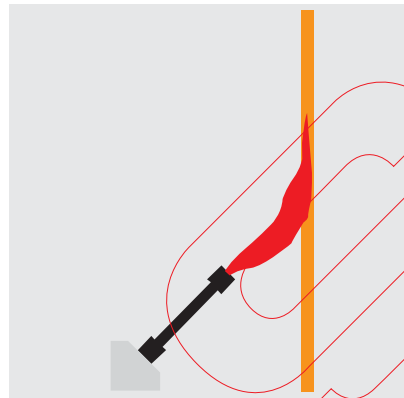


PERFORMANCE TEST OF USED ON TO ERVITAL® CABLES**1) IEC 332-1, VDE 0482-265-2-1, EN 50265-2-1****TEST FOR RESISTANCE TO VERTICAL FLAME DIFFUSION OF A SINGLE INSULATED CONDUCTOR OR CABLE 1 KW PRE-MIXED FLAME**

A sample cable of 600 mm will be fixed vertically in a metal chamber with exposed front side. A propane gas burner will be mounted in order to obtain a 45° angle with axis of the sample cable. The test time is dependent on the cable diameter. If the sample does not burn, or if the flame extinguishes on its own, the test shall be deemed as successful.

IEC 60332-1

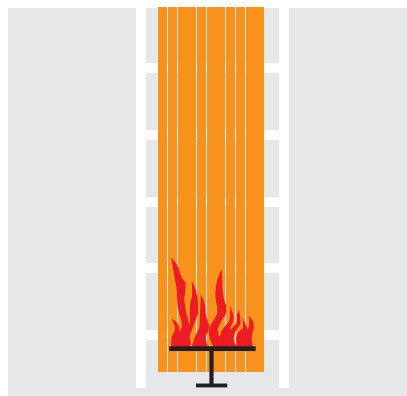


OUTER DIAMETER mm	FLAME DURATION sec
D<25	60
25<D<50	120
50<D<75	240
D>75	480

2) IEC 60332-3-22, VDE 0482-266-2-2, EN 50266-2-2**TEST FOR VERTICAL FLAME DIFFUSION ON VERTICALLY FIXED WIRE OR CABLE BUNDLES**

The test samples are mounted on a steel ladder. The number of samples will be determined depending on the outer diameter. The steel ladder is placed on the rear part of a test chamber having a width of 1 m, a depth of 2 m and a height of 4 m. The test chamber should be ventilated by an air vent. The test flame is applied on the sample cable for 20 min. The test is passed if the flames extinguish on their own and no part of the samples is damaged over a length of 2.5 m.

IEC 60332-3-24 (CATEGORY C)



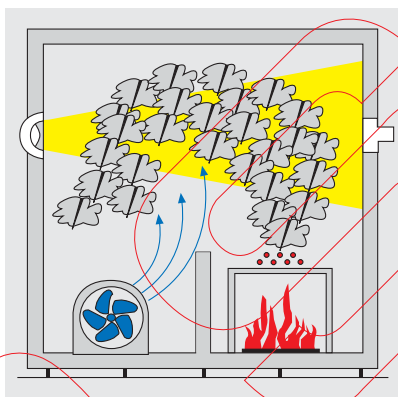
PERFORMANCE TESTS OF USED ON TO ERVITAL® CABLES

3) IEC 61034, VDE 0482-268-2, EN 50268-2

MEASUREMENT OF SMOKE DENSITY OF CABLES BURNT UNDER CERTAIN CONDITIONS

The volume of test chamber is 3 m³. The measurement system consists of a light source (a standard 100 W halogen lamp) and a Selenium or Silicon photo-electric cell, both installed at a height of 2.15 m. A rectangular tray will be filled with alcohol. A ventilator is used to ensure the distribution of smoke. The length of the test samples is 1 m. The number of test samples depends on the outer diameter. The samples should be attached horizontally above the tray which is filled with alcohol. The ventilator is started and the alcohol is ignited. Light intensity is recorded by a plotter which is connected to the photocell. The test is passed if the level of light transmission does not exceed the values given in the following table during the test.

