

Impianto agrivoltaico  
G R \_ M A N D A S  
della potenza di 26,576 MWp DC  
(26,025 MW AC in immissione)

REGIONE AUTONOMA DELLA SARDEGNA  
COMUNI DI GESICO E MANDAS

STUDIO DI IMPATTO AMBIENTALE

Elaborato:

Settembre 2023

137PRG652D 00

Datasheet Cavi 36kV

PROPONENTE:



GREENERGY RINNOVABILI 10 S.R.L.

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Dott. Piero Angelo Salvatore Rubiu (Tecnico compet. in Acustica Ambientale)

**MEDIUM VOLTAGE POWER CABLES**

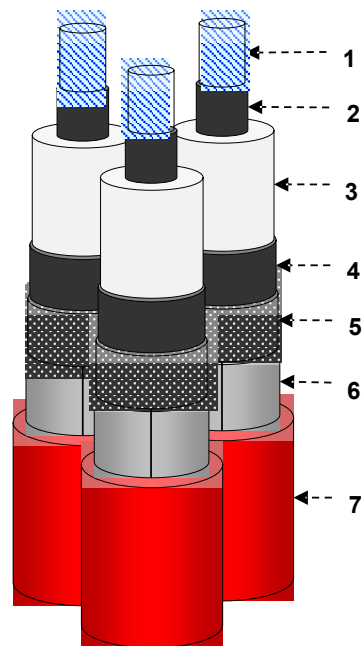
**THREE SINGLE CORE CABLES IN TRIPLEX FORMATION WITH ALUMINIUM CONDUCTOR, REDUCED THICKNESS XLPE INSULATION, ALLUMINIUM TAPE SCREEN AND PE OUTER SHEATH, LONGITUDINAL AND RADIAL WATERTIGHTNESS.**

**APPLICATIONS**

In MV energy distribution networks for voltage systems up to **42kV**.  
 Suitable for fixed installation indoor or outdoor laying in air or directly or indirectly buried, also in wet location.

**FUNCTIONAL CHARACTERISTICS**

Rated voltage $U_0/U$ :	<b>20,8/36 kV</b>
Maximum voltage $U_m$ :	<b>42 kV</b>
Test voltage:	<b>3,5 <math>U_0</math></b>
Max operating temperature of conductor:	<b>90 °C</b>
Max short-circuit temperature:	<b>250 °C (max duration 5 s)</b>
Max short-circuit temperature (screen):	<b>150 °C</b>



**CONSTRUCTION**

- 1. Conductor**  
*stranded, compacted, round aluminium - class 2 acc. to IEC 60228*
- 2. Conductor screen**  
*extruded semiconducting compound*
- 3. Insulation**  
*extruded XLPE compound*
- 4. Insulation screen**  
*extruded semiconducting compound - fully bonded*
- 5. Longitudinal watertightness**  
*semiconducting water blocking tape*
- 6. Metallic screen and radial water barrier**  
*aluminium tape longitudinally applied (nominal thickness = 0,20 mm)*
- 7. Outer sheath**  
*extruded PE compound - colour: red*

**INSTALLATION DATA**

**Max pulling force during laying**  
 50 N/mm<sup>2</sup> (applied on the conductors)

**Min bending radius during laying**  
 21 D<sub>phase</sub> (dynamic condition)

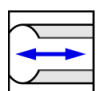
**Min temperature during laying**  
 - 25 °C (cable temperature)

**STANDARDS**

IEC 60840 where applicable (*testing*)  
 Nexans Design  
 HD 620 where applicable (*materials*)

**MARKING by ink-jet of the following legend:**

on phase 1: **"Manufacturer <Year> ARE4H5EX 20,8/36KV 3x1x<S> FASE 1 <meter marking>**  
 on phase 2: **"FASE 2"**  
 on phase 3: **"FASE 3"**  
 <YEAR> =Year of manufacturing  
 <S> = Section of conductor



Longitudinal waterproof



Radial waterproof



Max operating temp. of conductor: **90 °C**



Max short-circuit temperature : **250 °C**



Max short-circuit temperature screen: **150 °C**



Minimum installation temperature: **-25 °C**

ARE4H5EX 20,8/36kV 3x1x...															
Type	Conductor diameter nominal	Insulation		Sheath thickness nominal	Phase diameter approx	Cable diameter approx	Cable weight indicative	Electrical resistance		X at 50 Hz	C	Current capacity		Short circuit current	
		thickness min	diameter nominal					at 20 °C - d.c. max	at 90 °C - a.c.			in ground at 20 °C	in free air at 30 °C	conductor Tmax 250°C	screen Tmax 150°C
n° x mm <sup>2</sup>	mm	mm	mm	mm	mm	mm	kg/km	Ω/km	Ω/km	Ω/km	μF/km	A	A	kA x 1,0 s	kA x 0,5 s
<b>3x1x95</b>	11,5	8,1	29,5	2,1	<b>37,3</b>	<b>80,3</b>	<b>3.360</b>	0,320	0,411	0,130	0,168	<b>223</b>	<b>287</b>	9,0	2,1
<b>3x1x150</b>	14,3	7,6	31,3	2,2	<b>39,4</b>	<b>84,8</b>	<b>3.950</b>	0,206	0,265	0,120	0,201	<b>283</b>	<b>374</b>	14,2	2,2
<b>3x1x185</b>	16,0	7,4	32,6	2,2	<b>40,7</b>	<b>87,8</b>	<b>4.350</b>	0,1640	0,211	0,115	0,221	<b>321</b>	<b>429</b>	17,5	2,3
<b>3x1x240</b>	18,5	7,1	34,5	2,3	<b>42,8</b>	<b>92,3</b>	<b>4.990</b>	0,1250	0,161	0,109	0,252	<b>372</b>	<b>508</b>	22,7	2,3
<b>3x1x300</b>	20,7	6,8	36,1	2,3	<b>44,5</b>	<b>96,0</b>	<b>5.550</b>	0,1000	0,129	0,104	0,283	<b>419</b>	<b>583</b>	28,3	2,4

**Note**

Laying condition: trefoil formation  
depth (m): 0,8  
soil thermal resistivity (°Cm/W): 1,5  
metallic layers connection: solid bonding (earthed at both ends)

X = phase reactance  
C = capacitance

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Manufacturer reserves the right to change the technical data as a result of changes in standards and product improvements

