WIRELINE CABLES

DEACERO®

About **Deacero**

Deacero, one of the largest steel wire manufacturers in North America, presents this electromechanical cable product catalog for the petroleum exploration and production industry. Deacero is a company with deep resources and a strong commitment to serve you with products and solutions that meet your electromechanical cable needs.

QUALITY
All employees of Deacero are dedicated to provide the highest quality products in compliance with the electromechanical industry and with ISO-9001.

Deacero is a vertically integrated company with quality control standards throughout its entire supply chain; from steel scrap to finished goods.

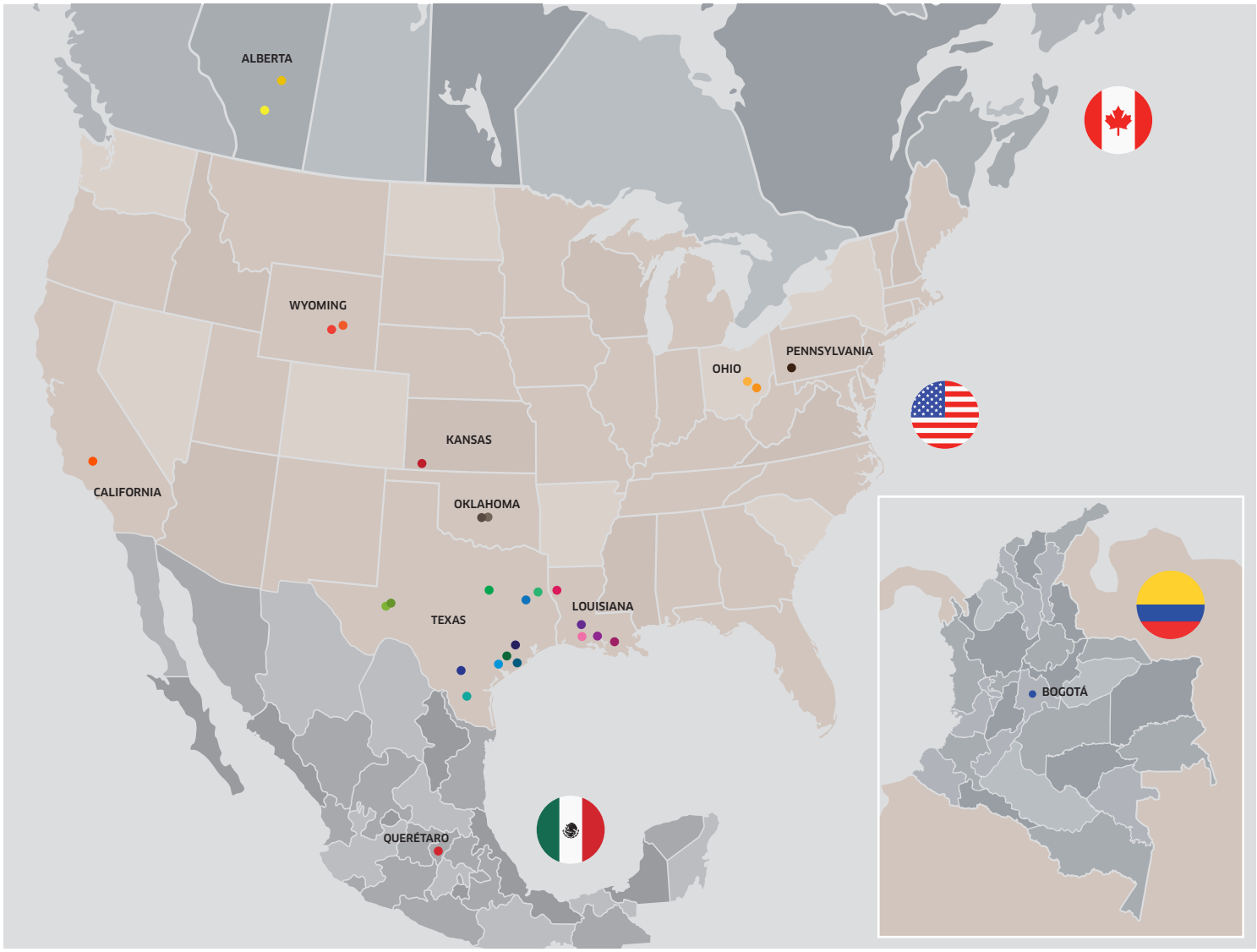
KNOWLEDGE
Deacero is a customer-oriented company with a knowledgeable technical sales staff and attentive customer service to give you product solutions on any need you have.

SERVICE
With distribution centers strategically located around the US, Deacero is ready to supply promptly and efficiently to US and international customers.

TECHNOLOGY
Deacero serves the industry with cables to cover the unique demands of corrosive environments and high temperatures by using special copper alloys, high temperature insulations and special anti-corrosive alloy armoring materials.

Deacero is a proprietary developer of advanced, eco-friendly metal recycling and manufacturing technology.

Service center **locations**



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- **REMARCABLES COLOMBIA**
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Contact: Cullen Falgout

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Phone: 281-342-4492
Contact: Keith Nutt

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Contact: Joe Davidson

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Phone: 307-472-9100
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13667 East Highway 2026
Evansville, WY 82604
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CANADA

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COLOMBIA

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Carrera 7 N 18-31
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Contact: Alexander Aguirre

Cable manufacturing **information**

20 years of oil and gas industry experience back up Deacero's manufacturing processes on electromechanical cables.

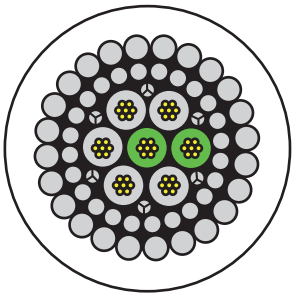
- All of our raw materials are rigorously inspected in our laboratory.
- The wires we use for our standard cables are galvanized extra improved plow steel with a tensile strength in the range of 270 to 305 Kpsi.
- No conductor splices on any Deacero Wireline Cable.
- We do not accept any butt welds in the final drawing process nor the outer armors of the cable.
- ISO 9001 plant certified, API Spec 9A certified.
- All armor wires are preformed to make a better quality cable.
- A special material is used to block the migration of water or gas to the conductor.
- All our multiconductors are blocked with a semi conductor material and NOMEX Tape to avoid any gas or water infiltration.
- All armors are protected with a corrosion inhibitor.
- The diameter of all cables is measured with normal spooling tension for better accuracy of measurement.
- All of our wireline cables are tested electrically and mechanically to achieve and exceed published specifications.
- The electrical values are corrected to 20° C (68°F).
- The maximum working load recommended by Deacero is 60% of the catalog breaking strength.

Cable specifications
Summary table

Cable Type	Size	Diameter	Breaking Strength	Weight	Armor Wires In/Out	Wire Strength In/Out	Stretch Coefficient	Conductor Resistance	Cap	Max. Temp.	Min. Sheave Diameter	Max. Volt.
	(")	(")	(lbf)	(lbs)		(lbs)	(ft/kft/klb)	(Ohms/Kft)	(pf/ft)	(Deg F)	(")	
MONOCONDUCTOR												
185 • 1DTK • HS	3/16	0.185	4,300	66	12/12	137/207	3.10	9.8	55	500	12	1,000
224 • 1XPL • HS	7/32	0.224	6,100	94	15/15	137/294	2.20	4.1	62	300	14	1,200
224 • 1XTL • HS	7/32	0.224	6,100	96	15/15	137/294	2.20	4.1	69	500	14	1,200
224 • 1ZPL • HS	7/32	0.224	6,100	94	12/18	221/221	2.50	4.1	62	300	13	1,200
224 • 1ZTL • HS	7/32	0.224	6,100	95	12/18	221/221	2.50	4.1	69	500	13	1,200
224 • 1ZETL • HS	7/32	0.224	6,100	97	12/18	221/221	2.50	4.1	62	600	13	1,200
224 • 1ZFTL • HS	7/32	0.224	6,100	97	12/18	221/221	2.50	4.1	62	500	13	1,200
224 • 1ZATK • S75	7/32	0.224	5,000	96	12/18	190/190	2.90	6.5	45	500	13	1,200
224 • 1ZATK • S77	7/32	0.224	5,200	96	12/18	195/195	2.90	6.5	45	500	13	1,200
224 • 1ZATK • MP35	7/32	0.224	5,400	100	12/18	210/210	2.90	6.5	45	500	13	1,200
258 • 1ZPL • HS	1/4	0.258	8,200	120	12/18	294/294	1.90	4.1	52	300	14.3	1,200
258 • 1ZFTL • HS	1/4	0.258	8,200	125	12/18	294/294	1.90	4.1	53	500	14.3	1,200
288 • 1ZPL • HS	9/32	0.288	10,400	154	12/18	370/370	1.60	2.8	57	300	16	1,500
288 • 1ZTL • HS	9/32	0.288	10,400	158	12/18	370/370	1.60	2.8	64	500	16	1,500
288 • 1ZETL • HS	9/32	0.288	10,400	160	12/18	370/370	1.60	2.8	58	600	16	1,500
288 • 1ZFTL • HS	9/32	0.288	10,400	160	12/18	370/370	1.60	2.8	58	500	16	1,500
288 • 1ZATL • HS	9/32	0.288	10,400	160	12/18	370/370	1.60	2.8	58	500	16	1,500
288 • 1ZATL • S75	9/32	0.288	8,600	167	12/18	308/308	1.90	2.9	57	500	16	1,500
288 • 1ZATL • S77	9/32	0.288	9,200	167	12/18	320/320	1.90	2.9	57	500	16	1,500
288 • 1ZATL • MP35	9/32	0.288	9,200	174	12/18	320/320	1.90	2.9	57	500	16	1,500
322 • 1ZPL • HS	5/16	0.322	12,400	188	12/18	460/460	1.20	2.8	48	300	18	1,500
322 • 1ZETL • HS	5/16	0.322	12,400	195	12/18	460/460	1.20	2.8	48	600	18	1,500
322 • 1ZFTL • HS	5/16	0.322	12,400	195	12/18	460/460	1.20	2.8	48	500	18	1,500
322 • 1ZATL • S75	5/16	0.322	10,700	206	12/18	380/380	1.20	3.1	48	500	18	1,500
322 • 1ZATL • S77	5/16	0.322	11,200	206	12/18	395/395	1.20	3.1	48	500	18	1,500
322 • 1ZATL • MP35	5/16	0.322	11,200	206	12/18	395/395	1.20	3.1	48	500	18	1,500
380 • 1ZPL • HS	3/8	0.380	17,500	259	12/18	625/625	1.00	2.8	40	300	21	1,500
380 • 1ZFTL • HS	3/8	0.380	17,500	269	12/18	625/625	1.00	2.8	40	500	21	1,500
380 • 1ZFTL • HSLR	3/8	0.380	17,500	269	12/18	625/625	1.00	2.3	44	500	21	1,500
425 • 1ZPL • HS	7/16	0.425	22,000	325	12/18	780/780	0.70	2.8	36	300	24	1,500
425 • 1ZFTL • HSLR	7/16	0.425	22,000	335	12/18	780/780	0.70	2.1	44	500	24	1,500
MULTICONDUCTOR												
185 • 3STK • HS	3/16	0.186	3,800	65	18/18	80/150	3.60	22.0	52	500	12	1,000
380 • 7SPK • HS	3/8	0.378	15,500	254	18/18	320/625	1.40	9.8	72	300	21	1,000
380 • 7STK • HS	3/8	0.378	15,500	261	18/18	320/625	1.40	9.8	79	500	21	1,000
384 • 3DPK • HS	3/8	0.384	16,500	267	16/20	466/580	1.10	6.4	54	300	20	1,200
384 • 3DTK • HS	3/8	0.384	16,500	267	16/20	466/580	1.10	6.4	60	500	20	1,200
426 • 7SPK • HS	7/16	0.426	20,000	310	18/18	415/780	0.75	9.8	57	300	24	1,000
426 • 7SFTK • HS	7/16	0.426	20,000	322	18/18	415/770	0.75	9.8	58	500	24	1,000
464 • 7RPK	15/32	0.464	20,000	321	24/24	350/560	0.77	9.8	41	300	20	1,200
464 • 7RFTK	15/32	0.464	20,000	341	24/24	350/560	0.77	9.8	42	500	20	1,200
474 • 7SPK I HS	SLAMMER	0.474	24,500	377	18/18	505/940	0.61	9.8	48	300	27	1,100
474 • 7SFTK I HS	SLAMMER	0.474	24,500	392	18/18	505/965	0.61	9.8	48	500	27	1,100
484 • 7DFTK I HS	SLAMMER	0.484	27,600	409	16/18	650/1071	0.61	9.8	50	500	27	1,100
490 • 7DFTK I HS	SLAMMER	0.490	28,000	405	20/20	485/870	0.60	9.8	48	500	25	1,200

How to read a **product code**

464 • 7RPK • HS • S75



A Cable Diameter in Thousands of Inch.

B Number of Conductors.

C Armor Type.

Z. 12/18
Y. 12/12
X. 15/15
T. 11/15
S. 18/18
R. 24/24
D. Others

D Type of Electrical Insulation.

