



**C.R.I. CABLES**  
*Quality to the core*

# C.R.I. CABLES

- Submersible Cables
- Power Cables • Building Wires
- Winding Wires



## QUALITY TO THE CORE



## T H E B E G I N N I N G

of C.R.I., way back in 1961, was a resolute attempt to produce a few irrigation equipments using the limited facilities of an in-house foundry. Eventually the founder's dream was coming true as the small production unit he started kept growing rapidly. Now, after more than five eventful decades, it is an enormous, widely reputed organization, which produces more than 2300 varieties of perfectly engineered pumps and motors and sells its products in numerous countries spread across 6 continents.

## C . R . I . I S O N E A M O N G

the few pioneers in the world to produce 100% stainless steel submersible pumps. Having achieved a record production capacity of over 2 million pumps per annum, today C.R.I. is rubbing its shoulders with the best brands in the world, with advanced technology and safety standards as its hallmarks.

## T H E I N F R A S T R U C T U R E

of C.R.I. is pretty comprehensive with state-of-the-art machineries and high potential in-house R&D recognised by the ministry of science and technology, Govt. of India - all within its own covered area of 300,000 square metres. The production environment is accredited with ISO 9001, ISO 14001 & OSHAS 18001 certifications and the products are CE, UR/UL, TSE & ISI certified. The R&D team always stays in tune with the changing scenario and seldom fails in coming up with outstanding solutions every time.

## N E E D L E S S T O S A Y ,

behind this legendary growth lies the untiring, innovative, enthusiastic and dedicated team work. and, of course, a flawlessly maintained value system too. The name C.R.I. itself encapsulates the company's ethos: " Commitment, Reliability, Innovation".



# C.R.I. Submersible Cables

## Description

C.R.I. submersible cables are produced in a well equipped, state of the art manufacturing facilities and using 99.97% pure bright electrolytic copper with low conductor resistance for high current carrying capacity. The insulation coating is done with superior grade Rubber PVC compounds with high insulation resistance and higher thermal stability. Outer sheath is made up of special grade water proof Rubber / PVC compounds, which gives resistant to moisture, abrasion, grease, oil and other environment effect.

C.R.I. produces different types of submersible cables in a wide range to meet the different needs of customers across the world. C.R.I. supplies cables in both SWG and AWG dimensions. These cables are produced by considering different type of field conditions, voltage fluctuations into account to ensure reliability, safety, longevity and energy saving.

## Features

99.97% EC Grade Copper | High Conductivity | Better Thermal Stability | Abrasion Resistant PVC Compound | High Ageing property | Impervious to water, oil & grease

## Applications

To supply power to submersible motors, pumping equipments & industrial machineries.

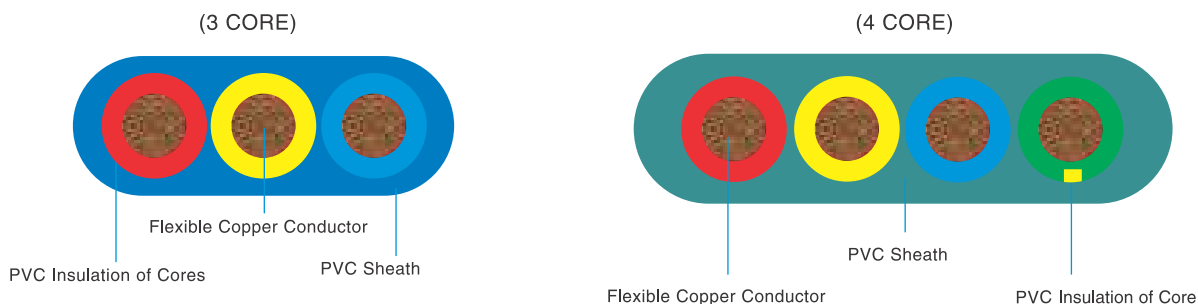
## Specifications

Available sizes in Sq.mm	1.5, 2.5, 4, 6, 10, 16, 25, 35, 50, 70, 95, 120 & 150 (3 core and 4 core) - 1100 V
Available sizes in AWG	14, 12, 10, 8, 6, 4, 2, 1, 1/0, 2/0, 3/0, 4/0 (3 core and 4 core) - 600 V
Armoured cables sizes in Sq.mm	1.5 to 400 (3 core and 4 core) 1100 V
Temperature Range	-40°C to +90°C
Conductor material	High conductivity, annealed and bunched copper
Conductor coating	Plain / Tinned
Conductor Resistance is as per :	PVC / Rubber Std - Class 5 of IEC60228, DIN VDE 0295, IS 8130, BS 6360 PVC / Rubber AWG - Class 5 of IEC60228, UL 83, DIN VDE 0295, IS 8130, BS 6360 Armoured Cable - IS : 1554 (Part 1) 1988
Insulation material	Flexible water proof PVC / Rubber. H07RN-f against requirement
Sheath material	Flexible water proof PVC / Rubber. H07RN-f against requirement
Sheath colour	Blue/Black/Green. Other colors can also be supplied against requirement
Standards conforming to	PVC Std - CENELEC HD 21, IEC60227, BS 6500, DIN VDE 0281, IS 694 Rubber Std - CENELEC HD 21.152, DIN VDE 0282, PART 810, IEC 245, CEI 20-19 & BS 6007, BS 6899 PVC AWG - UL 83, IEC 60227, BS 6500, ISI 694 Rubber AWG - UL 83, IEC 60245, DIN VDE 0282, PART 810, BS 6007 & BS 6899 ARMOURED POWER CABLE - IEC 60502-1, BS 5467, BS 6724

## Colour Coding : PVC / Rubber Insulated & Sheathed 3 & 4 core, flat & Round (Single / Double sheathed)

Country	Core colour Codes	Outer sheath colour code
European Standard	4 core - Brown, Blue, Black, Yellow with Green stripe 3 core - Brown, Blue, Black	Blue
Australia	4 core - Brown, Blue, Black, Yellow with Green stripe 3 core - Brown, Blue, Yellow with Green stripe	Blue
South Africa	4 core - Red, Yellow, Blue, Green with Yellow stripe 3 core - Red, Yellow, Blue	4 core Round / Flat - Green 3 core Round / Flat - Blue
Sharjah	4 core - Red, Yellow, Blue, Black 3 core - Red, Yellow, Blue	Black
USA Standard - AWG	4 core - Black, Yellow, Red, Green 3 core - Black, Yellow, Red	Blue