IEC 61034-2



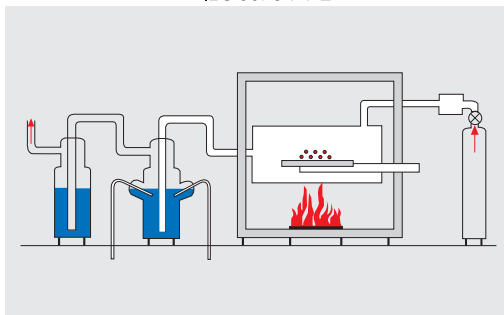
OUTER DIAMETER mm	NUMBER OF SAMPLE	LIGHT TRANSMISSION
<40	1	>70%
<20<40	2	>60%
>10<20	3	>60%

4) IEC 60754-1 and 2, VDE 0482-267-2-1 and 2, EN 50267-2-1 and 2

DETERMINATION OF HALOGEN ACID GAS, MEASUREMENT OF pH AND CONDUCTIVITY

This test indirectly allows measuring emission of corrosive gas by insulation and sheathing compounds. It is possible to measure small quantities of halogens during measurement of the pH-value and the conductivity. In a 500-600 mm long furnace, at least 1 g of insulating or sheathing compound should be heated up to a temperature of 935°C. Air flow will ensure that combustion gases pass through a bottle filled with purified water. The test is passed if the pH-value is lower than 4.3 and the electrical conductivity does not exceed 10 NS/mm.

IEC 60754-1-2



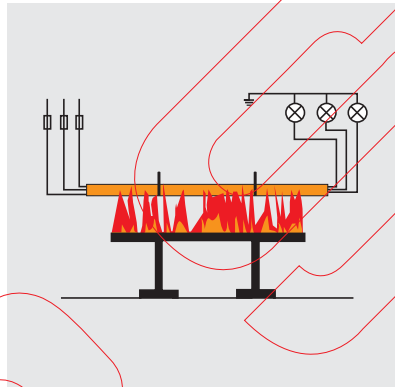
PERFORMANCE TESTS OF USED ON TO ERVITAL® CABLES

5) IEC 60331-23

TEST ON INSULATION INTEGRITY

This test determines insulation integrity under fire conditions. Cables which are tested according to these standards are marked as FE 180. 1.2 m long sample cable suitable for electrical connection, having outer sheath and other jackets, which are removed at both ends. The prepared sample will be fixed horizontally about 75 mm above the burner. The samples will be connected (one 2 A fuse for each conductor) to a voltage source and will be tested with their rated voltage. Shields and other metal sheaths will be connected together and earthed. The end of a conductor, which is opposite to the voltage source, is slightly curled in order to prevent electrical contact. The burner is ignited and heated up to a temperature of at least 750 °C by means of a thermocouple. The sample will be connected to electrical supply and placed into the flames. The sample will be tested during a period of 180. If none of the 2 A fuses has blown during the test period, the test is passed.

IEC 60331-21/23



6) EN 50200, VDE 0482-1

SPECIFICATION FOR PERFORMANCE REQUIREMENTS FOR CABLES REQUIRED TO MAINTAIN CIRCUIT INTEGRITY UNDER FIRE CONDITIONS

This test is applied to cables having resident fire retardant properties used in emergency circuits such as alarm, lighting and communication.

A single piece of cable is attached to a special fibre glass wall with cable at the minimum bending radius. It is burned with the 840°C propane burner. The rated tension values of the cable are applied on the conductors during the test. Every five minutes a mechanical shock of 25 kg is applied to the wall the cable is attached to. The tension values must be preserved during the test.

Cable resistance durations in terms of minutes are quoted as PH 15, PH 30, PH 60, PH 90, PH 120 ranges

EN 50200

