**矿物绝缘电缆**

**Mineral Insulated Cable**

**电缆优越性/防爆·防腐·耐高温·耐损伤**

**Explosion Proof and High**

**Corrosion Resistance High Temperature Resistance Resistance to Mechanical Impact Advantages of MI Cable**

**防 爆 Explosion Proof**

由于矿物绝缘电缆采用的铜护套是无缝铜管，而且氧化镁粉又是紧密压实的，可燃性气体、油汽、火焰就不能到达与电 缆连接的电气设备，因此电缆具备防爆特性。

The MI cable is made up of seamless copper sheath,magnesium oxide powder compacted a tightly solid,So it can prevent the steam,gas and blaze into the electrical equipment connected with the cable.So it has the quality of explosion proof.

**耐 腐 蚀 High Corrosion Resistance**

由于铜有较好的耐腐蚀性，在正常使用的环境下不需要任何附加的保护，在特殊的环境条件下，如对铜有较强的腐蚀作 用的环境中，只需在电缆外面增加一层塑料外护套就可以达到防腐性，所以电缆有很好的耐腐蚀性。

The copper sheath of MI cables has the self-character of high corrosion resistance.Only in any area where would corrode the copper,it must be covered with a PVC outer sheath to prevent the corrosion.

**耐 高 温 High Temperature Resistance**

电缆可在250℃高温下连续正常工作，在接近铜的熔点1083℃下短时工作，而氧化镁绝缘材料此时不会发生任何性质的 变化。该特性适合在冶金、水泥及其它高温环境中使用。

This cable works normally and continuously at 250℃ high temperature.works in a short time when it is close to 1083℃-the melting point of copper,and magnesia insulation material doesn't change in the nature.This characteristic is suitable to be used in metallurgy Cement and other high temperature environment.

**耐机械损伤 Resistance to Mechanical Impact**

由于电缆的导体、金属护套有一定的强度和韧性，氧化镁在电缆加工过程中又是经过高度压缩的，导体、护套、绝缘组 成了一个密实的整体。所以电缆在遭受冲击弯曲、压扁、扭转等变形时护套不会损坏，芯线之间以及芯线和护套之间的相对 位置保持不变，不会产生短路，也不会影响电气性能。

Because conductor and metal sheath of the cable have good strength and toughness,and magnesium oxide is highly compacted during Conductor, sheath and insulation constitutes a dense integral.The relative position between cores and between core and sheath keeps constant when suffering bending, wavering, torsion etc. So there is no short-circuit and electric property can not be influenced.

**MI 电缆的优点**

**Advantages of MI Cable**

弯曲半径小、敷设空间小

Small curve radius,small space required for laying

矿物绝缘电缆是一密实的整体，最小弯曲半径不大于6D(D一电缆的直径),所以安

装方便，减少了线路敷设所占用的空间。适合代替母线槽，敷设在空间小的场所。

The mineral-insulated cable is of a compact body.with a minimum curve radius less than or equivalent to 6D (D being the diameter of the cable).Therefore,the installation of the cable is rather easy and doesn't take much space,making it an ideal substitute for bus-ways to be laid in places where small space is required.

无烟无毒

NO Toxicity and Halogen-free

由于电缆全都是由无机物(金属铜和氧化镁粉)组成，因而即使在火灾条件下电

缆不会自燃也不会产生烟雾和有毒气体，是真正意义上的安全、环保电缆。

This cable totally consists of inorganic materials(copper and magnesia powder),So it doesn't self-ignite,produce smokes or toxic gases when fire breaks out. Therefore.it is a safe and environment.friendly cable in the real sense.

耐过载

High Overload

由于绝缘采用氧化镁，氧化镁的熔点是2800℃,与普通塑料电缆相比，矿物绝缘

电缆的载流量可以提高一个截面等级，同时能承受相当大的过载，其过载能力可以达

到正常载流量的10倍以上。

同时矿物绝缘电缆，过电压后可以很快恢复，不会损坏绝缘。

Since this cable makes use of magnesia whose melting point is 2800℃, compared with ordinary plastic cables, the current carrying capacity of mineral insulated cable can be raised to a higher sectional level. At the same time, mineral insulated cable is able to endure very great overload.which can be over 10 times larger than normal current-carrying capacity. Mineral insulated cable recovers quickly after over-voltage, and its insulation is not harmed.

|  |  |  |  |
| --- | --- | --- | --- |
| **Reduction of sheath thickness** | **250℃** | **400℃** | **800℃** |
| **Year** | **Year** | **Hour** |
| 25.4 | 2.57 | 0.0583 | 0.259 |
| 50.8 | 10.3 | 0.233 | 1.04 |
| 127.0 | 64.3 | 1.46 | 6.48 |
| 254.0 | 257 | 5.83 | 25.9 |

**寿命长**

**Long Service Life**

由于电缆采用的材料全部是无机材料，不老化。使用寿命可以按照铜护套氧化

腐蚀的速率来计算。资料显示(见P9), 护套氧化0.25mm在250℃的环境温度下需要257年，而矿物绝缘电缆的铜护套厚度一般都在0.31—1.17mm之间，实际使用温度又低于250℃,所以该电缆是一种永久性的电缆。

Because MI cable is made up of inorganic material without ageing,we can compute its

life span according to oxide, etch velocity of copper tube. P9 It is reported that 0.25mm sheath will take 257years to oxide etch under the condition of 250℃,Also,the thickness of MI cable sheath is 0.31-1.17mm and operating temperature is under 250℃,so MI cable has the quality of long service life.

**铜 护 套 可 以 作 接 地 线**

**Copper Sheath as a Ground Wire**

对于矿物绝缘电缆，由于铜护套的连续性和极低的接地电阻，因此可以作为接

地导线使用。铜护套作为接地导线使用时接地连接线截面应符合JGJ232—2011《 矿

物绝缘电缆敷设技术规程》的规定。

The MI cable is a good ground wire, for continuity and extremely low grounding resistance,When the copper sheath is used as the grounding wire, the cross-section should comply with the regulation of JGJ232-2011 Technical specification for the laying of mineral insulated cables.

产 品 用 途 ： 由 于 矿 物 绝 缘 电 缆 具 有 的 特 殊 性 能 ， 因 此 ， 它 适 用 于 额 定 电 压 1 0 0 0V及 以 下 的 以 下 线 路 中：

Application: As MI cable has special performances,therefore can be used in fire circuit under 1000V as follows:

|  |  |  |
| --- | --- | --- |
| Fire extinguishing system | Emergency lightingEmergency broadcasting | Emergency exits and escalators |
| Fire alarm control circuit | Computer information center | Refrigeration units |
| Power room transmitting circuit | Constant power supply circuits | Double power source system |
| Public lighting circuit | Trunk and branch power distribution system | Scenic spot and histories resort lighting |
| Power supply and high temperatureplaces and control circuit | Oil pump circuits | The circuit in environments wherepotential explosion gases are present |