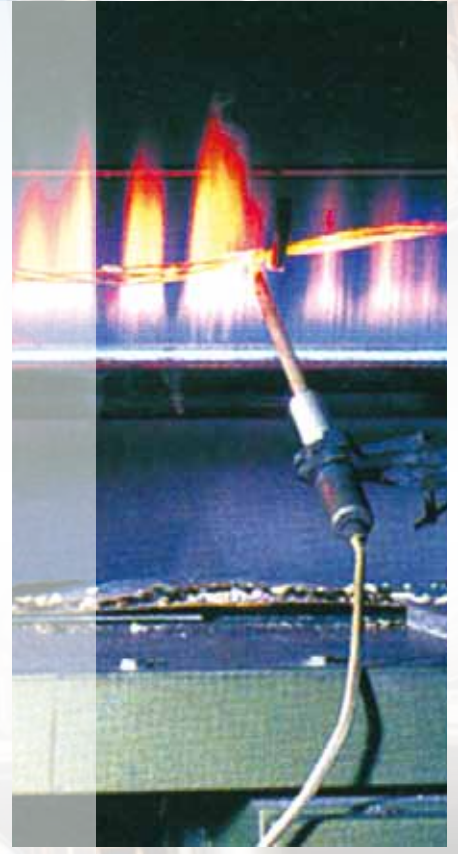
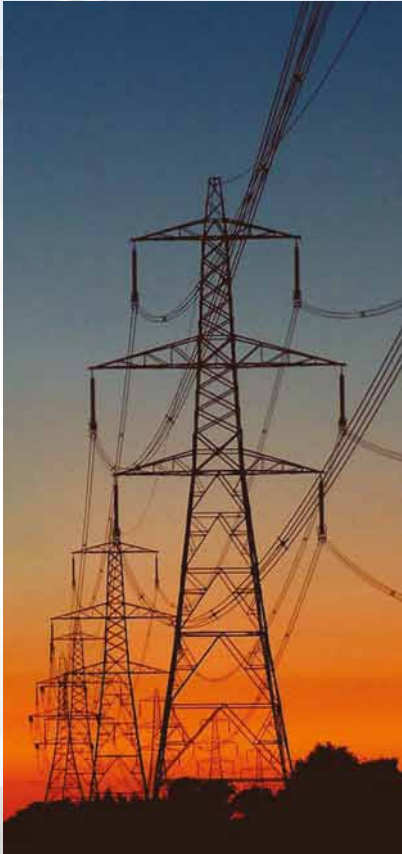


Oil & Gas Cables

Power Cables

Fire Resistant Cables





WILSON CABLE enjoys a track record of 30 years in power cables, building wires manufacture in Singapore and have successfully introduced Flame Retardant Power Cables and Instrumentation Cable range since 1993. Flame Retardant Power Cables and Instrumentation Cables manufactured in Singapore facility are sold under the brand name of "**WILSON CABLES**" State of the art braiding and pairing machineries used by a well trained workforce that understands the demands of the Petrochemical and Oil & Gas Industry support this operation.

In Thailand, WILSON CABLES assigned Chubil Enterprises Co., Ltd. to be main agent since 2004 to do Marketing, Transportation, Technical support & after sale service. Recognition has come out of hard work and perseverance and Wilson Cables is proud to have been the chosen brand for major Petrochemical and Oil & Gas customers in Thailand and the Asean market all these years.

THESE ARE OUR PETROCHEMICAL AND OIL & GAS CUSTOMERS

- PTT PUBLIC COMPANY LIMITED
- PTT AROMATIC AND REFINING PUBLIC COMPANY LIMITED
- PTT CHEMICAL COMPANY LIMITED
- ADITYA BIRLA CHEMICALS (THAILAND) LTD.
- BANGKOK SYNTHETICS CO., LTD.
- BANGKOK ELASTOMERS CO., LTD.
- THAI PETROLEUM PIPELINE CO., LTD.
- BAYER THAI CO., LTD.
- SCG CHEMICAL CO., LTD.
- VINYTHAI PUBLIC COMPANY LIMITED
- BANGCHAK PETROLEUM PUBLIC COMPANY LIMITED

Product Group Code

Product Group Code	Description
FRT	Flame Retardant Power & Control Cables
IC	Multi Pair Instrumentation Cables with Collective Screen
IP	Multi Pair Instrumentation Cables with Individual Pair Screen and Collective Screen
IM	Multi-Core Instrumentation Cables with Collective Screen

Product Construction Code

Product Construction Code	Abbreviation	Description
W = First Digit (Insulation Material)	1	PE = Polyethylene
	2	XLPE = Crosslink Polyethylene
	3	LSOH = Low Smoke Zero Halogen
	4	PVC = Polyvinyl Chloride
X = Second Digit (Sheath Material)	0	LSOH = Low Smoke Zero Halogen
	1	PVC = Polyvinyl Chloride
	NIL	Non-Sheathed
Y = Third Digit (Product's Family)	0	Product With Basic Specification as per Standard / Brochure
	1	Product With Basic Specification as per Standard / Brochure Plus Sheaths' Oxygen Index > 30% & HCL Content < 17%, Product Complying with IEC 60332 Part 3 Cat. A
	NIL	Non-Sheathed Product Without Other Family
Z = Forth Digit (Construction)	A	Single Wire Amour
	C	Plain Copper Wire Braid
	T	Tinned Copper Wire Braid
	Q	Galvanized Round Steel Wire Braid
	S	Single Core Non-Sheathed Cable