A. Teflon - PFA
P. Polypropylene
F. Teflon - FEP
T. Tefzel - ETFE
E. Teflon - 600° F

E Type of Copper Construction.

K. 7 wires
L. 19 wires
M. Others

F Strength Wire.

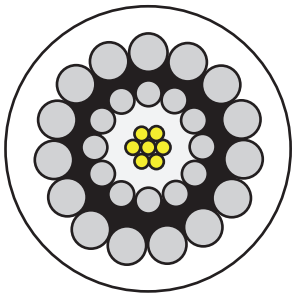
HS
EHS

G Type of Stainless Steel.

∅ Drawn Galvanized
S75. Supa 75
S77. Supa 77
MP35. MP35

185 • 1DTK • HS

3/16” 4.70 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

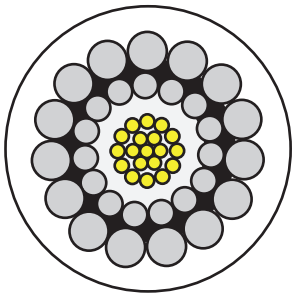
Construction Characteristics		English	Metric
Conductor – # 20 AWG, 7 x 0.0128”	dia.	0.038”	0.965 mm
Wall Thickness:		0.023”	0.584 mm
Insulation Conductors - OD:	dia.	0.084”	2.134 mm
Armor – Inner: 12 wires 0.0243”	dia.	0.125”	3.175 mm
Armor – Outer: 15 wires 0.0300”	dia.	0.185”	4.699 mm

Mechanical Characteristics		English	Metric
Weight in Air		66 lb/kft	98 kg/km
Weight in Water		56 lb/kft	83 kg/km
Minimum Breaking Strength, Ends Fixed		**4,300 lbf**	**19.13 kN**
Minimum Wire Break Strength (In/Out)		**137/207 lbf**	**609/921 N**
Maximum Working Load		2,365 lbf	10.52 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	12”	305 mm
Stretch Coefficient (Nominal)		3.1 ft /kft/klb	3.48 m/km/5kN
Outside Diameter	0.185”	+ 0.004” - 0.002”	4.70 mm + 0.102 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,100 VDC	1,100 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	9.8 Ω/kft	32.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	6.2 Ω/kft	20.3 Ω/km
Capacitance Conductor to Armor (Maximum)	55 pF/ft	180 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

224 • 1XPL • HS

7/32” 5.69 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: Polypropylene.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

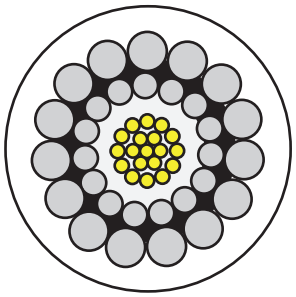
Construction Characteristics		English	Metric
Conductor – # 16 AWG, 19 x 0.0119”	dia.	0.059”	1.499 mm
Wall Thickness:		0.0245”	0.6223 mm
Insulation - OD:	dia.	0.108”	2.743 mm
Armor – Inner: 15 wires 0.0243”	dia.	0.152”	3.861 mm
Armor – Outer: 15 wires 0.0358”	dia.	0.224”	5.690 mm

Mechanical Characteristics		English	Metric
Weight in Air		94 lb/kft	140 kg/km
Weight in Water		79 lb/kft	118 kg/km
Minimum Breaking Strength, Ends Fixed		**6,100 lbf**	**27.13 kN**
Minimum Wire Break Strength (In/Out)		**137/294 lbf**	**609/1308 N**
Maximum Working Load		3,355 lbf	14.92 kN
Temperature Rating (Maximum)		**300º F**	**149º C**
Suggested Minimum Sheave	dia.	14”	356 mm
Stretch Coefficient (Nominal)		2.20 ft /kft/klb	2.47 m/km/5kN
Outside Diameter	0.224”	+ 0.005” / - 0.002”	5.69 mm + 0.127 mm / - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,200 VDC	1,200 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	4.1 Ω/kft	13.5 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	4.3 Ω/kft	14.1 Ω/km
Capacitance Conductor to Armor (Maximum)	62 pF/ft	203 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

224 • 1XTL • HS

7/32” 5.69 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

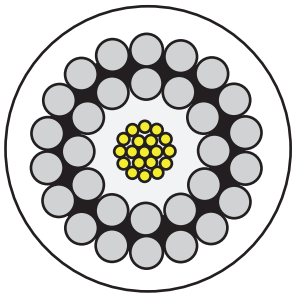
Construction Characteristics		English	Metric
Conductor – # 16 AWG, 19 x 0.0119”	dia.	0.059”	1.499 mm
Wall Thickness:		0.0245”	0.6223 mm
Insulation - OD:	dia.	0.108”	2.743 mm
Armor – Inner: 15 wires 0.0243”	dia.	0.152”	3.861 mm
Armor – Outer: 15 wires 0.0358”	dia.	0.224”	5.690 mm

Mechanical Characteristics		English	Metric
Weight in Air		96 lb/kft	143 kg/km
Weight in Water		82 lb/kft	122 kg/km
Minimum Breaking Strength, Ends Fixed		**6,100 lbf**	**27.13 kN**
Minimum Wire Break Strength (In/Out)		**137/294 lbf**	**609/1308 N**
Maximum Working Load		3,355 lbf	14.92 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	14”	356 mm
Stretch Coefficient (Nominal)		2.20 ft /kft/klb	2.47 m/km/5kN
Outside Diameter	0.224”	+ 0.005” / - 0.002”	5.69 mm + 0.127 mm / - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,200 VDC	1,200 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	4.1 Ω/kft	13.5 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	4.3 Ω/kft	14.1 Ω/km
Capacitance Conductor to Armor (Maximum)	69 pF/ft	226 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

224 • 1ZPL • HS

7/32” 5.69 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: Polypropylene.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

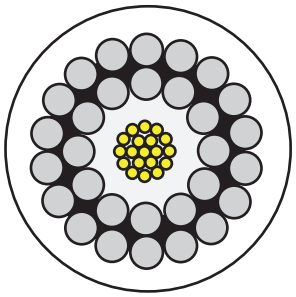
Construction Characteristics		English	Metric
Conductor – # 16 AWG, 19 x 0.0119”	dia.	0.059”	1.499 mm
Wall Thickness:		0.0245”	0.6223 mm
Insulation - OD:	dia.	0.108”	2.743 mm
Armor – Inner: 12 wires 0.031”	dia.	0.162”	4.115 mm
Armor – Outer: 18 wires 0.031”	dia.	0.224”	5.690 mm

Mechanical Characteristics		English	Metric
Weight in Air		96 lb/kft	140 kg/km
Weight in Water		79 lb/kft	118 kg/km
Minimum Breaking Strength, Ends Fixed		**6,100 lbf**	**27.13 kN**
Minimum Wire Break Strength (In/Out)		**221 /221 lbf**	**983/983 N**
Maximum Working Load		3,355 lbf	14.92 kN
Temperature Rating (Maximum)		**300º F**	**149º C**
Suggested Minimum Sheave	dia.	13”	330 mm
Stretch Coefficient (Nominal)		2.5 ft /kft/klb	2.81 m/km/5kN
Outside Diameter	0.224”	+ 0.005” / - 0.002”	5.69 mm + 0.127 mm / - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,200 VDC	1,200 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	4.1 Ω/kft	13.5 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	4.3 Ω/kft	14.1 Ω/km
Capacitance Conductor to Armor (Maximum)	62 pF/ft	203 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

224 • 1ZTL • HS

7/32” 5.69 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

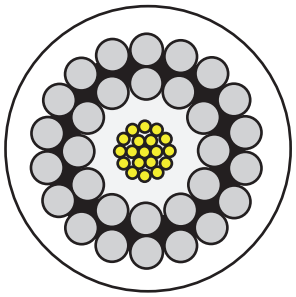
Construction Characteristics		English	Metric
Conductor – # 16 AWG, 19 x 0.0119”	dia.	0.059”	1.499 mm
Wall Thickness:		0.0245”	0.6223 mm
Insulation - OD:	dia.	0.108”	2.743 mm
Armor – Inner: 12 wires 0.031”	dia.	0.162”	4.115 mm
Armor – Outer: 18 wires 0.031”	dia.	0.224”	5.690 mm

Mechanical Characteristics		English	Metric
Weight in Air		95 lb/kft	142 kg/km
Weight in Water		81 lb/kft	120 kg/km
Minimum Breaking Strength, Ends Fixed		**6,100 lbf**	**27.13 kN**
Minimum Wire Break Strength (In/Out)		**221 /221 lbf**	**983/983 N**
Maximum Working Load		3,355 lbf	14.92 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	13”	330 mm
Stretch Coefficient (Nominal)		2.5 ft /kft/klb	2.81 m/km/5kN
Outside Diameter	0.224”	+ 0.005” - 0.002”	5.69 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,200 VDC	1,200 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	4.1 Ω/kft	13.5 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	4.3 Ω/kft	14.1 Ω/km
Capacitance Conductor to Armor (Maximum)	69 pF/ft	226 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

224 • 1ZETL • HS

HIGHEST TEMPERATURE (600˚F) | 7/32” 5.69 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: FEP/ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

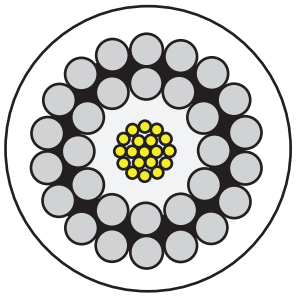
Construction Characteristics		English	Metric
Conductor – # 16 AWG, 19 x 0.0119”	dia.	0.059”	1.499 mm
Wall Thickness:		0.0245”	0.6223 mm
Insulation - OD:	dia.	0.108”	2.743 mm
Armor – Inner: 12 wires 0.031”	dia.	0.162”	4.115 mm
Armor – Outer: 18 wires 0.031”	dia.	0.224”	5.690 mm

Mechanical Characteristics		English	Metric
Weight in Air		97 lb/kft	144 kg/km
Weight in Water		82 lb/kft	122 kg/km
Minimum Breaking Strength, Ends Fixed		**6,100 lbf**	**27.13 kN**
Minimum Wire Break Strength (In/Out)		**221/221 lbf**	**983/983 N**
Maximum Working Load		3,355 lbf	14.92 kN
Temperature Rating (Maximum)		**600º F**	**316º C**
Suggested Minimum Sheave	dia.	13”	330 mm
Stretch Coefficient (Nominal)		2.5 ft /kft/klb	2.81 m/km/5kN
Outside Diameter	0.224”	+ 0.005” - 0.002”	5.69 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,200 VDC	1,200 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	4.1 Ω/kft	13.5 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	4.3 Ω/kft	14.1 Ω/km
Capacitance Conductor to Armor (Maximum)	62 pF/ft	203 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

224 • 1ZFTL • HS

7/32” 5.69 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: FEP/ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

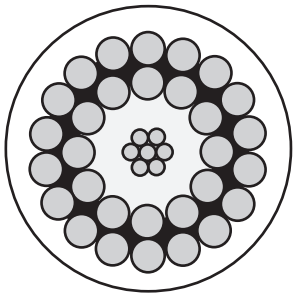
Construction Characteristics		English	Metric
Conductor – # 16 AWG, 19 x 0.0119”	dia.	0.059”	1.499 mm
Wall Thickness:		0.0245”	0.6223 mm
Insulation - OD:	dia.	0.108”	2.743 mm
Armor – Inner: 12 wires 0.031”	dia.	0.162”	4.115 mm
Armor – Outer: 18 wires 0.031”	dia.	0.224”	5.690 mm

Mechanical Characteristics		English	Metric
Weight in Air		97 lb/kft	144 kg/km
Weight in Water		82 lb/kft	122 kg/km
Minimum Breaking Strength, Ends Fixed		**6,100 lbf**	**27.13 kN**
Minimum Wire Break Strength (In/Out)		**221/221 lbf**	**983/983 N**
Maximum Working Load		3,355 lbf	14.92 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	13”	330 mm
Stretch Coefficient (Nominal)		2.5 ft /kft/klb	2.81 m/km/5kN
Outside Diameter	0.224”	+ 0.005” - 0.002”	5.69 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,200 VDC	1,200 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	4.1 Ω/kft	13.5 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	4.3 Ω/kft	14.1 Ω/km
Capacitance Conductor to Armor (Maximum)	62 pF/ft	203 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

224 • 1ZATK • S75

CORROSION RESISTANT | 7/32” 5.69 mm
MONOCONDUCTOR



CONDUCTOR: Copper,Nickel Plated, Water Blocked.
INSULATION: PFA/ETFE.
ARMOR: SUPA 75 (UNS N08926)Gal

Special Sealant is applied between armor layers.

