

# WANDA 450-FLAT ESP CABLE

## DESCRIPTION

BARE SOLID COPPER CONDUCTOR,  
EPDM INSULATION, LEAD SHEATH ,  
FIBER TAPE COMPLETELY COVERED  
THE SHEATH, GALVANIZED STEEL  
(SS OR MONEL)ARMOR



## STANDARD

IEEE1018, API RP11S5, API RP 11S6

## PACKING

ALL STEEL REELS, WOODEN COVER  
OUTSIDE. CABLE LENGTH TO MEET  
CUSTOMER'S REQUIREMENTS.

## CABLE SPECIFICATION AND PARAMETERS

NO.	VOLTAGE RATING (KV)	CONDUCTOR		NOMINAL CONDUCTOR OD		INSULATION OD		LEAD SHEATH OD		ARMOR	MAX CABLE DIMENSION		NOMINAL WEIGHT (APPROXIMATE)	
		AWG	mm <sup>2</sup>	inch	mm	inch	mm	inch	mm		inch	mm	lbs/ft	kg/m
1	5KV	4	20	0.20	5.19	0.373	9.48	0.441	11.20	GAL.STEEL TAPE	0.592x1.506	15.0x38.3	1.48	2.2
2	5KV	2	33	0.26	6.54	0.427	10.80	0.494	12.60	GAL.STEEL TAPE	0.646x1.666	16.4x42.3	1.89	2.8
3	5KV	1	42	0.29	7.34	0.458	11.64	0.526	13.40	GAL.STEEL TAPE	0.677x1.761	17.2x44.7	2.15	3.2

# WANDA 450-FLAT ESP CABLE SPECIFICATION

**CONSTRUCTION:** FLAT/SOL BARE COPPER/2 AWG/5KV/EPDM/LEAD SHEATH/FIBER TAPE/ GALV./450°F  
※ CONDUCTOR CAN BE TINNED OR BARE

1. CONDUCTOR: 2AWG SOLID BC MAX. DIA=0.26" 6.54mm

2. INSULATION: EPDM,HIGH DIELECTRIC STRENGTH,5KV MAX. DIA=0.427" 10.80 mm  
0.075" MINIMUM AVG WALL THICKNESS  
0.067" MINIMUM AVG WALL THICKNESS AT ANY POINT

3. LEAD SHEATH: LEAD,FATIGUE RESISTANT,MEETS ASTM B-29  
0.030" MINIMUM AVG WALL THICKNESS  
0.024"MINIMUM AVG WALL THICKNESS AT ANY POINT  
MAX. DIAMETER OVER LEAD SHEATH DIA=0.494" 12.60 mm

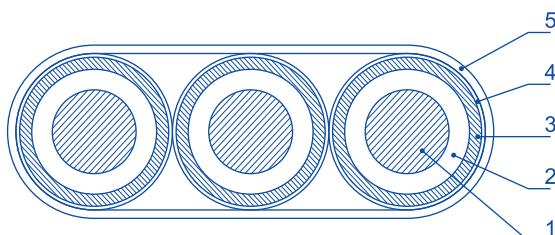
4. TAPES: PROTECTIVE FIBER TAPE  
TO PROTECT THE LEAD SHEATH FROM MECHANICAL ATTACK AND TO  
PROVIDE ADDITIONAL CONTAINMENT TO THE CABLE PHASES

BEDDING TAPE SHALL BE TIGHTLY WRAPPED TO PROTECT LEAD SHEATH  
DURING THE ARMORING OPERATION. PROVIDES 100% PROTECTION TO  
THE LEAD SHEATH

5. ARMOR: GALVANIZED STEEL ARMOR, 0.02" THICKNESS  
MAX. DIAMETER OVER ARMOR 0.646" X 1.666" 16.4mmx42.3mm  
NOMINAL WEIGHT PER FOOT

**TEMPERATURE:** TEMPERATURE RATING 450-LEAD SHEATH -40°C TO 232°C  
-40°F TO 450°F

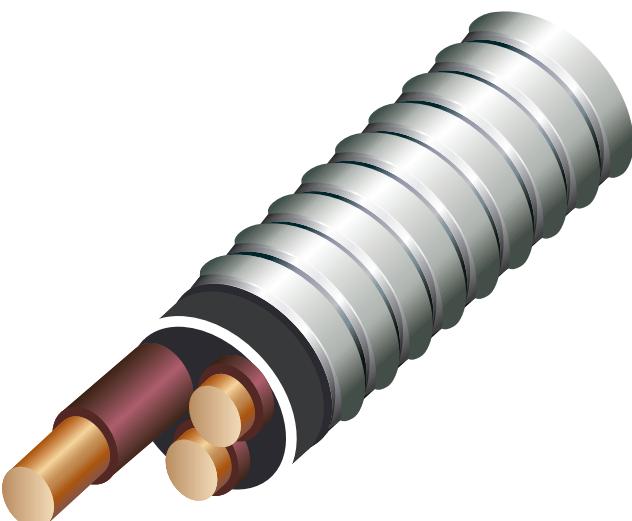
**TESTED:** IEEE1018,API RP 11S5,API RP 11S6 AND WANDA SPECIFICATIONS  
CONDUCTOR RESISTANCE=MAX.0.566Ω/KM@20°C  
INSULATION RESISTANCE=899MΩ.KM@15.6°C  
DC TEST(5MIN.@35KV)  
MAX. DC LEAKAGE=0.100 μAmp/kft/kV