Technical Information - Instrumentation Cables to BS 5308 Part 1 & 2

Maximum d. c. Conductor Resistance & L/R Ratio

Nominal Area of Conductor	No. and Diameter of Wires	Maximum d. c. Conductor Resistance at 20 °C				Maximum L/R Ratio (For Adjacent Cores)
		Plain Wires		Tinned Wires		
		Multi - Pair	Multi - Core	Multi - Pair	Multi - Core	
mm ²	No. / mm	ohm / Km	ohm / Km	ohm / Km	ohm / Km	µH / ohm
0.5	7 / 0.30	36.8	36.0	37.5	36.7	25
	16 / 0.20	39.8	39.0	40.9	40.1	
	1 / 0.80	36.8	36.0	37.5	36.7	
0.75	7 / 0.37	25.0	24.5	25.3	24.8	25
	24 / 0.20	26.5	26.0	27.3	26.7	
1.0	7 / 0.43	18.4	18.1	18.6	18.2	25
	1 / 1.13	18.4	18.1	18.6	18.2	
1.5	7 / 0.53	12.3	12.1	12.5	12.2	40
2.5	7 / 0.67	7.56	7.41	7.71	7.56	-

FRT - 211A



APPLICATION

This cable is preferably used for supplying main power. It can also be used for industrial installation such as in cable trench, cable duct, switchgear and in power stations. This cable is ideal for ground emplacement if a higher electrical or mechanical protection is required.

TECHNICAL DATA

Standard	IEC 60502-1
Rated Voltage	600/1000V
Test Voltage	3.5 KV / 5 min
Max. Temperature	90 °C

PRODUCT PERFORMANCE

IEC 60332-1
IEC 60332-3 Cat. A
IEC 60754-1 (< 17%)
ASTM D 2863 Min. 30%

CONSTRUCTION

1. Conductor	Annealed Stranded Non-Compacted / Compacted Circular or Shaped Copper
2. Insulation	XLPE
3. Bedding	Lapped or Extruded PVC
4. Armour	Aluminium Round Wires (For Single Core Cables) Galvanized Round Steel Wires (For Multi-Core Cables)
5. Sheath	Flame Retardant Reduced Toxicity PVC
6. Colour	Black

CORE IDENTIFICATION

1 C	- Natural
2 C	- Red & Black
3 C	- Red, Yellow & Blue
4 C	- Red, Yellow, Blue & Black
5 C	- Red, Yellow, Blue, Black and Green/Yellow
5 C & above	- Numbers printed on the cores

FRT - 411A



APPLICATION

This cable is preferably used for supplying main power. It can also be used for industrial installation such as in cable trench, cable duct, switchgear and in power stations. This cable is ideal for ground emplacement if a higher electrical or mechanical protection is required.

TECHNICAL DATA

Standard	BS 6346
Rated Voltage	600/1000V
Test Voltage	3.5 KV / 5 min
Max. Temperature	70 °C

PRODUCT PERFORMANCE

IEC 60332-1
IEC 60332-3 Cat. A
IEC 60754-1 (< 17%)
ASTM D 2863 Min. 30%

CONSTRUCTION

1. Conductor	Annealed Stranded Non-Compacted / Compacted Circular or Shaped Copper
2. Insulation	PVC
3. Bedding	Lapped or Extruded PVC
4. Armour	Galvanized Round Steel Wires
5. Sheath	Flame Retardant Reduced Toxicity PVC
6. Colour	Black

CORE IDENTIFICATION

2 C	- Red & Black
3 C	- Red, Yellow & Blue
4 C	- Red, Yellow, Blue & Black
5 C	- Red, Yellow, Blue, Black and Green/Yellow
5 C & above	- Numbers printed on the cores

FRT - 200 / FRT - 300



APPLICATION

This cable is preferably used for supplying main power. It can also be used for industrial installation such as in cable trench, cable duct, switchgear and in power stations. This cable is ideal for ground emplacement if higher electrical or mechanical protections and flame retardant low smoke halogen free properties are required.

TECHNICAL DATA

Standard	IEC 60502-1
Rated Voltage	600/1000V
Test Voltage	3.5 KV / 5 min
Max. Temperature	90 °C

PRODUCT PERFORMANCE

IEC 60332-1
IEC 60332-3 Cat. A
IEC 60754-1 & 2
IEC 61034-1 & 2
ASTM D 2863 Min. 30%

CONSTRUCTION

1. Conductor	Annealed Stranded Non-Compacted / Compacted Circular or Shaped Copper
2. Insulation	XLPE (For FRT - 200) LSOH (For FRT - 300)
3. Sheath	Flame Retardant LSOH
4. Colour	Black

CORE IDENTIFICATION

1 C	- Natural
2 C	- Red & Black
3 C	- Red, Yellow & Blue
4 C	- Red, Yellow, Blue & Black
5 C	- Red, Yellow, Blue, Black and Green/Yellow
5 C & above	- Numbers printed on the cores

FRT - 200A / FRT - 300A



APPLICATION

This cable is preferably used for supplying main power. It can also be used for industrial installation such as in cable trench, cable duct, switchgear and in power stations. This cable is ideal for ground emplacement if higher electrical or mechanical protections and flame retardant low smoke halogen free properties are required.