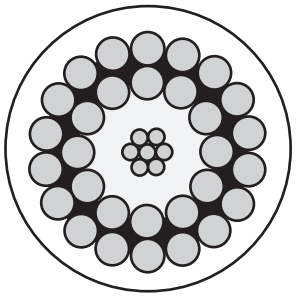
Construction Characteristics		English	Metric
Conductor – # 18 AWG, 7 x 0.0159”	dia.	0.0475”	1.207 mm
Wall Thickness:		0.030”	0.762 mm
Insulation - OD:	dia.	0.108”	2.743 mm
Armor – Inner: 12 wires 0.031”	dia.	0.162”	4.115 mm
Armor – Outer: 18 wires 0.031”	dia.	0.224”	5.690 mm

Mechanical Characteristics		English	Metric
Weight in Air		96 lb/kft	143 kg/km
Weight in Water		81 lb/kft	121 kg/km
Minimum Breaking Strength, Ends Fixed		**5,000 lbf**	**22.24 kN**
Minimum Wire Break Strength (In/Out)		**190/190 lbf**	**845/845 N**
Maximum Working Load		2,750 lbf	12.23 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	13”	330 mm
Stretch Coefficient (Nominal)		2.9 ft /kft/klb	3.26 m/km/5kN
Outside Diameter	0.224”	+ 0.005” - 0.002”	5.69 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,200 VDC	1,200 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	6.5 Ω/kft	21.3 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	17.0 Ω/kft	55.8 Ω/km
Capacitance Conductor to Armor (Maximum)	45 pF/ft	148 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

224 • 1ZATK • S77

CORROSION RESISTANT | 7/32” 5.69 mm
MONOCONDUCTOR



CONDUCTOR: Copper,Nickel Plated, Water Blocked.
INSULATION: PFA/ETFE.
ARMOR: SUPA 77 (UNS S31277)

Special Sealant is applied between armor layers.

Construction Characteristics		English	Metric
Conductor – # 18 AWG, 7 x 0.0159”	dia.	0.0475”	1.207 mm
Wall Thickness:		0.030”	0.762 mm
Insulation - OD:	dia.	0.108”	2.743 mm
Armor – Inner: 12 wires 0.031”	dia.	0.162”	4.115 mm
Armor – Outer: 18 wires 0.031”	dia.	0.224”	5.690 mm

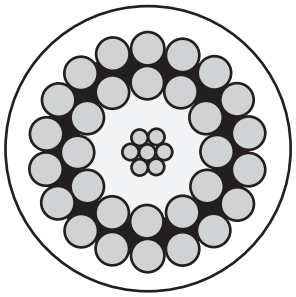
Mechanical Characteristics		English	Metric
Weight in Air		96 lb/kft	143 kg/km
Weight in Water		81 lb/kft	121 kg/km
Minimum Breaking Strength, Ends Fixed		**5,200 lbf**	**23.13 kN**
Minimum Wire Break Strength (In/Out)		**195/195 lbf**	**867/867 N**
Maximum Working Load		2,860 lbf	12.72 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	13”	330 mm
Stretch Coefficient (Nominal)		2.9 ft /kft/klb	3.26 m/km/5kN
Outside Diameter	0.224”	+ 0.005” - 0.002”	5.69 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,200 VDC	1,200 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	6.5 Ω/kft	21.3 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	22.0 Ω/kft	72.2 Ω/km
Capacitance Conductor to Armor (Maximum)	45 pF/ft	148 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

224 • 1ZATK • MP35

CORROSION RESISTANT | 7/32” 5.69 mm
MONOCONDUCTOR

CONDUCTOR: Copper,Nickel Plated, Water Blocked.
INSULATION: PFA/ETFE.
ARMOR: MP35 (UNS R30035)



Special Sealant is applied between armor layers.

Construction Characteristics		English	Metric
Conductor – # 18 AWG, 7 x 0.0159”	dia.	0.0475”	1.207 mm
Wall Thickness:		0.030”	0.762 mm
Insulation - OD:	dia.	0.108”	2.743 mm
Armor – Inner: 12 wires 0.031”	dia.	0.162”	4.115 mm
Armor – Outer: 18 wires 0.031”	dia.	0.224”	5.690 mm

Mechanical Characteristics		English	Metric
Weight in Air		100 lb/kft	149 kg/km
Weight in Water		86 lb/kft	128 kg/km
Minimum Breaking Strength, Ends Fixed		**5,400 lbf**	**24.02 kN**
Minimum Wire Break Strength (In/Out)		**210/210 lbf**	**934/934 N**
Maximum Working Load		2,970 lbf	13.21 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	13”	330 mm
Stretch Coefficient (Nominal)		2.9 ft /kft/klb	3.26 m/km/5kN
Outside Diameter	0.224”	+ 0.005” - 0.002”	5.69 mm + 0.127 mm - 0.051 mm

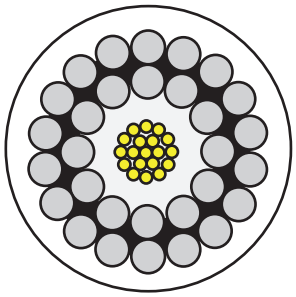
Electrical Characteristics	English	Metric
Voltage Rating	1,200 VDC	1,200 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	6.5 Ω/kft	21.3 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	22.0 Ω/kft	72.2 Ω/km
Capacitance Conductor to Armor (Maximum)	45 pF/ft	148 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

258 • 1ZPL • HS

1/4” 6.55 mm
MONOCONDUCTOR

CONDUCTOR: Copper, Water Blocked.
INSULATION: Polypropylene.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.



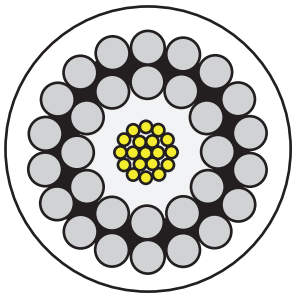
Construction Characteristics		English	Metric
Conductor – # 16 AWG, 19 x 0.0119”	dia.	0.059”	1.499 mm
Wall Thickness:		0.032”	0.813 mm
Insulation - OD:	dia.	0.123”	3.124 mm
Armor – Inner: 12 wires 0.358”	dia.	0.186”	4.724 mm
Armor – Outer: 18 wires 0.358”	dia.	0.258”	6.553 mm

Mechanical Characteristics		English	Metric
Weight in Air		120 lb/kft	178 kg/km
Weight in Water		98 lb/kft	146 kg/km
Minimum Breaking Strength, Ends Fixed		**8,200 lbf**	**36.48 kN**
Minimum Wire Break Strength (In/Out)		**294/294 lbf**	**1308/1308 N**
Maximum Working Load		4,510 lbf	20.06 kN
Temperature Rating (Maximum)		**300º F**	**149º C**
Suggested Minimum Sheave	dia.	14.3”	363 mm
Stretch Coefficient (Nominal)		1.9 ft /kft/klb	2.14 m/km/5kN
Outside Diameter	0.258”	+ 0.005” - 0.002”	6.55 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,200 VDC	1,200 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	4.1 Ω/kft	13.5 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	3.3 Ω/kft	10.83 Ω/km
Capacitance Conductor to Armor (Maximum)	52 pF/ft	171 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

258 • 1ZFTL • HS

1/4” 6.55 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: FEP/ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

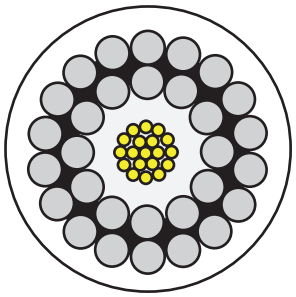
Construction Characteristics		English	Metric
Conductor – # 16 AWG, 19 x 0.0119”	dia.	0.059”	1.499 mm
Wall Thickness:		0.032”	0.813 mm
Insulation - OD:	dia.	0.123”	3.214 mm
Armor – Inner: 12 wires 0.358”	dia.	0.186”	4.724 mm
Armor – Outer: 18 wires 0.358”	dia.	0.258”	6.553 mm

Mechanical Characteristics		English	Metric
Weight in Air		125 lb/kft	186 kg/km
Weight in Water		102 lb/kft	152 kg/km
Minimum Breaking Strength, Ends Fixed		**8,200 lbf**	**36.48 kN**
Minimum Wire Break Strength (In/Out)		**294/294 lbf**	**1308/1308 N**
Maximum Working Load		4,510 lbf	20.06 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	14.3”	363 mm
Stretch Coefficient (Nominal)		1.9 ft /kft/klb	2.14 m/km/5kN
Outside Diameter	0.258”	+ 0.005” - 0.002”	6.55 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,200 VDC	1,200 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	4.1 Ω/kft	13.5 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	3.3 Ω/kft	10.83 Ω/km
Capacitance Conductor to Armor (Maximum)	53 pF/ft	174 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

288 • 1ZPL • HS

9/32” 7.32 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: Polypropylene.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

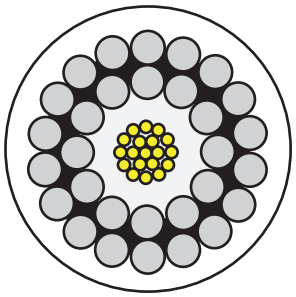
Construction Characteristics		English	Metric
Conductor – # 15 AWG, 19 x 0.0142”	dia.	0.071”	1.803 mm
Wall Thickness:		0.0325”	0.825 mm
Insulation - OD:	dia.	0.136”	3.454 mm
Armor – Inner: 12 wires 0.040”	dia.	0.208”	5.283 mm
Armor – Outer: 18 wires 0.040”	dia.	0.288”	7.315 mm

Mechanical Characteristics		English	Metric
Weight in Air		154 lb/kft	229 kg/km
Weight in Water		130 lb/kft	194 kg/km
Minimum Breaking Strength, Ends Fixed		**10,400 lbf**	**46.26 kN**
Minimum Wire Break Strength (In/Out)		**370/370 lbf**	**1646/1646 N**
Maximum Working Load		5,720 lbf	25.44 kN
Temperature Rating (Maximum)		**300º F**	**149º C**
Suggested Minimum Sheave	dia.	16”	406 mm
Stretch Coefficient (Nominal)		1.6 ft /kft/klb	1.8 m/km/5kN
Outside Diameter	0.288”	+ 0.005” / - 0.002”	6.55 mm / + 0.127 mm / - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,200 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	2.8 Ω/kft	9.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	2.7 Ω/kft	8.9 Ω/km
Capacitance Conductor to Armor (Maximum)	57 pF/ft	187 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

288 • 1ZTL • HS

9/32” 7.32 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: ETFE .
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

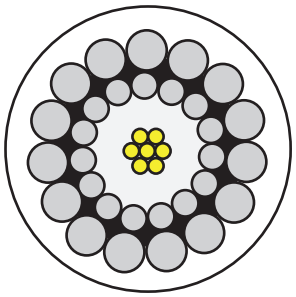
Construction Characteristics		English	Metric
Conductor – # 15 AWG, 19 x 0.0142”	dia.	0.071”	1.803 mm
Wall Thickness:		0.0325”	0.825 mm
Insulation - OD:	dia.	0.136”	3.454 mm
Armor – Inner: 12 wires 0.040”	dia.	0.208”	5.283 mm
Armor – Outer: 18 wires 0.040”	dia.	0.288”	7.315 mm

Mechanical Characteristics		English	Metric
Weight in Air		158 lb/kft	235 kg/km
Weight in Water		134 lb/kft	199 kg/km
Minimum Breaking Strength, Ends Fixed		**10,400 lbf**	**46.26 kN**
Minimum Wire Break Strength (In/Out)		**370/370 lbf**	**1646/1646 N**
Maximum Working Load		5,720 lbf	25.44 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	16”	406 mm
Stretch Coefficient (Nominal)		1.6 ft /kft/klb	1.8 m/km/5kN
Outside Diameter	0.288”	+ 0.005” - 0.002”	7.32 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	2.8 Ω/kft	9.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	2.7 Ω/kft	8.9 Ω/km
Capacitance Conductor to Armor (Maximum)	64 pF/ft	210 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

288 • 1ZETL • HS

HIGHEST TEMPERATURE (600˚F) | 9/32” 7.32 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: PFA/ETFE .
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

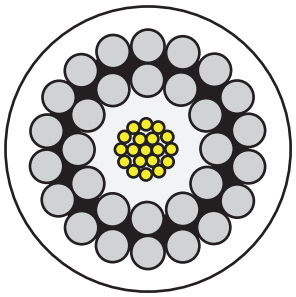
Construction Characteristics		English	Metric
Conductor – # 15 AWG, 19 x 0.0142”	dia.	0.071”	1.803 mm
Wall Thickness:		0.0325”	0.825 mm
Insulation - OD:	dia.	0.136”	3.454 mm
Armor – Inner: 12 wires 0.040”	dia.	0.208”	5.283 mm
Armor – Outer: 18 wires 0.040”	dia.	0.288”	7.315 mm

Mechanical Characteristics		English	Metric
Weight in Air		160 lb/kft	238 kg/km
Weight in Water		138 lb/kft	205 kg/km
Minimum Breaking Strength, Ends Fixed		**10,400 lbf**	**46.26 kN**
Minimum Wire Break Strength (In/Out)		**370/370 lbf**	**1646/1646 N**
Maximum Working Load		5,720 lbf	25.44 kN
Temperature Rating (Maximum)		**600º F**	**316º C**
Suggested Minimum Sheave	dia.	16”	406 mm
Stretch Coefficient (Nominal)		1.6 ft /kft/klb	1.8 m/km/5kN
Outside Diameter	0.288”	+ 0.005” / - 0.002”	7.32 mm / + 0.127 mm / - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	2.8 Ω/kft	9.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	2.7 Ω/kft	8.9 Ω/km
Capacitance Conductor to Armor (Maximum)	58 pF/ft	190 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

