Following the test, the luminaire shall be inspected to ensure that the components have been retained in place.

Parts of the luminaire enclosure providing protection against electric shock shall continue to protect live parts against access with the standard test finger as specified in Section 8.

12.7.1.2 Test for luminaires incorporating discharge lamps, fluorescent lamps (>70 W), transformer of power >10 VA

The luminaire shall be tested under the conditions specified in items a), c), e), f) and h) of 12.4.1. In addition, the following applies:

20 % of the lamp circuits in the luminaire, and not less than one lamp circuit, shall be subjected to abnormal conditions (see item a) of 12.5.1).

The circuit(s) which have the most thermal influence on the fixing point and exposed parts shall be chosen and other lamp circuits shall be operated at rated voltage under normal conditions.

The circuit(s) subjected to abnormal conditions, shall be operated at 0,9, 1,0 and 1,1 times the rated voltage (or the maximum of the rated voltage range). When conditions are stable, the highest winding temperature, the highest temperature of fixing points and the most thermally influenced exposed parts shall be measured. It is not necessary to measure the temperature of small wound devices that are incorporated within electronic circuits.

The values of ambient temperature and the temperature measured at 0,9, 1,0 and 1,1 times the rated voltage (or the maximum of the voltage range) are used for the linear regression formula in calculating the temperature of fixing points and other exposed parts in relation to a ballast/transformer winding temperature of 350 °C. If the difference between winding temperature measurements at 0,9 and 1,1 co-ordinates is less than 30 K, a fourth point is added, whose co-ordinates are winding t_a, fixing or exposed part t_a. The thermoplastic material is then subjected to the ball pressure test as described in 13.2.1 at the estimated temperature determined by linear regression, but not less than 75 °C. The diameter of the impression shall be measured and shall not exceed 2 mm.

NOTE 1 This is a fault condition test and the test at 25 °C of 13.2.1 does not apply.

NOTE 2 t_a is the rated t_a of the luminaire.

12.7.1.3 Test for luminaires with inherently short-circuit proof transformer of power ≤10 VA

The fault test shall be carried out, according to the test method in 12.7.1.2, to small transformers with power up to 10 VA; at the end of the first period of 4 h, the secondary winding shall be short circuited.

The short circuit current shall be allowed to continue until transformer failure occurs; transformers that are mounted in their own enclosure (e.g. emergency inverter) and have shown to comply with their own relevant safety standard are deemed to comply with this subclause without the need for test.

Following the test, the luminaire shall be inspected to ensure that the components have been retained in place.

Parts of the luminaire enclosure providing protection against electric shock shall continue to protect live parts against access with the standard test finger, as specified in Section 8.

Because of the high current that may be present during this test, appropriate protection of the test circuit shall be provided (see Note to 12.7.1.1). Care shall be taken to ensure that any protection device does not affect the outcome of the test and the transformer breakdown has occurred at the conclusion of the test.

12.7.2 Test for luminaires with temperature sensing controls internal/external to the ballast or transformer

The luminaires shall be set up for this test as described in the first three paragraphs of 12.7.1.2

The circuits subjected to abnormal conditions shall be operated with a slowly and steadily increasing current through the windings, until the temperature sensing control operates.

Time intervals and increments in current shall be such that thermal equilibrium between winding temperatures and temperature of fixing points and most thermally influenced exposed parts is achieved as far as practicable. During the test, the highest temperature of the spots tested shall be continuously measured.

For luminaires fitted out with manual-reset thermal cut-outs, the test shall be repeated six times, allowing 30 min intervals between tests. At the end of each 30 min interval, the cut-out shall be reset.

For luminaires fitted with auto-reset thermal cut-outs, the tests shall be continued until a stable temperature is achieved.

In order to perform the test on transformers, see also 15.3.5 of IEC 61558-1. The temperature sensing controls external to the transformer shall be checked according to 20.4, 20.5 and 20.6 of IEC 61558-1.

The highest temperature of the fixing points and most thermally influenced exposed parts shall be recorded. The thermoplastic material is then subjected to the ball pressure test as described in 13.2.1 at the maximum recorded temperature, but not less than 75 °C. The diameter of the impression shall be measured and shall not exceed 2 mm.