TECHNICAL DATA

Standard	IEC 60502-1
Rated Voltage	600/1000V
Test Voltage	3.5 KV / 5 min
Max. Temperature	90 °C

PRODUCT PERFORMANCE

IEC 60332-1
IEC 60332-3 Cat. A
IEC 60754-1 & 2
IEC 61034-1 & 2
ASTM D 2863 Min. 30%

CONSTRUCTION

1. Conductor	Annealed Stranded Non-Compacted / Compacted Circular or Shaped Copper
2. Insulation	XLPE (For FRT - 200A) LSOH (For FRT - 300A)
3. Bedding	Extruded LSOH
4. Armour	Aluminium Round Wires (For Single Core Cables) Galvanized Round Steel Wires (For Multi-Core Cables)
5. Sheath	Flame Retardant LSOH
6. Colour	Black

CORE IDENTIFICATION

1 C	- Natural
2 C	- Red & Black
3 C	- Red, Yellow & Blue
4 C	- Red, Yellow, Blue & Black
5 C	- Red, Yellow, Blue, Black and Green/Yellow
5 C & above	- Numbers printed on the cores

IC - 411 / IC - 111



APPLICATION

This cable is specially designed to provide optimum properties of flexibility and intrinsic safety required for process instrumentation. It is used in electronic equipment, instrument panel, power station and petrochemical plant.

TECHNICAL DATA

Standard	BS 5308-2 (For IC - 411) BS 5308-1 (For IC - 111)
Rated Voltage	300/500V
Test Voltage	1.0 KV / 1 min
Max. Temperature	70 °C (For IC - 411) 65 °C (For IC - 111)

PRODUCT PERFORMANCE

BS 4066-1	/ IEC 60332-1
BS 4066-3 Cat A	/ IEC 60332-3 Cat A
BS EN 50267-2-1 (< 17%)	/ IEC 60754-1 (< 17%)
ASTM D 2863 Min.	30%

CONSTRUCTION

1. Conductor	Annealed Stranded Copper
2. Insulation	PVC (For IC - 411) PE (For IC - 111)
3. Collective Screen	Aluminium Mylar Foil With Drain Wire
4. Sheath	Flame Retardant Reduced Toxicity PVC
5. Colour	Black / Blue / Green

CORE IDENTIFICATION

Each Pair	-	Black and White cores printed with pair number
1 Triple	-	Black, White & Red

IC - 411A / IC - 111A



APPLICATION

This cable is specially designed to provide optimum properties of flexibility and intrinsic safety required for process instrumentation. It is used in electronic equipment, instrument panel, power station and petrochemical plant.

TECHNICAL DATA

Standard	BS 5308-2 (For IC - 411A) BS 5308-1 (For IC - 111A)
Rated Voltage	300/500V
Test Voltage	1.0 KV / 1 min
Max. Temperature	70 °C (For IC - 411A) 65 °C (For IC - 111A)

PRODUCT PERFORMANCE

BS 4066-1	/ IEC 60332-1
BS 4066-3 Cat A	/ IEC 60332-3 Cat A
BS EN 50267-2-1 (< 17%)	/ IEC 60754-1 (< 17%)
ASTM D 2863 Min.	30%

CONSTRUCTION

1. Conductor	Annealed Stranded Copper
2. Insulation	PVC (For IC - 411A) PE (For IC - 111A)
3. Collective Screen	Aluminium Mylar Foil With Drain Wire
4. Bedding	PVC
5. Armour	Galvanized Round Steel Wires
6. Sheath	Flame Retardant Reduced Toxicity PVC
7. Colour	Black / Blue / Green

CORE IDENTIFICATION

Each Pair	-	Black and White cores printed with pair number
1 Triple	-	Black, White & Red

IP - 411 / IP - 111



APPLICATION

This cable is specially designed to provide optimum properties of flexibility and intrinsic safety required for process instrumentation. It is used in electronic equipment, instrument panel, power station and petrochemical plant.

TECHNICAL DATA

Standard	BS 5308-2 (For IP - 411)
	BS 5308-1 (For IP - 111)
Rated Voltage	300/500V
Test Voltage	1.0 KV / 1 min
Max. Temperature	70 °C (For IP - 411)
	65 °C (For IP - 111)

PRODUCT PERFORMANCE

BS 4066-1	/ IEC 60332-1
BS 4066-3 Cat A	/ IEC 60332-3 Cat A
BS EN 50267-2-1 (< 17%)	/ IEC 60754-1 (< 17%)
ASTM D 2863 Min.	30%

CONSTRUCTION

1. Conductor	Annealed Stranded Copper
2. Insulation	PVC (For IP - 411)
	PE (For IP - 111)
3. Individual Screen	Aluminium Mylar foil With Drain Wire
4. Collective Screen	Aluminium Mylar Foil With Drain Wire
5. Sheath	Flame Retardant Reduced Toxicity PVC
6. Colour	Black / Blue / Green

CORE IDENTIFICATION

Each Pair - Black and White cores printed with pair number

IP - 411A / IP - 111A



APPLICATION

This cable is specially designed to provide optimum properties of flexibility and intrinsic safety required for process instrumentation. It is used in electronic equipment, instrument panel, power station and petrochemical plant.

