

Suzhou Newlead Augmented Intelligence Equipment Co.Ltd

- Test box: 3m×3m×3M(prepared by users)
- Gas source: propane and air (prepared by users)
- Power supply: three phases and five lines, AC380V 50/60Hz 10A

YN52019 BS Wire and Cable Fire Resistance Tester

Product description:

The structure and performance of BS fire resistance impact shock tester, including fire resistance test, water spray fire resistance test and mechanical fire resistance test, suitable for mineral insulated cable which the rated voltage is not exceeding 450/ 750V, maintain circuit integrity for a long time under fire conditions. In comply with the British fire resistance cable standard BS 6387 <Performance requirements for cables required to maintain circuit integrity under fire conditions>

Standard:

• BS6387: 2013

1. Fire resistance test: the fire resistance test bed consists of the following parts:

1.1: Heat source

Cable support system: Both ends of the cable sheath are horizontal clamped. The middle part of the cable is fixed by two metal rings (spacing distance 300mm), the metal rings and the other metal parts of the device are grounded. For those non-armored cables which diameters are less than 10mm, or some other cable with noticeable displacement occurred during the test, the metal rings should be 2 pcs, and each metal ring is fixed in the original ring at about 150mm

1.2 Continuous detection device: During the test, make the current get through all the cores of the cable, a three-phase star shape connected transformer or three single-phase transformers (or a single-phase transformer, if the test is for single-core cable), and ensure that it is absolutely able to keep it maintaining 3A maximum allowable leakage current at the test voltage. At the other end of the cable, each core wire is connected with a lamp, and load the current of close to 0.25A under the rated cable voltage

1.3 Heat supply is a tubular gas burner with 610 mm length and can be forced to supply methane and a flame dense 1.4 Temperature measurement: place a armored thermometer of 1.5mm diameter near the inlet, and be parallel to the top of the burner 75mm

1.5 Testing flame temperature and time: (view BS6387 flame rating)

- A 650 ± 40 -- 3 hours
- B 750 ± 40 -- 3 hours
- C 950 ± 40 -- 3 hours
- S 950 ± 40 -- 20 minutes

1.6 Specimen: Specimen is a section of finished product, with a length not less than 1200mm, remove the sheath and covering layer of 100mm on the both ends. The wires of the cable two ends should be in accordance with the electrical connection

1.7 Test voltage: 100~1000V adjustable

1.8 Test Current: 100~260mA adjustable

2. BS resistance to mechanical shock and fire:

2.1 Walls and installations: The walls are made of heat resistant, flame retardant materials, and fixed to the two horizontal girders, one on upper of the board and the other one on bottom of the board. This board is about 900mm long, 300mm wide, 9mm thick, and the total weight of walls (that is to say, the board plus the supporting frame) is 10 \pm 0.5 kg. Each girder is about 1m long, 25 m² square pipe. If you need to fill materials, you need to place them inside

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of girders. The upper girder has to be fixed on the board, to make the upper surface be flush with the upper edge of the board. There is a horizontal hole on each girder and outer edge of the board, the precise position is determined by the requirements of the particular support pad and the supporting frame. The wall is bonded to the frame by 4 rubber bushings, the bushing diameter is approximately 32mm, thickness is 20mm

2.2 Heat supply: a strip burner with a length of 500mm which is able to burn 500mm cable specimens, the burner assembly is adjustable, it is able to furnish a bright flame with temperature of 650 °C

2.3 Temperature measurement: an armored thermometer of 1.5 mm diameter, make the thermometer through the wall and keep one end of the thermometer 8mm-10mm away to the wall. The temperature is measured by the following procedure: In one end of the low-carbon steel rod with diameter $3mm \pm 5\%$, length 300mm, tie a thermometer on it, so that it can measure the temperature of the rod. Grab the rod and make it close to the flame, keep it 40mm to 50mm far away from the flame. When the flame temperature reaches to 950°C, the steel rod temperature reaches 400° C in 10s to 20s, when the flame temperature reaches to 650° C, the steel rod temperature reaches 400° C in 20s to 40s.

2.4 Test flame temperature and time: Test temperature needs to be selected from the following table: X 650 ± 40 $^{\circ}$ C, Y 750 ± 40 $^{\circ}$ C, Z 950 ± 40 $^{\circ}$ C.

2.5 Shock device: a low-carbon steel rod (diameter $25mm \pm 5\%$, length $600mm \pm 5\%$). Longitudinal section of the rod parallels to the wall, and is higher than the top of wall 200mm. An axis divides it into 200mm and 400mm two parts, the longer section towards the wall. Every $30\pm 2s$, it drops down from the parallel position to the center of the wall at 60° C.

2.6 Test voltage: 100 ~ 1000V adjustable.

2.7 Test Current: 100~260mA adjustable

3. Water and fire resistance test:

3.1 Heat supply: a strip burner with a length of 500mm which is able to burn 500mm cable specimens, the burner assembly is adjustable, it is able to furnish a bright flame with temperature of 650 \pm 40 .

3.2 Temperature measurement: Place an armored thermometer of 1.5 mm diameter under the surface of the cable. 3.3 Test flame temperature: 650 ± 40

3.4 Water spray: a shower nozzle mounted on a test stand, in the middle of the burner, the pressure is 250KPa to 350KPa, spray 0.25L/m² to 0.30L/m² water around the specimens. This rate measurement requires a collection tray, this tray should have a sufficient depth to make its long axis parallel to the axis of the cable and be center placed. This tray is approximately 100mm wide 400mm long.

3.5 Specimen: Specimen is bigger than 1500mm from the finished products, and has been done bending test at ambient temperature, remove sheaths and coating layers of 100mm at each end. The lead wires at the ends of the cable should be properly handled in accordance with electrical connections and suggestions of manufacturers 3.6 Test voltage: 100 ~ 1000V adjustable.

3.7 Test Current: 100~260mA adjustable

Specifications:

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• Test main machine dimensions: 2430mm (W) × 770mm (D) × 1600mm (H)

- Console dimensions: 1500mm (W) × 900mm (D) × 1300mm (H)
- Tank dimensions: 1500mm × 1200mm × 900mm
- Test chamber: 3M × 3M × 3M(prepared by users)
- Air source: propane, air (prepared by users)
- Power supply: two-phase AC380V + N 50 / 60Hz 30A





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