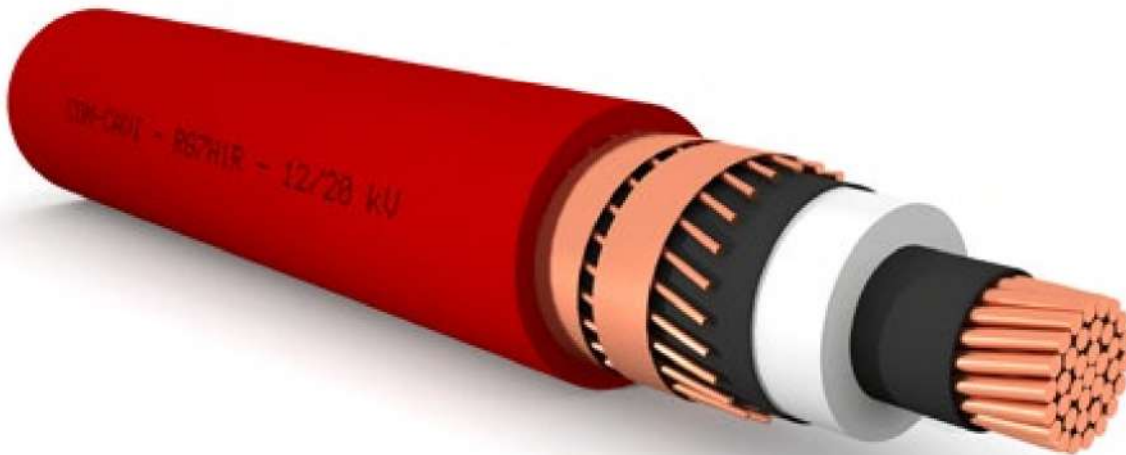
## RG7H1R 1.8/3 kV - 26/45 kV

MEDIA TENSIONE - SENZA PIOMBO  
MEDIUM VOLTAGE - LEAD-FREE



### RIFERIMENTO NORMATIVO/STANDARD REFERENCE

Costruzione e requisiti/Construction and specifications	IEC 60502 CEI 20-13
Misura delle scariche parziali/Measurement of partial discharges	CEI 20-16 IEC 60885-3
Propagazione fiamma/Flame propagation	CEI EN 60332-1-2



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#### DESCRIZIONE:

Cavi unipolari isolati in gomma HEPR di qualità G7, sotto guaina di PVC.

#### CARATTERISTICHE FUNZIONALI:

- Tensione nominale  $U_0/U$ : 1,8/3 ÷ 26/45 kV
- Temperatura massima di esercizio: 90°C
- Temperatura minima di esercizio: -15°C (in assenza di sollecitazioni meccaniche)
- Temperatura minima di posa: 0°C
- Temperatura massima di corto circuito: 250°C
- Raggio minimo di curvatura consigliato: 12 volte il diametro del cavo.
- Massimo sforzo di trazione consigliato: 60 N/mm<sup>2</sup> di sezione del rame

#### CONDIZIONI DI IMPIEGO:

Adatto per il trasporto di energia tra le cabine di trasformazione e le grandi utenze. Per posa in aria libera, in tubo o canale. Ammessa la posa interrata anche non protetta, in conformità all'art. 4.3.11 della norma CEI 11-17.

#### DESCRIPTION:

Single-core cables, insulated with HEPR rubber of G7 quality, under PVC sheath.

#### FUNCTIONAL CHARACTERISTICS

- Nominal voltage  $U_0/U$ : 1,8/3 ÷ 26/45 kV
- Maximum operating temperature: 90°C
- Min. operating temperature: -15°C (without mechanical shocks)
- Minimum installation temperature: 0°C
- Maximum short circuit temperature: 250°C
- Recommended minimum bending radius: 12 times the cable diameter.
- Recommended maximum tensile stress: 60 N/mm<sup>2</sup> of the cross-section of the copper

#### USE AND INSTALLATION

Suitable for energy transmission between transformer rooms and big power users. For laying on air, into tube or open pass. Can be laid underground, also if not protected, complying with art. 4.3.11 of CEI 11-17 standard.

# RG7H1R 1.8/3 kV - 26/45 kV

## COSTRUZIONE DEL CAVO / CABLE CONSTRUCTION



### CONDUTTORE

**Materiale:** Rame rosso, formazione rigida compatta, classe 2

### CONDUCTOR

**Material:** Plain copper, compact stranded wire, class 2



### STRATO SEMICONDUCTORE

**Materiale:** Estruso (solo cavi U<sub>o</sub>/U ≥ 6/10 kV)

### SEMICONDUCTOR LAYER

**Material:** Extruded (only cables U<sub>o</sub>/U ≥ 6/10 kV)



### ISOLAMENTO

**Materiale:** Gomma HEPR, qualità G7, **SENZA PIOMBO** (HD 620 DHI 2)

### INSULATION

**Material:** : HEPR rubber, G7 quality, **LEAD FREE** (HD 620 DHI 2)



### STRATO SEMICONDUCTORE

**Materiale:** Estruso, pelabile a freddo (solo cavi U<sub>o</sub>/U ≥ 6/10 kV)

### SEMICONDUCTOR LAYER

**Material:** Extruded, cold stripping (only cables U<sub>o</sub>/U ≥ 6/10 kV)



### SCHERMO

**Tipo:** Fili di rame rosso, con nastro di rame in contospirale

### SCREEN

**Type:** Plain copper wires with helically wounded copper tape



### GUAINA ESTERNA

**Materiale:** Mescola a base di PVC, qualità Rz  
**Colore:** Rosso

### OUTER SHEATH

**Material:** PVC based compound, Rz quality  
**Colour:** Red

N.B. Il cavo può essere fornito nella versione tripolare riunito ad elica visibile. In tal caso la sigla di designazione diventa RG7H1RX seguita dalla tensione nominale di esercizio.  
N.B. The cable can be built in the three-pole version with helically wound cores. In this case, the initials becomes RG7H1RX, followed by rated voltage.