## PVC 3 & 4 CORE FLAT CABLES



TECHNICAL & DIMENSIONAL TABLE (3 CORE)

CONDUCTOR		PVC INSULATION		PVC SHEATH			Conductor Resistance at 20°C (max) ohms/km	CURRENT Rating at 40°C Amps.
Nominal Area in Sq.mm.	No. of conductors/ Nom. dia in mm	Nominal Thickness (in mm)	Nominal Core Dia (in mm)	Nominal Thickness (in mm)	Approx. Overall Dimensions (in mm)			
					W	H		
1.5	22/0.30	0.80	3.10	1.15	12.60	6.00	12.10	14.0
2.5	36/0.30	0.90	3.60	1.15	14.45	6.40	7.41	18.0
4.0	56/0.30	1.00	4.20	1.15	16.60	7.40	4.95	26.0
6.0	84/0.30	1.00	5.05	1.15	18.15	7.90	3.30	31.0
10.0	140/0.30	1.00	6.20	1.40	23.20	9.90	1.91	42.0
16.0	226/0.30	1.00	7.30	1.40	27.20	11.40	1.21	57.0
25.0	354/0.30	1.20	9.90	2.00	35.20	14.70	0.780	72.0
35.0	495/0.30	1.20	10.90	2.00	39.20	16.20	0.554	90.0
50.0	703/0.30	1.40	13.30	2.20	45.50	18.30	0.386	115.0
70.0	988/0.30	1.40	15.30	2.20	51.00	20.00	0.272	143.0
95.0	1349/0.30	1.60	18.00	2.40	60.00	23.50	0.206	165.0
120.0	608/0.50	1.80	19.80	2.80	65.00	25.00	0.161	188.0
150.0	760/0.50	2.00	22.00	4.00	76.10	30.70	0.129	216.0



TECHNICAL & DIMENSIONAL TABLE (4 CORE)

CONDUCTOR		PVC INSULATION		PVC SHEATH			Conductor Resistance at 20°C (max) ohms/km	CURRENT Rating at 40°C Amps.
Nominal Area in Sq.mm.	No. of conductors/ Nom. dia in mm	Nominal Thickness (in mm)	Nominal Core Dia (in mm)	Nominal Thickness (in mm)	Approx. Overall Dimensions (in mm)			
					W	H		
1.5	22/0.30	0.80	3.10	1.30	15.40	6.00	12.10	14.0
2.5	36/0.30	0.90	3.60	1.30	17.35	6.50	7.41	18.0
4.0	56/0.30	1.00	4.20	1.45	20.40	7.60	4.95	26.0
6.0	84/0.30	1.00	5.05	1.50	23.80	7.90	3.30	31.0
10.0	140/0.30	1.00	6.20	1.80	28.90	9.90	1.91	42.0
16.0	226/0.30	1.00	7.30	1.95	35.70	11.40	1.21	57.0
25.0	354/0.30	1.20	9.90	2.00	45.10	14.70	0.780	72.0
35.0	495/0.30	1.20	10.90	2.00	50.10	16.20	0.554	90.0
50.0	703/0.30	1.40	13.30	2.20	58.10	18.30	0.386	115.0
70.0	988/0.30	1.40	15.30	2.20	66.50	20.00	0.272	143.0
95.0	1349/0.30	1.60	18.00	2.40	77.30	23.50	0.206	165.0
120.0	608/0.50	1.80	19.80	3.50	87.00	27.40	0.161	188.0



Note : The number of strands are approximate and strands diameter is nominal  
 In view of continuous developments, the information / descriptions / specifications / illustrations are subject to change without notice.

## PVC 3 & 4 CORE ROUND CABLES - SINGLE SHEATHED



### TECHNICAL & DIMENSIONAL TABLE (3 CORE)

CONDUCTOR		PVC INSULATION		PVC SHEATH		Conductor Resistance at 20°C (max) ohms/km	CURRENT Rating at 40°C Amps.
Nominal Area in Sq.mm.	No. of conductors/ Nom. dia in mm	Nominal Thickness (in mm)	Nominal Core Dia (in mm)	Nominal Thickness (in mm)	Nominal Diameter (in mm)		
1.5	22/0.30	0.80	3.10	1.50	10.00	12.10	14.0
2.5	36/0.30	0.90	3.60	1.50	11.00	7.41	18.0
4.0	56/0.30	1.00	4.20	1.60	13.00	4.95	26.0
6.0	84/0.30	1.00	5.05	1.60	14.60	3.30	31.0
10.0	140/0.30	1.00	6.20	2.00	18.00	1.91	42.0
16.0	226/0.30	1.00	7.30	2.00	21.20	1.21	57.0
25.0	354/0.30	1.20	10.10	2.40	26.50	0.780	72.0
35.0	495/0.30	1.20	11.30	2.60	29.50	0.554	90.0
50.0	703/0.30	1.40	13.30	3.10	34.80	0.386	115.0
70.0	988/0.30	1.40	15.30	3.20	39.30	0.272	143.0
95.0	1349/0.30	1.60	18.00	3.50	45.70	0.206	165.0
120.0	608/0.50	1.90	19.80	3.80	50.20	0.161	188.0
150.0	760/0.50	2.20	22.00	4.00	55.30	0.129	216.0



