

IS:694/2010

CM/L No. 2558364



Naviflex Cables Industries

An ISO 9001:2008 Co

Naviflex[®] **CABLES**



Our Product & Ranges of Wires :-

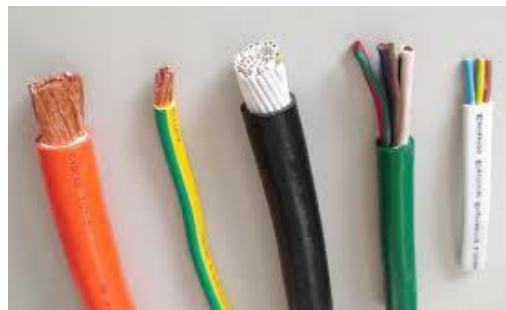
Sheathed*Unsheathed*Twin Flat*Submersible Cable

- **Copper Conductor FR/FRLS**

- ❖ **House Wires**
- ❖ **Building Wires**
- ❖ **Industrial Wires**

Range : 0.50 sqmm x 1 Core to 630 sqmm x 1 Core (Unsheathed)

1 sqmm x 4 Core to 50 sqmm x 4 Core (Sheathed)



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I – 2182, DSIDC Industrial Area, Narela, DELHI – 110040



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SINGLE CORE, TWIN INSULATED WIRES IN VOLTAGE GRADE 650/1100 V

Nominal area of Conductor	No./Nom. Dia of wires	Thickness of Insulation (Nom)	Approx Overall Diameter	Current Rating	Conductor Resistance at 20°C
SQMM	mm	mm	mm	Amps.	Ω/km
0.50	16/0.20**	0.60	2.25	6	39.0
0.75	24/0.20 **	0.60	2.40	8	26.0
1.0	14/0.30 *	0.70	2.75	12	18.10
1.5	22/0.30 *	0.70	3.05	16	12.10
2.5	36/0.30 *	0.80	3.65	22	7.41
4.0	56/0.30 **	0.80	4.20	29	4.95
6.0	84/0.30 **	0.80	4.80	37	3.30

Standard Colours : Red, Yellow, Blue, Black, White & Green (for earthing)
 Supplied in 90 meters / 180 meters /270 meters coils in attractive cartons.
 Confirming to IS:694/2010. ISI Licence No. CM/L-2558364.

* As per Conductor Class 2 of IS:8130/1984

** As per Conductor Class 5 of IS:8130/1984

**SINGLE CORE INSULATED COPPER CONDUCTOR (UNSHEATHED) FLEXIBLE CABLES
650/1100 VOLTAGE GRADE FOR INDUSTRIAL APPLICATION**

Nominal area of Conductor	No./Nom. Dia of wires	Thickness of Insulation (Nom)	Approx Overall Diameter	Current Rating	Conductor Resistance at 20°C
SQMM	mm	mm	mm	Amps.	Ω/km
10	80/0.40	1.0	6.20	55	1.91
16	126/0.40	1.0	7.20	75	1.21
25	196/0.40	1.2	9.60	100	0.780
35	276/0.40	1.2	10.9	125	0.554
50	396/0.40	1.4	12.9	165	0.386
70	354/0.50	1.4	14.80	240	0.272
95	484/0.50	1.6	17.0	300	0.206
120	608/0.50	1.6	18.60	325	0.161
150	750/0.50	1.8	21.0	352	0.129
185	925/0.50	2.0	23.0	415	0.106
240	1210/0.50	2.2	26.0	500	0.0801
300	1520/0.50	2.4	29.10	585	0.0641
400	2036/0.50	2.6	33.0	705	0.0486

Conductor as per Class 5 of IS:8130/1984
 Supplied in 100 meters length.

**COPPER/ALUMINIUM CONDUCTOR PVC INSULATED & SHEATHED CABLES
650/1100 VOLTAGE GRADE FOR INDUSTRIAL APPLICATION**

Nominal X- Sectional Area of Conductor	Nominal Thickness of Insulation	Nominal Thickness of Sheath			
		Single Core	Twin Core	Three Core	Four Core
MM ²	MM	MM	MM	MM	MM
4.0	0.80	1.0	1.0	1.0	1.0
6.0	0.80	1.1	1.1	1.1	1.1
10	1.0	1.3	1.3	1.3	1.3
16	1.0	1.4	1.4	1.4	1.4
25	1.2	1.4	1.4	1.5	1.6
35	1.2	1.6	1.6	1.6	1.7
50	1.4	2.0	2.0	2.0	2.0