288 • 1ZFTL • HS

9/32” 7.32 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: FEP/ETFE .
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

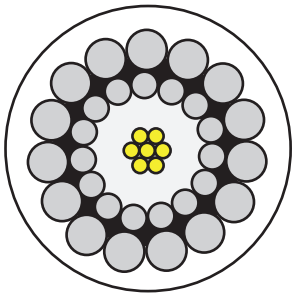
Construction Characteristics		English	Metric
Conductor – # 15 AWG, 19 x 0.0142”	dia.	0.071”	1.803 mm
Wall Thickness:		0.0325”	0.825 mm
Insulation - OD:	dia.	0.136”	3.454 mm
Armor – Inner: 12 wires 0.040”	dia.	0.208”	5.283 mm
Armor – Outer: 18 wires 0.040”	dia.	0.288”	7.315 mm

Mechanical Characteristics		English	Metric
Weight in Air		160 lb/kft	238 kg/km
Weight in Water		138 lb/kft	205 kg/km
Minimum Breaking Strength, Ends Fixed		**10,400 lbf**	**46.26 kN**
Minimum Wire Break Strength (In/Out)		**370/370 lbf**	**1646/1646 N**
Maximum Working Load		5,720 lbf	25.44 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	16”	406 mm
Stretch Coefficient (Nominal)		1.6 ft /kft/klb	1.8 m/km/5kN
Outside Diameter	0.288”	+ 0.005” - 0.002”	7.32 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	2.8 Ω/kft	9.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	2.7 Ω/kft	8.9 Ω/km
Capacitance Conductor to Armor (Maximum)	58 pF/ft	190 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

288 • 1ZATL • HS

HIGH STRENGTH | 9/32” 7.32 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: PFA/ETFE .
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

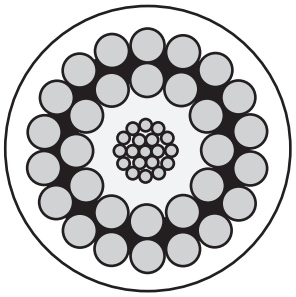
Construction Characteristics		English	Metric
Conductor – # 15 AWG, 19 x 0.0142”	dia.	0.071”	1.803 mm
Wall Thickness:		0.0325”	0.825 mm
Insulation - OD:	dia.	0.136”	3.454 mm
Armor – Inner: 12 wires 0.040”	dia.	0.208”	5.283 mm
Armor – Outer: 18 wires 0.040”	dia.	0.288”	7.315 mm

Mechanical Characteristics		English	Metric
Weight in Air		160 lb/kft	238 kg/km
Weight in Water		138 lb/kft	205 kg/km
Minimum Breaking Strength, Ends Fixed		**10,400 lbf**	**46.26 kN**
Minimum Wire Break Strength (In/Out)		**370/370 lbf**	**1646/1646 N**
Maximum Working Load		5,720 lbf	25.44 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	16”	406 mm
Stretch Coefficient (Nominal)		1.6 ft /kft/klb	1.8 m/km/5kN
Outside Diameter	0.288”	+ 0.005” - 0.002”	7.32 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	2.8 Ω/kft	9.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	2.7 Ω/kft	8.9 Ω/km
Capacitance Conductor to Armor (Maximum)	56 pF/ft	184 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

288 • 1ZATL • S75

CORROSION RESISTANT | 9/32” 7.32 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: PFA/ETFE .
ARMOR: SUPA 75 (UNS N08926)

Special Sealant is applied between armor layers.

Construction Characteristics		English	Metric
Conductor – # 15 AWG, 19 x 0.0142”	dia.	0.071”	1.803 mm
Wall Thickness:		0.0325”	0.825 mm
Insulation - OD:	dia.	0.136”	3.454 mm
Armor – Inner: 12 wires 0.040”	dia.	0.208”	5.283 mm
Armor – Outer: 18 wires 0.040”	dia.	0.288”	7.315 mm

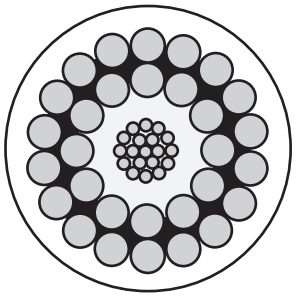
Mechanical Characteristics		English	Metric
Weight in Air		167 lb/kft	248 kg/km
Weight in Water		142 lb/kft	211 kg/km
Minimum Breaking Strength, Ends Fixed		**8,600 lbf**	**38.25 kN**
Minimum Wire Break Strength (In/Out)		**308/308 lbf**	**1370/1370 N**
Maximum Working Load		4,730 lbf	21.04 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	16”	406 mm
Stretch Coefficient (Nominal)		1.90 ft /kft/klb	2.13 m/km/5kN
Outside Diameter	0.288”	+ 0.005” - 0.002”	7.32 mm	+ 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	2.9 Ω/kft	9.51 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	10.0 Ω/kft	32.8 Ω/km
Capacitance Conductor to Armor (Maximum)	57 pF/ft	187 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

288 • 1ZATL • S77

CORROSION RESISTANT | 9/32” 7.32 mm
MONOCONDUCTOR

CONDUCTOR: Copper, Water Blocked.
INSULATION: PFA/ETFE .
ARMOR: SUPA 77 (UNS S31277)



Special Sealant is applied between armor layers.

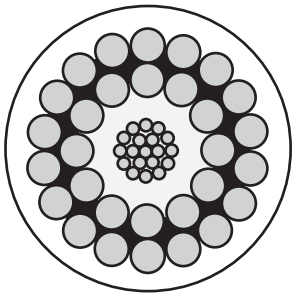
Construction Characteristics		English	Metric
Conductor – # 15 AWG, 19 x 0.0142”	dia.	0.071”	1.803 mm
Wall Thickness:		0.0325”	0.825 mm
Insulation - OD:	dia.	0.136”	3.454 mm
Armor – Inner: 12 wires 0.040”	dia.	0.208”	5.283 mm
Armor – Outer: 18 wires 0.040”	dia.	0.288”	7.315 mm

Mechanical Characteristics		English	Metric
Weight in Air		167 lb/kft	248 kg/km
Weight in Water		142 lb/kft	211 kg/km
Minimum Breaking Strength, Ends Fixed		**9,200 lbf**	**40.92 kN**
Minimum Wire Break Strength (In/Out)		**320/320 lbf**	**1423/1423 N**
Maximum Working Load		5,060 lbf	22.51 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	16”	406 mm
Stretch Coefficient (Nominal)		1.90 ft /kft/klb	2.13 m/km/5kN
Outside Diameter	0.288”	+ 0.005” - 0.002”	7.32 mm	+ 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	2.9 Ω/kft	9.51 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	12.8 Ω/kft	41.98 Ω/km
Capacitance Conductor to Armor (Maximum)	57 pF/ft	187 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

288 • 1ZATL • MP35

CORROSION RESISTANT | 9/32" 7.32 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: PFA/ETFE .
ARMOR: MP35 (UNS R30035)

Special Sealant is applied between armor layers.

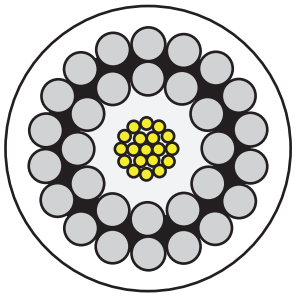
Construction Characteristics		English	Metric
Conductor – # 15 AWG, 19 x 0.0142"	dia.	0.071"	1.803 mm
Wall Thickness:		0.0325"	0.825 mm
Insulation - OD:	dia.	0.136"	3.454 mm
Armor – Inner: 12 wires 0.040"	dia.	0.208"	5.283 mm
Armor – Outer: 18 wires 0.040"	dia.	0.288"	7.315 mm

Mechanical Characteristics		English	Metric
Weight in Air		174 lb/kft	258 kg/km
Weight in Water		142 lb/kft	220 kg/km
Minimum Breaking Strength, Ends Fixed		**9,200 lbf**	**40.92 kN**
Minimum Wire Break Strength (In/Out)		**320/320 lbf**	**1423/1423 N**
Maximum Working Load		5,060 lbf	22.51 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	16"	406 mm
Stretch Coefficient (Nominal)		1.90 ft /kft/klb	2.13 m/km/5kN
Outside Diameter	0.288"	+ 0.005" - 0.002"	7.32 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	2.9 Ω/kft	9.51 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	13.0 Ω/kft	41.98 Ω/km
Capacitance Conductor to Armor (Maximum)	57 pF/ft	187 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

322 • 1ZPL • HS

HIGH STRENGTH | 5/16” 8.18 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: Polypropylene.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

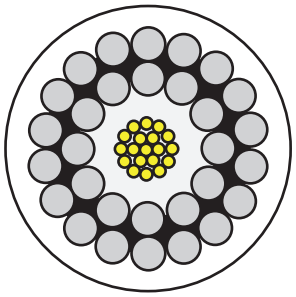
Construction Characteristics		English	Metric
Conductor – # 15 AWG, 19 x 0.0142”	dia.	0.071”	1.803 mm
Wall Thickness:		0.042”	1.067 mm
Insulation - OD:	dia.	0.155”	3.937 mm
Armor – Inner: 12 wires 0.0445”	dia.	0.233”	5.918 mm
Armor – Outer: 18 wires 0.0445”	dia.	0.322”	8.179 mm

Mechanical Characteristics		English	Metric
Weight in Air		188 lb/kft	280 kg/km
Weight in Water		158 lb/kft	235 kg/km
Minimum Breaking Strength, Ends Fixed		**12,400 lbf**	**55.16 kN**
Minimum Wire Break Strength (In/Out)		**460/460 lbf**	**2046/2046 N**
Maximum Working Load		6,820 lbf	30.34 kN
Temperature Rating (Maximum)		**300º F**	**149º C**
Suggested Minimum Sheave	dia.	18”	457 mm
Stretch Coefficient (Nominal)		1.2 ft /kft/klb	1.35 m/km/5kN
Outside Diameter	0.322”	+ 0.005” 8.179 mm - 0.002”	+ 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	2.8 Ω/kft	9.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	2.1 Ω/kft	6.9 Ω/km
Capacitance Conductor to Armor (Maximum)	48 pF/ft	157 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

322 • 1ZETL • HS

HIGHEST TEMPERATURE (600˚F) | 5/16” 8.18 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: FEP/ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

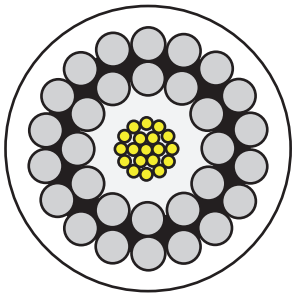
Construction Characteristics		English	Metric
Conductor – # 15 AWG, 19 x 0.0142”	dia.	0.071”	1.803 mm
Wall Thickness:		0.042”	1.067 mm
Insulation - OD:	dia.	0.155”	3.937 mm
Armor – Inner: 12 wires 0.0445”	dia.	0.233”	5.918 mm
Armor – Outer: 18 wires 0.0445”	dia.	0.322”	8.179 mm

Mechanical Characteristics		English	Metric
Weight in Air		195 lb/kft	290 kg/km
Weight in Water		165 lb/kft	246 kg/km
Minimum Breaking Strength, Ends Fixed		**12,400 lbf**	**55.16 kN**
Minimum Wire Break Strength (In/Out)		**460/460 lbf**	**2046/2046 N**
Maximum Working Load		6,820 lbf	30.34 kN
Temperature Rating (Maximum)		**600º F**	**316º C**
Suggested Minimum Sheave	dia.	18”	457 mm
Stretch Coefficient (Nominal)		1.2 ft /kft/klb	1.35 m/km/5kN
Outside Diameter	0.322”	+ 0.005” 8.179 mm - 0.002”	+ 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	2.8 Ω/kft	9.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	2.1 Ω/kft	6.9 Ω/km
Capacitance Conductor to Armor (Maximum)	48 pF/ft	157 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

322 • 1ZFTL • HS

5/16” 8.18 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: FEP/ETFE .
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

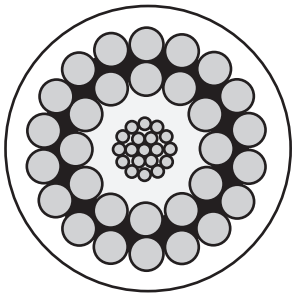
Construction Characteristics		English	Metric
Conductor – # 15 AWG, 19 x 0.0142”	dia.	0.071”	1.803 mm
Wall Thickness:		0.042”	1.067 mm
Insulation - OD:	dia.	0.155”	3.937 mm
Armor – Inner: 12 wires 0.0445”	dia.	0.233”	5.918 mm
Armor – Outer: 18 wires 0.0445”	dia.	0.322”	8.179 mm

Mechanical Characteristics		English	Metric
Weight in Air		195 lb/kft	290 kg/km
Weight in Water		165 lb/kft	246 kg/km
Minimum Breaking Strength, Ends Fixed		**12,400 lbf**	**55.16 kN**
Minimum Wire Break Strength (In/Out)		**460/460 lbf**	**2046/2046 N**
Maximum Working Load		6,820 lbf	30.34 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	18”	457 mm
Stretch Coefficient (Nominal)		1.2 ft /kft/klb	1.35 m/km/5kN
Outside Diameter	0.322”	+ 0.005” 8.179 mm - 0.002”	+ 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	2.8 Ω/kft	9.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	2.1 Ω/kft	6.9 Ω/km
Capacitance Conductor to Armor (Maximum)	48 pF/ft	157 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

322 • 1ZATL • S75

CORROSION RESISTANT | 5/16” 8.18 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: PFA/ETFE .
ARMOR: SUPA 75 (UNS N08926)

Special Sealant is applied between armor layers.