### TECHNICAL & DIMENSIONAL TABLE (4 CORE)

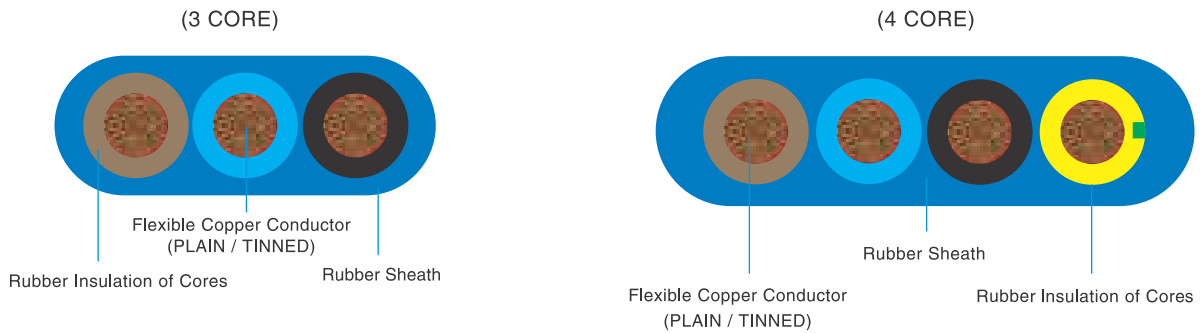
CONDUCTOR		PVC INSULATION		PVC SHEATH		Conductor Resistance at 20°C (max) ohms/km	CURRENT Rating at 40°C Amps.
Nominal Area in Sq.mm.	No. of conductors/ Nom. dia in mm	Nominal Thickness (in mm)	Nominal Core Dia (in mm)	Nominal Thickness (in mm)	Nominal Diameter (in mm)		
1.5	22/0.30	0.80	3.10	1.50	10.80	12.10	14.0
2.5	36/0.30	0.90	3.60	1.65	12.50	7.41	18.0
4.0	56/0.30	1.00	4.20	1.65	14.10	4.95	26.0
6.0	84/0.30	1.00	5.05	1.65	16.00	3.30	31.0
10.0	140/0.30	1.00	6.20	2.00	20.35	1.91	42.0
16.0	226/0.30	1.00	7.30	2.00	23.40	1.21	57.0
25.0	350/0.30	1.20	10.10	2.40	29.20	0.780	72.0
35.0	490/0.30	1.20	11.30	2.60	32.40	0.554	90.0
50.0	703/0.30	1.40	13.30	3.10	38.25	0.386	115.0
70.0	988/0.30	1.40	15.30	3.20	43.30	0.272	143.0
95.0	1349/0.30	1.60	18.00	3.50	50.40	0.206	165.0
120.0	608/0.50	1.90	19.80	3.80	55.30	0.161	188.0
150.0	760/0.50	2.00	22.00	4.00	61.00	0.129	216.0



Note : The number of strands are approximate and strands diameter is nominal  
In view of continuous developments, the information / descriptions / specifications / illustrations are subject to change without notice.

Important : Do not use single sheath cables for heavy-duty applications like sewage, slurry and de-watering pumps in which the acidic fluids and chemicals may damage the sheath. Double-sheathed cables can be used for these kind of applications.

# RUBBER 3 & 4 CORE FLAT CABLES



TECHNICAL & DIMENSIONAL TABLE (3 CORE)

CONDUCTOR		PVC INSULATION		PVC SHEATH			Conductor Resistance at 20°C (max) ohms/km	CURRENT Rating at 40°C Amps.
Nominal Area in Sq.mm.	No. of conductors/ Nom. dia in mm	Nominal Thickness (in mm)	Nominal Core Dia (in mm)	Nominal Thickness (in mm)	Approx. Overall Dimensions (in mm)			
					W	H		
1.5	22/0.30	0.80	3.10	1.15	12.60	6.00	12.10	14.0
2.5	36/0.30	0.90	3.60	1.15	14.45	6.40	7.41	18.0
4.0	56/0.30	1.00	4.20	1.15	16.60	7.40	4.95	26.0
6.0	84/0.30	1.00	5.05	1.15	18.15	7.90	3.30	31.0
10.0	140/0.30	1.00	6.20	1.40	23.20	9.90	1.91	42.0
16.0	226/0.30	1.00	7.30	1.40	27.20	11.40	1.21	57.0
25.0	354/0.30	1.20	9.90	2.00	35.20	14.70	0.780	72.0
35.0	495/0.30	1.20	10.90	2.00	39.20	16.20	0.554	90.0
50.0	703/0.30	1.40	13.30	2.20	45.50	18.30	0.386	115.0
70.0	988/0.30	1.40	15.30	2.20	51.00	20.00	0.272	143.0
95.0	1349/0.30	1.60	18.00	2.40	60.00	23.50	0.206	165.0
120.0	608/0.50	1.80	19.80	2.80	65.00	25.00	0.161	188.0
150.0	760/0.50	2.20	22.00	4.00	76.10	30.70	0.129	216.0



TECHNICAL & DIMENSIONAL TABLE (4 CORE)

CONDUCTOR		PVC INSULATION		PVC SHEATH			Conductor Resistance at 20°C (max) ohms/km	CURRENT Rating at 40°C Amps.
Nominal Area in Sq.mm.	No. of conductors/ Nom. dia in mm	Nominal Thickness (in mm)	Nominal Core Dia (in mm)	Nominal Thickness (in mm)	Approx. Overall Dimensions (in mm)			
					W	H		
1.5	22/0.30	0.80	3.10	1.30	15.40	6.00	12.10	14.0
2.5	36/0.30	0.90	3.60	1.30	17.35	6.50	7.41	18.0
4.0	56/0.30	1.00	4.20	1.45	20.40	7.60	4.95	26.0
6.0	84/0.30	1.00	5.05	1.50	23.80	7.90	3.30	31.0
10.0	140/0.30	1.00	6.20	1.80	28.90	9.90	1.91	42.0
16.0	226/0.30	1.00	7.30	1.95	35.70	11.40	1.21	57.0
25.0	354/0.30	1.20	9.90	2.00	45.10	14.70	0.780	72.0
35.0	495/0.30	1.20	10.90	2.00	50.10	16.20	0.554	90.0
50.0	703/0.30	1.40	13.30	2.20	58.10	18.30	0.386	115.0
70.0	988/0.30	1.40	15.30	2.20	66.50	20.00	0.272	143.0
95.0	1349/0.30	1.60	18.00	2.40	77.30	23.50	0.206	165.0
120.0	608/0.50	1.80	19.80	3.50	87.00	27.40	0.161	188.0



Note : The number of strands are approximate and strands diameter is nominal ; In view of continuous developments, the information / descriptions / specifications / illustrations are subject to change without notice.

## RUBBER 3 & 4 CORE ROUND CABLES - SINGLE SHEATHED



### TECHNICAL & DIMENSIONAL TABLE (3 CORE)

CONDUCTOR		PVC INSULATION		PVC SHEATH		Conductor Resistance at 20°C (max) ohms/km	CURRENT Rating at 40°C Amps.
Nominal Area in Sq.mm.	No. of conductors/ Nom. dia in mm	Nominal Thickness (in mm)	Nominal Core Dia (in mm)	Nominal Thickness (in mm)	Nominal Diameter (in mm)		
1.5	22/0.30	0.80	3.10	1.50	10.00	12.10	14.0
2.5	36/0.30	0.90	3.60	1.50	11.00	7.41	18.0
4.0	56/0.30	1.00	4.20	1.60	13.00	4.95	26.0
6.0	84/0.30	1.00	5.05	1.60	14.60	3.30	31.0
10.0	140/0.30	1.00	6.20	2.00	18.00	1.91	42.0
16.0	226/0.30	1.00	7.30	2.00	21.20	1.21	57.0
25.0	350/0.30	1.20	10.10	2.40	26.50	0.780	72.0
35.0	490/0.30	1.20	11.30	2.60	29.50	0.554	90.0
50.0	703/0.30	1.40	13.30	3.10	34.80	0.386	115.0
70.0	988/0.30	1.40	15.30	3.20	39.30	0.272	143.0
95.0	1349/0.30	1.60	18.00	3.50	45.70	0.206	165.0
120.0	608/0.50	1.90	19.80	3.80	50.20	0.161	188.0
150.0	760/0.50	2.00	22.00	4.00	55.30	0.129	216.0