# WANDA 450-ROUND ESP CABLE

## DESCRIPTION

SOL BARE COPPER, EPDM INSULATION,  
LEAD SHEATH , FIBER TAPE COMPLETELY  
COVERED THE SHEATH, COLLECTIVE  
JACKET, GALVANIZED STEEL  
(SS OR MONEL) ARMOR



## STANDARD

IEEE1018, API RP11S5, API RP 11S6

## PACKING

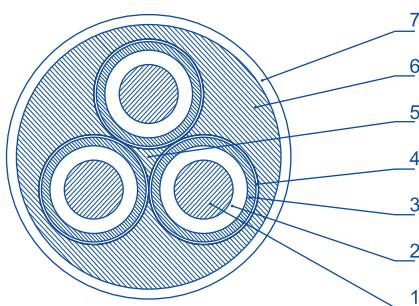
STEEL REELS, WOODEN COVER OUTSIDE.  
CABLE LENGTH TO MEET CUSTOMER'S  
REQUIREMENTS.

## CABLE SPECIFICATION AND PARAMETERS

NO.	VOLTAGE RATING (KV)	CONDUCTOR		NOMINAL CONDUCTOR OD		INSULATION OD		LEAD SHEATH OD		JACKET OD		ARMOR	MAX CABLE OD		NOMINAL WEIGHT (APPROXIMATE)	
		AWG	mm <sup>2</sup>	inch	mm	inch	mm	inch	mm	inch	mm		inch	mm	lbs/ft	kg/m
1	5KV	4	20	0.20	5.19	0.373	9.48	0.47	11.90	1.15	29.10	GALSTEEL TAPE	1.248	31.7	2.0	3.0
2	5KV	2	33	0.26	6.54	0.427	10.80	0.52	13.20	1.26	32.10	GALSTEEL TAPE	1.36	34.5	2.4	3.6
3	5KV	1	42	0.29	7.34	0.458	11.64	0.55	14.00	1.40	35.60	GALSTEEL TAPE	1.527	38.8	2.7	4.0

# **WANDA 450-ROUND+LEAD ESP CABLE SPECIFICATION**

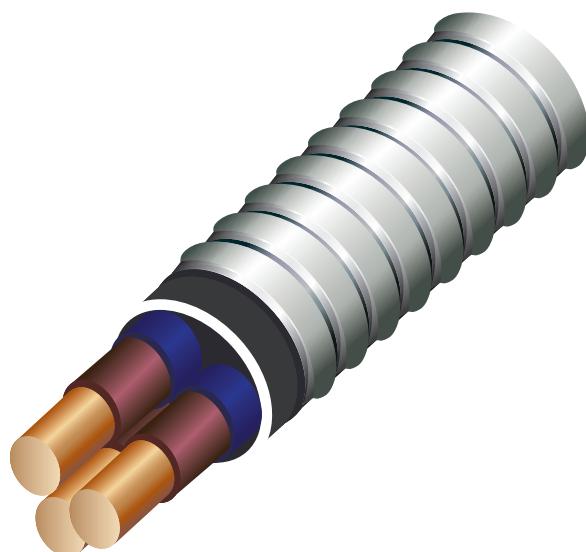
<b>CONSTRUCTION :</b>	ROUND/ SOL BARE COPPER / 4AWG / 5KV / EPDM/ (LEAD/EPDM)/BARRIER/GALV./450°F ※ CONDUCTOR CAN BE TINNED OR BARE
<b>1. CONDUCTOR :</b>	4AWG SOLID BC DIA=0.204" 5.19mm
<b>2. INSULATION :</b>	EPDM,HIGH DIELECTRIC STRENGTH,5KV MAX. DIA=0.374" 9.50mm 0.075" MINIMUM AVG WALL THICKNESS 0.067" MINIMUM AVG WALL THICKNESS AT ANY POINT
<b>3. LEAD SHEATH :</b>	LEAD,FATIGUE RESISTANT,MEETS ASTM B-29 0.039" MINIMUM AVG WALL THICKNESS 0.031" MINIMUM AVG WALL THICKNESS AT ANY POINT MAX. DIAMETER OVER LEAD SHEATH DIA=0.469" 11.90mm
<b>4. TAPES :</b>	PROTECTIVE FIBER TAPE TO PROTECT THE LEAD SHEATH FROM MECHANICAL ATTACK AND TO PROVIDE ADDITIONAL CONTAINMENT TO THE CABLE PHASES
<b>5. FILLER :</b>	ELASTIC EPDM MATERIAL FILLER
<b>6. COLLECTIVE JACKET :</b>	EPDM,HIGH DIELECTRIC STRENGTH,5KV MAX. DIA=1.146" 29.10mm 0.060" MINIMUM AVG WALL THICKNESS 0.048" MINIMUM AVG WALL THICKNESS AT ANY POINT
<b>7. ARMOR :</b>	GALVANIZED STEEL ARMOR, 0.025" THICKNESS MAX. DIAMETER OVER ARMOR DIA=1.248" 31.70mm
<b>TEMPERATURE:</b>	TEMPERATURE RATING 450-LEAD SHEATH -40°C TO 232°C -40°F TO 450°F
<b>TESTED:</b>	IEEE1018,API RP 11S5,API RP 11S6 AND WANDA SPECIFICATIONS CONDUCTOR RESISTANCE=MAX.0.873Ω/KM@20°C INSULATION RESISTANCE=1355MΩ.KM@15.6°C DC TEST(5MIN.@35KV) MAX. DC LEAKAGE=0.100μAmp/kft/kV