NOTE 1 This is a fault condition test and the test and the additional 25 °C of 13.2.1 does not apply.

NOTE 2 ”Fixing points” (in 12.7) means both the fixing points of components and the fixing points of a luminaire to the mounting surface.

NOTE 3 ”Exposed part” (in 12.7) means the outer surface of the luminaire enclosure.

NOTE 4 According to the requirements of 12.7, measurement of exposed parts is restricted to those parts providing the luminaire/component fixing or parts providing a protective barrier against accidental contact with live parts, as required by Section 8 of this standard.

NOTE 5 The hottest part of the thermoplastic material section requiring test is measured. This may often be on the internal surface of a luminaire enclosure, not the outer surface.

NOTE 6 The material temperature limits defined are with respect to materials under both mechanical load and no mechanical load.

NOTE 7 The application of Annex N should be made together with the requirements of 4.15.

SECTION 13: RESISTANCE TO HEAT, FIRE AND TRACKING

13.1 General

This section specifies requirements and tests relating to the resistance to heat, fire and tracking of certain parts of insulating material of luminaires.

For printed wiring boards, reference should be made to the requirements of IEC 61249.

13.2 Resistance to heat

External parts of insulating material providing protection against electric shock, and parts of insulating material retaining current-carrying parts or SELV parts in position shall be sufficiently resistant to heat.

The ball pressure test does not have to be applied to plastic parts of a luminaire which provide supplementary insulation.

13.2.1 *Compliance is checked by the following test:*

The test is not made on parts of ceramic material or on insulation of wiring.

The test shall be made in a heating cabinet having a temperature 25 °C ± 5 °C in excess of the operating temperature of the relevant part determined during the temperature test (normal operation) of Section 12, with a minimum temperature of 125 °C when parts retaining current-carrying parts or SELV parts in position are tested, and 75 °C for other parts.

The surface of the part to be tested shall be placed in the horizontal position and a steel ball of 5 mm diameter pressed against this surface with a force of 20 N. A suitable apparatus for this test is shown in Figure 10. If the surface under test bends, the part where the ball presses should be supported.

After 1 h, the ball shall be removed from the sample, and the sample shall be cooled by immersion in cold water for 10 s. The diameter of the impression shall be measured and shall not exceed 2 mm.

13.3 Resistance to flame and ignition

Parts of insulating material retaining current-carrying parts or SELV parts in position, and external parts of insulating material providing protection against electric shock shall be resistant to flame and ignition.

For materials other than ceramic, compliance is checked by the test of 13.3.1 or 13.3.2, as appropriate.

13.3.1 *Parts of insulating material retaining current-carrying parts in position shall withstand the following tests:*

The parts to be tested are subjected to the needle-flame test of IEC 60695-11-5, the test flame being applied to the sample for 10 s at the point where the highest temperatures are likely to occur, measured if necessary during the thermal tests of Section 12.

The duration of burning shall not exceed 30 s after removal of the test flame, and any burning drop from the sample shall not ignite the underlying parts or tissue paper specified in 4.187 of ISO 4046-4, spread out horizontally 200 mm ± 5 mm below the sample.

The requirements of this subclause do not apply in those cases where the luminaire provides an effective barrier to burning drops.

13.3.2 *Parts of insulating material which do not retain live parts in position, but which provide protection against electric shock, and parts of insulating material retaining SELV, parts in position shall withstand the following test:*

Parts are subjected to a test using a nickel-chromium glow-wire heated to 650 °C. The test apparatus and test procedure shall be those described in IEC 60695-2-10.

Any flame or glowing of the sample shall extinguish within 30 s of withdrawing the glow-wire, and any burning or molten drop shall not ignite a single layer of tissue paper specified in 4.187 of ISO 4046-4, spread out horizontally 200 mm ± 5 mm below the sample.

The requirements of this subclause do not apply in those cases where the luminaires provide an effective barrier to burning drops or where the insulation material is ceramic.

13.4 Resistance to tracking

Insulating parts of luminaires, which are other than ordinary luminaires, which retain current-carrying parts or SELV parts in position or are in contact with such parts, shall be of material resistant to tracking unless they are protected against dust and moisture.