### TECHNICAL & DIMENSIONAL TABLE (4 CORE)

CONDUCTOR		RUBBER INSULATION		RUBBER SHEATH		Conductor Resistance at 20°C (max) ohms/km	CURRENT Rating at 40°C Amps.
Nominal Area in Sq.mm.	No. of conductors/ Nom. dia in mm	Nominal Thickness (in mm)	Nominal Core Dia (in mm)	Nominal Thickness (in mm)	Nominal Diameter (in mm)		
1.5	22/0.30	0.80	3.10	1.50	10.80	12.10	14.0
2.5	36/0.30	0.90	3.60	1.65	12.50	7.41	18.0
4.0	56/0.30	1.00	4.20	1.65	14.10	4.95	26.0
6.0	84/0.30	1.00	5.05	1.65	16.00	3.30	31.0
10.0	140/0.30	1.00	6.20	2.00	20.35	1.91	42.0
16.0	226/0.30	1.00	7.30	2.00	23.40	1.21	57.0
25.0	350/0.30	1.20	10.10	2.40	29.20	0.780	72.0
35.0	490/0.30	1.20	11.30	2.60	32.40	0.554	90.0
50.0	703/0.30	1.40	13.30	3.10	38.25	0.386	115.0
70.0	988/0.30	1.40	15.30	3.20	43.30	0.272	143.0
95.0	1349/0.30	1.60	18.00	3.50	50.40	0.206	165.0
120.0	608/0.50	1.90	19.80	3.80	55.30	0.161	188.0
150.0	760/0.50	2.00	22.00	4.00	61.00	0.129	216.0

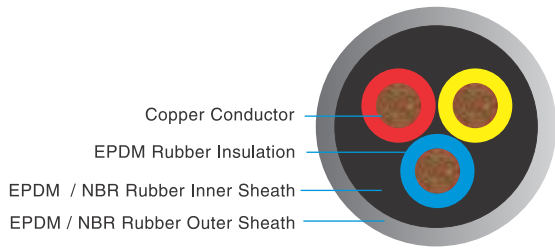


Note : The number of strands are approximate and strands diameter is nominal ;  
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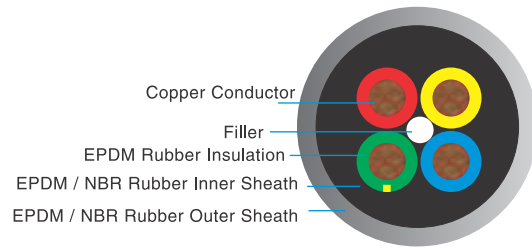
Important : Do not use single sheath cables for heavy-duty applications like sewage, slurry and de-watering pumps in which the acidic fluids and chemicals may damage the sheath. Double-sheathed cables can be used for these kind of applications.

# PVC / EPDM RUBBER INSULATED & PVC / EPDM / NBR RUBBER SHEATHED ROUND CABLES 3 & 4 CORE - DOUBLE SHEATHED

(3 CORE)



(4 CORE)



TECHNICAL & DIMENSIONAL TABLE (3 CORE)

CONDUCTOR		PVC INSULATION		PVC SHEATH		Conductor Resistance at 20°C (max) ohms/km	CURRENT Rating at 40°C Amps.
Nominal Area in Sq.mm.	No. of conductors/ Nom. dia in mm	Nominal Thickness (in mm)	Nominal Core Dia (in mm)	Nominal Thickness (in mm)	Nominal Diameter (in mm)		
1.5	22/0.30	0.80	3.10	1.50	10.00	12.10	14.0
2.5	36/0.30	0.90	3.60	1.50	11.00	7.41	18.0
4.0	56/0.30	1.00	4.20	1.60	13.00	4.95	26.0
6.0	84/0.30	1.00	5.05	1.60	14.60	3.30	31.0
10.0	140/0.30	1.00	6.20	2.00	18.00	1.91	42.0
16.0	226/0.30	1.00	7.30	2.00	21.20	1.21	57.0
25.0	354/0.30	1.20	10.10	2.15	26.00	0.780	72.0
35.0	495/0.30	1.20	11.30	2.15	28.30	0.554	90.0
50.0	703/0.30	1.40	13.30	2.25	33.50	0.386	115.0
70.0	988/0.30	1.40	15.30	2.45	37.80	0.272	143.0
95.0	1349/0.30	1.60	18.00	2.50	43.50	0.206	165.0



TECHNICAL & DIMENSIONAL TABLE (4 CORE)

CONDUCTOR		PVC INSULATION		PVC SHEATH		Conductor Resistance at 20°C (max) ohms/km	CURRENT Rating at 40°C Amps.
Nominal Area in Sq.mm.	No. of conductors/ Nom. dia in mm	Nominal Thickness (in mm)	Nominal Core Dia (in mm)	Nominal Thickness (in mm)	Nominal Diameter (in mm)		
1.5	22/0.30	0.80	3.10	1.50	10.80	12.10	14.0
2.5	36/0.30	0.90	3.60	1.65	12.50	7.41	18.0
4.0	56/0.30	1.00	4.20	1.65	14.10	4.95	26.0
6.0	84/0.30	1.00	5.05	1.65	16.00	3.30	31.0
10.0	140/0.30	1.00	6.20	2.00	20.35	1.91	42.0
16.0	226/0.30	1.00	7.30	2.00	23.40	1.21	57.0
25.0	354/0.30	1.20	10.10	2.20	28.80	0.780	72.0
35.0	495/0.30	1.20	11.30	2.20	31.50	0.554	90.0
50.0	703/0.30	1.40	13.30	2.30	37.30	0.386	115.0
70.0	988/0.30	1.40	5.30	2.60	42.20	0.272	143.0
95.0	1349/0.30	1.60	18.00	2.65	48.80	0.206	165.0