TECHNICAL DATA

Standard	BS 5308-2 (For IP - 411A)
	BS 5308-1 (For IP - 111A)
Rated Voltage	300/500V
Test Voltage	1.0 KV / 1 min
Max. Temperature	70 °C (For IP - 411A)
	65 °C (For IP - 111A)

PRODUCT PERFORMANCE

BS 4066-1	/ IEC 60332-1
BS 4066-3 Cat A	/ IEC 60332-3 Cat A
BS EN 50267-2-1 (< 17%)	/ IEC 60754-1 (< 17%)
ASTM D 2863 Min.	30%

CONSTRUCTION

1. Conductor	Annealed Stranded Copper
2. Insulation	PVC (For IP - 411A)
	PE (For IP - 111A)
3. Individual Screen	Aluminium Mylar foil With Drain Wire
4. Collective Screen	Aluminium Mylar Foil With Drain Wire
5. Bedding	PVC (For IP - 411A)
	PE (For IP - 111A)
6. Armour	Galvanized Round Steel Wires
7. Sheath	Flame Retardant Reduced Toxicity PVC
8. Colour	Black / Blue / Green

CORE IDENTIFICATION

Each Pair - Black and White cores printed with pair number

IC - 200 / IC - 200A



APPLICATION

This cable is specially designed to provide optimum properties of flexibility and intrinsic safety required for process instrumentation. It is used in electronic equipment, instrument panel, power station and petrochemical plant, where flame retardant and low smoke halogens free properties are required.

TECHNICAL DATA

Standard	BS 5308-1
Rated Voltage	300/500V
Test Voltage	1.0 KV / 1 min
Max. Temperature	90 °C

PRODUCT PERFORMANCE

BS 4066-1	/ IEC 60332-1
BS 4066-3 Cat A	/ IEC 60332-3 Cat A
BS EN 50267-2-1	/ IEC 60754-1
BS EN 50267-2-3	/ IEC 60754-2
BS EN 50268-1 & 2	/ IEC 61034-1 & 2
ASTM D 2863 Min.	30%

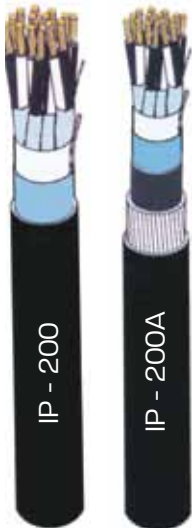
CONSTRUCTION

1. Conductor	Annealed Stranded Copper
2. Insulation	XLPE
3. Collective Screen	Aluminium Mylar Foil With Drain Wire
4. Bedding	LSOH
(For IC - 200A Only)	
5. Armour	Galvanized Round Steel
(For IC - 200A Only)	Wires
6. Sheath	Flame Retardant LSOH
7. Colour	Black / Blue / Green

CORE IDENTIFICATION

Each Pair	-	Black and White cores printed with pair number
1 Triple	-	Black, White & Red

IP - 200 / IP - 200A



APPLICATION

This cable is specially designed to provide optimum properties of flexibility and intrinsic safety required for process instrumentation. It is used in electronic equipment, instrument panel, power station and petrochemical plant, where flame retardant and low smoke halogens free properties are required.

TECHNICAL DATA

Standard	BS 5308-1
Rated Voltage	300/500V
Test Voltage	1.0 KV / 1 min
Max. Temperature	90 °C

PRODUCT PERFORMANCE

BS 4066-1	/ IEC 60332-1
BS 4066-3 Cat A	/ IEC 60332-3 Cat A
BS EN 50267-2-1	/ IEC 60754-1
BS EN 50267-2-3	/ IEC 60754-2
BS EN 50268-1 & 2	/ IEC 61034-1 & 2
ASTM D 2863 Min.	30%

CONSTRUCTION

1. Conductor	Annealed Stranded Copper
2. Insulation	XLPE
3. Individual Screen	Aluminium Mylar Foil With Drain Wire
4. Collective Screen	Aluminium Mylar Foil With Drain Wire
5. Bedding	LSOH
(For IP - 200A Only)	
6. Armour	Galvanized Round Steel
(For IP - 200A Only)	Wires
7. Sheath	Flame Retardant LSOH
8. Colour	Black / Blue / Green

CORE IDENTIFICATION

Each Pair	-	Black and White cores printed with pair number
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Test Methods

1. Fire Resistant Test IEC 60331



WILSON CABLES provides Fire Resistant Cables meeting IEC 60331 requirement.

Fire Resistant Test : IEC 60331

The Fire Resistant Cable is subjected to the flame at 750 °C temperature continuously for a period of 3 hours. Test voltage equal to the cable designated voltage is applied to the cable continuously during the entire testing. During the test procedure the cable shall maintain circuit integrity. The same cable will be energized for 3 hours after duration not less than 12 hours from the flame extinction.

2. Fire Resistance Characteristics Tests SS 299-1 or BS 6387 Cat. C, W, Z

WILSON CABLES provides Fire Resistant Cables comply with most stern Singapore Standard of SS 299-1 or British Standard of BS 6387 Cat. C, W, Z.

a. Resistance to Fire Alone Test : SS 299-1 of BS 6387 Cat. A, B, C



The Fire Resistant Cable is subjected to the specific flame temperature continuously for a period of the specific combustion time. Test voltage equal to the cable designated voltage is applied to the cable continuously during the entire testing. During the test procedure the cable shall maintain circuit integrity.

Cat.	Flame Temperature (°C)	Combustion Time
A	650 + 40 °C	3 Hours
B	750 + 40 °C	3 Hours
C	950 + 40 °C	3 Hours

b. Resistance to Fire With Water Test : SS 299-1 or BS 6387 Cat. W



The Fire Resistant Cable is subjected to the flame at 650°C temperature continuously for 15 minutes, then continue the flame and water spray for further 15 minutes. Test voltage equal to the cable designated voltage is applied to the cable continuously during the entire testing. During the test procedure the cable shall maintain circuit integrity.