# WANDA 400-ROUND ESP CABLE

## DESCRIPTION

SOL BARE COPPER, EPDM INSULATION,  
FEP AS SECOND INSULATION  
TO BETTER CABLE ELECTRICAL PROPERTY,  
COLLECTIVE JACKET, GALVANIZED STEEL  
(SS OR MONEL)ARMOR



## STANDARD

IEEE1018, API RP11S5, API RP 11S6

## PACKING

STEEL REELS, WOODEN COVER OUTSIDE.  
CABLE LENGTH TO MEET CUSTOMER'S  
REQUIREMENTS.

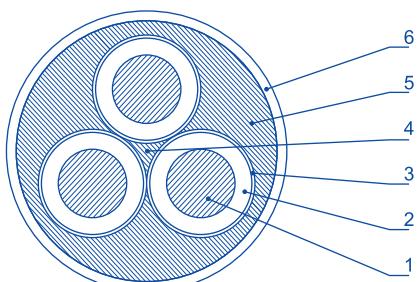
## CABLE SPECIFICATION AND PARAMETERS

NO.	VOLTAGE RATING (KV)	CONDUCTOR		NOMINAL CONDUCTOR OD		INSULATION OD		FEP OD		JACKET OD		ARMOR	MAX CABLE OD		NOMINAL WEIGHT (APPROXIMATE)	
		AWG	mm <sup>2</sup>	inch	mm	inch	mm	inch	mm	inch	mm		inch	mm	lbs/ft	kg/m
1	5KV	4	20	0.20	5.19	0.37	9.46	0.39	10.00	1.04	26.5	GALSTEEL TAPE	1.2	31.0	1.26	1.9
2	5KV	2	33	0.26	6.54	0.43	10.85	0.45	11.45	1.16	29.5	GALSTEEL TAPE	1.3	34.0	1.62	2.4
3	5KV	1	42	0.29	7.35	0.46	11.8	0.49	12.40	1.20	30.5	GALSTEEL TAPE	1.4	36.5	1.75	2.6

# WANDA 400-ROUND ESP CABLE SPECIFICATION

**CONSTRUCTION:** ROUND/ SOL COPPER / 2AWG / 5KV / EPDM / EPDM / BARRIER/ GALV. / 400°F  
※ CONDUCTOR CAN BE TINNED OR BARE

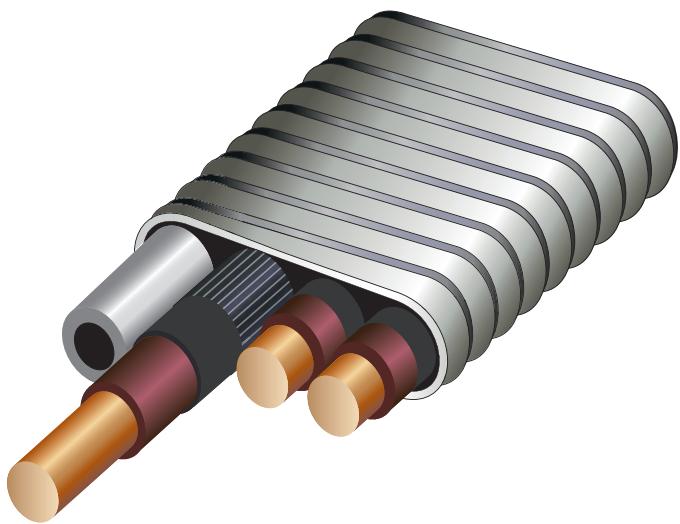
1. CONDUCTOR :	2AWG SOLID BC	DIA=0.260" 6.54mm
2. INSULATION :	EPDM,HIGH DIELECTRIC STRENGTH,5KV 0.078"MINIMUM AVG WALL THICKNESS 0.07"MINIMUM AVG WALL THICKNESS AT ANY POINT	MAX. DIA=0.427" 10.85mm
3. BARRIER :	FEP EXTRUSION,AS SECOND INSULATION LAYER 0.011" MINIMUM AVG WALL THICKNESS 0.010"MINIMUM AVG WALL THICKNESS AT ANY POINT MAX. DIAMETER TO MAKE THE ELECTRICAL PROPERTY MUCH BETTER TO PROTECT THE EPDM INSULATION FROM MECHANICAL ATTACK AND TO PROVIDE ADDITIONAL CONTAINMENT TO THE CABLE PHASES	DIA=0.451" 11.45mm
4. FILLER :	ELASTIC EPDM MATERIAL FILLER	
5. COLLECTIVE JACKET :	EPDM,HIGH DIELECTRIC STRENGTH,5KV 0.059" MINIMUM AVG WALL THICKNESS 0.047" MINIMUM AVG WALL THICKNESS AT ANY POINT	MAX. DIA=1.161" 29.5mm
6. ARMOR :	GALVANIZED STEEL ARMOR, 0.025" THICKNESS MAX. DIAMETER OVER ARMOR	DIA=1.339" 34.0mm
<b>TEMPERATURE:</b>	TEMPERATURE RATING 400-EPDM	-40 C TO 204 C -40 F TO 400 F
<b>TESTED:</b>	IEEE1018,API RP 11S5,API RP 11S6 AND WANDA SPECIFICATIONS CONDUCTOR RESISTANCE=MAX 0.566Ω/km INSULATION RESISTANCE=1294MΩ.KM@15.6 C DC TEST(5MIN.@35KV) MAX. DC LEAKAGE=0.100 μAmp/kft/kV	