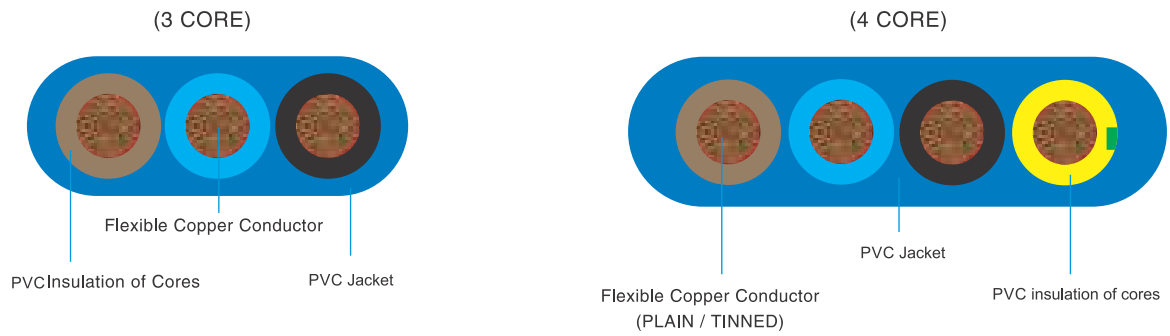
NBR - Nitrile butadiene rubber.  
Cables with EPDM Insulation & NBR Sheath is equivalent to H07RN-F Standards.  
on request cables with lead free NBR can be supplied.

Note : The number of strands are approximate and strands diameter is nominal.

In view of continuous developments, the information / descriptions / specifications / illustrations are subject to change without notice.




## PVC 3 & 4 CORE FLAT CABLES (AWG)




**TECHNICAL & DIMENSIONAL TABLE (3 CORE)**

Conductor Size (AWG)	No. of Conductors	Nom. Conductor Dia (mm)	OD (mm)	Core Thickness (mm)	Core Dia (mm)	Sheath Thickness (mm)	Width (mm)	Height (mm)
14	41	0.254	1.89	1.1	4.15	1.15	14.85	6.55
12	65	0.254	2.38	1.2	4.85	1.15	16.95	7.25
10	105	0.254	3.02	1.2	5.35	1.15	18.45	7.75
8	168	0.254	3.82	1.3	6.35	1.4	21.95	9.25
6	226	0.254	4.43	1.9	8.25	1.4	27.65	11.15
4	420	0.254	6.04	2	9.95	2	33.95	14.05
2	665	0.254	7.6	1.8	11.15	2	37.55	15.25
1	817	0.254	8.42	2.6	13.65	2.2	45.45	18.15
1/0	1045	0.254	9.52	2.1	13.65	2.2	45.45	18.15
2/0	1330	0.254	10.75	2.5	15.65	2.2	51.45	20.15
3/0	1672	0.254	12.05	3	18.05	2.4	59.05	22.95
4/0	2116	0.254	13.55	3.1	19.85	2.65	64.95	25.25



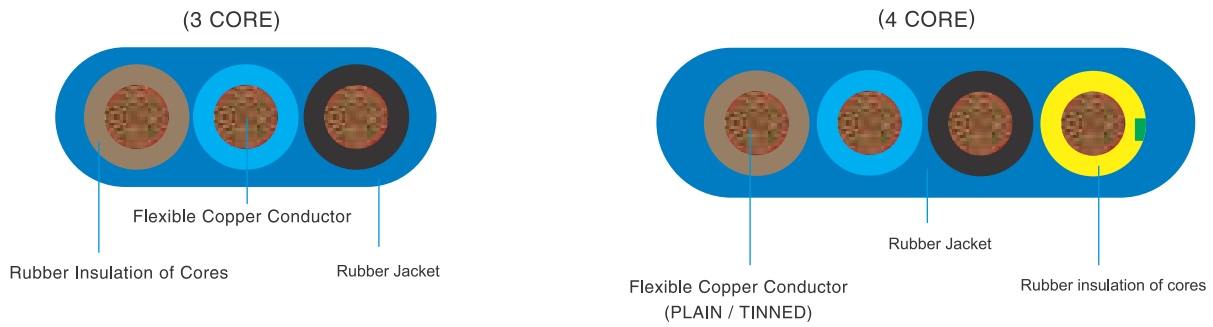
**TECHNICAL & DIMENSIONAL TABLE (4 CORE)**

Conductor Size (AWG)	No. of Conductors	Nom. Conductor Dia (mm)	OD (mm)	Core Thickness (mm)	Core Dia (mm)	Sheath Thickness (mm)	Width (mm)	Height (mm)	Ground Conductor (AWG)
14	41	0.254	1.89	1.1	4.15	1.15	19	6.55	14
12	65	0.254	2.38	1.2	4.85	1.15	21.8	7.25	12
10	105	0.254	3.02	1.2	5.35	1.15	23.8	7.75	10
8	168	0.254	3.82	1.3	6.35	1.4	28.3	9.25	10
6	226	0.254	4.43	1.9	8.25	1.4	35.9	11.15	8
4	420	0.254	6.04	2	9.95	2	43.9	14.05	8
2	665	0.254	7.6	1.8	11.15	2	48.7	15.25	6
1	817	0.254	8.42	2.6	13.65	2.2	59.1	18.15	6
1/0	1045	0.254	9.52	2.1	13.65	2.2	59.1	18.15	6
2/0	1330	0.254	10.75	2.5	15.65	2.2	67.1	20.15	6
3/0	1672	0.254	12.05	3	18.05	2.4	77.1	22.95	2
4/0	2116	0.254	13.55	3.1	19.85	2.65	84.8	25.25	2



Note : The number of strands are approximate and strands diameter is nominal ;  
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## RUBBER 3 & 4 CORE FLAT CABLES (AWG)



**TECHNICAL & DIMENSIONAL TABLE (3 CORE)**

Conductor Size (AWG)	No. of Conductors	Nom. Conductor Dia (mm)	OD (mm)	Core Thickness (mm)	Core Dia (mm)	Sheath Thickness (mm)	Width (mm)	Height (mm)
14	41	0.254	1.89	1.1	4.15	1.15	14.85	6.55
12	65	0.254	2.38	1.2	4.85	1.15	16.95	7.25
10	105	0.254	3.02	1.2	5.35	1.15	18.45	7.75
8	168	0.254	3.82	1.3	6.35	1.4	21.95	9.25
6	226	0.254	4.43	1.9	8.25	1.4	27.65	11.15
4	420	0.254	6.04	2	9.95	2	33.95	14.05
2	665	0.254	7.6	1.8	11.15	2	37.55	15.25
1	817	0.254	8.42	2.6	13.65	2.2	45.45	18.15
1/0	1045	0.254	9.52	2.1	13.65	2.2	45.45	18.15
2/0	1330	0.254	10.75	2.5	15.65	2.2	51.45	20.15
3/0	1672	0.254	12.05	3	18.05	2.4	59.05	22.95
4/0	2116	0.254	13.55	3.1	19.85	2.65	64.95	25.25