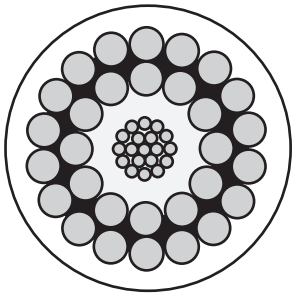
Construction Characteristics		English	Metric
Conductor – # 15 AWG, 19 x 0.0142”	dia.	0.071”	1.803 mm
Wall Thickness:		0.042”	1.067 mm
Insulation - OD:	dia.	0.155”	3.937 mm
Armor – Inner: 12 wires 0.0445”	dia.	0.233”	5.918 mm
Armor – Outer: 18 wires 0.0445”	dia.	0.322”	8.179 mm

Mechanical Characteristics		English	Metric
Weight in Air		206 lb/kft	307 kg/km
Weight in Water		176 lb/kft	262 kg/km
Minimum Breaking Strength, Ends Fixed		**10,700 lbf**	**47.60 kN**
Minimum Wire Break Strength (In/Out)		**380/380 lbf**	**1690/1690 N**
Maximum Working Load		5,885 lbf	26.18 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	18”	457 mm
Stretch Coefficient (Nominal)		1.2 ft /kft/klb	1.35 m/km/5kN
Outside Diameter	0.322”	+ 0.005” - 0.002”	8.179 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	3.1 Ω/kft	10.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	8.0 Ω/kft	26.2 Ω/km
Capacitance Conductor to Armor (Maximum)	48 pF/ft	157 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

322 • 1ZATL • S77

CORROSION RESISTANT | 5/16” 8.18 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: PFA/ETFE .
ARMOR: SUPA 77 (UNS S31277)

Special Sealant is applied between armor layers.

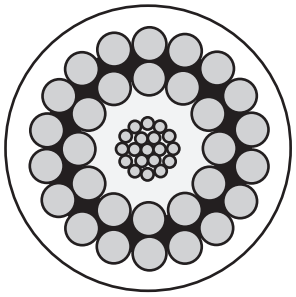
Construction Characteristics		English	Metric
Conductor – # 15 AWG, 19 x 0.0142”	dia.	0.071”	1.803 mm
Wall Thickness:		0.042”	1.067 mm
Insulation - OD:	dia.	0.155”	3.937 mm
Armor – Inner: 12 wires 0.0445”	dia.	0.233”	5.918 mm
Armor – Outer: 18 wires 0.0445”	dia.	0.322”	8.179 mm

Mechanical Characteristics		English	Metric
Weight in Air		206 lb/kft	307 kg/km
Weight in Water		176 lb/kft	262 kg/km
Minimum Breaking Strength, Ends Fixed		**11,200 lbf**	**49.82 kN**
Minimum Wire Break Strength (In/Out)		**395/395 lbf**	**1757/1757 N**
Maximum Working Load		6,160 lbf	27.40 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	18”	457 mm
Stretch Coefficient (Nominal)		1.2 ft /kft/klb	1.35 m/km/5kN
Outside Diameter	0.322”	+ 0.005” 8.179 mm - 0.002”	+ 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	3.1 Ω/kft	10.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	10.4 Ω/kft	34.1 Ω/km
Capacitance Conductor to Armor (Maximum)	48 pF/ft	157 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

322 • 1ZATL • MP35

CORROSION RESISTANT | 5/16” 8.18 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: PFA/ETFE .
ARMOR: MP35 (UNS R30035)

Special Sealant is applied between armor layers.

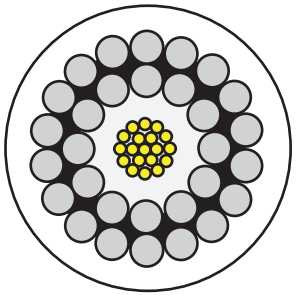
Construction Characteristics		English	Metric
Conductor – # 15 AWG, 19 x 0.0142”	dia.	0.071”	1.803 mm
Wall Thickness:		0.042”	1.067 mm
Insulation - OD:	dia.	0.155”	3.937 mm
Armor – Inner: 12 wires 0.0445”	dia.	0.233”	5.918 mm
Armor – Outer: 18 wires 0.0445”	dia.	0.322”	8.179 mm

Mechanical Characteristics		English	Metric
Weight in Air		206 lb/kft	307 kg/km
Weight in Water		176 lb/kft	262 kg/km
Minimum Breaking Strength, Ends Fixed		**11,200 lbf**	**49.82 kN**
Minimum Wire Break Strength (In/Out)		**395/395 lbf**	**1757/1757 N**
Maximum Working Load		6,160 lbf	27.40 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	18”	457 mm
Stretch Coefficient (Nominal)		1.2 ft /kft/klb	1.35 m/km/5kN
Outside Diameter	0.322”	+ 0.005” - 0.002”	8.179 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	3.1 Ω/kft	10.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	11.0 Ω/kft	36.1 Ω/km
Capacitance Conductor to Armor (Maximum)	48 pF/ft	157 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

380 • 1ZPL • HS

3/8” 9.65 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: Polypropylene.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

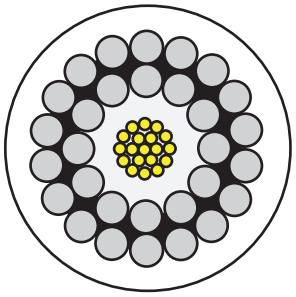
Construction Characteristics		English	Metric
Conductor – # 15 AWG, 19 x 0.0142”	dia.	0.071”	1.803 mm
Wall Thickness:		0.056”	1.422 mm
Insulation - OD:	dia.	0.183”	4.648 mm
Armor – Inner: 12 wires 0.0525”	dia.	0.275”	6.985 mm
Armor – Outer: 18 wires 0.0525”	dia.	0.380”	9.652 mm

Mechanical Characteristics		English	Metric
Weight in Air		259 lb/kft	386 kg/km
Weight in Water		218 lb/kft	324 kg/km
Minimum Breaking Strength, Ends Fixed		**17,500 lbf**	**77.84 kN**
Minimum Wire Break Strength (In/Out)		**625/625 lbf**	**2780/2780 N**
Maximum Working Load		9,625 lbf	42.81 kN
Temperature Rating (Maximum)		**300º F**	**149º C**
Suggested Minimum Sheave	dia.	21”	533 mm
Stretch Coefficient (Nominal)		1.0 ft /kft/klb	1.12 m/km/5kN
Outside Diameter	0.380”	+ 0.005” 9.65 mm - 0.002”	+ 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	2.8 Ω/kft	9.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	1.5 Ω/kft	4.9 Ω/km
Capacitance Conductor to Armor (Maximum)	40 pF/ft	131 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

380 • 1ZFTL • HS

3/8” 9.65 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: FEP/ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

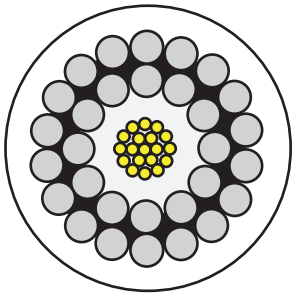
Construction Characteristics		English	Metric
Conductor – # 13 AWG, 19 x 0.0159”	dia.	0.071”	1.803 mm
Wall Thickness:		0.056”	1.422 mm
Insulation - OD:	dia.	0.183”	4.648 mm
Armor – Inner: 12 wires 0.0525”	dia.	0.275”	6.985 mm
Armor – Outer: 18 wires 0.0525”	dia.	0.380”	9.652 mm

Mechanical Characteristics		English	Metric
Weight in Air		269 lb/kft	400 kg/km
Weight in Water		227 lb/kft	338 kg/km
Minimum Breaking Strength, Ends Fixed		**17,500 lbf**	**77.84 kN**
Minimum Wire Break Strength (In/Out)		**625/625 lbf**	**2780/2780 N**
Maximum Working Load		9,625 lbf	42.81 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	21”	533 mm
Stretch Coefficient (Nominal)		1.0 ft /kft/klb	1.12 m/km/5kN
Outside Diameter	0.380”	+ 0.005” 9.65 mm - 0.002”	+ 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	2.8 Ω/kft	9.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	1.5 Ω/kft	4.9 Ω/km
Capacitance Conductor to Armor (Maximum)	40 pF/ft	131 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

380 • 1ZFTL • HSLR

3/8” 9.65 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: FEP/ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

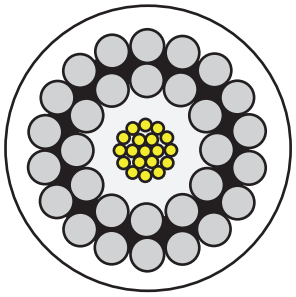
Construction Characteristics		English	Metric
Conductor – # 13 AWG, 19 x 0.0159”	dia.	0.079”	2.007 mm
Wall Thickness:		0.056”	1.422 mm
Insulation - OD:	dia.	0.183”	4.648 mm
Armor – Inner: 12 wires 0.0525”	dia.	0.275”	6.985 mm
Armor – Outer: 18 wires 0.0525”	dia.	0.380”	9.652 mm

Mechanical Characteristics		English	Metric
Weight in Air		269 lb/kft	400 kg/km
Weight in Water		227 lb/kft	338 kg/km
Minimum Breaking Strength, Ends Fixed		**17,500 lbf**	**77.84 kN**
Minimum Wire Break Strength (In/Out)		**625/625 lbf**	**2780/2780 N**
Maximum Working Load		9,625 lbf	42.81 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	21”	533 mm
Stretch Coefficient (Nominal)		1.0 ft /kft/klb	1.12 m/km/5kN
Outside Diameter	0.380”	+ 0.005” - 0.002”	9.65 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	2.3 Ω/kft	7.5 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	1.5 Ω/kft	4.9 Ω/km
Capacitance Conductor to Armor (Maximum)	44 pF/ft	144 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

425 • 1ZPL • HS

7/16” 10.80 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: Polypropylene.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

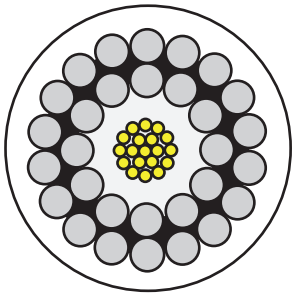
Construction Characteristics		English	Metric
Conductor – # 15 AWG, 19 x 0.0142”	dia.	0.071”	1.803 mm
Wall Thickness:		0.067”	1.702 mm
Insulation - OD:	dia.	0.205”	5.207 mm
Armor – Inner: 12 wires 0.0585”	dia.	0.308”	7.823 mm
Armor – Outer: 18 wires 0.0585”	dia.	0.425”	10.795 mm

Mechanical Characteristics		English	Metric
Weight in Air		325 lb/kft	484 kg/km
Weight in Water		273 lb/kft	406 kg/km
Minimum Breaking Strength, Ends Fixed		**22,000 lbf**	**97.86 kN**
Minimum Wire Break Strength (In/Out)		**780/780 lbf**	**3470/3470 N**
Maximum Working Load		12,100 lbf	53.82 kN
Temperature Rating (Maximum)		**300º F**	**149º C**
Suggested Minimum Sheave	dia.	24”	610 mm
Stretch Coefficient (Nominal)		0.70 ft /kft/klb	0.79 m/km/5kN
Outside Diameter	0.425”	+ 0.005” - 0.002”	10.8 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	2.8 Ω/kft	9.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	1.2 Ω/kft	3.9 Ω/km
Capacitance Conductor to Armor (Maximum)	36 pF/ft	118 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

425 • 1ZFTL • HSLR

7/16” 10.80 mm
MONOCONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: FEP/ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

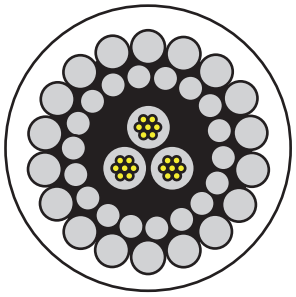
Construction Characteristics		English	Metric
Conductor – # 13 AWG, 19 x 0.0172”	dia.	0.086”	2.184 mm
Wall Thickness:		0.0595”	1.511 mm
Insulation - OD:	dia.	0.205”	5.207 mm
Armor – Inner: 12 wires 0.0585”	dia.	0.308”	7.823 mm
Armor – Outer: 18 wires 0.0585”	dia.	0.425”	10.795 mm