# WANDA 450-FLAT+CT ESP CABLE

## DESCRIPTION

BARE SOLID COPPER CONDUCTOR,  
EPDM INSULATION, LEAD SHEATH ,  
FIBER TAPE  
COMPLETELY COVERED THE SHEATH,  
SS MATERIAL CAPILLARY TUBE,GALVANIZED  
STEEL(SS OR MONEL)ARMOR



## STANDARD

IEEE1018, API RP11S5, API RP 11S6

## PACKING

STEEL REELS, WOODEN COVER OUTSIDE.  
CABLE LENGTH TO MEET CUSTOMER'S  
REQUIREMENTS.

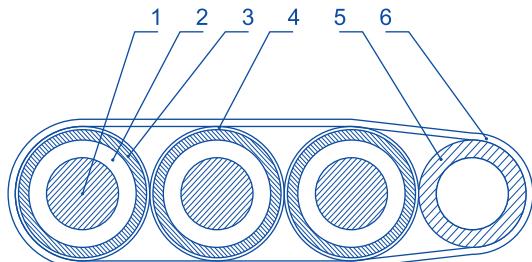
## CABLE SPECIFICATION AND PARAMETERS

NO.	VOLTAGE RATING (KV)	CONDUCTOR		NOMINAL CONDUCTOR OD		INSULATION OD		LEAD SHEATH OD		CT		ARMOR	MAX CABLE DIMENSION		NOMINAL WEIGHT (APPROXIMATE)	
		AWG	mm <sup>2</sup>	inch	mm	inch	mm	inch	mm	IDinch	ODinch		inch	mm	lbs/ft	kg/m
1	5KV	4	20	0.20	5.19	0.373	9.48	0.441	11.20	0.049	0.375	GAL. STEEL TAPE	0.592x1.881	15.0x47.9	1.8	2.7
2	5KV	2	33	0.26	6.54	0.427	10.80	0.494	12.60				0.646 X2.041	16.4x51.9	2.2	3.3
3	5KV	1	42	0.29	7.34	0.458	11.64	0.526	13.40				0.677x1.761	17.2x54.3	2.4	3.6

# WANDA 450-FLAT+CT ESP CABLE SPECIFICATION

**CONSTRUCTION:** FLAT/SOL BC/2AWG/5KV/ EPDM INSULATION/ LEAD SHEATH/ FIBER TAPE/3/8" CT/ GALV./450 °F  
※ CONDUCTOR CAN BE TINNED OR BARE

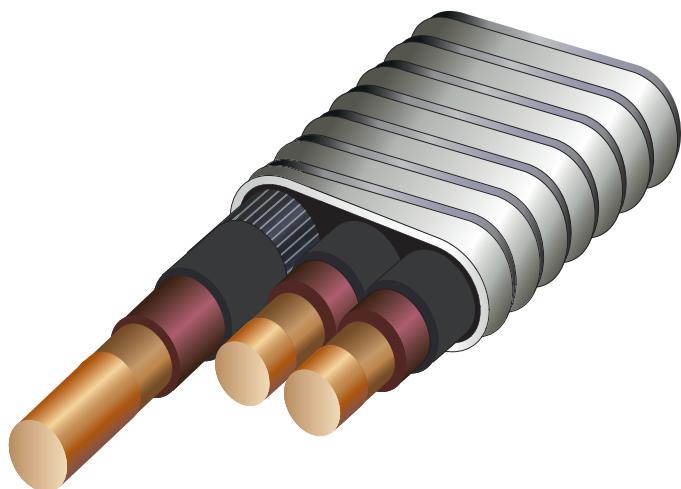
1. CONDUCTOR:	2AWG SOLID BC	MAX. DIA=0.26"	6.54 mm
2. INSULATION:	EPDM,HIGH DIELECTRIC STRENGTH,5KV 0.075" MINIMUM AVG WALL THICKNESS 0.067" MINIMUM AVG WALL THICKNESS AT ANY POINT	MAX. DIA=0.427"	10.80 mm
3. LEAD SHEATH:	LEAD,FATIGUE RESISTANT,MEETS ASTM B-29 0.030" MINIMUM AVG WALL THICKNESS 0.024"MINIMUM AVG WALL THICKNESS AT ANY POINT MAX. DIAMETER OVER LEAD SHEATH	DIA=0.494"	12.6 mm
4. TAPES:	PROTECTIVE FIBER TAPE TO PROTECT THE LEAD SHEATH FROM MECHANICAL ATTACK AND TO PROVIDE ADDITIONAL CONTAINMENT TO THE CABLE PHASES BEDDING TAPE SHALL BE TIGHTLY WRAPPED TO PROTECT LEAD SHEATH DURING THE ARMORING OPERATION. PROVIDES 100% PROTECTION TO THE LEAD SHEATH		
5. ARMOR:	GALVANIZED STEEL ARMOR, 0.02" THICKNESS		
6. ARMOR:	GALVANIZED STEEL ARMOR, 0.02" THICKNESS MAX. DIAMETER OVER ARMOR	0.646" X 2.041"	16.4mmx51.9mm
<b>TEMPERATURE:</b>	TEMPERATURE RATING 450-LEAD SHEATH	-40 °C TO 232 °C	
		-40 °F TO 450 °F	
<b>TESTED:</b>	IEEE1018,API RP 11S5,API RP 11S6 AND WANDA SPECIFICATIONS CONDUCTOR RESISTANCE=MAX.0.566Ω/KM@20 °C INSULATION RESISTANCE=899MΩ.KM@15.6 °C DC TEST(5MIN.@35KV) MAX. DC LEAKAGE=0.100 μAmp/kft/kV		