**TECHNICAL & DIMENSIONAL TABLE (4 CORE)**

Conductor Size (AWG)	No. of Conductors	Nom. Conductor Dia (mm)	OD (mm)	Core Thickness (mm)	Core Dia (mm)	Sheath Thickness (mm)	Width (mm)	Height (mm)	Ground Conductor (AWG)
14	41	0.254	1.89	1.1	4.15	1.15	19	6.55	14
12	65	0.254	2.38	1.2	4.85	1.15	21.8	7.25	12
10	105	0.254	3.02	1.2	5.35	1.15	23.8	7.75	10
8	168	0.254	3.82	1.3	6.35	1.4	28.3	9.25	10
6	226	0.254	4.43	1.9	8.25	1.4	35.9	11.15	8
4	420	0.254	6.04	2	9.95	2	43.9	14.05	8
2	665	0.254	7.6	1.8	11.15	2	48.7	15.25	6
1	817	0.254	8.42	2.6	13.65	2.2	59.1	18.15	6
1/0	1045	0.254	9.52	2.1	13.65	2.2	59.1	18.15	6
2/0	1330	0.254	10.75	2.5	15.65	2.2	67.1	20.15	6
3/0	1672	0.254	12.05	3	18.05	2.4	77.1	22.95	2
4/0	2116	0.254	13.55	3.1	19.85	2.65	84.8	25.25	2



Note : The number of strands are approximate and strands diameter is nominal ; In view of continuous developments, the information / descriptions / specifications / illustrations are subject to change without notice.

## C.R.I. BUILDING WIRES

C.R.I.'s vast experience and successful track record pump industry spanning over 6 decades facilitate not only to enhance the range of pumps & motors, but also to produce and supply quality wire and cables in its state-of-the-art manufacturing facilities. The systems at the manufacturing facility are certified for ISO-9001 and the product manufactured to meet the relevant PVC cables standards IS 694.

### Conductor

These wires are manufactured using Electrolytic Grade 99.97% purity copper with more than 100% conductivity. The conductors are drawn using state-of-the-art multiwire drawing machine as fine wires and bunched with concentricity according to IS 8130. High purity and conductivity of copper ensures greater saving of electrical energy.

### Certifications:

- BIS - Bureau of Indian standards (ISI)
- TUV NORD-ISO 9001 : 2015 Certification for the quality management systems

### FLAME RETARDANT (FR) PVC INSULATED BUILDING WIRES

**Z FIRE**  
FR



- Voltage Rating** : Upto 1100 volts - AC Supply
- Temperature Range** : -10° C to +70° C
- Insulation Material** : PVC with Fire - Retardant property
- Conductor** : High Conductivity Annealed and Bunched Copper
- Available Size** : 0.5 mm<sup>2</sup> to 16.0 mm<sup>2</sup>

### LEAD FREE FLAME RETARDANT LOW SMOKE HALOGEN (FR-LSH) PVC INSULATED BUILDING WIRES

**Z FUME**  
FR-LSH



- Voltage Rating** : Upto 1100 volts - AC Supply
- Temperature Range** : -10° C to +70° C
- Insulation Material** : PVC with Fire - Retardant, Low smoke & Low Halogen property
- Conductor** : High Conductivity Annealed and Bunched Copper
- Available Size** : 0.5 mm<sup>2</sup> to 16.0 mm<sup>2</sup>

### PVC INSULATED UNSHEATHED CABLES WITH SOLID STRANDED COPPER WIRE



- Voltage Rating** : Upto 1100 volts - AC Supply
- Temperature Range** : -10° C to +70° C
- Insulation Material** : PVC with Fire - Retardant Material
- Available Size** : 1/18 to 7/16 SWG or 1.5 Sq.mm to 16.0 Sq.mm
- Conductor** : Solid Annealed Copper

**TECHNICAL & DIMENSIONAL DETAILS (SINGLE CORE, UNSHEATHED, FLEXIBLE) IS-694 ISI CM/L-3406447**

Nominal Area of conductor mm <sup>2</sup>	No. of conductors/ Nom. dia in mm	Thickness of insulation (Nom.) mm	Approx. overall Diameter mm	Current carrying capacity #2 Cables, single phase		Max. Resistance @ 20°C (Ohms/km)
				In conduit/ Trunking Amps.	Unenclosed-clipped directly to a surface or on cable tray Amps.	
0.5	16/0.20	0.60	2.20	3	4	39.00
0.75	24/0.20	0.60	2.40	6	7	26.00
1.0	14/0.30	0.70	2.70	11	12	18.10
1.5	22/0.30	0.70	3.00	13	16	12.10
2.5	36/0.30	0.80	3.60	18	22	7.41
4.0	56/0.30	0.80	4.00	24	29	4.95
6.0	84/0.30	0.80	4.60	31	37	3.30
10.0	140/0.30	1.00	6.20	42	51	1.91
16.0	226/0.30	1.00	7.30	57	68	1.21

Standard length : 90 Meter Coils in Protective Carton, Coils in Meter & Project Coils of 180/270 mtrs also available.  
# As per IS : 3961(Part V) : 1968. \*\*Nominal Dia to meet the specified resistance.

**TECHNICAL & DIMENSIONAL DETAILS (SINGLE/MULTICORE SHEATHED FLEXIBLE)**

Cross sectional Area of conductor (nom.) mm <sup>2</sup>	No. of conductors/ Nom. dia in mm	Thickness of Insulation (Nom.) mm	Thickness of Sheath (Nom.)				Overall Dimensions (Max.)				Max. Resistance @ 20°C (Ohms/km)
			Single Core mm	Two Core mm	Three Core mm	Four Core mm	Single Core mm	Two Core mm	Three Core mm	Four Core mm	
0.5	16/0.2	0.6	0.9	0.9	0.9	0.9	4.3	6.9	7.3	8.0	39.0
0.75	24/0.2	0.6	0.9	0.9	0.9	0.9	4.5	7.3	7.7	8.4	26.0
1.0	32/0.2	0.6	0.9	0.9	0.9	0.9	4.7	7.6	8.1	8.8	19.5
1.5	48/0.2 or 30/0.25	0.6	0.9	0.9	0.9	0.9	5.4	8.9	9.4	10.4	13.3
2.5	80/0.2 or 50/0.25	0.7	1.0	1.0	1.0	1.0	6.2	10.3	10.9	12.0	7.98
4.0	56/0.3	0.8	1.0	1.0	1.0	1.0	6.8	11.6	12.4	13.6	4.95
6.0	84/0.3	0.8	1.1	1.1	1.1	1.1	7.5	13.0	13.8	15.47	3.30
10.0	140/0.3	1.0	1.3	1.3	1.3	1.3	9.4	16.5	17.69	19.5	1.91
16.0	226/0.3	1.0	1.4	1.4	1.4	1.4	10.9	19.4	20.6	23.0	1.21

**Standard Colours:** Red, Yellow, Blue, Black, Green, Grey & White. Other colours can also be supplied against requirement.