Mechanical Characteristics		English	Metric
Weight in Air		335 lb/kft	499 kg/km
Weight in Water		282 lb/kft	420 kg/km
Minimum Breaking Strength, Ends Fixed		**22,000 lbf**	**97.86 kN**
Minimum Wire Break Strength (In/Out)		**780/780 lbf**	**3470/3470 N**
Maximum Working Load		12,100 lbf	53.82 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	24”	610 mm
Stretch Coefficient (Nominal)		0.70 ft /kft/klb	0.79 m/km/5kN
Outside Diameter	0.425”	+ 0.005” - 0.002”	10.8 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,500 VDC	1,500 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	2.1 Ω/kft	6.9 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	1.2 Ω/kft	3.9 Ω/km
Capacitance Conductor to Armor (Maximum)	44 pF/ft	144 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

185 • 3STK • HS

HIGH STRENGTH | 3/16” 4.70 mm
MULTICONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

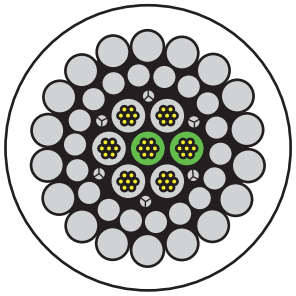
Construction Characteristics		English	Metric
Conductor – # 23 AWG, 7 x 0.0085”	dia.	0.025”	0.635 mm
Wall Thickness:		0.009”	0.229 mm
Insulation Conductors:	dia.	0.043”	1.092 mm
Insulation Jacket:	dia.	0.107“	2.718 mm
Armor – Inner: 18 wires 0.0185”	dia.	0.135”	3.429 mm
Armor – Outer: 18 wires 0.0255”	dia.	0.186”	4.724 mm

Mechanical Characteristics		English	Metric
Weight in Air		65 lb/kft	96 kg/km
Weight in Water		54.4 lb/kft	81 kg/km
Minimum Breaking Strength, Ends Fixed		**3,800 lbf**	**16.90 kN**
Minimum Wire Break Strength (In/Out)		**80/150 lbf**	**356/667 N**
Maximum Working Load		2,090 lbf	9.30 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	12”	305 mm
Stretch Coefficient (Nominal)		3.6 ft /kft/klb	4.02 m/km/5kN
Outside Diameter	0.186”	+ 0.004” 4.72 mm - 0.002”	+ 0.102 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,000 VDC	1,000 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	22.0 Ω/kft	72.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	6.4 Ω/kft	21.0 Ω/km
Capacitance Conductor to Armor (Maximum)	52 pF/ft	170 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

380 • 7SPK • HS

3/8” 9.6 mm
MULTICONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: Polypropylene.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

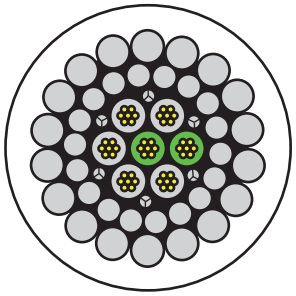
Construction Characteristics		English	Metric
Conductor – # 20 AWG, 7 x 0.0128”	dia.	0.038”	0.965 mm
Wall Thickness:		0.0135”	0.343 mm
Insulation - OD:	dia.	0.065”	1.651 mm
Armor – Inner: 18 wires 0.0375”	dia.	0.273”	6.934 mm
Armor – Outer: 18 wires 0.0525”	dia.	0.378”	9.601 mm

Mechanical Characteristics		English	Metric
Weight in Air		254 lb/kft	378 kg/km
Weight in Water		211 lb/kft	314 kg/km
Minimum Breaking Strength, Ends Fixed		**15,500 lbf**	**68.95 kN**
Minimum Wire Break Strength (In/Out)		**320/625 lbf**	**1423/2780 N**
Maximum Working Load		8,525 lbf	37.92 kN
Temperature Rating (Maximum)		**300º F**	**149º C**
Suggested Minimum Sheave	dia.	21”	533 mm
Stretch Coefficient (Nominal)		1.4 ft /kft/klb	1.57 m/km/5kN
Outside Diameter	0.378”	+ 0.005” - 0.002”	9.60 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,000 VDC	1,000 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	9.8 Ω/kft	32.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	1.8 Ω/kft	5.9 Ω/km
Capacitance Conductor to Armor (Maximum)	72 pF/ft	236 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

380 • 7STK • HS

3/8” 9.6 mm
MULTICONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

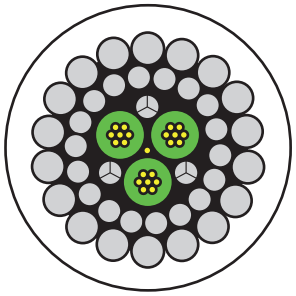
Construction Characteristics		English	Metric
Conductor – # 20 AWG, 7 x 0.0128”	dia.	0.038”	0.965 mm
Wall Thickness:		0.0135”	0.343 mm
Insulation - OD:	dia.	0.065”	1.651 mm
Armor – Inner: 18 wires 0.0375”	dia.	0.273”	6.934 mm
Armor – Outer: 18 wires 0.0525”	dia.	0.378”	9.601 mm

Mechanical Characteristics		English	Metric
Weight in Air		261 lb/kft	388 kg/km
Weight in Water		219 lb/kft	326 kg/km
Minimum Breaking Strength, Ends Fixed		**15,500 lbf**	**68.95 kN**
Minimum Wire Break Strength (In/Out)		**320/625 lbf**	**1423/2780 N**
Maximum Working Load		8,525 lbf	37.92 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	21”	533 mm
Stretch Coefficient (Nominal)		1.4 ft /kft/klb	1.57 m/km/5kN
Outside Diameter	0.378”	+ 0.005” - 0.002”	9.60 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,000 VDC	1,000 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	9.8 Ω/kft	32.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	1.8 Ω/kft	5.9 Ω/km
Capacitance Conductor to Armor (Maximum)	79 pF/ft	259 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

384 • 3DPK • HS

HIGH STRENGTH | 0.384" 9.76 mm
MULTICONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: Polypropylene.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

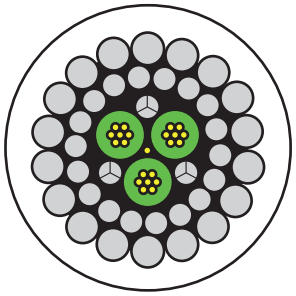
Construction Characteristics		English	Metric
Conductor – # 18 AWG, 7 x 0.0160"	dia.	0.048"	1.219 mm
Wall Thickness:		0.025"	0.635 mm
Insulation - OD:	dia.	0.098"	2.489 mm
Armor – Inner: 16 wires 0.0435"	dia.	0.287"	7.290 mm
Armor – Outer: 20 wires 0.0485"	dia.	0.384"	9.754 mm

Mechanical Characteristics		English	Metric
Weight in Air		267 lb/kft	397 kg/km
Weight in Water		221 lb/kft	329 kg/km
Minimum Breaking Strength, Ends Fixed		**16,500 lbf**	**73.40 kN**
Minimum Wire Break Strength (In/Out)		**466/580 lbf**	**2073/2580 N**
Maximum Working Load		9,075 lbf	40.37 kN
Temperature Rating (Maximum)		**300º F**	**149º C**
Suggested Minimum Sheave	dia.	20"	508 mm
Stretch Coefficient (Nominal)		1.1 ft /kft/klb	1.2 m/km/5kN
Outside Diameter	0.384"	+ 0.004" - 0.002"	9.754 mm + 0.102 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,200 VDC	1,200 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	6.4 Ω/kft	21.0 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	1.6 Ω/kft	5.2 Ω/km
Capacitance Conductor to Armor (Maximum)	54 pF/ft	177 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

384 • 3DTK • HS

HIGH STRENGTH | 0.384" 9.76 mm
MULTICONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

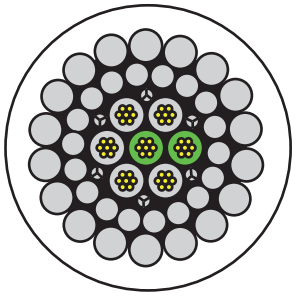
Construction Characteristics		English	Metric
Conductor – # 18 AWG, 7 x 0.0160"	dia.	0.048"	1.219 mm
Wall Thickness:		0.025"	0.635 mm
Insulation - OD:	dia.	0.098"	2.489 mm
Armor – Inner: 16 wires 0.0435"	dia.	0.287"	7.290 mm
Armor – Outer: 20 wires 0.0485"	dia.	0.384"	9.754 mm

Mechanical Characteristics		English	Metric
Weight in Air		267 lb/kft	397 kg/km
Weight in Water		221 lb/kft	329 kg/km
Minimum Breaking Strength, Ends Fixed		**16,500 lbf**	**73.40 kN**
Minimum Wire Break Strength (In/Out)		**466/580 lbf**	**2073/2580 N**
Maximum Working Load		9,075 lbf	40.37 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	20"	508 mm
Stretch Coefficient (Nominal)		2.5 ft /kft/klb	1.2 m/km/5kN
Outside Diameter	0.384"	+ 0.004" - 0.002"	9.754 mm + 0.102 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,200 VDC	1,200 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	6.4 Ω/kft	21.0 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	1.6 Ω/kft	5.2 Ω/km
Capacitance Conductor to Armor (Maximum)	60 pF/ft	197 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

426 • 7SPK • HS

7/16” 10.82 mm
MULTICONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: Polypropylene.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

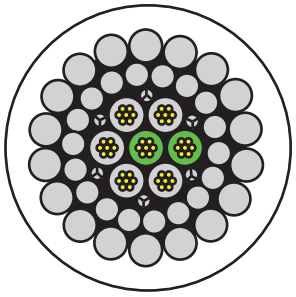
Construction Characteristics		English	Metric
Conductor – # 20 AWG, 7 x 0.0128”	dia.	0.038”	0.965 mm
Wall Thickness:		0.018”	0.457 mm
Insulation - OD:	dia.	0.074”	1.880 mm
Armor – Inner: 18 wires 0.0425”	dia.	0.308”	7.823 mm
Armor – Outer: 18 wires 0.059”	dia.	0.426”	10.820 mm

Mechanical Characteristics		English	Metric
Weight in Air		310 lb/kft	461 kg/km
Weight in Water		255 lb/kft	379 kg/km
Minimum Breaking Strength, Ends Fixed		**20,000 lbf**	**88.96 kN**
Minimum Wire Break Strength (In/Out)		**415/780 lbf**	**1846/3470 N**
Maximum Working Load		11,000 lbf	48.93 kN
Temperature Rating (Maximum)		**300º F**	**149º C**
Suggested Minimum Sheave	dia.	24”	610 mm
Stretch Coefficient (Nominal)		0.75 ft /kft/klb	0.84 m/km/5kN
Outside Diameter	0.426”	+ 0.005” / - 0.002”	10.82 mm + 0.127 mm / - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,000 VDC	1,000 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	9.8 Ω/kft	32.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	1.3 Ω/kft	4.3 Ω/km
Capacitance Conductor to Armor (Maximum)	57 pF/ft	187 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

426 • 7SFTK • HS

7/16” 10.82 mm
MULTICONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: FEP/ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

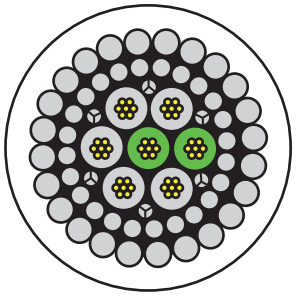
Construction Characteristics		English	Metric
Conductor – # 20 AWG, 7 x 0.0128”	dia.	0.038”	0.965 mm
Wall Thickness:		0.018”	0.457 mm
Insulation - OD:	dia.	0.074”	1.880 mm
Armor – Inner: 18 wires 0.0425”	dia.	0.308”	7.823 mm
Armor – Outer: 18 wires 0.059”	dia.	0.426”	10.820 mm

Mechanical Characteristics		English	Metric
Weight in Air		322 lb/kft	479 kg/km
Weight in Water		266 lb/kft	396 kg/km
Minimum Breaking Strength, Ends Fixed		**20,000 lbf**	**88.96 kN**
Minimum Wire Break Strength (In/Out)		**415/770 lbf**	**1846/3470 N**
Maximum Working Load		11,000 lbf	48.93 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	24”	610 mm
Stretch Coefficient (Nominal)		0.75 ft /kft/klb	0.84 m/km/5kN
Outside Diameter	0.426”	+ 0.005” / - 0.002”	10.82 mm + 0.127 mm / - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,000 VDC	1,000 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	9.8 Ω/kft	32.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	1.3 Ω/kft	4.3 Ω/km
Capacitance Conductor to Armor (Maximum)	58 pF/ft	190 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

464 • 7RPK

15/32” 11.79 mm
MULTICONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: Polypropylene.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

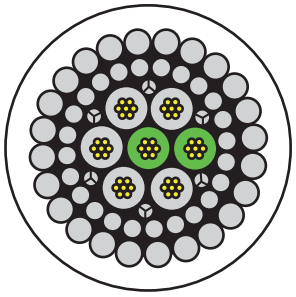
Construction Characteristics		English	Metric
Conductor – # 20 AWG, 7 x 0.0128”	dia.	0.038”	0.965 mm
Wall Thickness:		0.029”	0.737 mm
Insulation - OD:	dia.	0.096”	2.438 mm
Armor – Inner: 24 wires 0.0390”	dia.	0.365”	9.271 mm
Armor – Outer: 24 wires 0.0495”	dia.	0.464”	11.786 mm