# WANDA 450-MLE CABLE

## DESCRIPTION

BARE SOLID COPPER CONDUCTOR,  
EPDM+POLYIMIDE FILM INSULATION,  
LEAD SHEATH , FIBER TAPE,COMPLETELY  
COVERED THE SHEATH,GALVANIZED  
STEEL(SS OR MONEL)ARMOR



## STANDARD

IEEE1018, API RP11S5, API RP 11S6

## PACKING

STEEL REELS, WOODEN COVER OUTSIDE.  
CABLE LENGTH TO MEET CUSTOMER'S  
REQUIREMENTS.

## CABLE SPECIFICATION AND PARAMETERS

NO.	VOLTAGE RATING (KV)	CONDUCTOR		NOMINAL CONDUCTOR OD		INSULATION OD		LEAD SHEATH OD		ARMOR	MAX CABLE DIMENSION		NOMINAL WEIGHT (APPROXIMATE)	
		AWG	mm <sup>2</sup>	inch	mm	inch	mm	inch	mm		inch	mm	lbs/ft	kg/m
1	3KV	6	13.2	0.16	4.12	0.24	5.99	0.29	7.37	GAL STEEL TAPE	0.378 X 0.969	9.6x24.61	0.82	1.22
2	4KV	4	20	0.20	5.19	0.316	8.03	0.39	9.86	GAL STEEL TAPE	0.510X1.260	12.95x32	1.28	1.90
3	4KV	6	13.2	0.16	4.12	0.276	7.01	0.35	8.79	GAL STEEL TAPE	0.468X1.134	11.89x28.8	1.03	1.53

# WANDA 450-MLE CABLE SPECIFICATION

**CONSTRUCTION:** FLAT/SOL BARE COPPER/6 AWG/3KV/PI+EPDM/LEAD SHEATH/FIBER TAPE/GALV./400°F

1. CONDUCTOR: 6AWG SOLID BC MAX. DIA=0.162" 4.12mm

2. POLYIMIDE FILM: AS FIRST LAYER OF INSULATION, WORK TOGETHER WITH  
EPDM TO PROVIDE BETTER INSULATION PROPERTY

3. INSULATION: PI+EPDM,HIGH DIELECTRIC STRENGTH,5KV MAX. DIA=0.236" 5.99mm  
0.033"MINIMUM AVG WALL THICKNESS  
0.030"MINIMUM AVG WALL THICKNESS AT ANY POINT  
POLYIMIDE FILM TIGHLY WRAPPED OVER THE EPDM INSULATION

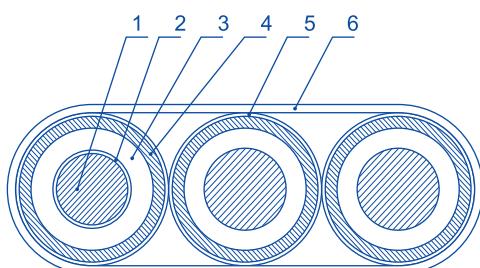
4. LEAD SHEATH: LEAD,FATIGUE RESISTANT,MEETS ASTM B-29  
0.025" MINIMUM AVG WALL THICKNESS  
0.019" MINIMUM AVG WALL THICKNESS AT ANY POINT  
MAX DIAMETER OVER LEAD SHEATH DIA=0.290" 7.37 mm

5. TAPES: PROTECTIVE FIBER TAPE  
TO PROTECT THE LEAD SHEATH FROM MECHANICAL ATTACK AND TO  
PROVIDE ADDITIONAL CONTAINMENT TO THE CABLE PHASES  
BEDDING TAPE SHALL BE TIGHTLY WRAPPED TO PROTECT LEAD SHEATH  
DURING THE ARMORING OPERATION. PROVIDES 100% PROTECTION TO  
THE LEAD SHEATH

6. ARMOR: GALVANIZED STEEL ARMOR, 0.015" THICKNESS  
MAX. DIAMETER OVER ARMOR 0.378" X0.969" 9.6mmx24.61mm

**TEMPERATURE:** TEMPERATURE RATING 450-LEAD SHEATH -40°C TO 204°C  
-40°F TO 450°F

**TESTED:** IEEE1018,API RP 11S5,API RP 11S6 AND WANDA SPECIFICATIONS  
CONDUCTOR RESISTANCE=MAX.1.39Ω/KM@20°C  
INSULATION RESISTANCE=820MΩ.KM@15.6°C  
DC TEST(5MIN.@35KV)  
MAX. DC LEAKAGE=0.100 μAmp/kft/kV