**Standard Length:** 90 Meter Coils in Protective Carton. Project Coils of 180 / 270 mtrs also available.

# As per IS 3961(Part V) : 1968.

\*\* Nominal Dia to meet the Specified resistance.

**SINGLE CORE, UNSHEATHED CABLES**

Size mm <sup>2</sup>	No. of strands/ Dia of wire inch	No. of strands/ Dia of wire mm	Nominal Thickness of insulation	Overall Diameter (mm)	Tolerance	Max. Resistance @ 20°C (Ohms/km)
1.5	3/0.032	3/0.82	0.7	3.8	+0.05	12.1
2.5	3/0.041	3/1.04	0.8	4.6	+0.05	7.41
4.0	7/0.034	7/0.86	0.8	4.7	+0.05	4.61
6.0	7/0.041	7/1.04	0.8	6.2	+0.05	3.08
10.0	7/0.053	7/1.35	1.0	6.7	+0.10	1.83
16.0	7/0.067	7/1.70	1.0	7.8	+0.10	1.15

Test	Test Method	Values	FR (ZFIRE)	FR-LSH (ZFUME)
Limited Oxygen Index	IS 10810 Part 58	>29%	✓	✓
Limited Temperature Index	IS 10810 Part 64	>250	✓	✓
Smoke Density (Light Absorption)	IS 13360 P-6/Sec-9	<60%	NA	✓
Acid Gas Generation	IS 10810 P-59	<20%	NA	✓

Note : The number of strands are approximate and strands diameter is nominal ;  
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## C.R.I. WINDING WIRES



C.R.I. XLPE & poly wrap submersible winding wires are manufactured at its state of art manufacturing facility with high accuracy and automatic manufacturing lines. The systems at the manufacturing facility are certified for ISO-9001

### CONDUCTOR

Conductors are drawn from 99.97% pure copper with high conductivity and high purity results low voltage drop. This ensures savings of power cost.

### ANNEALING

Drawn copper wires are POT annealed to provide high flexibility in copper for easy winding process.

### INSULATION

#### XLPE:

These wires are insulated with specially formulated "Cross Linked Poly Ethylene", so commonly known as **XLPE** winding wires. The XLPE material is coated over the annealed copper conductor through single line extrusion process. Entire length of the wire is tested with online Spark tester to ensure there are no weak spots, pinholes, black spots and any other defects in insulation during extrusion. Then the wires are tested for leakage by passing 3 kV for 60 seconds in submerged condition, this ensures zero defective. These wires have excellent electrical, mechanical, thermal and chemical properties. The maximum operating temperature of XLPE is 90°C.

#### Polywrap:

These wires are insulated with Polyester film and Biaxial Oriented Polypropylene (BOPP) and commonly known as **Poly wrap** winding wires. The films are wrapped over annealed copper using high speed, precise wrapping machine and then heated in oven for bonding of films. Wires are again tested for leakage by passing 3 kV for 60 seconds in submerged condition this ensures zero defective. These wires have excellent electrical, mechanical, thermal and chemical properties; the maximum operating temperature of Poly wrap wire is 80°C.

### FEATURES

- Smooth surface finish
- High flexibility
- High insulation resistance
- High impact resistance
- Low conductor resistance
- Zero water absorption

## TECHNICAL &amp; DIMENSIONAL TABLE (XLPE)

Nominal conductor diameter (mm)	Thickness of insulation (mm) minimum	Overall diameter (mm)		Conductor Resistance at 20°C (Max.) Ohms/km	Approximate Weight (kg/km)
		Minimum	Maximum		
0.8	0.35	1.5	1.55	35.33	5.7
0.9	0.35	1.6	1.65	27.91	7.0
1	0.35	1.7	1.75	22.61	8.0
1.1	0.35	1.8	1.9	18.69	10
1.2	0.35	1.9	2	15.70	12
1.3	0.35	2	2.1	13.38	14
1.4	0.35	2.05	2.15	11.54	15
1.5	0.35	2.2	2.3	10.05	18
1.6	0.35	2.3	2.4	8.83	20
1.7	0.35	2.45	2.55	7.82	23
1.8	0.35	2.55	2.65	6.98	25
1.9	0.35	2.65	2.75	6.26	28
2	0.4	2.85	2.95	5.65	31
2.1	0.4	3	3.1	5.13	34
2.2	0.4	3.1	3.2	4.67	37
2.3	0.4	3.2	3.3	4.27	41
2.4	0.45	3.4	3.5	3.93	45
2.5	0.45	3.5	3.6	3.62	48
2.6	0.45	3.6	3.7	3.34	52
2.7	0.5	3.7	3.8	3.10	56
2.8	0.5	3.85	3.95	2.88	60
2.9	0.5	4	4.1	2.69	65
3	0.55	4.1	4.2	2.51	69
3.1	0.55	4.2	4.3	2.35	73
3.2	0.55	4.3	4.4	2.21	78
3.3	0.55	4.4	4.5	2.08	83
3.4	0.6	4.6	4.7	1.96	88
3.5	0.6	4.7	4.8	1.85	93
3.6	0.6	4.8	4.9	1.74	98
3.7	0.6	4.9	5	1.65	104
3.8	0.6	5	5.1	1.57	109
3.9	0.6	5.1	5.2	1.49	115
4	0.65	5.3	5.4	1.41	121