13.4.1 *Compliance is checked by the following test, which is made at three places on the test sample.*

For materials other than ceramic, compliance is checked by the proof tracking test in accordance with IEC 60112 subject to the following details:

– If the specimen has no flat surface of at least 15 mm × 15 mm, the test may be carried out on a flat surface with reduced dimensions provided drops of liquid do not flow off the specimen during the test. No artificial means should, however, be used to retain the liquid on the surface. In case of doubt, the test may be made on a separate strip of the same material, having the required dimensions and manufactured by the same process.

– If the thickness of the specimen is less than 3 mm, two, or if necessary more, specimens should be stacked to obtain a thickness of at least 3 mm.

– The test shall be made at three places of the specimen or on three specimens.

– The electrodes (see Figure 11) shall be of platinum and test solution A, described in 7.3 of IEC 60112, shall be used.

13.4.2 The specimen shall withstand 50 drops without failure at a test voltage of PTI 175.

A failure has occurred if a current of 0,5 A or more flows for at least 2 s by a conducting path between the electrodes on the surface of the specimen, thus operating the overcurrent relay, or if the specimen burns without releasing the overcurrent relay.

Clause 9 of IEC 60112 regarding determination of erosion does not apply.

The Note 3 of Clause 5 of IEC 60112 regarding surface treatment does not apply.

SECTION 14: SCREW TERMINALS

14.1 General

This section specifies requirements for all types of terminals which employ screws incorporated in luminaires.

Examples of screw terminals are shown in Figures 12 to 16.

14.2 Definitions

14.2.1 Pillar terminal

A terminal in which the conductor is inserted in a hole or cavity, where it is clamped under the shank of the screw or screws. The clamping pressure may be applied directly by the shank of

the screw or through an intermediate clamping member to which pressure is applied by the shank of the screw.

Examples of pillar terminals are shown in Figure 12.

14.2.2 Screw terminal

A terminal in which the conductor is clamped under the head of the screw. The clamping pressure may be applied directly by the head of the screw or through an intermediate part, such as a washer, clamping plate or antispread device.

Examples of screw terminals are shown in Figure 13.

14.2.3 Stud terminal

A terminal in which the conductor is clamped under a nut. The clamping pressure may be applied directly by a suitably shaped nut or through an intermediate part, such as a washer, clamping plate or anti-spread device.

Examples of stud terminals are shown in Figure 13.

14.2.4 Saddle terminal

A terminal in which the conductor is clamped under a saddle by means of two or more screws or nuts.

Examples of saddle terminals are shown in Figure 14.

14.2.5 Lug terminal

A screw terminal or a stud terminal, designed for clamping a cable lug or bar by means of a screw or nut.

Examples of lug terminals are shown in Figure 15.

14.2.6 Mantle terminal

A terminal in which the conductor is clamped against the base of a slot by a suitably shaped washer under the nut, by a central peg if the nut is a cap nut, or by equally effective means for transmitting the pressure from the nut to the conductor within the slot.

Examples of mantle terminals are shown in Figure 16.

14.3 General requirements and basic principles

14.3.1 These requirements apply to terminals with screw clamping carrying a current not exceeding 63 A, intended for the connection, by clamping only, of copper conductors of cables and flexible cords.

These requirements do not exclude terminals of types other than those shown in Figures 12 to 16.

14.3.2 Terminals are of varied design and have different shapes: they include, among others, terminals in which the conductor is clamped directly or indirectly under the shank of the screw, terminals in which the conductor is clamped directly or indirectly under the head of the screw, terminals in which the conductor is clamped directly or indirectly under a nut, and terminals intended solely for use with cable lugs or bars.

The basic principles governing these requirements are specified in 14.3.2.1 to 14.3.2.3.

14.3.2.1 Terminals are primarily for the connection of only one conductor, although, owing to the wide range of conductors that each terminal is required to clamp, they may in some cases be suitable for clamping two conductors having the same nominal cross-sectional area, which is smaller than the maximum value for which the terminal is designed.

Certain types of terminals, in particular pillar terminals and mantle terminals, may be used for looping-in, when two or more conductors of the same or different nominal cross-sectional area or composition have to be connected. In such cases, the terminal sizes specified in this standard may not be applicable.

14.3.2.2 In general, terminals will be suitable for the connection of cables and flexible cords without special preparation of the conductor, but provision is made in certain cases for connection by means of cable lugs or for connection to bars.