# MONOCONDUCTOR 7/32" VS 5/16"

## PROPERTIES

Cable Diameter	7/32" (5.6 mm)	5/16" (8.0mm)
Minimum Sheave Diameter	11" (280mm)	16" (400mm)
Cable Stretcch Coefficient	2.2 ft/Kft/Klbs (2.5m/Km/5KN)	1.2 ft/Kft/Klbs(1.35m/Km/5KN)

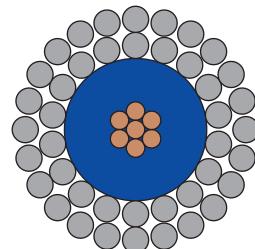


## ELECTRICAL

Maximum Conductor Voltage	1,000VAC	1,000VAC
Conductor AWG Rating	16	14
Minimum Insulation Resistance	1,640 MΩ/Kft (500MΩ/Km)	1,640 MΩ/Kft (500MΩ/Km)

## MECHANICAL

Cable Breaking Strength		
Ends Fixed	6,300 lbs(28KN)	12,375 lbs(55KN)
Maximum Suggested Working Tension	4,725 lbs(21KN)	9,281 lbs(41.25KN)
Number and Size of Wires		
Inner Armor	15 wires 0.61 mm	12 wires 1.11 mm
Outer Armor	15 wires 0.89 mm	18 wires 1.11 mm



Cable Type	Main Description							Cable Weight
	Temp Rating	Insulation Type	Insulation Thickness	Copper Construction	Resistance	Cap. Typical	O.D In mm	
W1F-5.6 HS 1x1.35	450 F 232 C	FEP	0.021 in 0.55 mm	19*0.30mm	4.0 Ω/Kft 13.1 Ω/Km	58 pF/ft 190 pF/m	0.22 5.6	92 137
W1F-8.0 HS 1x2.0	450 F 232 C	FEP	0.033 in 0.85 mm	19*0.37mm	2.80 Ω/Kft 9.2 Ω/Km	58 pF/ft 190 pF/m	0.32 8.0	184 274

# MONOCONDUCTOR 7/32" VS 5/16"

## PROPERTIES

Cable Diameter	7/32" (5.6 mm)	5/16" (8.0mm)
Minimum Sheave Diameter	11" (280mm)	16" (400mm)
Cable Stretch Coefficient	1.63 ft/Kft/Klbs (1.83m/Km/5KN)	1.08 ft/Kft/Klbs(1.22m/Km/5KN)

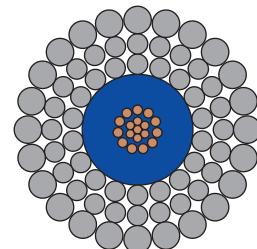


## ELECTRICAL

Maximum Conductor Voltage	1,000VAC	1,000VAC
Conductor AWG Rating	17	17
Minimum Insulation Resistance	1,640 MΩ/Kft (500MΩ/Km)	1,640 MΩ/Kft (500MΩ/Km)

## MECHANICAL

Cable Breaking Strength		
Ends Fixed	7,200 lbs(32KN)	15,975 lbs(71KN)
Maximum Suggested Working Tension	5,400 lbs(24KN)	11,981 lbs(53.25KN)
Number and Size of Wires		
Inner Armor	15 wires 0.5 mm	11 wires 0.79 mm
Middle Armor	21 wires 0.5 mm	14 wires 1.0 mm
Outer Armor	18 wires 0.79 mm	18 wires 1.11 mm



Cable Type	Main Description							Cable Weight
	Temp Rating	Insulation Type	Insulation Thickness	Copper Construction	Resistance	Cap. Typical	O.D In mm	
W1F-5.6 JQ/HS 1x1.0	450 F 232 C	FEP	0.0142 in 0.36 mm	19*0.26mm	5.48Ω/Kft 18 Ω/Km	58 pF/ft 190 pF/m	0.22 5.6	99 147
W1F-8.0 JQ/HS 1x1.0	450 F 232 C	FEP	0.0177 in 0.45 mm	19*0.26mm	5.48Ω/Kft 18 Ω/Km	53 pF/ft 170 pF/m	0.32 8.0	200 297

# 3-CONDUCTOR 7/32" VS 5/16" VS15/32"

## PROPERTIES

Cable Diameter	7/32" (5.6 mm)	5/16" (8.0mm)	15/32" (11.8mm)
Minimum Sheave Diameter	11" (280mm)	16" (400mm)	23" (590mm)
Cable Stretch Coefficient ft/Kft/Klbs (m/Km/5KN)	2.2 (2.5)	1.2 (1.35)	0.76 (0.85)

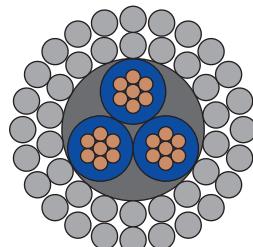


## ELECTRICAL

Maximum Conductor Voltage	1,000 VAC	1,000 VAC	1,000VAC
Conductor AWG Rating	24	20	17
Minimum Insulation Resistance			
MΩ/Kft (MΩ/Km)	1,640 (500)	1,640 (500)	1,640 (500)