Category W : Flame temperatures 650 ± 40 °C

c. Resistance to Fire With mechanical Shock Test : SS 299-01 or BS 6387 Cat. X, Y, Z



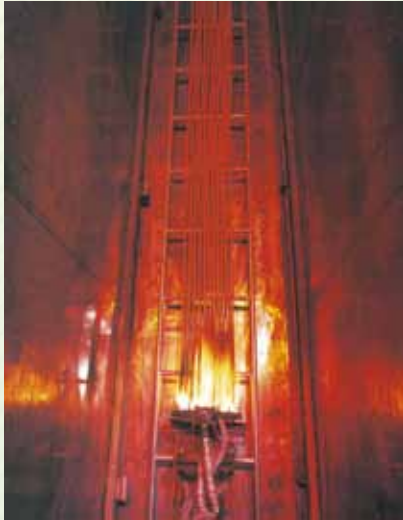
The Fire Resistant Cable is subjected to the specific flame temperature and mechanical shock continuously for a period of 15 minutes. Test voltage equal to the cable designated voltage is applied to the cable continuously during the entire testing. During the test procedure the cable shall maintain circuit integrity.

Cat.	Flame Temperature (°C)
X	650 °C for 15 min + Mechanical Shock
Y	750 °C for 15 min + Mechanical Shock
Z	950 °C for 15 min + Mechanical Shock

Test Methods

3. Flame Retardant Test

IEC 60332-3 Cat. A, B, C



WILSON CABLES can provide Flame Retardant (Reduced Flame Propagation (RFP) and Self-Extinguished) type of cables meeting Flame Retardant test requirement to IEC 60332-3 Cat. A, B & C.

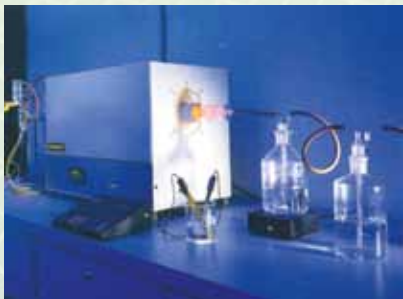
Flame Retardant Test (Bunch) : IEC 60332-3 Cat. A, B, C

A bunch of cables are installed vertically on the test ladder. A burner, as specified in the test standard, is used as ignition source. The flame is continuously applied for the test duration in the below table. Flame is cut off after the test duration. After flame extinction, length of charred portion is measured and should not exceed 2.5 meters from the bottom edge of the burner.

Cat.	Total Volume of Combustible Material	Burning Time
A	7 Litre / m	40 min
B	3.5 Litre / m	40 min
C	1.5 Litre / m	20 min

4. Halogen Content & Corrosivity Test

IEC 60754-1 & IEC 60754-2



WILSON CABLES provide LSOH type of cables with Low Smoke Halogen Free material, which comply with IEC 60754-1 & IEC 60754-2 requirements

Halogen Content Test : IEC 60754-1

Determine the amount of halogen acid gas, which is evolved during the combustion of compounds based on halogenated polymers and compounds containing halogenated additives taken from cable constructions. The amount of halogen acid shall not exceed 0.5%.

Corrosivity Test : IEC 60754-2

Determine the degree of pH value and conductivity of the gases, which is evolved during the combustion of compounds taken from cable components. The weighted pH value should not be less than 4.3 and the weighted value of conductivity should not exceed 10 $\mu\text{S}/\text{mm}$.

5. Smoke Density Test

IEC 61034-1 & IEC 61034-2



WILSON CABLES LSOH type of cables with Low Smoke Halogen Free materials release very little smoke emission during a fire, which are complying with IEC 61034-1 and IEC 61034-2 requirements, it provide one more layer of safety protection to the personnel.

Smoke Density Test : IEC 61034-1 & IEC 61034-2

Burn the cable sample(s) in a test cube of 27 m^3 volume, measure the light transmittance of the smoke to determine the measurement of the smoke density. The minimum value of 60% is adopted. Generally the smoke density shall be followed the requirement specified in the cable specification.

FR-3S Fire Resistant Cables



APPLICATION

Single core cable is suitable use in fire extinguishing systems to operate sprinklers, control panels, exit lights in high-rise buildings, hotels, hospitals, sub-ways and public facilities.

Twin Twisted cable option is having the similar product characteristics and product feature, which comply with all the fire testing requirements.

Twin Twisted cable is your ultimate choice for fire services installation, emergency power supply, especially for fire alarm addressable system and other essential services where twisting and flexibility and prerequisites.

PRODUCT FEATURES

For FR - 3S 450/750 V or 600/1000 V
(On Request)
IEC 60331
SS 299-1 Cat. C
SS 299-1 or BS 6387 Cat. C, W, Z
(For Twin Twisted Only)
IEC 60332-1
IEC 60332-3 Cat. A
IEC 60754-1 & IEC 60754-2
IEC 61034-1 & IEC 61034-2
Oxygen Index - Min. 30%

CONSTRUCTION

1. Conductor	:	Plain Annealed, Stranded Circular Non-Compacted or Circular Compacted Copper
2. Fire Barrier	:	Mica Tape
3. Insulation	:	LSOH
4. Colour	:	Insulation :
		Single Core - Orange, Red, Yellow, Blue, Black, Green/Yellow
		Two Core - Red & Black (Twin Twisted)

TECHNICAL DATA

Applicable Standard	:	BS 7211
Rated Voltage	:	450/750 V (or 600/1000 V *)
Test Voltage	:	2.5 KV / 15 min (or 3.5 KV / 5 min *)
Max. Conductor Operating Temperature	:	90°C
Note	:	* = On Request

FR-200 or FR-300 Fire Resistant Cables-Single Core



APPLICATION

This cable is specially designed for areas where integrity of electric circuit is critical to maintain the power supply.