## RG7H1R 1,8/3 kV

### Caratteristiche tecniche/Technical characteristics **U max: 3,6 kV**

Formazione Size	Ø indicativo conduttore Approx. conduct. Ø	Spessore medio isolante Average insulation thickness	Ø esterno max Max outer Ø	Peso indicativo cavo Approx. cable weight	Portata di corrente Current rating			
					A			
					in aria In air		interrato* buried*	
n° x mm <sup>2</sup>	mm	mm	mm	kg/km	a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat
1 x 10	4,0	2,0	14,0	290,0	87,0	111,0	99,0	104,0
1 x 16	4,8	2,0	15,0	350,0	114,0	145,0	126,0	133,0
1 x 25	6,0	2,0	16,0	450,0	149,0	190,0	162,0	171,0
1 x 35	7,0	2,0	17,0	550,0	181,0	230,0	193,0	204,0
1 x 50	8,1	2,0	18,5	670,0	219,0	276,0	227,0	241,0
1 x 70	9,7	2,0	20,5	880,0	275,0	345,0	278,0	294,0
1 x 95	11,4	2,0	22,0	1100,0	339,0	422,0	332,0	351,0
1 x 120	12,9	2,0	24,5	1400,0	393,0	487,0	377,0	399,0
1 x 150	14,3	2,0	26,0	1650,0	446,0	550,0	421,0	445,0
1 x 185	16,0	2,0	27,5	2000,0	516,0	635,0	477,0	500,0
1 x 240	18,3	2,0	30,0	2550,0	617,0	745,0	550,0	580,0
1 x 300	21,0	2,0	32,5	3150,0	709,0	855,0	621,0	650,0
1 x 400	23,2	2,0	35,5	3950,0	824,0	990,0	702,0	735,0
1 x 500	26,1	2,2	40,0	5050,0	954,0	1140,0	790,0	830,0
1 x 630	30,3	2,4	44,0	6300,0	1102,0	1300,0	885,0	930,0

\*Resistività termica del terreno 100°C cm/W  
 \* Ground thermal resistivity 100°C cm/W

### Caratteristiche elettriche/Electrical characteristics

Formazione Size	Resistenza elettrica a 20°C Max. electrical resistance at 20°C	Resistenza apparente a 90°C e 50Hz Conductor apparent resistance at 90°C and 50Hz		Reattanza di fase Phase reactance		Capacità a 50Hz Capacity at 50Hz
		a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat	
		Ω/Km	Ω/Km	Ω/Km	Ω/Km	
1 x 10	1,83	2,34	2,34	0,13	0,19	0,19
1 x 16	1,15	1,47	1,47	0,12	0,18	0,23
1 x 25	0,727	0,927	0,927	0,12	0,18	0,27
1 x 35	0,524	0,669	0,668	0,11	0,17	0,30
1 x 50	0,387	0,494	0,494	0,11	0,16	0,34
1 x 70	0,268	0,342	0,342	0,10	0,16	0,40
1 x 95	0,193	0,246	0,246	0,098	0,16	0,45
1 x 120	0,153	0,196	0,196	0,095	0,15	0,50
1 x 150	0,124	0,159	0,158	0,092	0,15	0,55
1 x 185	0,0991	0,128	0,127	0,089	0,15	0,60
1 x 240	0,0754	0,0985	0,0974	0,086	0,14	0,68
1 x 300	0,0601	0,0797	0,0781	0,084	0,14	0,75
1 x 400	0,0470	0,0638	0,0628	0,083	0,14	0,83
1 x 500	0,0366	0,0517	0,0492	0,081	0,14	0,88
1 x 630	0,0283	0,0425	0,0392	0,079	0,14	0,92

# RG7H1R 3,6/6 kV

## Caratteristiche tecniche/Technical characteristics U max: 7,2 kV

Formazione Size	Ø indicativo conduttore Approx. conduct. Ø	Spessore medio isolante Average insulation thickness	Ø esterno max Max outer Ø	Peso indicativo cavo Approx. cable weight	Portata di corrente Current rating			
					A		A	
					in aria In air	in piano flat	interrato* buried*	in piano flat
n° x mm <sup>2</sup>	mm	mm	mm	kg/km	a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat
1 x 10	4,0	3,0	16,0	330,0	87,0	105,0	95,0	100,0
1 x 16	4,8	3,0	17,0	410,0	113,0	136,0	122,0	128,0
1 x 25	6,0	3,0	18,5	510,0	150,0	180,0	156,0	165,0
1 x 35	7,0	3,0	20,0	630,0	182,0	220,0	187,0	197,0
1 x 50	8,1	3,0	21,5	750,0	219,0	261,0	220,0	233,0
1 x 70	9,7	3,0	23,5	1010,0	275,0	328,0	271,0	286,0
1 x 95	11,4	3,0	25,0	1250,0	337,0	402,0	324,0	342,0
1 x 120	12,9	3,0	26,5	1500,0	390,0	465,0	370,0	390,0
1 x 150	14,3	3,0	28,0	1800,0	443,0	525,0	412,0	435,0
1 x 185	16,0	3,0	30,0	2100,0	512,0	605,0	468,0	491,0
1 x 240	18,3	3,0	32,5	2650,0	608,0	715,0	540,0	570,0
1 x 300	21,0	3,0	35,3	3200,0	700,0	820,0	610,0	640,0
1 x 400	23,2	3,0	37,5	4000,0	813,0	950,0	690,0	725,0
1 x 500	26,1	3,2	41,6	5100,0	940,0	1100,0	780,0	820,0
1 x 630	30,3	3,2	46,0	6500,0	182,0	1260,0	875,0	915,0

\*Resistività termica del terreno 100°C cm/W

\* Ground thermal resistivity 100°C cm/W

## Caratteristiche elettriche/Electrical characteristics

Formazione Size	Resistenza elettrica a 20°C Max. electrical resistance at 20°C	Resistenza apparente a 90°C e 50Hz Conductor apparent resistance at 90°C and 50Hz		Reattanza di fase Phase reactance		Capacità a 50Hz Capacity at 50Hz
		a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat	
		Ω/Km	Ω/Km	Ω/Km	Ω/Km	
n° x mm <sup>2</sup>	Ω/Km	Ω/Km	Ω/Km	Ω/Km	Ω/Km	µF/km
1 x 10	1,83	2,34	2,34	0,14	0,20	0,15
1 x 16	1,15	1,47	1,47	0,14	0,19	0,17
1 x 25	0,727	0,927	0,927	0,13	0,18	0,20
1 x 35	0,524	0,669	0,668	0,12	0,18	0,23
1 x 50	0,387	0,494	0,494	0,11	0,17	0,25
1 x 70	0,268	0,342	0,342	0,11	0,17	0,29
1 x 95	0,193	0,246	0,246	0,10	0,16	0,33
1 x 120	0,153	0,196	0,196	0,10	0,16	0,37
1 x 150	0,124	0,159	0,158	0,097	0,16	0,40
1 x 185	0,0991	0,128	0,127	0,094	0,16	0,44
1 x 240	0,0754	0,0985	0,0974	0,091	0,15	0,49
1 x 300	0,0601	0,0797	0,0781	0,089	0,15	0,54
1 x 400	0,0470	0,0638	0,0628	0,087	0,15	0,60
1 x 500	0,0366	0,0517	0,0492	0,084	0,14	0,64
1 x 630	0,0283	0,0425	0,0392	0,082	0,14	0,72

