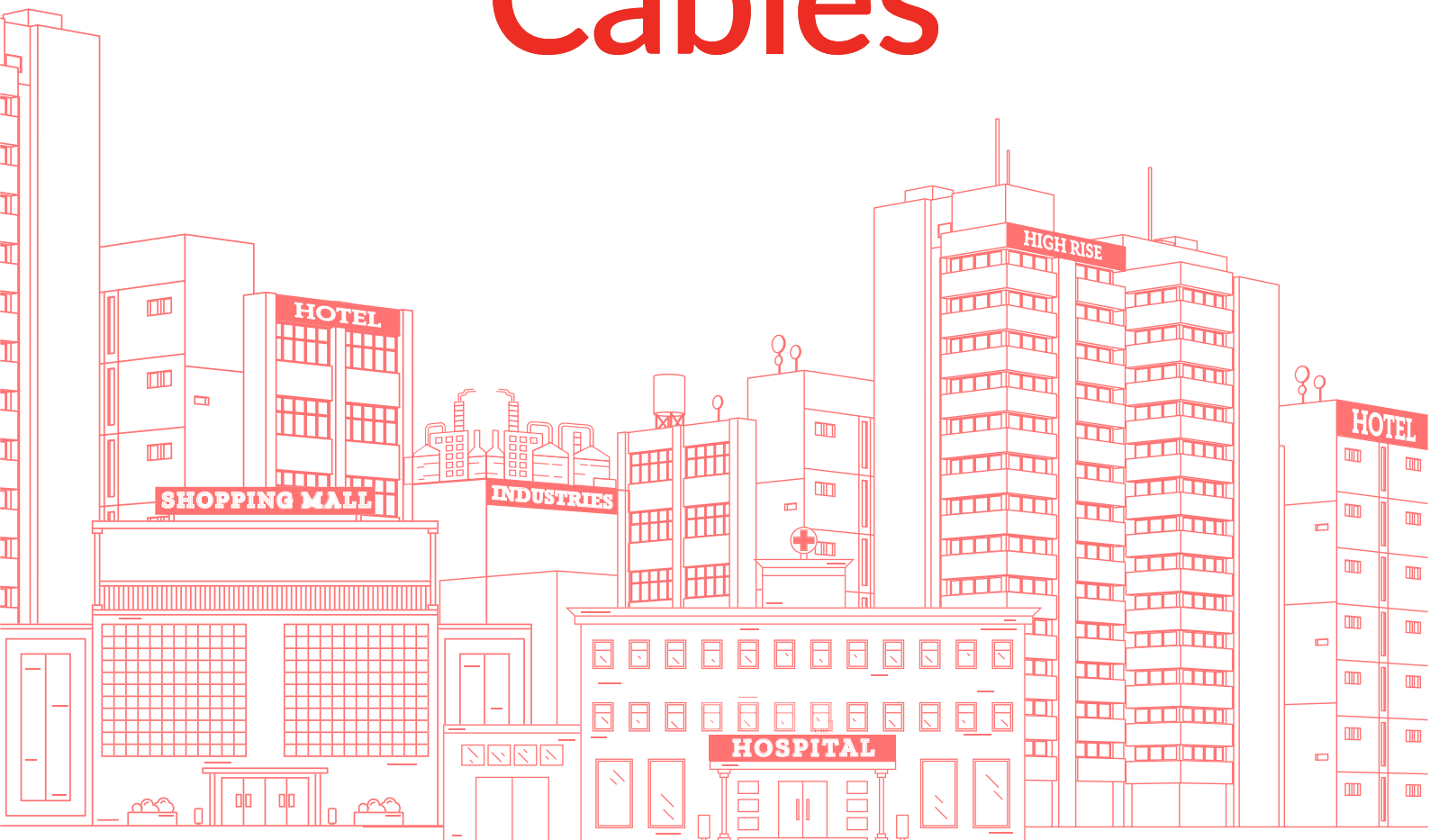




SafeShield[®]

Fire Survival Cables



3-Hour Fire Rating Lifetime Peace of Mind

Enhance Safety & Reliability

——— Agilon Fire Survival Cables



Fire Survival Cables

IS: 17505-1

AGILON offers a full line of Fire Survival Cables. Our Fire Survival Cables are specifically designed for critical applications where circuit integrity must be maintained during fire emergencies. These cables comply with IS 17505 (Part 1): 2021 standards and are essential for life safety systems in High-Rise Buildings, Shopping Malls, Hospitals, Airport, Railway Station, Tunnels, Petrochemical Complexes, power Stations, and other fire prone areas.