FR-200 application usage can be found in :

- emergency lightings, control and power circuits
- power stations
- fire alarm system
- underground tunnels
- communication systems
- sewage treatment plants
- lifts and escalators
- high-rise buildings

FR-300 is used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, high-rise buildings.

PRODUCT FEATURES

IEC 60331
SS 299-1 Cat. C
IEC 60332-1
IEC 60332-3 Cat. A (For FR-300 Only)
IEC 60754-1 & IEC 60754-2
IEC 61034-1 & IEC 61034-2
Oxygen Index - Min. 30%
SS 299-1 Cat. W, Z (On Request)
BS 6387 Cat. C, W, Z (On Request)

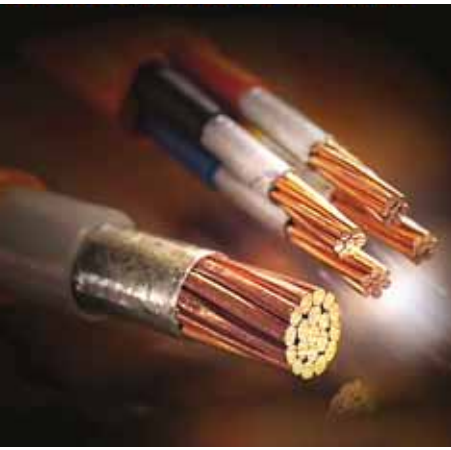
CONSTRUCTION

1. Conductor	:	Plain Annealed, Stranded Circular Non-Compacted or Circular Compacted Copper
2. Fire Barrier	:	Mica Tape
3. Insulation	:	XLPE (For FR-200) or LSOH (For FR-300)
4. Sheath	:	LSOH
5. Colour	:	Insulation - Natural Sheath - Orange

TECHNICAL DATA

Applicable Standard	:	IEC 60502-1
Rated Voltage	:	600/1000 V
Testing Voltage	:	3.5 KV / 5 min
Max. Conductor Operating Temperature	:	90°C

FR-200 or FR-300 Fire Resistant Cables-Multi Core



APPLICATION

This cable is specially designed for areas where integrity of electric circuit is critical to maintain the power supply.

FR-200 application usage can be found in :

- emergency lightings, control and power circuits
- power stations
- fire alarm system
- underground tunnels
- communication systems
- sewage treatment plants
- lifts and escalators
- high-rise buildings

FR-300 is used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, high-rise buildings.

PRODUCT FEATURES

IEC 60331
 SS 299-1 or BS 6387 Cat. C, W, Z
 IEC 60332-1
 IEC 60332-3 Cat. A (For FR-300 Only)
 IEC 60754-1 & IEC 60754-2
 IEC 61034-1 & IEC 61034-2
 Oxygen Index - Min. 30%

CONSTRUCTION

- | | | |
|-----------------|---|--|
| 1. Conductor | : | Plain Annealed, Stranded
Circular Non-Compacted or
Circular Compacted or Shaped Copper |
| 2. Fire Barrier | : | Mica Tape |
| 3. Insulation | : | XLPE (For FR-200) or LSOH (For FR-300) |
| 4. Sheath | : | LSOH |
| 5. Colour | : | Insulation |
| | | 2C - Red & Black |
| | | 3C - Red, Yellow & Blue |
| | | 4C - Red, Yellow, Blue & Black |
| | | 5C - Red, Yellow, Blue,
Black & Green/Yellow |
| | | 5C & above - With number printed on cores |
| | | Sheath - Orange |

TECHNICAL DATA

Applicable Standard	:	IEC 60502-1
Rated Voltage	:	600/1000 V
Testing Voltage	:	3.5 KV / 5 min
Max. Conductor Operating Temperature	:	90°C

FR-200A or FR-300A Fire Resistant Cables



APPLICATION

This cable is specially designed for areas where integrity of electrical circuit is critical to maintain the main power supplies. It is used in power stations, mass transit underground passenger systems airports, petrochemical plants, hotels, hospitals, high-rise buildings.

PRODUCT FEATURES

IEC 60331
 SS 299-1 or BS 6387 Cat. C, W, Z
 IEC 60332-1
 IEC 60332-3 Cat. A
 IEC 60754-1 & IEC 60754-2
 IEC 61034-1 & IEC 61034-2
 Oxygen Index - Min. 30%

CONSTRUCTION

- | | | |
|-----------------|---|--|
| 1. Conductor | : | Plain Annealed, Stranded
Circular Non-Compacted or
Circular Compacted or Shaped Copper |
| 2. Fire Barrier | : | Mica Tape |
| 3. Insulation | : | XLPE (For FR-200A) / LSOH (For FR-300A) |
| 4. Bedding | : | LSOH |
| 5. Armour | : | Galvanised Round Steel Wires |
| 6. Sheath | : | LSOH |
| 7. Colour | : | Insulation |
| | | 1C - Natural |
| | | 2C - Red & Black |
| | | 3C - Red, Yellow & Blue |
| | | 4C - Red, Yellow, Blue & Black |
| | | 5C - Red, Yellow, Blue,
Black & Green/Yellow |
| | | 5C & above - With number printed on cores |
| | | Sheath - Orange |

TECHNICAL DATA

Adopted Standard	:	BS 7846 / BS 6724
Rated Voltage	:	600/1000 V
Testing Voltage	:	3.5 KV / 5 min
Max. Conductor Operating Temperature	:	90°C

FRIC-300 & FRIC-300A Fire Resistant Instrumentation Cables

APPLICATION

This cable is suitable for control, instrumentation and telecommunication in the power stations, mass transit underground passenger systems, airport, hotels, hospitals, high-rise buildings.