## RG7H1R 6/10 kV

### Caratteristiche tecniche/Technical characteristics U max: 12 kV

Formazione Size	Ø indicativo conduttore Approx. conduct. Ø	Spessore medio isolante Average insulation thickness	Ø esterno max Max outer Ø	Peso indicativo cavo Approx. cable weight	Portata di corrente Current rating			
					A			
					in aria In air		interrato* buried*	
n° x mm <sup>2</sup>	mm	mm	mm	kg/km	a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat
1 x 10	4,0	3,4	19,5	420,0	91,0	105,0	93,0	98,0
1 x 16	4,8	3,4	21,0	530,0	117,0	136,0	120,0	128,0
1 x 25	6,0	3,4	22,2	650,0	154,0	178,0	155,0	163,0
1 x 35	7,0	3,4	23,0	760,0	186,0	219,0	185,0	195,0
1 x 50	8,1	3,4	24,5	880,0	223,0	260,0	218,0	231,0
1 x 70	9,7	3,4	26,5	1100,0	279,0	325,0	270,0	285,0
1 x 95	11,4	3,4	28,0	1400,0	340,0	398,0	320,0	340,0
1 x 120	12,9	3,4	29,3	1630,0	395,0	460,0	365,0	385,0
1 x 150	14,3	3,4	31,0	1900,0	448,0	520,0	410,0	432,0
1 x 185	16,0	3,4	33,0	2350,0	516,0	600,0	464,0	490,0
1 x 240	18,3	3,4	35,6	2900,0	610,0	705,0	540,0	565,0
1 x 300	21,0	3,4	38,5	3500,0	703,0	810,0	605,0	635,0
1 x 400	23,2	3,4	41,0	4300,0	815,0	935,0	690,0	720,0
1 x 500	26,1	3,4	45,0	5420,0	945,0	1080,0	780,0	810,0
1 x 630	30,3	3,4	48,0	6850,0	1085,0	1230,0	875,0	900,0

\*Resistività termica del terreno 100°C cm/W  
\* Ground thermal resistivity 100°C cm/W

### Caratteristiche elettriche/Electrical characteristics

Formazione Size	Resistenza elettrica a 20°C Max. electrical resistance at 20°C	Resistenza apparente a 90°C e 50Hz Conductor apparent resistance at 90°C and 50Hz		Reattanza di fase Phase reactance		Capacità a 50Hz Capacity at 50Hz
		a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat	
		Ω/Km	Ω/Km	Ω/Km	Ω/Km	
1 x 10	1,83	2,34	2,34	0,16	0,21	0,16
1 x 16	1,15	1,47	1,47	0,15	0,20	0,18
1 x 25	0,727	0,927	0,927	0,14	0,19	0,21
1 x 35	0,524	0,669	0,669	0,13	0,19	0,23
1 x 50	0,387	0,494	0,494	0,12	0,18	0,26
1 x 70	0,268	0,342	0,342	0,12	0,17	0,29
1 x 95	0,193	0,246	0,246	0,11	0,17	0,32
1 x 120	0,153	0,196	0,196	0,11	0,16	0,36
1 x 150	0,124	0,159	0,158	0,10	0,16	0,38
1 x 185	0,0991	0,128	0,127	0,10	0,16	0,42
1 x 240	0,0754	0,0985	0,0973	0,097	0,16	0,47
1 x 300	0,0601	0,0797	0,0780	0,095	0,15	0,52
1 x 400	0,0470	0,0638	0,0617	0,092	0,15	0,57
1 x 500	0,0366	0,0517	0,0490	0,089	0,15	0,64
1 x 630	0,0283	0,0425	0,0390	0,087	0,15	0,73



# RG7HIR 8,7/15 kV

## Caratteristiche tecniche/Technical characteristics U max: 17,5 kV

Formazione Size	Ø indicativo conduttore Approx. conduct. Ø	Spessore medio isolante Average insulation thickness	Ø esterno max Max outer Ø	Peso indicativo cavo Approx. cable weight	Portata di corrente Current rating			
					A			
					in aria In air		interrato* buried*	
n° x mm <sup>2</sup>	mm	mm	mm	kg/km	a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat
1 x 16	4,8	4,5	23,3	650,0	120,0	135,0	118,0	123,0
1 x 25	6,0	4,5	24,5	750,0	155,0	177,0	152,0	158,0
1 x 35	7,0	4,5	25,8	850,0	190,0	215,0	181,0	190,0
1 x 50	8,1	4,5	27,0	1000,0	225,0	258,0	213,0	224,0
1 x 70	9,7	4,5	28,5	1200,0	282,0	323,0	262,0	276,0
1 x 95	11,4	4,5	30,1	1500,0	345,0	393,0	313,0	330,0
1 x 120	12,9	4,5	32,5	1900,0	400,0	455,0	358,0	375,0
1 x 150	14,3	4,5	33,5	2100,0	450,0	515,0	396,0	420,0
1 x 185	16,0	4,5	35,5	2500,0	518,0	590,0	453,0	475,0
1 x 240	18,3	4,5	38,0	3030,0	615,0	700,0	525,0	550,0
1 x 300	21,0	4,5	41,0	3800,0	704,0	800,0	590,0	620,0
1 x 400	23,2	4,5	43,3	4600,0	816,0	920,0	670,0	700,0
1 x 500	26,1	4,5	47,4	5700,0	945,0	1060,0	760,0	785,0
1 x 630	30,3	4,5	52,6	7100,0	1088,0	1210,0	850,0	870,0