Product Overview

Standard Compliance	IS 17505 (Part-I): 2021
Voltage Rating	1100V (AC) and 1500V (DC)
Sizes	1.50 Sqmm and 2.50 Sqmm (1 Core to 61 Core) 4.0 Sqmm to 400 Sqmm (1 Core, 2 Core, 3 Core to 4 Core) 25 Sqmm to 400 Sqmm (3.5 Core)
Circuit integrity Test (Fire Rating)	Category FWS / F3 / F30 / F60 / F120
Flammability Test	As Per IS:10810 (Part 61)
Certification	BIS Certified & ISI Mark*

* BIS certification available for Upto 4 Core and 25 Sqmm.



Continued Functionality
at **950°C** for 3 Hour



Better Visibility
more than **90%**



Toxic Gases &
Emissions **0%**



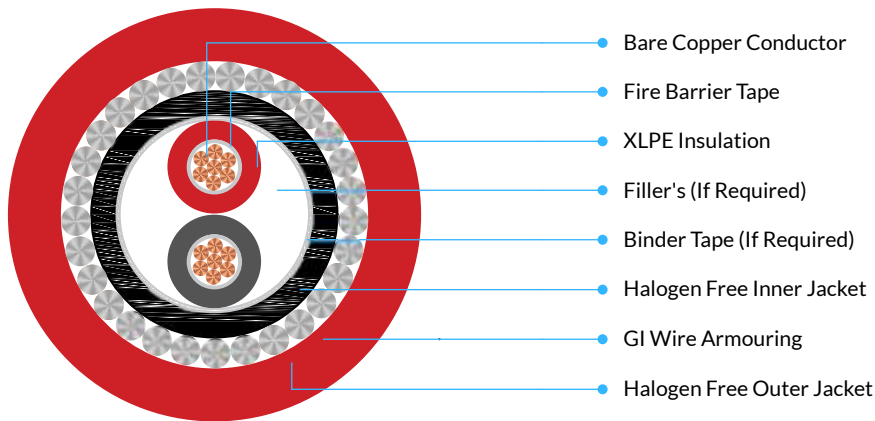
Better Flame Retardancy
Oxygen Index $\geq$ **35%**



Warranty
5 Years*

*(T & C Apply)





*Drawing Not on Scale

Applications



Fire Alarm Systems



Public Address Systems



Fire Pumps, Pressurization Systems



Emergency Lighting Exit Signage Lighting



Smoke Ventilation (Dampers & Actuators)



Fire Fighting Shafts (Staircase, Lift, Lift Lobby)



Magnetic Door Hold Open Devices



Fireman's Lifts



Lighting in Fire Command Centers & Security Rooms

& Other Critical Applications....

Special Features

- Maintains electrical functionality during fire
- Resistance to fire at 950 Deg.C for 3 Hours
- 90% or More Visibility during fire & smoke
- Excellent Flame Retardancy
- Low Smoke Halogen Free
- Thermal stable and UV Resistant
- Oil, Chemical & Ozone Resistant
- Anti-termite & Anti-rodent Properties
- Excellent Water Resistant Properties
- Excellent Crack Resistance
- RoHS - Reach Compliance

From Power to Fire Safety – All in One.

- 950°C at 3hr Circuit Integrity
- Engineered for Extremes Performance
- Eco-Safe & No Toxic Gases
- Better Visibility & Reduced Toxicity

Construction

Conductor	Stranded (Class 2) Annealed Bare Copper conductor
Insulation	Double Layer of Glass Mica Tape wrapped over conductor
Fire barrier tape	Extruded, Cross-linked Polyethylene (XLPE)
Laid Up	Cores shall be laid up concentrically to form a cable circular
Filler's	Suitable fillers shall be provided, wherever necessary
Protection tape	Glass fiber tape shall be provided, If required
Inner Jacket	Extruded, Halogen Free (HFS-TP 90)
Armour	Galvanized Steel Round Wire (For Multicore) & Aluminium Wire Armour (For Single Core)
Outer Jacket	Extruded, Halogen Free (HFS-TP 90)