## MECHANICAL

Cable Breaking Strength			
Ends Fixed	5,622 lbs(25KN)	10,125 lbs(45KN)	19,125 lbs(85KN)
Maximum Suggested Working Tension	4,050 lbs(18KN)	7,425 lbs(33KN)	14,175 lbs(63KN)
Number and Size of Wires			
Inner Armor	12 wires 0.79 mm	12 wires 0.81 mm	24 wires 1.0 mm
Outer Armor	18 wires 0.79 mm	18 wires 1.11 mm	24 wires 1.26 mm



Cable Type	Main Description							Cable Weight
	Temp Rating	Insulation Type	Insulation Thickness	Copper Construction	Conductor Resistance	Cap. Typical	O.D In mm	Lbs/Kft Kg/Km
W3FP-5.6 3x0.24	450 F 232 C	FEP	0.0087 in 0.22 mm	7*0.21 mm	25.9Ω/Kft 85 Ω/Km	51.8 pF/ft 170 pF/m	0.22 5.6	97 144
W3FP-8.0 3x0.50	450 F 232 C	FEP	0.017 in 0.43 mm	7*0.30 mm	11Ω/Kft 36 Ω/Km	51.8 pF/ft 170 pF/m	0.32 8.0	179 266
W3FP-11.8 3x1.12	450 F 232 C	FEP	0.033 in 0.85 mm	19*0.28 mm	9.4Ω/Kft 31 Ω/Km	39.6 pF/ft 130 pF/m	0.46 11.8	355 528

# 7-CONDUCTOR 7/32" VS 1/2" VS 33/64"



## PROPERTIES

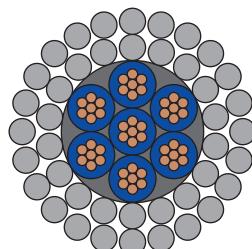
Cable Diameter	15/32" (11.8mm)	1/2" (12.4mm)	33/64" (13.2mm)
Minimum Sheave Diameter	23" (590mm)	25" (620mm)	26" (660mm)
Cable Stretch Coefficient ft/Kft/Klbs (m/Km/5KN)	0.756 (0.85)	0.578 (0.65)	0.578 (0.64)

## ELECTRICAL

Maximum Conductor Voltage	1,000 VAC	1,000 VAC	1,000VAC
Conductor AWG Rating	20	20	20
Minimum Insulation Resistance			
MΩ/Kft (MΩ/Km)	1,640 (500)	1,640 (500)	1,640 (500)

## MECHANICAL

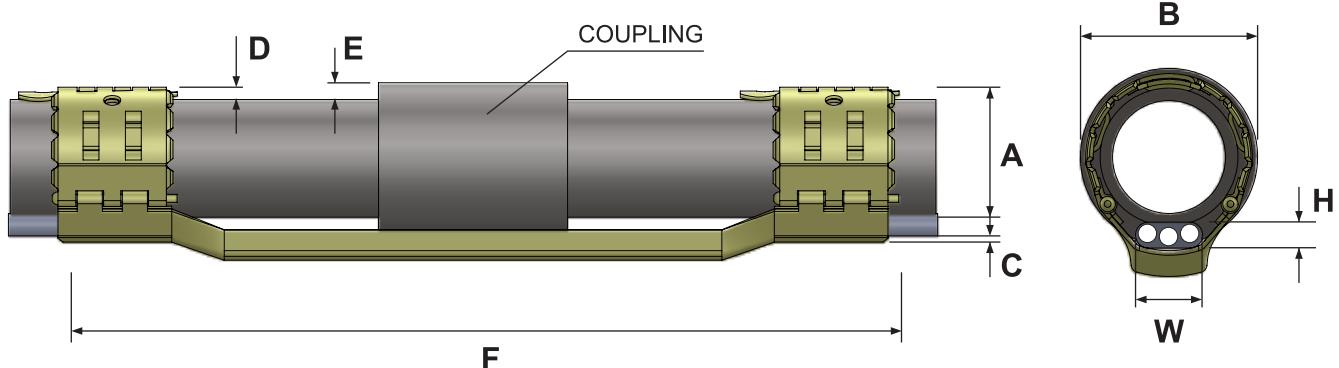
Cable Breaking Strength			
Ends Fixed	22,500 lbs(100KN)	24,750 lbs(110KN)	28,125 lbs(125KN)
Maximum Suggested Working Tension	16,875 lbs(75KN)	18,563 lbs(82.5KN)	21,094 lbs(93.75KN)
Number and Size of Wires			
Inner Armor	24 wires 1.0 mm	22 wires 1.11 mm	16 wires 1.5 mm
Outer Armor	24 wires 1.26 mm	22 wires 1.44 mm	20 wires 1.67 mm