\*Resistività termica del terreno 100°C cm/W

\* Ground thermal resistivity 100°C cm/W

## Caratteristiche elettriche/Electrical characteristics

Formazione Size	Resistenza elettrica a 20°C Max. electrical resistance at 20°C	Resistenza apparente a 90°C e 50Hz Conductor apparent resistance at 90°C and 50Hz		Reattanza di fase Phase reactance		Capacità a 50Hz Capacity at 50Hz
		a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat	
		Ω/Km	Ω/Km	Ω/Km	Ω/Km	
1 x 16	1,15	1,47	1,47	0,15	0,21	0,15
1 x 25	0,727	0,927	0,927	0,14	0,20	0,18
1 x 35	0,524	0,669	0,669	0,14	0,19	0,19
1 x 50	0,387	0,494	0,494	0,13	0,19	0,21
1 x 70	0,268	0,342	0,342	0,12	0,18	0,24
1 x 95	0,193	0,246	0,246	0,12	0,17	0,26
1 x 120	0,153	0,196	0,196	0,11	0,17	0,29
1 x 150	0,124	0,159	0,158	0,11	0,17	0,31
1 x 185	0,0991	0,128	0,127	0,11	0,16	0,34
1 x 240	0,0754	0,0985	0,0973	0,10	0,16	0,37
1 x 300	0,0601	0,0797	0,0780	0,099	0,16	0,42
1 x 400	0,0470	0,0638	0,0617	0,096	0,15	0,45
1 x 500	0,0366	0,0517	0,0490	0,092	0,15	0,51
1 x 630	0,0283	0,0425	0,0390	0,090	0,15	0,58

## RG7H1R 12/20 kV

### Caratteristiche tecniche/Technical characteristics **U max: 24 kV**

Formazione Size	Ø indicativo conduttore Approx. conduct. Ø	Spessore medio isolante Average insulation thickness	Ø esterno max Max outer Ø	Peso indicativo cavo Approx. cable weight	Portata di corrente Current rating			
					A			
					in aria In air		interrato* buried*	
n° x mm <sup>2</sup>	mm	mm	mm	kg/km	a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat
1 x 35	7,0	5,5	27,7	960,0	190,0	213,0	182,0	189,0
1 x 50	8,1	5,5	29,0	1100,0	230,0	255,0	216,0	225,0
1 x 70	9,7	5,5	30,5	1350,0	285,0	320,0	265,0	275,0
1 x 95	11,4	5,5	33,0	1650,0	348,0	390,0	315,0	329,0
1 x 120	12,9	5,5	34,8	1950,0	400,0	450,0	360,0	374,0
1 x 150	14,3	5,5	36,2	2300,0	450,0	510,0	402,0	416,0
1 x 185	16,0	5,5	37,6	2600,0	520,0	585,0	455,0	472,0
1 x 240	18,3	5,5	40,2	3200,0	615,0	690,0	528,0	545,0
1 x 300	21,0	5,5	43,0	3900,0	705,0	790,0	595,0	611,0
1 x 400	23,2	5,5	45,8	4800,0	815,0	910,0	674,0	690,0
1 x 500	26,1	5,5	50,0	5900,0	945,0	1050,0	762,0	776,0
1 x 630	30,3	5,5	54,0	7300,0	1087,0	1190,0	858,0	875,0

\*Resistività termica del terreno 100°C cm/W  
 \* Ground thermal resistivity 100°C cm/W

### Caratteristiche elettriche/Electrical characteristics

Formazione Size	Resistenza elettrica a 20°C Max. electrical resistance at 20°C	Resistenza apparente a 90°C e 50Hz Conductor apparent resistance at 90°C and 50Hz		Reattanza di fase Phase reactance		Capacità a 50Hz Capacity at 50Hz
		a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat	
		Ω/Km	Ω/Km	Ω/Km	Ω/Km	
1 x 35	0,524	0,669	0,669	0,14	0,20	0,17
1 x 50	0,387	0,494	0,494	0,13	0,19	0,18
1 x 70	0,268	0,342	0,342	0,13	0,19	0,21
1 x 95	0,193	0,246	0,246	0,12	0,18	0,23
1 x 120	0,153	0,196	0,196	0,12	0,18	0,25
1 x 150	0,124	0,159	0,158	0,11	0,17	0,27
1 x 185	0,0991	0,128	0,127	0,11	0,17	0,29
1 x 240	0,0754	0,0985	0,0972	0,11	0,16	0,32
1 x 300	0,0601	0,0797	0,0779	0,10	0,16	0,35
1 x 400	0,0470	0,0638	0,0616	0,099	0,16	0,39
1 x 500	0,0366	0,0517	0,0489	0,096	0,15	0,43
1 x 630	0,0283	0,0425	0,0389	0,093	0,15	0,49

# RG7H1R 18/30 kV

## Caratteristiche tecniche/Technical characteristics U max: 36 kV

Formazione Size	Ø indicativo conduttore Approx. conduct. Ø	Spessore medio isolante Average insulation thickness	Ø esterno max Max outer Ø	Peso indicativo cavo Approx. cable weight	Portata di corrente Current rating			
					A			
					in aria In air		interrato* buried*	
n° x mm <sup>2</sup>	mm	mm	mm	kg/km	a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat
1 x 50	8,1	8,0	34,1	1400,0	229,0	250,0	214,0	222,0
1 x 70	9,7	8,0	36,2	1700,0	285,0	316,0	263,0	272,0
1 x 95	11,4	8,0	38,2	1950,0	347,0	387,0	314,0	325,0
1 x 120	12,9	8,0	40,0	2230,0	401,0	445,0	358,0	370,0
1 x 150	14,3	8,0	41,0	2550,0	452,0	505,0	400,0	415,0
1 x 185	16,0	8,0	43,1	3000,0	520,0	580,0	453,0	469,0
1 x 240	18,3	8,0	45,0	3600,0	615,0	680,0	525,0	540,0
1 x 300	21,0	8,0	47,0	4300,0	705,0	775,0	593,0	606,0
1 x 400	23,2	8,0	51,1	5200,0	815,0	895,0	671,0	685,0
1 x 500	26,1	8,0	53,0	6300,0	943,0	1030,0	761,0	775,0
1 x 630	30,3	8,0	60,2	7800,0	1085,0	1170,0	860,0	875,0

\*Resistività termica del terreno 100°C cm/W

\* Ground thermal resistivity 100°C cm/W

## Caratteristiche elettriche/Electrical characteristics

Formazione Size	Resistenza elettrica a 20°C Max. electrical resistance at 20°C	Resistenza apparente a 105°C e 50Hz Conductor apparent resistance at 105°C and 50Hz		Reattanza di fase Phase reactance		Capacità a 50Hz Capacity at 50Hz
		a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat	
		Ω/Km	Ω/Km	Ω/Km	Ω/Km	
1 x 50	0,387	0,494	0,494	0,15	0,20	0,15
1 x 70	0,268	0,342	0,342	0,14	0,20	0,16
1 x 95	0,193	0,246	0,246	0,13	0,19	0,18
1 x 120	0,153	0,196	0,196	0,13	0,18	0,19
1 x 150	0,124	0,159	0,158	0,12	0,18	0,20
1 x 185	0,0991	0,128	0,127	0,12	0,18	0,22
1 x 240	0,0754	0,0985	0,0972	0,11	0,17	0,24
1 x 300	0,0601	0,0797	0,0779	0,11	0,17	0,27
1 x 400	0,0470	0,0638	0,0616	0,11	0,16	0,29
1 x 500	0,0366	0,0517	0,0489	0,10	0,16	0,32
1 x 630	0,0283	0,0425	0,0389	0,099	0,16	0,36