Cable Colour Coded Course

Core Identification	1 C - Black 2 C - Red, Black 3 C - Red, Yellow, Blue 4 C - Red, Yellow, Blue, Black 5 C - Red, Yellow, Blue, Black, Grey 6 C & above -Grey With Numbering
Inner Jacket	Black
Outer Jacket	Red, Black or As Per Customer Requirement

Packing and Marking

Printing on Cable	<AGILON> <"PART NO."> <No. of Cores & Size of conductor> <FIRE SURVIVAL CABLE> <1100 VOLT> <2XWH> <F> <RoHS> <IS:17505-1:2021> <CM/L Number> <ISI Mark> <Year of Mfg.>
Sequential Length Marking	Every One Meter of Interval
Standard Packing Length	1000 meter / As Per Requirement
Packing Material	Non-Returnable Wooden Drum
Tolerance on Length	±5% Tolerance

Electrical Characteristics

Voltage Grade	1100 Volt (AC) and 1500 Volt (DC)
Permissible Voltage Variation For Satisfactory Operation	±10%
Frequency	50 Hz
Permissible frequency variation for satisfactory operation	±5%
Max. DC Resistance of Conductor at 20°C	See table
Insulation Resistance (Min.)	1000 MΩ/Km at 20°C
Volume Resistivity (Min.)	-at 27°C 1×10^{14} Ohm-cm
	-at 90°C 1×10^{12} Ohm-cm
High voltage test (Dielectric strength)	3 kVac rms for 5 Minutes
Short Circuit rating of conductor for the duration of 1 sec (kA)	$k \times A$, Where; $k=0.143$ and $A=$ Area of conductor
Continuous Current Rating	See Table

Mechanical Characteristics

Maximum Conductor Temperature	Under Normal Operation	90°C
	During Short Circuit Condition	250°C
Bending Radius (Min.)	Movement	12 x OD; mm
	Fixed	10 x OD; mm
Max. Permissible Tensile Strength for Cables	For Cables Pulled by Pulling Eye (N)	50 N/Sq mm
	For Cables Pulled by Stocking (N)	9 x D ² ; where "D" is overall diameter of cable
Properties Before Ageing (For insulation)	Tensile Strength - Minimum	12.5 N/mm ²
	Elongation at Break - Minimum	200%
Properties Before Ageing (For Jacket)	Tensile Strength - Minimum	10.0 N/mm ²
	Elongation at Break - Minimum	150%

Environmental and Overall Characteristics

Performance	Suitability	Indoor/Outdoor
	Suitable for Earthed or Unearthed System	Both
	Temperature Range	Fixed: -20°C to +90°C Installation: +10°C to +80°C
LSZH Properties & Flammability Test	Oxygen Index as Per IS:10810 (Part 58)	≥35% at 27±2°C
	Temperature Index as Per IS:10810 (Part 64)	≥300°C
	HCL Gas Emission as Per IS:10810 (Part 59)	Nil
	Light Transmission as Per IS:10810 (Part 63)	≥90%
	Flammability Test	IS:10810 (Part 61)
Fire Resistance Test (Circuit Integrity Test)	Resistance to Fire Alone (Symbol F)	950°C for 3 Hours
	Resistance to Fire and Water (Symbol W)	650°C for 15 min Followed by 5 Bursts for Water
	Resistance to Fire and Mechanical Shock (Symbol S)	950°C for 15 min Along with 03 Mechanical Impact
	Resistance to Fire, Water and Shock	Category F3/F30/F60/F120
Site condition for A.C. Continuous Current Rating	Depth of Laying in Ground	750 mm
	Thermal Resistivity of Soil	1.5 Km/W
	Ambient Temperature	40°C
	Ground Temperature	30°C
Properties / Compliance	REACH / RoHS Compliant	Yes
	UV Resistance (for Outdoor Only)	Yes
	Anti-Rodent & Anti-Termite (ART) Properties	Yes

Cable Description

Stranded, Annealed Bare Copper Conductor, Double Layer Glass Mica taped wrapped over conductor, Cross-Link Polyethylene Insulated, Glass Fiber Tape, HFS-TP 90 (LSZH) Inner Jacket, GI Wire Armoured and Overall HFS-TP 90 (LSZH) Jacketed Fire Survival Armoured cable.