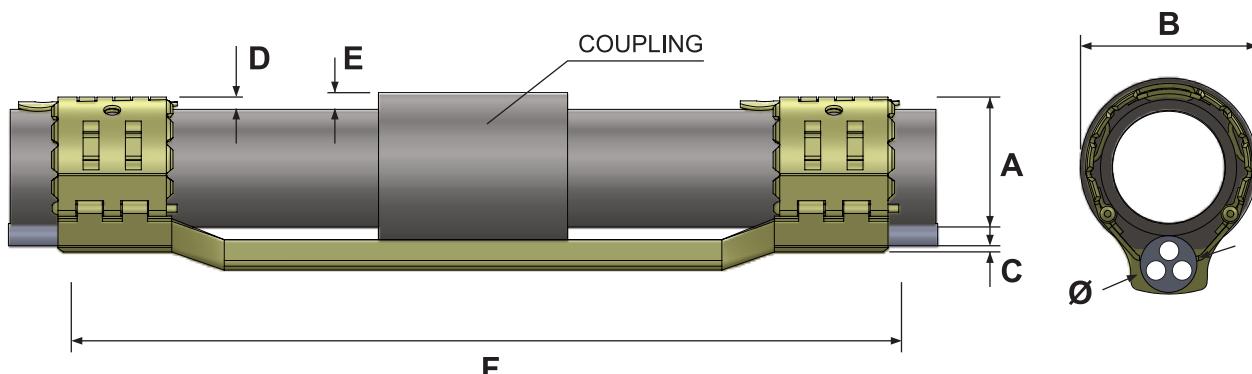
Cable Type	Main Description							Cable Weight
	Temp Rating	Insulation Type	Insulation Thickness	Copper Construction	Conductor Resistance	Cap. Typical	O.D In mm	Lbs/Kft Kg/Km
W7FPP-11.8 HS 7x0.56	450 F 232 C	FEP	0.0256 in 0.65 mm	7*0.32 mm	10.3Ω/Kft 34 Ω/Km	48.7 pF/ft 160 pF/m	0.46 11.8	357 531
W7FPP-12.4 HS 7x0.56	450 F 232 C	FEP	0.0256 in 0.65 mm	7*0.32 mm	10.3Ω/Kft 34 Ω/Km	48.7 pF/ft 160 pF/m	0.50 12.4	384 571
W7FPP-13.2 HS 7x0.56	450 F 232 C	FEP	0.0260 in 0.66 mm	7*0.32 mm	10.3Ω/Kft 34 Ω/Km	48.7 pF/ft 160 pF/m	0.52 13.2	465 692

# WANDA CABLE PROTECTOR

## PROPERTIES



Production Tubing (A)	Collar OD (B)	Channel Offset (C)	
2-3/8"	3.16	0.39	D=0.38"for All Standard Protectors E=Coupling Dimension F=24.7"for All Standard Protectors
2-7/8"	3.66	047	
3-1/2"	4.29	0.59	<u>Calculation of Running OD</u>
4-1/2"	5.29	0.59	A+C+H+0.12"(material thickness)
5-1/2"	6.29	0.39	+ (Larger of D or E)
7"	7.79	0.39	



Production Tubing (A)	Collar OD (B)	Channel Offset (C)	
2-3/8"	3.16	0.39	D=0.38"for All Standard Protectors E=Coupling Dimension F=24.7"for All Standard Protectors
2-7/8"	3.66	047	
3-1/2"	4.29	0.59	<u>Calculation of Running OD</u>
4-1/2"	5.29	0.59	A+C+Ø+0.12"(material thickness)
5-1/2"	6.29	0.39	+ (Larger of D or E)
7"	7.79	0.39	

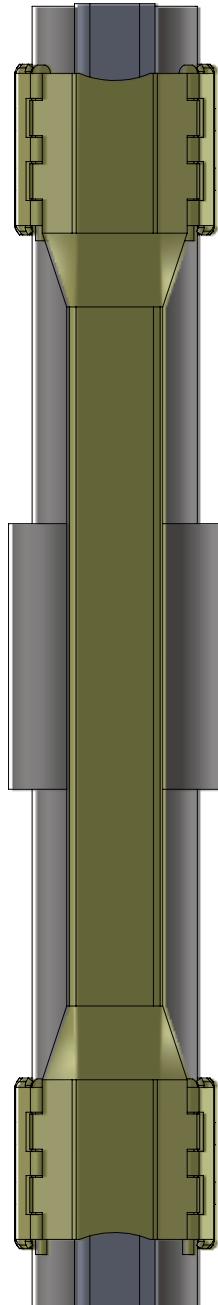
# WANDA CABLE PROTECTOR

WANDA CABLE IS THE MOST PROFESSIONAL MANUFACTUR PROTECTORS. STABLE PROTECTION OF ESP CABLE, CONTROL LINE AND ENCAPSULATED IN THE WELLBORE.

OUR CABLE PROTECTORS USE CHANNELS TO SHIELD CABLES OR LINES AS THEY TRANSLTION ACROSS THE COUPLING TO PREVENT DAMAGE DURING INSTALLATION OR RETRIEVAL OF COMPLETIONS.

OUR CABLE PROTECTORS ARE WIDELY USED TO PROTECT THE WIDE RANGE OF ESP CABLE, CONTROL LINE, UMBILICAL LINES OR ENCAPSULATED BUNDIES IN THE WELLBORE.

OUR CABLE PROTECTORS USES A COMPRESSIVE FIT DESIGN TO ACCOMMODATE OVERSIZE OR UNDERSIZE TUBING PER API SPEC AND SECURELY ENGAGE THE CABLE OR LINES TO THE TUBING.



## Features:

**quickly**  
**Safely**  
**efficiently**