## RG7H1R 26/45 kV

### Caratteristiche tecniche/Technical characteristics **U max: 52 kV**

Formazione Size	Ø indicativo conduttore Approx. conduct. Ø	Spessore medio isolante Average insulation thickness	Ø esterno max Max outer Ø	Peso indicativo cavo Approx. cable weight	Portata di corrente Current rating			
					A			
					in aria In air		interrato* buried*	
n° x mm <sup>2</sup>	mm	mm	mm	kg/km	a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat
1 x 70	9,7	10,3	41,9	2150,0	280,0	315,0	255,0	260,0
1 x 95	11,4	10,3	43,8	2490,0	340,0	380,0	300,0	310,0
1 x 120	12,9	10,0	44,8	2735,0	395,0	440,0	355,0	365,0
1 x 150	14,3	9,5	45,1	3020,0	445,0	495,0	385,0	395,0
1 x 185	16,0	9,3	47,1	3395,0	510,0	570,0	440,0	450,0
1 x 240	18,3	9,3	49,2	4025,0	600,0	665,0	510,0	520,0
1 x 300	21,0	9,0	52,2	4725,0	695,0	760,0	570,0	580,0
1 x 400	23,2	9,0	54,8	5635,0	800,0	875,0	650,0	655,0
1 x 500	26,1	9,0	58,6	6825,0	930,0	1010,0	735,0	740,0
1 x 630	30,3	9,0	62,7	8260,0	1070,0	1180,0	835,0	845,0

\*Resistività termica del terreno 100°C cm/W

\* Ground thermal resistivity 100°C cm/W

### Caratteristiche elettriche/Electrical characteristics

Formazione Size	Resistenza elettrica a 20°C Max. electrical resistance at 20°C	Resistenza apparente a 90°C e 50Hz Conductor apparent resistance at 90°C and 50Hz		Reattanza di fase Phase reactance		Capacità a 50Hz Capacity at 50Hz
		a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat	
		Ω/Km	Ω/Km	Ω/Km	Ω/Km	
1 x 70	0,268	0,342	0,342	0,15	0,21	0,15
1 x 95	0,193	0,246	0,246	0,14	0,20	0,16
1 x 120	0,153	0,196	0,196	0,14	0,20	0,18
1 x 150	0,124	0,159	0,158	0,13	0,19	0,20
1 x 185	0,0991	0,128	0,127	0,13	0,19	0,21
1 x 240	0,0754	0,0985	0,0972	0,12	0,18	0,23
1 x 300	0,0601	0,0797	0,0779	0,12	0,18	0,26
1 x 400	0,0470	0,0638	0,0616	0,11	0,17	0,28
1 x 500	0,0366	0,0517	0,0489	0,11	0,17	0,31
1 x 630	0,0283	0,0425	0,0389	0,10	0,16	0,34

# RG7H1R EPRO-SETTE™



Unipolare da 1,8/3 kV a 26/45 kV  
Single core from 1,8/3 kV to 26/45 kV

**Norma di riferimento**  
CEI 20-13 (IEC 60840 per 26/45 kV)

### Descrizione del cavo

#### Anima

Conduttore a corda rotonda compatta di rame rosso

#### Semiconduttivo interno

Elastomerico estruso

(solo per cavi con tensione ≥ 6/10 kV)

#### Isolante

Mescola di gomma ad alto modulo G7

#### Semiconduttivo esterno

Elastomerico estruso (solo per cavi con tensione ≥ 6/10 kV)

pelabile a freddo

#### Schermatura

A filo di rame rosso

#### Guaina

PVC, di qualità Rz, colore rosso

#### Marcatura

PRYSMIAN (sigla sito produttivo) RG7H1R

<tensione> <sezione> <anno>

### Applicazioni

- I cavi possono essere forniti con caratteristiche di:
- non propagazione dell'incendio e ridotta emissione di sostanze corrosive
  - ridottissima emissione di fumi opachi e gas tossici e assenza di gas corrosivi (AFUMEX).

### Accessori idonei

#### Terminali

ELTI (pag. 114), ELTI-1C (pag. 115), ELTO-1C (pag. 118), STI RR (pag. 122), STI GT (pag. 124), STE GT (pag. 126), FMCS 250 (pag. 128), FMCE (pag. 130), FMCTs-400 (pag. 132), FMCTXs-630/C (pag. 136)

#### Giunti

ECOSPEED™ (pag. 140), RETRACFIT (pag. 142)

### Standard

CEI 20-13 (IEC 60840 for 26/45 kV)

### Cable design

#### Core

Compact stranded bare copper conductor

#### Inner semi-conducting layer

Extruded elastomeric compound

(only for rated voltage ≥ 6/10 kV)

#### Insulation

High module rubber compound, G7 type

#### Outer semi-conducting layer

Extruded cold strippable elastomeric compound

(only for rated voltage ≥ 6/10 kV)

#### Screen

Bare copper wire

#### Sheath

PVC, type Rz; colour red

#### Marking

PRYSMIAN (production site label) RG7H1R

<rated voltage> <cross-section> <year>

### Applications

Cables can be supplied with the following characteristics:

- fire retardant and with low emission of corrosive substances
- low emission of opaque smoke and toxic gases and without corrosive gases (AFUMEX).