Dimensions / Technical Parameters

Part No.	Cable Size (No. of core X Size of conductor in Sqmm)	Nom. Insulation Thickness (mm)	Nom. Armour Wire Diameter (mm)	Nom. Outer Jacket Thickness (mm)	Approx. Overall Diameter (mm)	Max. DC Resistance of conductor at 20°C (Ω/Km)	Continuous Current Rating		
							Ground at 30°C (A)	Duct at 30°C (A)	Air at 40°C (A)
BM1921	2C x 1.50	0.7	0.9	1.6	13.8	12.1	31	27	27
BM1922	2C x 2.50	0.7	0.9	1.6	14.6	7.41	41	35	36
BM1923	2C x 4.0	0.7	0.9	1.8	16.2	4.61	54	45	48
BM1924	2C x 6.0	0.7	0.9	1.8	17.6	3.08	67	56	61
BM1925	2C x 10	0.7	1.4	1.8	20.2	1.83	89	75	83
BM1926	2C x 16	0.7	1.6	2	20.2	1.15	115	96	108
BM1927	2C x 25	0.9	1.6	2	22.8	0.727	147	122	140
BM1928	3C x 1.50	0.7	0.9	1.6	14.4	12.1	26	22	23
BM1929	3C x 2.50	0.7	0.9	1.8	15.7	7.41	34	29	30
BM1930	3C x 4.0	0.7	0.9	1.8	16.9	4.61	45	38	41
BM1931	3C x 6.0	0.7	1.4	1.8	19.4	3.08	56	47	52
BM1932	3C x 10	0.7	1.4	2	21.9	1.83	74	62	70
BM1933	3C x 16	0.7	1.6	2	22.6	1.15	95	79	89
BM1938	3C x 25	0.9	1.6	2	25.7	0.727	122	102	119
FS0052	3.5C x 25	0.9	1.6	2	27.0	0.727	122	102	119
BM1939	4C x 1.50	0.7	0.9	1.8	15.7	12.1	26	22	23
BM1940	4C x 2.50	0.7	0.9	1.8	16.7	7.41	34	29	30
BM1941	4C x 4.0	0.7	1.4	1.8	19.1	4.61	45	38	41
BM1942	4C x 6.0	0.7	1.4	1.8	21.2	3.08	56	47	52
BM1943	4C x 10	0.7	1.6	2	23.9	1.83	74	62	70
BM1944	4C x 16	0.7	1.6	2	24.2	1.15	95	79	89
BM1945	4C x 25	0.9	1.6	2	27.7	0.727	122	102	119
FS0083	5C x 1.50	0.7	0.9	1.8	16.7	12.1	24	21	21
FS0084	6C x 1.50	0.7	0.9	1.8	17.8	12.1	22	19	19
FS0085	7C x 1.50	0.7	0.9	1.8	17.8	12.1	21	18	18
FS0088	10C x 1.50	0.7	1.6	2	20.7	12.1	18	16	16
FS0090	12C x 1.50	0.7	1.6	2	21.1	12.1	17	15	15
FS0092	14C x 1.50	0.7	1.6	2	21.9	12.1	16	14	14
FS0094	16C x 1.50	0.7	1.6	2	22.7	12.1	16	14	14
FS0097	19C x 1.50	0.7	1.6	2	23.6	12.1	15	13	13
FS0102	24C x 1.50	0.7	1.6	2	30.7	12.1	13	12	12
FS0143	5C x 2.50	0.7	1.4	1.8	18.8	7.41	31	28	28
FS0144	6C x 2.50	0.7	1.4	1.8	20.0	7.41	29	26	26
FS0145	7C x 2.50	0.7	1.4	1.8	20.0	7.41	27	25	25
FS0148	10C x 2.50	0.7	1.6	2	22.0	7.41	22	20	20
FS0150	12C x 2.50	0.7	1.6	2	22.5	7.41	21	19	19
FS0152	14C x 2.50	0.7	1.6	2	23.3	7.41	20	18	18
FS0154	16C x 2.50	0.7	1.6	2	24.3	7.41	19	17	17
FS0157	19C x 2.50	0.7	1.6	2	25.2	7.41	17	16	16
FS0162	24C x 2.50	0.7	1.6	2	33.3	7.41	16	16	16

Note:

- Higher number of Cores & Sizes are available on request.
- Tolerance shall be ±2.0 mm for OD ≤ 20 mm and ±3.0 mm for OD > 20 mm.





(An ISO 9001, 14001 & 45001 Certified Company)

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