## TECHNICAL &amp; DIMENSIONAL TABLE (POLYWRAP)

Nominal conductor diameter (mm)	Thickness of insulation (mm) minimum	Overall diameter (mm)		Conductor Resistance at 20°C (Max.) Ohms/km	Approximate Weight (kg/km)
		Minimum	Maximum		
0.4	0.2	0.8	0.82	141.32	1.7
0.5	0.2	0.9	0.92	90.44	2.4
0.6	0.2	1	1.02	62.81	3.2
0.7	0.2	1.1	1.12	46.14	4.2
0.8	0.2	1.2	1.22	35.33	5.4
0.9	0.2	1.3	1.32	27.91	6.7
1	0.2	1.4	1.42	22.61	8.1
1.1	0.2	1.5	1.52	18.69	9.6
1.2	0.2	1.6	1.62	15.70	11
1.3	0.2	1.7	1.72	13.38	13
1.4	0.2	1.8	1.82	11.54	15
1.5	0.2	1.9	1.92	10.05	17
1.6	0.2	2.05	2.07	8.83	20
1.7	0.25	2.3	2.32	7.82	23
1.8	0.25	2.4	2.42	6.98	26
1.9	0.25	2.5	2.52	6.26	28
2	0.25	2.6	2.62	5.65	31
2.1	0.25	2.7	2.72	5.13	34
2.2	0.25	2.8	2.84	4.67	37

In view of continuous developments, the information / descriptions / specifications / illustrations are subject to change without notice.



## CONVERSION TABLE - Sq.mm, Sq.Inch, CIRCULAR MILS & AWG

Sq.mm	Sq.Inch	Cir.Mils	AWG	Sq.mm	Sq.Inch	Cir.Mils	AWG	Sq.mm	Sq.Inch	Cir.Mils	AWG
1000	1.550	1974000	-	80	0.1240	157920	-	9.5	0.01472	18753	-
975	1.511	1924700	-	75	0.1163	148050	-	9.0	0.01395	17766	-
950	1.472	1875300	-	70	0.1085	138180	-	8.5	0.01317	16779	-
925	1.434	826000	-	-	-	133100	2/0	-	-	16510	8
900	1.395	1776600	-	65	0.1008	128310	-	8.0	0.01240	15792	-
875	1.356	1727300	-	60	0.0930	118440	-	7.5	0.01163	14805	-
850	1.317	1677900	-	55	0.0853	108570	-	7.0	0.01085	13818	-
825	1.279	1628600	-	-	-	105600	1/0	-	-	13090	9
800	1.240	1579200	-	50	0.0775	98700	-	6.5	0.01008	12831	-
775	1.201	1529900	-	45	0.0698	88830	-	6.0	0.00930	11844	-
750	1.163	1480500	-	-	-	83690	1	5.5	0.00853	10857	-
725	1.124	1431200	-	40	0.0620	78960	-	-	-	10380	10
700	1.085	1381800	-	35	0.0542	69090	-	5.0	0.00775	9870	-
675	1.046	1332500	-	-	-	66360	2	4.75	0.00736	9377	-
650	1.008	1283100	-	30	0.0465	59220	-	4.50	0.00698	8883	-
625	0.969	1233800	-	-	-	52620	3	4.25	0.00659	8390	-
600	0.930	1184400	-	25	0.0388	49350	-	-	-	8230	11
575	0.891	1135100	-	-	-	41740	4	4.0	0.00620	7896	-
550	0.853	1085700	-	20	0.0310	39480	-	3.75	0.00581	7403	-
525	0.814	1036400	-	19.5	0.0302	38490	-	3.50	0.00542	6909	-
500	0.775	987000	-	19.0	0.0294	37510	-	-	-	6530	12
475	0.736	937700	-	18.5	0.0287	36520	-	3.25	0.00504	6416	-
450	0.698	888300	-	18.0	0.0279	35520	-	3.0	0.00465	5922	-
425	0.659	839000	-	17.5	0.0271	34550	-	2.75	0.00426	5429	-
400	0.620	789600	-	17.0	0.0264	33560	-	-	-	5180	13
375	0.581	740300	-	-	-	33090	5	2.50	0.00388	4935	-
350	0.542	690900	-	16.5	0.0256	32560	-	2.25	0.00349	4442	-
325	0.504	641600	-	16.0	0.0248	31580	-	-	-	4110	14
300	0.465	592200	-	15.5	0.0240	30600	-	2.0	0.00310	3948	-
275	0.526	542900	-	15.0	0.0233	29610	-	1.75	0.00271	3455	-
250	0.388	493500	-	14.5	0.0225	28620	-	-	-	3260	15
225	0.349	444200	-	14.0	0.0217	27640	-	1.50	0.00233	2961	-
200	0.310	394800	-	13.5	0.0209	26650	-	-	-	2580	16
175	0.271	345500	-	-	-	26240	6	1.25	0.00194	2468	-
150	0.233	296100	-	13.0	0.0201	25660	-	-	-	2050	17
125	0.1938	246800	-	12.5	0.0194	24680	-	1.0	0.00155	1974	-
-	-	211600	4/0	12.0	0.0186	23690	-	0.9	0.00140	1777	-
100	0.1550	197400	-	11.5	0.0178	22700	-	-	-	1620	18
95	0.1472	187530	-	11.0	0.0171	21710	-	0.8	0.00124	1579	-
90	0.1395	177660	-	-	-	20820	7	0.75	0.00116	1481	-
-	-	167800	3/0	10.5	0.0163	20730	-	0.7	0.00109	1382	-
85	0.1317	167790	-	10.0	0.0155	19740	-	-	-	1290	19
-	-	-	-	-	-	-	-	0.6	0.00093	1184	-
-	-	-	-	-	-	-	-	-	-	1029	-
-	-	-	-	-	-	-	-	0.5	0.000775	987	20

To Convert :	Multiply by :
Meters to feet	3.2808
Kilometers to feet	3280.8
Feet to meters	0.3048
Feet to kilometers	0.0003048
Kilograms to pounds	2.205
Pounds to kilograms	0.4536
Pounds 1000 ft. to pounds 1000 meters	3.2808
Pounds 1000 ft to kilograms 1000 meters	1.4882
Kilograms 1000 meters to pounds 1000 feet	0.6719
°C = 5/9 (°F - 32)	°F = 32 + 5/9 (°C)



NOTES

A series of horizontal dotted lines for taking notes, starting from the 'NOTES' header and extending across the page.

# W I N N I N G   W A Y S

When you have a good thing going it is quite in the fitting of things that recognitions come our way. Several prestigious awards, which decorate our shelf, say it all. These rewards not only acknowledge our position as a leader in the water pump industry but also serve as reminders about what the customer expects from a winner. And we, as ever, have our ears perfectly tuned to customer expectations.



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