### Suitable accessories

#### Terminations

ELTI (pag. 114), ELTI-1C (pag. 115), ELTO-1C (pag. 118), STI RR (pag. 122), STI GT (pag. 124), STE GT (pag. 126), FMCS 250 (pag. 128), FMCE (pag. 130), FMCTs-400 (pag. 132), FMCTXs-630/C (pag. 136)

#### Joints

ECOSPEED™ (pag. 140), RETRACFIT (pag. 142)

TEMPERATURA  
FUNZIONAMENTO /  
OPERATING  
TEMPERATURE



TEMPERATURA  
CORTOCIRCUITO /  
SHORT-CIRCUIT  
TEMPERATURE



CEI 20-35  
EN 60332



RIGIDO /  
RIGID



## Condizioni di posa / Laying conditions

TEMPERATURA  
MIN. DI POSA 0 °C /  
MINIMUM  
INSTALLATION  
TEMPERATURE 0 °C



CANALE  
INTERRATO /  
BURIED  
TROUGH



TUBO INTERRATO /  
BURIED DUCT



ARIA LIBERA /  
OPEN AIR



DIRETTAMENTE  
INTERRATO /  
DIRECTLY BURIED



INTERRATO CON  
PROTEZIONE /  
BURIED WITH  
PROTECTION



## RG7H1R EPRO-SETTE™

Unipolare da 1,8/3 kV a 26/45 kV  
Single core from 1,8/3 kV to 26/45 kV

### Unipolare - conduttore di rame / Single core - copper conductor - RG7H1R

sezione nominale	diametro indicativo conduttore	spessore isolante	diametro esterno massimo	peso indicativo del cavo	raggio minimo di curvatura
<i>conductor cross-section</i>	<i>approximate conductor diameter</i>	<i>insulation thickness</i>	<i>maximum outer diameter</i>	<i>approximate weight</i>	<i>minimum bending radius</i>
(mm <sup>2</sup> )	(mm)	(mm)	(mm)	(kg/km)	(mm)

sezione nominale	posa in aria		posa interrata			
	in piano	a trifoglio	in piano	a trifoglio	in piano	a trifoglio
<i>conductor cross-section</i>	<i>open air installation flat</i>		<i>underground installation</i>			
(mm <sup>2</sup> )	(A)	(A)	flat	trefoil	flat	trefoil
			p=1 °C m/W			
			p=2 °C m/W			

#### Dati costruttivi / Construction charact. - 1,8/3 kV

10	3,8	2,0	14,0	290	180
16	4,8	2,0	15,0	350	190
25	6,0	2,0	16,7	460	210
35	7,0	2,0	17,6	560	230
50	8,2	2,0	18,9	680	240
70	9,9	2,0	21,1	910	270
95	11,6	2,0	23,1	1190	300
120	13,1	2,0	24,7	1430	320
150	14,4	2,0	26,1	1680	340
185	16,1	2,0	27,8	2050	360
240	18,5	2,0	30,2	2590	390
300	21,1	2,0	32,8	3170	430
400	23,9	2,0	35,6	3980	470
500	27,1	2,2	39,6	5050	520
630	30,7	2,4	43,9	6410	580

#### Caratt. elettriche / Electrical charact. - 1,8/3 kV

10	111	87	104	99	79	74
16	145	114	133	126	100	94
25	190	149	171	162	128	120
35	230	181	204	193	153	143
50	276	219	241	227	179	168
70	345	276	294	278	219	205
95	422	339	351	332	260	244
120	487	393	399	377	295	277
150	550	446	445	421	328	308
185	635	516	500	477	370	349
240	745	617	580	550	426	403
300	855	709	650	620	478	452
400	990	824	735	700	540	510
500	1140	954	830	790	605	575
630	1300	1102	930	885	675	645

#### Dati costruttivi / Construction charact. - 3,6/6 kV

10	3,8	3,0	16,5	350	210
16	4,8	3,0	17,5	420	220
25	6,0	3,0	18,8	520	240
35	7,0	3,0	20,1	640	260
50	8,2	3,0	21,4	770	270
70	9,9	3,0	23,6	1010	300
95	11,6	3,0	25,2	1270	330
120	13,1	3,0	26,8	1520	350
150	14,4	3,0	28,1	1780	370
185	16,1	3,0	29,9	2150	390
240	18,5	3,0	32,6	2690	420
300	21,1	3,0	35,3	3320	460
400	23,9	3,0	37,7	4100	500
500	27,1	3,2	41,7	5190	550
630	30,7	3,2	46,0	6580	600

#### Caratt. elettriche / Electrical charact. - 3,6/6 kV

10	105	87	100	95	77	73
16	137	113	128	122	99	93
25	180	150	165	156	126	119
35	219	182	197	187	151	141
50	262	219	233	220	177	168
70	329	275	286	271	216	203
95	402	337	342	324	258	242
120	465	390	389	369	292	275
150	525	443	434	412	325	306
185	605	513	492	467	367	346
240	715	609	570	540	423	400
300	820	701	640	610	475	450
400	950	813	725	690	535	510
500	1100	941	820	780	605	575
630	1260	1083	915	875	670	640

#### Dati costruttivi / Construction charact. - 6/10 kV

10	3,8	3,4	19,7	440	250
16	4,8	3,4	21,1	530	270
25	6,0	3,4	22,4	650	290
35	7,0	3,4	23,3	750	300
50	8,2	3,4	24,6	890	320
70	9,9	3,4	26,4	1120	340
95	11,6	3,4	28,0	1390	360
120	13,1	3,4	29,6	1650	390
150	14,4	3,4	31,2	1920	410
185	16,1	3,4	33,4	2330	440
240	18,5	3,4	35,8	2880	470
300	21,1	3,4	38,5	3510	500
400	23,9	3,4	40,9	4310	540
500	27,1	3,4	44,9	5430	590
630	30,7	3,4	49,4	6850	650

#### Caratt. elettriche / Electrical charact. - 6/10 kV

10	105	91	98	93	77	73
16	136	117	126	120	99	93
25	178	154	163	154	127	119
35	219	186	195	185	151	141
50	260	223	231	218	177	166
70	326	279	283	268	217	203
95	398	340	340	321	258	242
120	459	395	386	366	293	275
150	520	448	431	409	326	307
185	600	516	489	464	368	347
240	705	611	565	540	424	401
300	810	703	635	605	476	451
400	935	815	720	690	535	510
500	1080	943	810	780	605	575
630	1230	1086	900	875	670	645

