2% (= 4 m) initial sag	Number of optical units in cable	Initial cable load without external load	Sag with external load	Cable load with external load
25 m/s (90 km/h) wind load	6	2.7 kN	6.6 m	6.3 kN
	8	3.1 kN	6.8 m	6.9 kN
50 m/s (180 km/h) wind load	6	2.7 kN	10.7 m	15.2 kN *)
	8	3.1 kN	11.1 m	16.6 kN *)
1 kg/m ice load	6	2.7 kN	7.6 m	8.0 kN
	8	3.1 kN	7.5 m	8.3 kN
2 kg/m ice load	6	2.7 kN	9.4 m	11.8 kN
	8	3.1 kN	9.3 m	12.0 kN

*) The dynamic tensile strength may be used as maximum acceptable tension in this case

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Stringing example for cable type T-028-1900 and 250 m span

External loading For 250 m span And 2% (= 5 m) initial sag	Number of optical units in cable	Initial cable load without external load	Sag with external load	Cable load with external load
25 m/s (90 km/h) wind load	6	3.4 kN	8.7m	7.5 kN
	8	3.9 kN	8.9 m	8.3 kN
50 m/s (180 km/h) wind load	6	3.4 kN	14.3 m	17.9 kN *)
	8	3.9 kN	14.8 m	19.5 kN *)
1 kg/m ice load	6	3.4 kN	10.0 m	9.5 kN
	8	3.9 kN	9.9 m	9.8 kN
2 kg/m ice load	6	3.4 kN	12.5 m	13.9 kN
	8	3.9 kN	12.3 m	14.3 kN

*) The dynamic tensile strength may be used as maximum acceptable tension in this case

Product codes – ordering information

Prysmian group material code	Prysmian Group material description	Draka Material code	Fibre count	Fibre type	Fibre data sheet
60037499	UC^{FIBRE} ADSS T-028-1100 1x8 SM2D		8	Singlemode G652.D	C06
60019829	UC^{FIBRE} ADSS T-028-1100 12 SM2D	1025697	12	Singlemode G652.D	C06
60032110	UC^{FIBRE} ADSS T-028-1100 24 SM2D		24	Singlemode G652.D	C06
60037502	UC^{FIBRE} ADSS T-028-1100 36 SM2D		36	Singlemode G652.D	C06
60019831	UC^{FIBRE} ADSS T-028-1100 48 SM2D	1025699	48	Singlemode G652.D	C06
60032112	UC^{FIBRE} ADSS T-028-1100 72 SM2D		72	Singlemode G652.D	C06
60020383	UC^{FIBRE} ADSS T-028-1100 96 SM2D	1027988	96	Singlemode G652.D	C06
60030895	UC^{FIBRE} ADSS T-028-1900 24 SM2D		24	Singlemode G652.D	C06
60037565	UC^{FIBRE} ADSS T-028-1900 36 SM2D		36	Singlemode G652.D	C06
60037567	UC^{FIBRE} ADSS T-028-1900 48 SM2D		48	Singlemode G652.D	C06
60037568	UC^{FIBRE} ADSS T-028-1900 72 SM2D		72	Singlemode G652.D	C06
60037270	UC^{FIBRE} ADSS T-028-1900 96 SM2D		96	Singlemode G652.D	C06
60037234	UC^{FIBRE} ADSS T-028-1900 96 SM7A1		96	Singlemode G657.A1	C17
60032111	UC^{FIBRE} ADSS T-028-1100 24 MM61		24	OM1 62.5/125 multimode	C02