PRODUCT FEATURES

IEC 60331
SS 299-1 or BS 6387 Cat. C, W, Z
IEC 60332-1
IEC 60332-3 Cat. A
IEC 60754-1 & IEC 60754-2
IEC 61034-1 & IEC 61034-2
Oxygen Index - Min. 30%



CONSTRUCTION

1. Conductor	: Plain Annealed, Stranded Circular Non-Compacted Copper
2. Fire Barrier	: Mica Tape
3. Insulation	: LSOH
4. Collective Screen	: Aluminium Mylar Foil With Drain Wire
5. Bedding (For FRIC-300A)	: LSOH
6. Armour (For FRIC-300A)	: Galvanised Round Steel Wires
7. Sheath	: LSOH
8. Colour	: Insulation : Each Pair - Blue and White cores with pair number printed on the cores : 1 Triple - White, Blue and Red insulation with numbers printed on the cores : Sheath : Orange

TECHNICAL DATA

Adopted Standard	: BS 5308-2
Rated Voltage	: 300/500 V
Testing Voltage	: 1.0 KV / 1 min
Max. Conductor Operating Temperature	: 70°C

FRIM-300 & FRIM-300A Fire Resistant Instrumentation Cables



APPLICATION

This cable is suitable for control, instrumentation and telecommunication in the power stations, mass transit underground passenger systems, airport, hotels, hospitals, high-rise buildings.

PRODUCT FEATURES

IEC 60331
SS 299-1 or BS 6387 Cat. C, W, Z
IEC 60332-1
IEC 60332-3 Cat. A
IEC 60754-1 & IEC 60754-2
IEC 61034-1 & IEC 61034-2
Oxygen Index - Min. 30%

CONSTRUCTION

1. Conductor	: Plain Annealed, Stranded Circular Non-Compacted Copper
2. Fire Barrier	: Mica Tape
3. Insulation	: LSOH
4. Collective Screen	: Aluminium Mylar Foil With Drain Wire
5. Bedding (For FRIM-300A)	: LSOH
6. Armour (For FRIM-300A)	: Galvanised Round Steel Wires
7. Sheath	: LSOH
8. Colour	: Insulation : Each Core - White cores with number printed on the cores : Sheath : Orange

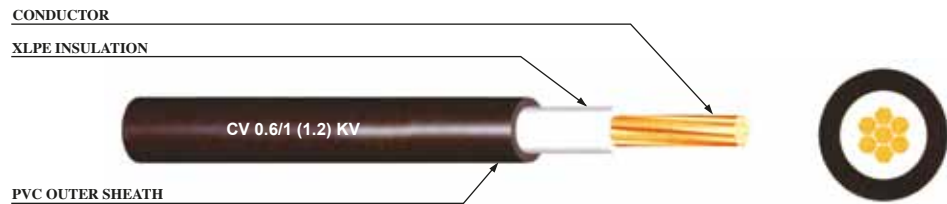
TECHNICAL DATA

Adopted Standard	: BS 5308-2
Rated Voltage	: 300/500 V
Testing Voltage	: 1.0 KV / 1 min
Max. Conductor Operating Temperature	: 70°C

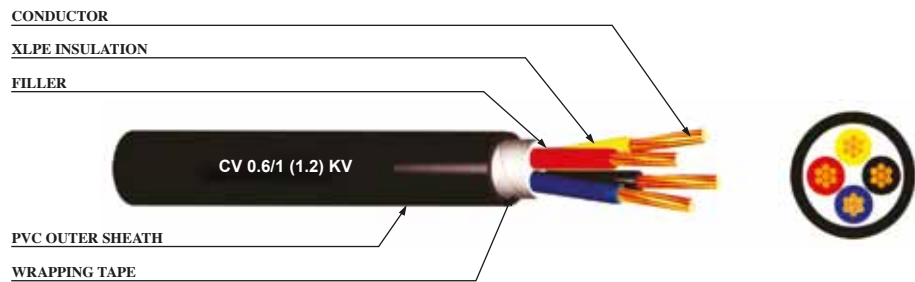
**THW (MEA TYPE A)
PVC INSULATED 750V 70°C**



