20.5.3 A PTC resistor of the indirect heating type is considered in this standard as a **non-self-resetting thermal cut-out**.

Compliance is checked by the following test:

The transformer is connected for 48 h (two days) at 1,1 times the rated input voltage with the output terminals short-circuited.

- *After 48 h, the transformer shall be allowed to cool down to approximately ambient temperature; this test shall be repeated five times at the maximum ambient temperature declared for the transformer.*
- *The same test cycles shall be repeated but at 0,9 times the rated input voltage and the minimum ambient temperature declared for the transformer.*

During the part of the cycle where the transformer is under load, the PTC shall operate and stay in high impedance position until the supply is switched off. At the end of the test, the transformer shall withstand the test of clause 18, shall show no damage, and shall work correctly in the sense of this standard.

20.6 **Thermal-links** shall meet one of the following requirements.

20.6.1 The **thermal-link**, when tested as a separate component, shall comply with the requirements and tests of IEC 60691.

If the **thermal-link** is tested according to IEC 60691, the following applies:

Its characteristics with regard to:

- the ambient conditions (see 6.1 of IEC 60691);
- the circuit conditions (see 6.2 of IEC 60691);
- the ratings of the **thermal-link** (see 8 b) of IEC 60691);
- the suitability for sealing in, or use with, impregnating fluids or cleaning solvents (see 8 c) of IEC 60691);

shall be appropriate for the application in the apparatus under normal operating conditions and under short-circuit and overload conditions.

Compliance is checked according to the test specification of IEC 60691, by inspection and measurement.

20.6.2 The **thermal-link** when tested as a part of the transformer:

- shall be aged for 300 h at a temperature corresponding to the ambient temperature of the **thermal-link** when the transformer is operated under normal operating conditions at an ambient temperature of 35 °C or, where relevant, t_a + 10 °C;
- shall be subjected to those fault condition(s) of the transformer which cause the **thermal-link** to operate. During the test, no sustained arcing and no damage in the sense of this standard shall occur;
- shall be capable of withstanding two times the voltage across the disconnection, and have an insulation resistance of at least 0,2 MΩ when measured with a voltage equal to two times the voltage across the disconnection.