Mechanical Characteristics		English	Metric
Weight in Air		321 lb/kft	478 kg/km
Weight in Water		254 lb/kft	378 kg/km
Minimum Breaking Strength, Ends Fixed		**20,000 lbf**	**88.96 kN**
Minimum Wire Break Strength (In/Out)		**320/560 lbf**	**1557/2491 N**
Maximum Working Load		11,000 lbf	48.93 kN
Temperature Rating (Maximum)		**300º F**	**149º C**
Suggested Minimum Sheave	dia.	20”	508 mm
Stretch Coefficient (Nominal)		0.77 ft /kft/klb	0.87 m/km/5kN
Outside Diameter	0.464”	+ 0.005” 11.786 mm - 0.002”	+ 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,200 VDC	1,200 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	9.8 Ω/kft	32.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	1.3 Ω/kft	4.3 Ω/km
Capacitance Conductor to Armor (Maximum)	41 pF/ft	134 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

464 • 7RFTK

15/32” 11.79 mm
MULTICONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: FEP/ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

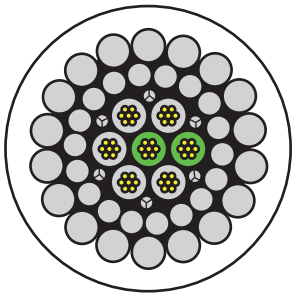
Construction Characteristics		English	Metric
Conductor – # 20 AWG, 7 x 0.0128”	dia.	0.038”	0.965 mm
Wall Thickness:		0.023”	0.737 mm
Insulation - OD:	dia.	0.096”	2.438 mm
Armor – Inner: 24 wires 0.0390”	dia.	0.365”	9.271 mm
Armor – Outer: 24 wires 0.0495”	dia.	0.464”	11.786 mm

Mechanical Characteristics		English	Metric
Weight in Air		341 lb/kft	507 kg/km
Weight in Water		274 lb/kft	408 kg/km
Minimum Breaking Strength, Ends Fixed		**20,000 lbf**	**88.96 kN**
Minimum Wire Break Strength (In/Out)		**320/560 lbf**	**1557/2491 N**
Maximum Working Load		11,000 lbf	48.93 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	20”	508 mm
Stretch Coefficient (Nominal)		0.77 ft /kft/klb	0.87 m/km/5kN
Outside Diameter	0.464”	+ 0.005” 11.786 mm - 0.002”	+ 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,200 VDC	1,200 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	9.8 Ω/kft	32.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	1.3 Ω/kft	4.3 Ω/km
Capacitance Conductor to Armor (Maximum)	42 pF/ft	138 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

474 • 7SPK • HS

HIGH STRENGTH SLAMMER | 12.04 mm
MULTICONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: Polypropylene.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

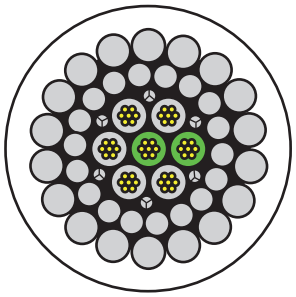
Construction Characteristics		English	Metric
Conductor – # 20 AWG, 7 x 0.0128”	dia.	0.038”	0.965 mm
Wall Thickness:		0.023”	0.584 mm
Insulation Conductors - OD:	dia.	0.084”	2.134 mm
Armor – Inner: 18 wires 0.0470”	dia.	0.343”	8.712 mm
Armor – Outer: 18 wires 0.0655”	dia.	0.474”	12.040 mm

Mechanical Characteristics		English	Metric
Weight in Air		377 lb/kft	561 kg/km
Weight in Water		311 lb/kft	463 kg/km
Minimum Breaking Strength, Ends Fixed		**24,500 lbf**	**109.0 kN**
Minimum Wire Break Strength (In/Out)		**505/940 lbf**	**2246/4181 N**
Maximum Working Load		13,475 lbf	60.0 kN
Temperature Rating (Maximum)		**300º F**	**149º C**
Suggested Minimum Sheave	dia.	27”	686 mm
Stretch Coefficient (Nominal)		0.61 ft /kft/klb	0.69 m/km/5kN
Outside Diameter	0.474”	+ 0.005” - 0.002”	12.04 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,100 VDC	1,100 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	9.8 Ω/kft	32.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	1.1 Ω/kft	3.6 Ω/km
Capacitance Conductor to Armor (Maximum)	48 pF/ft	157 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

474 • 7SFTK • HS

HIGH STRENGTH SLAMMER | 12.04 mm
MULTICONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: FEP/ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers..

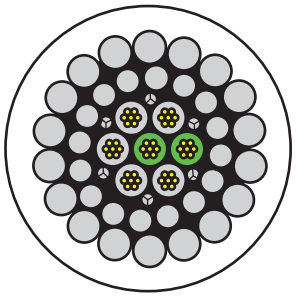
Construction Characteristics		English	Metric
Conductor – # 20 AWG, 7 x 0.0128”	dia.	0.038”	0.965 mm
Wall Thickness:		0.023”	0.584 mm
Insulation Conductors - OD:	dia.	0.084”	2.134 mm
Armor – Inner: 18 wires 0.0470”	dia.	0.343”	8.712 mm
Armor – Outer: 18 wires 0.0655”	dia.	0.474”	12.040 mm

Mechanical Characteristics		English	Metric
Weight in Air		392 lb/kft	583 kg/km
Weight in Water		326 lb/kft	485 kg/km
Minimum Breaking Strength, Ends Fixed		**24,500 lbf**	**109.0 kN**
Minimum Wire Break Strength (In/Out)		**505/965 lbf**	**2246/4293 N**
Maximum Working Load		13,475 lbf	60.0 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	27”	686 mm
Stretch Coefficient (Nominal)		0.61 ft /kft/klb	0.69 m/km/5kN
Outside Diameter	0.474”	+ 0.005” - 0.002”	12.04 mm + 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,100 VDC	1,100 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	9.8 Ω/kft	32.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	1.1 Ω/kft	3.6 Ω/km
Capacitance Conductor to Armor (Maximum)	48 pF/ft	157 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

484 • 7DFTK • HS

HIGH STRENGTH SLAMMER | 12.30 mm
MULTICONDUCTOR



CONDUCTOR: Copper, Water Blocked.
INSULATION: FEP/ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.

Construction Characteristics		English	Metric
Conductor – # 20 AWG, 7 x 0.0128”	dia.	0.038”	0.965 mm
Wall Thickness:		0.022”	0.559 mm
Insulation Conductors - OD:	dia.	0.082”	2.083 mm
Armor – Inner: 20 wires 0.046”	dia.	0.348”	8.839 mm
Armor – Outer: 20 wires 0.062”	dia.	0.484”	12.294 mm

Mechanical Characteristics		English	Metric
Weight in Air		409 lb/kft	609 kg/km
Weight in Water		336 lb/kft	500 kg/km
Minimum Breaking Strength, Ends Fixed		**27,600 lbf**	**122.77 kN**
Minimum Wire Break Strength (In/Out)		**650/1071 lbf**	**2891/4764 N**
Maximum Working Load		15,180 lbf	67.52 kN
Temperature Rating (Maximum)		**500º F**	**260º C**
Suggested Minimum Sheave	dia.	27”	686 mm
Stretch Coefficient (Nominal)		0.61 ft /kft/klb	0.69 m/km/5kN
Outside Diameter	0.484”	+ 0.006” - 0.003”	12.294 mm + 0.152 mm - 0.076 mm

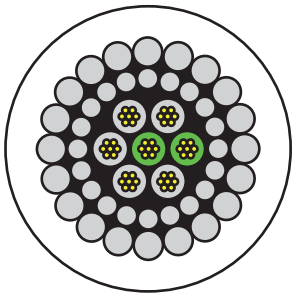
Electrical Characteristics	English	Metric
Voltage Rating	1,100 VDC	1,100 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	9.8 Ω/kft	32.2 Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	1.0 Ω/kft	3.3 Ω/km
Capacitance Conductor to Armor (Maximum)	50 pF/ft	164 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

490 • 7DFTK • HS

HIGH STRENGTH SLAMMER | 0.490" 12.45 mm
MULTICONDUCTOR

CONDUCTOR: Copper, Water Blocked.
INSULATION: FEP/ETFE.
ARMOR: Galvanized high strength steel (GEIPS) preformed and coated with a corrosion preventative lubricant compound.

Special Sealant is applied between armor layers.
Special Jacket is applied for drum crash protection.

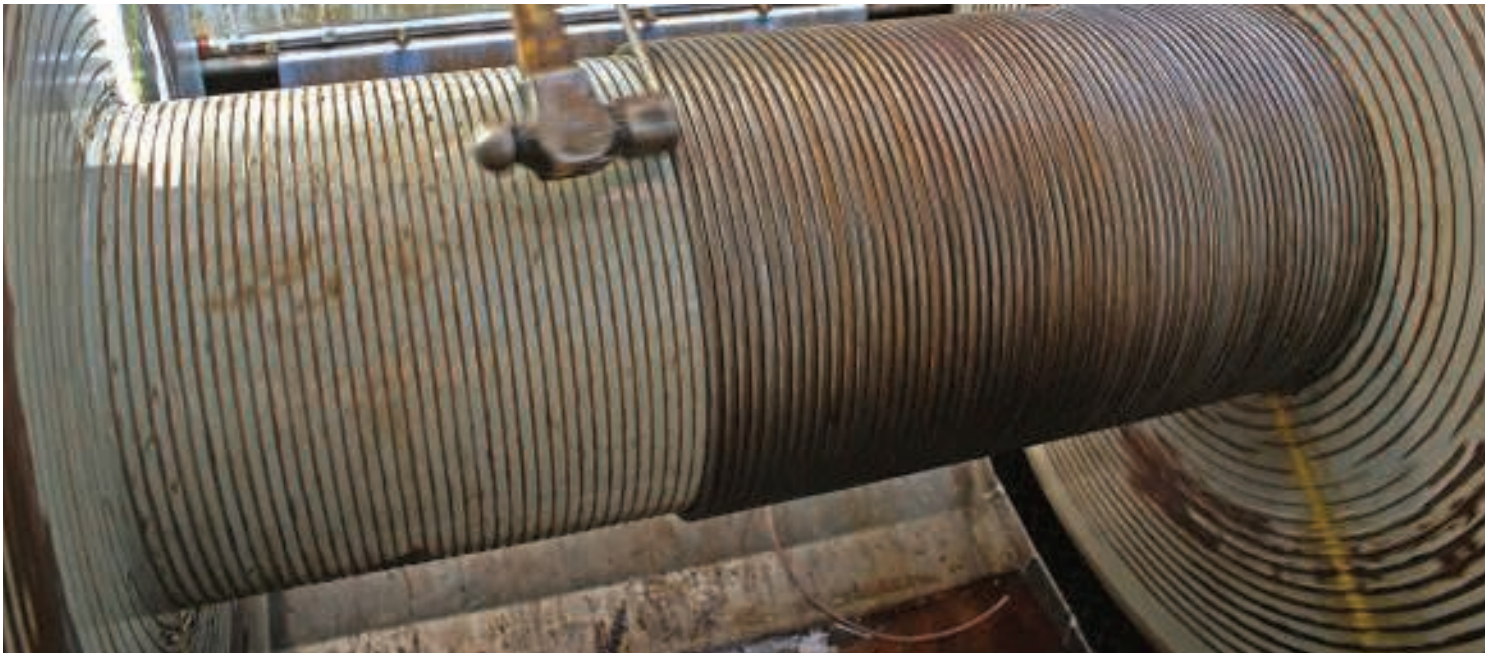


Construction Characteristics			English	Metric
Conductor – # 20 AWG, 7 x 0.0128”		dia.	0.038”	0.965 mm
Wall Thickness:			0.023”	0.584 mm
Insulation Conductors	FEP/ETFE	dia.	0.084”	2.134 mm
Insulation Jacket	ETFE	dia.	0.295”	7.493 mm
Armor – Inner: 20 wires 0.046”		dia.	0.366”	9.296 mm
Armor – Outer: 20 wires 0.062”		dia.	0.490”	12.446 mm

Mechanical Characteristics		English	Metric
Weight in Air		405 lb/kft	602 kg/km
Weight in Water		325 lb/kft	483 kg/km
Minimum Breaking Strength, Ends Fixed		28,000 lbf	124.55 kN
Minimum Wire Break Strength (In/Out)		485/870 lbf	2157/3870 N
Maximum Working Load		15,400 lbf	68.5 kN
Temperature Rating (Maximum)		500º F	260º C
Suggested Minimum Sheave	dia.	25”	635 mm
Stretch Coefficient (Nominal)		0.60 ft /kft/klb	0.67 m/km/5kN
Outside Diameter	0.490”	+ 0.005” 12.45 mm - 0.002”	+ 0.127 mm - 0.051 mm

Electrical Characteristics	English	Metric
Voltage Rating	1,200 VDC	1,200 VDC
D.C. Conductor Resistance at 68º F (20º C) (Maximum)	9.8Ω/kft	32.2Ω/km
D.C. Armor Resistance at 68º F (20º C) (Maximum)	1.1Ω/kft	3.6Ω/km
Capacitance Conductor to Armor (Maximum)	48 pF/ft	157 pF/m
Insulation Resistance (Minimum) @ 500 VDC	50,000 MΩ/kft	15,000 MΩ/km

Cable treatment and care **for longer duration**

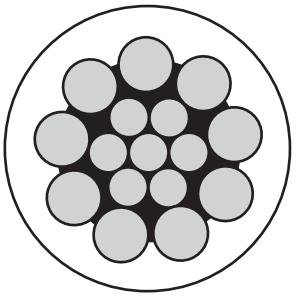


1. Season the cables on vertical wells letting the cable rotating freely.
2. Check your cable every time you get out of the hole.
3. Keep proper oil on the wireline every time.
4. Run slow speed into the well and getting out of it.
5. Tighten your cable continuosly in a service center, always check your cable for any looseness.
6. When reheading always check for squared armors, need to cut off until armors are round.
7. **80/120 Rule.** The tension going into the well should be never less than 80% of total weight. The tension coming out of the well should never exceed more than 120% of total weight.
8. Keep accurate log book to keep track of the cable jobs and services.
9. Use recommended sheave sizes.