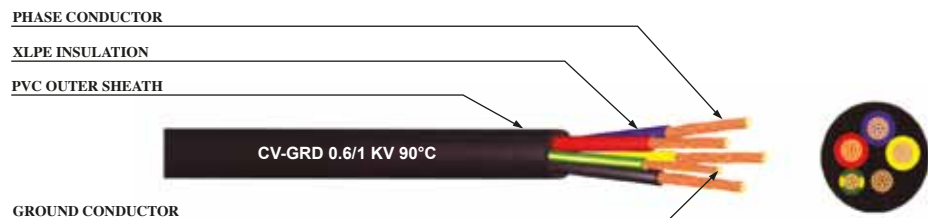
**0.6/1 KV-CV, SINGLE CONDUCTOR
XLPE INSULATED, PVC SHEATHED POWER CABLE**



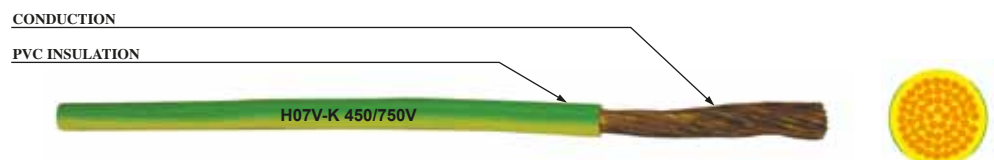
**0.6/1 KV-CV, MULTI-CONDUCTOR
XLPE INSULATED, PVC SHEATHED POWER CABLE**



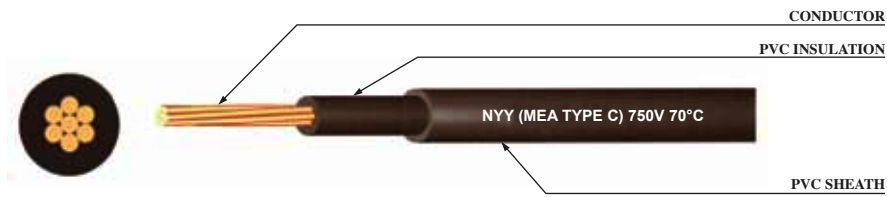
**0.6/1 KV-CV-GRD, MULTI-CONDUCTOR
XLPE INSULATED, PVC SHEATHED POWER CABLE**



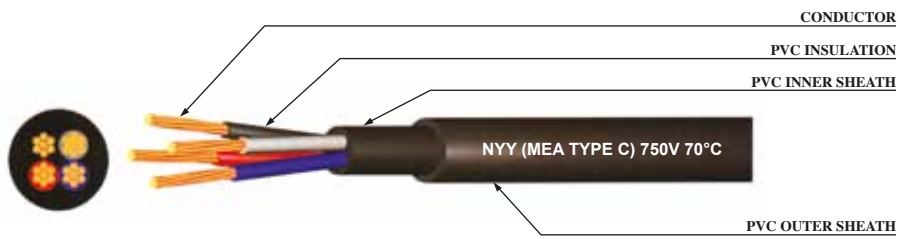
**H07V-K CABLE, FLEXIBLE CONDUCTOR
450/750V 70°C, PVC INSULATED**



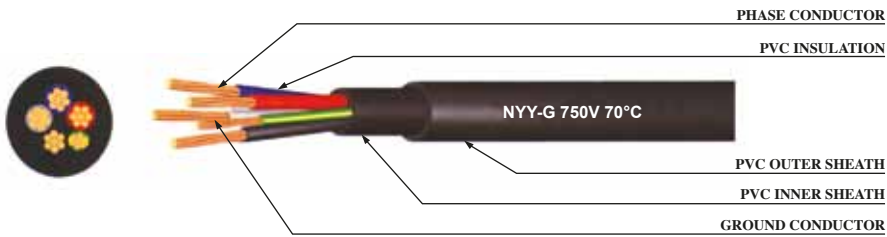
**NYY CABLE (MEA TYPE C), SINGLE CORE
750V 70°C, PVC INSULATED AND DOUBLE SHEATHED**



**NYY CABLE (MEA TYPE C), MULTI - CORE
750V 70°C, PVC INSULATED AND DOUBLE SHEATHED**



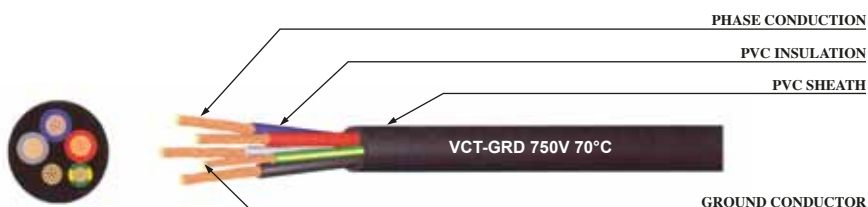
**NYY-GRD (MEA TYPE C-GRD), MULTI CORES WITH GROUND
750V 70°C, PVC INSULATED AND DOUBLE SHEATHED**

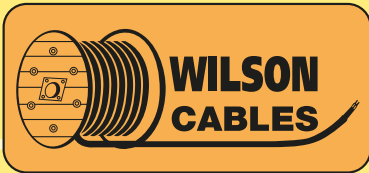


**VCT CABLE, FLEXIBLE CONDUCTOR
750V 70°C, PVC INSULATED, PVC SHEATHED**

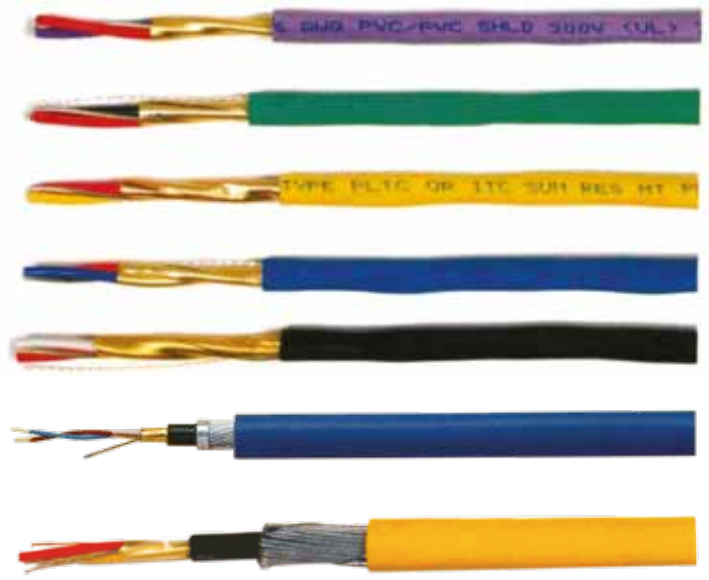


**VCT-GRD CABLE, FLEXIBLE CONDUCTOR
750V 70°C, PVC INSULATED, PVC SHEATHED**





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