



## THERMOCOUPLE EXTENSION & COMPENSATING CABLES

Thermocouple Cables are identical to instrumentation cables. These cables are used for connecting thermocouple to control and measurement devices (pyrometers etc) that may be some distance away from each other in control rooms. The thermo-electric properties of the conductors used for these cables are the same as that of the thermocouple used for sensing the temperature.

Thermocouple extension & compensating cables are generally designed and manufactured based in BS EN 50288 (formerly BS 5308) , EIL 6-52-45, ANSI MC 96.1, IEC 60584, IS 8784 and generally as per IS 1554-1, IS 7098 , IEC 60502-1.

### GENERAL DETAILS FOR THERMOCOUPLE EXTENSION & COMPENSATING CABLES

TYPE	CONDUCTOR COMBINATIONS		ANSI MC 96.1			IEC 60584-3		
			COLOUR CODE		EMF TOLERANCE ± °C	COLOUR CODE		EMF TOLERANCE ± °C
	+VE	-VE	+VE	-VE		+VE	-VE	
Kx	Nickel - Chromium (Chromel)	Nickel- Aluminium (Alumel)	Red	Green	2.2	Green	White	2.5
Ex	Nickel - Chromium (Chromel)	Copper-Nickel (Constantan)	Red	Violet	1.7	Violet	White	2.5
Tx	Copper	Copper-Nickel (Constantan)	Red	Black	1.0	Brown	White	1.0
Jx	Iron	Copper-Nickel (Constantan)	Red	Blue	2.2	Black	White	2.5
Vx (KxA)	Copper	Copper-Nickel (Constantan)	-	-	-	Brown	White	2.5
Rxa / Sxa	Copper	Copper-Nickel (Constantan)	Red	White	1.5		White	2.5

### MAXIMUM D.C LOOP RESISTANCE FOR THERMOCOUPLE CONDUCTORS AT 20°C Ω /KM

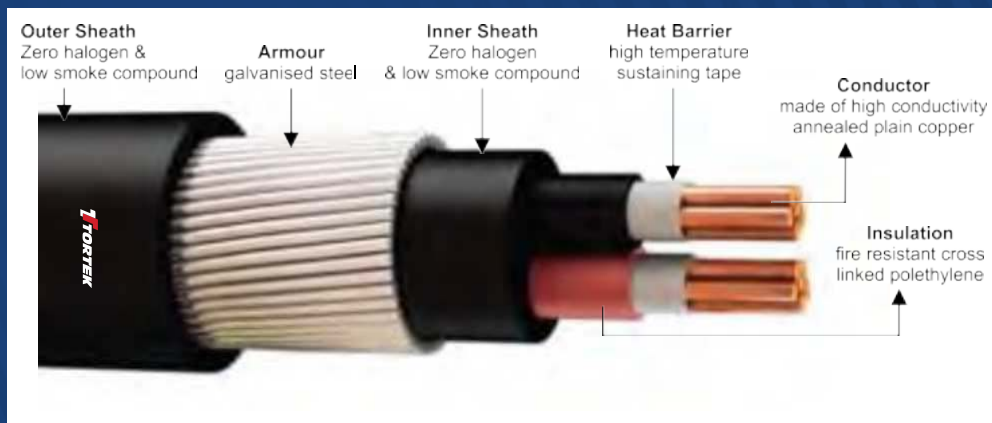
CONDUCTOR SIZE	Kx	Ex	Tx	Jx	Vx (KxA)	Rx / Sx
16 AWG (1.29mm)	746	905	385	475	385	110
18 AWG (1.02mm)	1210	1470	623	770	623	175
20 AWG (0.81mm)	1910	2311	980	1212	980	280

### SPECIAL APPLICATION CABLES - FIRE SURVIVAL CABLES

Fire Survival Cables are manufactured with Glass Backed Mica Tape applied over conductor and are used where the applications require circuit integrity during a fire mainly in Fire Alarm Systems. It is particularly suited for use in public buildings and constructions (such as hospitals, theatres, shopping developments, tunnels, mass transit railways, oil & petrochemical plants, power stations and computer installations) where the danger to life, equipment and structures may be greatly increased in the event of a power failure due to fire.

The Circuit integrity of Fire Survival Cables is maintained for 3 hours at 750Deg Celsius.

Fire survival cables are useful for continuous operation in the presence of high temperature, mechanical shock and water spray. These cables are used in circuits to maintain their integrity during a fire.





The performance of the cable under fire condition is specified in several international standard as follows:

- Flame Propagation: IEC 60332-1, BS EN 60332-1
- Flame spread : IEC 60332-1, BS EN 60332-3
- Fire Resistance: IEC60331, BS 7846
- Acid Gas emission test: IEC 60754, BS EN 50267
- Determination of Acidity: IEC 50754, BS EN 50267

## RUBBER CABLES

In keep with the company's commitment to technological advancement, elastomer material such as Polychloroprene (PCP). Chloro-Sulphonated Polyethelene (CSP). Nitrile Rubber / PVC blends, Ethylene Propylene Rubber (EPR). Ethylene Vinyl Acetate (EVA) and Silicone have been specially compounded to meet numerous heat oil and fire resisting requirements. In the recent years TorteK Cables has also developed special Elastomeric Fire Survival Cables for power, control and instrumentation wiring.

Elastomeric compounds for insulating and sheathing of cables are formulated to meet the requirement of IS 6380, BS 6899, IEC 60502 and other international specification.

### GENERAL CONSTRUCTION (Conforming to IS 9968 Part I)

Conductor	Annealed tinned Copper wires Solid (Class I), Stranded (Class I), Standard (Class 2), Flexible (Class 5) complying with the requirement of IS 8130-1984.
Separator Tape	Suitable material separator tape may be applied over the conductor
Insulation	General service elastomer compound Type IE1 of IS 6380-1984 Heat Resisting elastomer compound type IE2 of IS 6380-1984 Silicon Rubber Type IE 5 of IS 6380-1984.
Core Identification	Coloured insulation, Nos. PE tape. Coloured proofed tape. Nos printing.
Fillers	Natural or synthetic fibres or elastomer suitable for the operating temperature and compatible with the insulating material.
Sheath	General service sheath type SE1/SE2 of IS 6380-1984 Heavy Duty Sheath Type SE3/SE4 of IS 6380-1984