## RG7H1R EPRO-SETTE™

Unipolare da 1,8/3 kV a 26/45 kV  
Single core from 1,8/3 kV to 26/45 kV

### Unipolare - conduttore di rame / Single core - copper conductor - RG7H1R

sezione nominale	diametro indicativo conduttore	spessore isolante	diametro esterno massimo	peso indicativo del cavo	raggio minimo di curvatura
<i>conductor cross-section</i>	<i>approximate conductor diameter</i>	<i>insulation thickness</i>	<i>maximum outer diameter</i>	<i>approximate weight</i>	<i>minimum bending radius</i>
(mm <sup>2</sup> )	(mm)	(mm)	(mm)	(kg/km)	(mm)

sezione nominale	posa in aria		posa interrata			
	in piano	a trifoglio	in piano p=1 °C m/W	a trifoglio	in piano p=2 °C m/W	a trifoglio
<i>conductor cross-section</i>	<i>open air installation flat</i>		<i>underground installation</i>			
		<i>trefoil</i>	<i>flat</i>	<i>trefoil</i>	<i>flat</i>	<i>trefoil</i>
(mm <sup>2</sup> )	(A)	(A)	p=1 °C m/W		p=2 °C m/W	
	(A)	(A)	(A)	(A)	(A)	(A)

#### Dati costruttivi / Construction charact. - 8,7/15 kV

16	4,8	4,5	23,4	610	300
25	6,0	4,5	24,7	730	320
35	7,0	4,5	25,6	840	330
50	8,2	4,5	26,9	990	350
70	9,9	4,5	28,7	1230	370
95	11,6	4,5	30,3	1510	390
120	13,1	4,5	32,6	1800	420
150	14,4	4,5	33,9	2080	440
185	16,1	4,5	35,7	2460	470
240	18,5	4,5	38,1	3020	500
300	21,1	4,5	40,8	3660	530
400	23,9	4,5	43,6	4510	570
500	27,1	4,5	47,2	5600	620
630	30,7	4,5	52,1	7090	690

#### Caratt. elettriche / Electrical charact. - 8,7/15 kV

16	135	120	123	117	97	91
25	177	156	158	151	124	117
35	215	188	190	180	148	139
50	258	225	224	213	174	163
70	323	281	276	262	212	199
95	393	344	330	313	252	238
120	454	398	375	357	286	270
150	515	450	419	398	318	300
185	590	518	475	452	359	340
240	700	613	550	525	413	392
300	800	704	620	590	464	441
400	920	816	700	670	520	500
500	1060	944	785	760	585	565
630	1210	1087	870	850	645	630

#### Dati costruttivi / Construction charact. - 12/20 kV

35	7,0	5,5	27,7	940	360
50	8,2	5,5	29,0	1080	380
70	9,9	5,5	31,0	1330	400
95	11,6	5,5	33,1	1640	430
120	13,1	5,5	34,6	1920	450
150	14,4	5,5	36,0	2200	470
185	16,1	5,5	37,8	2580	490
240	18,5	5,5	40,2	3160	530
300	21,1	5,5	42,9	3800	560
400	23,9	5,5	45,7	4660	600
500	27,1	5,5	49,7	5810	660
630	30,7	5,5	54,2	7260	720

#### Caratt. elettriche / Electrical charact. - 12/20 kV

35	213	190	189	182	146	141
50	255	228	224	216	172	166
70	320	284	274	265	209	202
95	390	346	328	316	249	241
120	450	399	373	360	282	273
150	510	451	416	402	313	304
185	585	520	471	456	354	344
240	690	614	544	528	407	397
300	790	705	611	595	456	446
400	910	816	688	673	512	503
500	1050	944	776	761	575	568
630	1190	1087	873	856	645	637

## RG7H1R EPRO-SETTE™

Unipolare da 1,8/3 kV a 26/45 kV  
Single core from 1,8/3 kV to 26/45 kV

### Unipolare da 1,8/3 kV a 45 kV / Single core from 1,8/3 kV to 45 kV

sezione nominale	diametro indicativo conduttore	spessore isolante	diametro esterno massimo	peso indicativo del cavo	raggio minimo di curvatura
<i>conductor cross-section</i>	<i>approximate conductor diameter</i>	<i>insulation thickness</i>	<i>maximum outer diameter</i>	<i>approximate weight</i>	<i>minimum bending radius</i>
(mm <sup>2</sup> )	(mm)	(mm)	(mm)	(kg/km)	(mm)

sezione nominale	posa in aria		posa interrata			
	in piano	a trifoglio	in piano p=1 °C m/W	a trifoglio p=1 °C m/W	in piano p=2 °C m/W	a trifoglio p=2 °C m/W
<i>conductor cross-section</i>	<i>open air installation flat trefoil</i>		<i>underground installation flat trefoil flat trefoil</i>			
(mm <sup>2</sup> )	(A)	(A)	(A)	(A)	(A)	(A)

#### Dati costruttivi / Construction charact. - 18/30 kV

35	7,0	8,0	34,6	1290	450
50	8,2	8,0	34,8	1390	450
70	9,9	8,0	36,6	1660	480
95	11,6	8,0	38,3	1940	500
120	13,1	8,0	39,8	2230	520
150	14,4	8,0	41,2	2520	540
185	16,1	8,0	43,4	2960	570
240	18,5	8,0	45,8	3560	600
300	21,1	8,0	48,5	4240	640
400	23,9	8,0	51,3	5120	680
500	27,1	8,0	55,3	6300	730
630	30,7	8,0	59,8	7790	790

#### Caratt. elettriche / Electrical charact. - 18/30 kV

35	211	191	187	181	146	142
50	253	229	222	214	172	166
70	316	285	272	263	210	203
95	386	347	325	314	250	242
120	445	400	370	358	283	275
150	505	452	413	400	315	306
185	580	520	467	453	355	345
240	680	614	539	525	408	398
300	775	704	606	593	457	448
400	895	815	684	671	514	506
500	1030	943	775	761	580	572
630	1170	1085	874	860	650	644

#### Dati costruttivi / Construction charact. - 26/45 kV

70	9,9	10,0	42,2	2010	550
95	11,6	10,0	44,3	2360	580
120	13,1	10,0	45,9	2660	600
150	14,4	9,0	45,1	2810	590
185	16,1	9,0	46,9	3220	620
240	18,5	9,0	49,3	3840	650
300	21,1	9,0	52,6	4590	690
400	23,9	9,0	55,1	5440	730
500	27,1	9,0	59,1	6640	780
630	30,7	9,0	63,3	8150	840

#### Caratt. elettriche / Electrical charact. - 26/45 kV

70	318	285	264	256	205	199
95	385	346	315	305	243	237
120	443	398	358	348	275	269
150	502	449	400	389	305	299
185	576	516	451	441	344	338
240	675	609	520	511	395	390
300	769	698	585	575	442	438
400	881	807	661	654	498	495
500	1014	933	742	739	557	558
630	1178	1069	848	836	635	630