**FLEXIBLE COPPER CONDUCTOR PVC INSULATED & SHEATHED CORDS 650/1100
VOLTAGE GRADE FOR INDUSTRIAL APPLICATION.**

Nominal X- Sectional Area of Conductor	Nominal Thickness of Insulation	Nominal Thickness of Sheath				
		Single Core	Twin Core	Three Core	Four Core	Five Core
MM ²	MM	MM	MM	MM	MM	MM
0.50	0.60	0.90	0.90	0.90	0.90	0.90
0.75	0.60	0.90	0.90	0.90	0.90	0.90
1.0	0.60	0.90	0.90	0.90	0.90	1.0
1.5	0.60	0.90	0.90	0.90	1.0	1.0
2.5	0.7	1.0	1.0	1.0	1.0	1.0

CORE IDENTIFICATION

Cores	Cables for Fixed Wiring	Flexible Cords	Flexible Cable
1 Core	Red, Black, Yellow, Blue, White or Grey	Red, Black, Yellow, Blue, White or Grey	Red, Black, Yellow, Blue, White or Grey
2 Cores	Red and black	Red and black	Red and black
3 Cores	Red, Yellow and Blue	Red, Black and yellow-Green	Red, Yellow and Blue
4 Cores	Red, Yellow, Blue and Black	Red, Yellow, Blue and yellow-Green	
5 Cores		Red, Yellow, Blue, Black and Grey	

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FR BUILDING / HOUSE WIRES

(Fire Retardant PVC Insulated WIRES)

FR Building Wires are insulated with a Fire Retardant (FR) PVC compound, specially formulated by the leading PVC compound manufacturer of India to provide added safety. This FR PVC compound has a high Oxygen & Temperature Index. These properties help in restricting the spread of fire even at very high temperatures. This special compound also offers high Insulation Resistance and dielectric strength.

These ISI marked wires meets the requirements of IS:694/1990. In addition, they also offer Fire Retardant properties which means extra protection against electric shocks, short circuits and fires.



F R PROPERTIES		
Tests	Test Method Specified	Specification Values
OXYGEN INDEX	IS:10810 (Pt.-58)	Oxygen Index 29 % (minimum)
TEMPERATURE INDEX	IS:10810 (Pt.-64)	Temperature Index 250°C (minimum)

FRLS BUILDING / HOUSE WIRES

FRLS wires are now being preferred over the FR wires in residential and commercial buildings due to reduce smoke generation . FRLS wires have enhanced properties of PVC insulation to reduce the toxic- smoke generated in case of Fire condition. Modern household and offices have increased number of gadgets. This concentrated load increases the chances to Fire due to overload and subsequent short circuit. Since Fires are generally attributed to electric al short circuits, due care should be taken in selection and installation of low and non-toxic smoke generating wires and cables for highly populated buildings.

FRLS Building wires are excellent quality wires with Flame Retardant Low Smoke properties. These wires are recommended for all premium quality construction like Hotels, Hospitals, Schools, Commercial complexes, Residential Appartmens and so on.

Construction :-

Conductor : Plain High Conductivity Annealed Copper Conductor as per IS:8130/1984.

Insulation : Primary - Natural PVC with FR/FRLS properties.

Secondary – Skin colour coated PVC with FR properties.

Range : 0.75 sqmm x 1 Core to 400 sqmm x 1 Core (Unsheathed)

IS Applicable : is:694/1990

Salient Feature of FR / FRLS Wires / Cables :-

- Excellent Fire Retardent Properties.
- Self Extinguished.
- During Fire very less Toxic fumes emitted.
- Quite lesser amount of non-corrosive smoke emitted.

Save the Environment

HFFR Cables (Helogen Free Fire Retardent)

Every day thousands of tonnes of Hazardous Halogen Gases are released in the environment resulting in depletion of the earth's OZONE layer (which protects us from cancer causing UV radiations of the Sun) a phenomenon popularity known as green house effect. HFFR(Helogen Free Fire Retardent) Wires/Cables are practically halogen free and therefore are environment friendly. So when you sell/buy these Cables you not only protect your near & dear once but also your future generations against the Green House Effect.



Some Comparative Technical features are given in the details below.

S. No.	Feature	Standard Range	Special Range	
			FRLS	Low Smoke HFFR
		FR	FRLS	Low Smoke HFFR
1	Insulation Material	Spl. PVC	Spl. PVC	Spl. Polymers
2	Insulation Property	Good	Good	Very Good
3	Temperature Rating	70°C	70°C	70°C
4	Thermal Stability	Good	Good	Very Good
5	Flame Retardancy	Very Good	Very Good	Excellent
6	Safety during Burning	Good	Good	Excellent
7	Oxygen Index	More than 30	More than 30	More than 35
8	Temperature Index	More than 250°C	More than 250°C	More than 280°C
9	Helogen Gas release during burning	-N/A-	Less than 20 % Good	Less than 1 % Excellent
10	Light Transmission (Visibility)	-N/A-	More than 40 Good	More than 80 Excellent
11	Abrasion Resistance During Installation	Good	Good	Good