Swabline
Well service line

PRODUCED PER API 9A SPECIFICATIONS

CABLE SPECIFICATION
CONSTRUCTION 1X16 SEALE

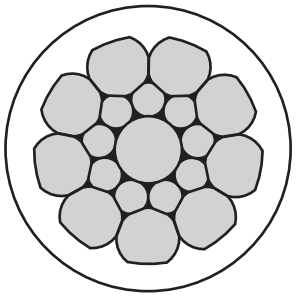


Nominal Diameter	3/16”	7/32”	1/4”	5/16”
Construction	1 x 16 (9/6/1)	1 x 16 (9/6/1)	1 x 16 (9/6/1)	1 x 16 (9/6/1)
INNER ARMOR CHARACTERISTICS				
Inner Lay Direction	Left	Left	Left	Left
Outer Lay Direction	Right	Right	Right	Right
Final Diameter	0.188” -0 + 2 %	0.219” -0 + 2 %	0.250” -0 + 2 %	0.316” -0 + 2 %
Inner Diameter	0.100”	0.118”	0.130”	0.160”
Lay Lenght	1.080”	1.274”	1.040”	1.28”
Central Wire Diameter	0.036” Drawn Galv. IPS	0.042” Drawn Galv. IPS	0.046” Drawn Galv. IPS	0.056” Drawn Galv. IPS
Internal Wires Diameter	0.032” Drawn Galv. IPS	0.038” Drawn Galv. IPS	0.042” Drawn Galv. IPS	0.052” Drawn Galv. IPS
External Wires Diameter	0.047” Drawn Galv. IPS	0.054” Drawn Galv. IPS	0.062” Drawn Galv. IPS	0.078” Drawn Galv. IPS
MECHANICAL CHARACTERISTICS				
Breaking Strength (klbs)	4.50	6.00	7.30	11.34
Max. Suggested Working Tension (klbs)	2.25	3.00	3.65	5.67
Weight (kg/mt)	0.112	0.146	0.198	0.311
Weight (lb/ft)	0.075	0.098	0.133	0.209
Stretch Coeficient (ft/ktf/klb)	2.85	1.80	1.70	1.10

Swabline
Well service line

PRODUCED PER API 9A SPECIFICATIONS

COMPACTED
CABLE SPECIFICATION
CONSTRUCTION 1X19 C SEALE



Nominal Diameter	**3/16”**	**7/32”**	**1/4”**	**5/16”**	**3/8”**	**7/16”**
Construction	1 x 19 (9/9/1)	1 x 19 (9/9/1)	1 x 19 (9/9/1)	1 x 19 (9/9/1)	1 x 19 (9/9/1)	1 x 19 (9/9/1)
INNER ARMOR CHARACTERISTICS						
Inner Lay Direction	Right	Right	Right	Right	Right	Right
Outer Lay Direction	Right Compacted	Right Compacted	Right Compacted	Right Compacted	Right Compacted	Right Compacted
Final Diameter	0.188” -0 + 2 %	0.219” -0 + 2 %	0.250” -0 + 2 %	0.312” -0 + 2 %	0.375” -0 + 2 %	0.437” -0 + 2 %
Diameter Before Compacted	0.209”	0.243”	0.275”	0.342”	0.408”	0.469”
Lay Lenght	1.982”	2.310”	2.614”	3.247”	3.878”	4.340”
Central Wire Diameter	0.060” Drawn Galv. IPS	0.068” Drawn Galv. IPS	0.078” Drawn Galv. IPS	0.096” Drawn Galv. IPS	0.116” Drawn Galv. IPS	0.132” Drawn Galv. IPS
Internal Wires Diameter	0.029” Drawn Galv. IPS	0.034” Drawn Galv. IPS	0.038” Drawn Galv. IPS	0.048” Drawn Galv. IPS	0.056” Drawn Galv. IPS	0.065” Drawn Galv. IPS
External Wires Diameter	0.051” Drawn Galv. IPS	0.060” Drawn Galv. IPS	0.068” Drawn Galv. IPS	0.084” Drawn Galv. IPS	0.101” Drawn Galv. IPS	0.116” Drawn Galv. IPS
Breaking Strength (klbs)	6.40	8.60	11.40	16.20	23.50	31.80
Max. Suggested Working Tension (klbs)	3.80	4.30	6.70	8.10	11.75	15.90
Weight (kg/mt)	0.141	0.193	0.247	0.380	0.543	0.718
Weight (lb/ft)	0.095	0.130	0.166	0.255	0.365	0.482
Stretch Coeficient (ft/ktf/klb)	2.17	1.28	0.87	0.43	0.22	0.19

Slickline
Well measuring lines

PRODUCED PER API 9A SPECIFICATIONS

CARBON STEEL **WELL MEASURING WIRE**

IPS

Diameter	Deacero	Suggested Sheave Diameter	Diameter Tolerance	Torsions (min)	Min. Breaking Strength
	(lbs/mtf)	(")		(")	(lbs)
0.072	13.9	13	+/- .001	30	961
0.082	18.0	16	+/- .001	27	1239
0.092	22.6	18	+/- .001	24	1547
0.108	31.2	21	+/- .001	20	2109
0.125	41.8	25	+/- .001	17	2794

EIPS

Diameter	Deacero	Suggested Sheave Diameter	Diameter Tolerance	Torsions (min)	Min. Breaking Strength
	(lbs/mtf)	(")		(")	(lbs)
0.072	13.9	13	+/- .001	26	1150
0.082	18.0	16	+/- .001	23	1460
0.092	22.6	18	+/- .001	22	1830
0.108	31.2	21	+/- .001	19	2490
0.125	41.8	25	+/- .001	16	3300
0.140	52.4	29	+/- .001	14	4400
0. 160	68.4	32	+/- .001	12	5120

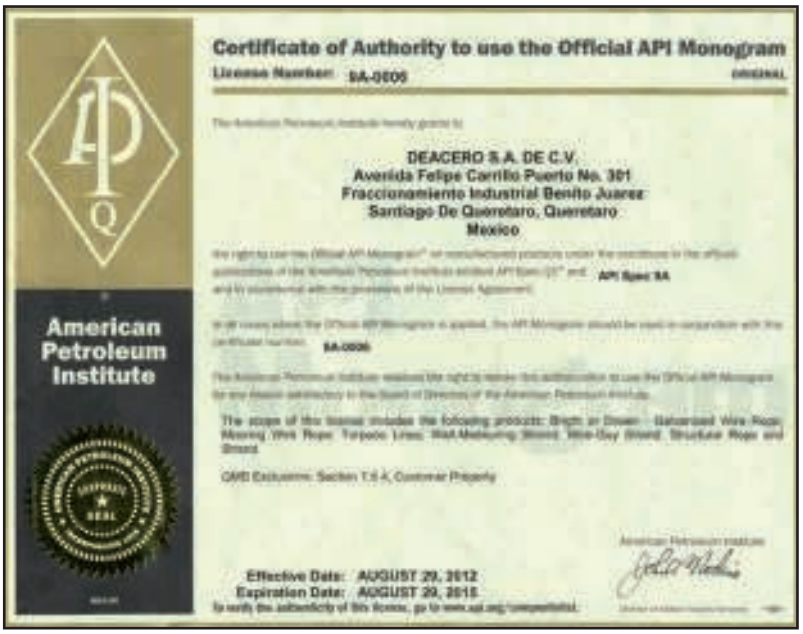
EEIPS

Diameter	Deacero	Suggested Sheave Diameter	Diameter Tolerance	Torsions (min)	Min. Breaking Strength
	(lbs/mtf)	(")		(")	(lbs)
0.125	41.8	26	+/- .001	14	3700

Suggested sheave diameter values are recommended to extend the life of the wire however, a larger sheave decreases bending stress and will increase the Slickline's useful life.

Certificate of **assessment**

Deacero meets and exceeds the international manufacturing standards in all its processes. All wireline products are certified under API Spec 9A and NMX-CC-9001-IMNC-2008.



Certificate of Authority to use the Official API Monogram

License Number: 9A-0005

DEACERO S.A. DE C.V.
Avenida Felipe Carrillo Puerto No. 301
Fraccionamiento Industrial Benito Juarez
Santiago De Queretaro, Queretaro
Mexico

API Spec 9A

9A-0005

American Petroleum Institute

Effective Date: AUGUST 29, 2012
Expiration Date: AUGUST 29, 2015

Certificate: American Petroleum Institute
Meets the requirements of: API Spec 9A

cim

CERTIFICATE OF ASSESSMENT

The Present Registry Certifies that:

DEACERO, S.A. DE C.V.
PLANTA INDUSTRIALES QUERETARO

Av. Felipe Carrillo Puerto No. 301
Fracc. Industrial Benito Juárez C.P. 76130
Querétaro, Qro.

It has demonstrated that the Management System meets the requirements of the international Standard:

NMX-CC-9001-IMNC-2008
ISO 9001:2008

For its Quality Management System under the following scope:

Design and Manufacture Wire Rope and Electromechanical Cable

In name of Organismo de Tercera Parte, S.A. de C.V.
Certificación Internacional México®

Certificate: CIM
Meets the requirements of: ISO 9001:2008

Warranty

Deacero warrants that all of its electromechanical cable purchased from an authorized dealer or contractor will be free from defects in materials or workmanship. Deacero also guarantees that all of its electromechanical cable will meet published breaking strengths and electrical characteristics.

The Purchaser has the obligation to indicate the environmental conditions under which the cable will be used so the authorized dealer or contractor can supply the correspondent electromechanical cable. Failure to do so will cancel this warranty.

This warranty is given by Deacero subject to the following conditions:

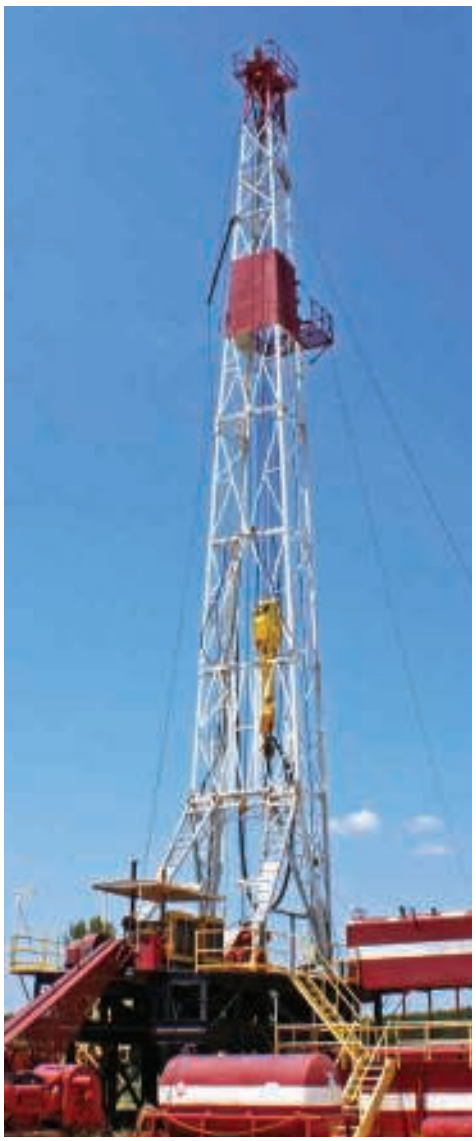
1. Published breaking strength or electrical characteristics apply only to new, unused electro-mechanical cable, and when the mechanical equipment on which such products are used is properly designed and maintained.

2. The electromechanical cables must be stored, handled, used and maintained, and properly inspected from time to time during the period of use.

3. The products must be installed by a qualified company.

Deacero may at its own option within a reasonable time either repair or replace the Products, or issue a Credit for any such Products in the amount of the original invoice price. Seller's obligation shall be limited solely to repair or replacement of the Products and does not include freight, removal, and installation charges. This warranty is strictly limited to the value of the product supplied.

The foregoing warranty is exclusive and in lieu of all other warranties, expressed or implied, including but not limited to, implied warranties of merchantability or fitness for particular pur-pose. In no event will Deacero be liable for any lost profits or for any direct, indirect, incidental, consequential, punitive or other special damages arising out of or related to its products regardless of whether such damages are sought based on causes of action sounding in tort, contract, negligence, strict liability or breach of warranty.



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