14.3.2.3 A numerical classification for terminals is adopted, based on the nominal cross-sectional areas of the conductors that the terminal can accept. According to this classification, each terminal can accept any one of three successive sizes of conductors in the range of nominal cross-sectional areas specified in IEC 60227 or IEC 60245.

With one exception, the sizes of the conductors within each range advance by one step for each increase in the size of the terminal.

The nominal cross-sectional areas of the conductors assigned to each terminal are given in Table 14.1, which also gives the diameter of the largest conductor that each terminal can accept.

Terminals may be used with conductors smaller than the nominal given range, provided the conductor is clamped with sufficient pressure to ensure adequate electrical and mechanical connection.

Table 14.1 – Nominal cross-sectional areas of conductors according to terminal sizes

Terminal size	Flexible conductors				Rigid conductors, solid or stranded			
	Nominal cross-sectional areas mm²			Diameter of largest conductor mm	Nominal cross-sectional areas mm²			Diameter of largest conductor mm
0 [a]	0,5	0,75	1	1,45	–	–	–	–
1 [b]	0,75	1	1,5	1,73	0,75	1	1,5	1,45
2	1	1,5	2,5	2,21	1	1,5	2,5	2,13
3	1,5	2,5	4	2,84	1,5	2,5	4	2,72
4 [c]	2,5	4	6	3,87	2,5	4	6	3,34
5	2,5	4	6	4,19	4	6	10	4,32
6	4	6	10	5,31	6	10	16	5,46
7	6	10	16	6,81	10	16	25	6,83

[a] Not suitable for rigid conductors. Suitable for flexible conductors of 0,4 mm² cross-sectional area (see 5.3.1).

[b] Also suitable for flexible conductors having a nominal cross-sectional area of 0,5 mm² if the end of the conductor is folded back on itself.

[c] Not suitable for 6 mm² flexible conductors of some special constructions.

14.3.3 Terminals shall allow the proper connection of copper conductors having nominal cross-sectional areas as given in Table 14.2 and the conductor space shall be at least that given in Figure 12, 13, 14 or 16, as appropriate.

These requirements do not apply to lug terminals.

Table 14.2 – Nominal cross-sectional areas of conductors according to maximum current

Maximum current carried by the terminal A	Flexible conductors		Rigid conductors solid or stranded	
	Nominal cross-sectional areas [a] mm^2	Terminal size	Nominal cross-sectional areas [a] mm^2	Terminal size
2	0,4	0	–	–
6	0,5 to 1	0	0,75 to 1,5	1
10	0,75 to 1,5	1	1 to 2,5	2
16	1 to 2,5	2	1,5 to 4	3
20	1,5 to 4	3	1,5 to 4	3
25	1,5 to 4	3	2,5 to 6	4
32	2,5 to 6	4 or 5 [b]	4 to 10	5
40	4 to 10	6	6 to 16	6
63	6 to 16	7	10 to 25	7

[a] These requirements do not apply to terminals used for the interconnections of different components of luminaires by means of cables or flexible cords not complying with IEC 60227 or IEC 60245, if the other requirements of this standard are met.

[b] Terminal size 4 is not suitable for 6 mm^2 of flexible conductors of some special constructions, in which case terminal size 5 should be used.

Compliance is checked by inspection, by measurement and by fitting conductors of the smallest and largest cross-sectional areas specified.

14.3.4 Terminals shall provide adequate connection of the conductors.

Compliance is checked by carrying out all tests of 14.4.

14.4 Mechanical tests

14.4.1 For pillar terminals, the distance between the clamping screw and the end of the conductor, when fully inserted, shall be at least that given in Figure 12.

The minimum distance between the clamping screw and the end of the conductor applies only to pillar terminals through which the conductor cannot pass.

For mantle terminals, the distance between the fixed part and the end of the conductor, when fully inserted, shall be at least that given in Figure 16.

Compliance is checked by measurement, after a solid conductor of the largest cross-sectional area given in Table 14.2 has been fully inserted and fully clamped.

14.4.2 Terminals shall be so designed or placed that neither a solid conductor nor a strand of a stranded conductor can slip out while the clamping screws or nuts are being tightened.

This requirement does not apply to lug terminals.

For fixed luminaires intended solely for permanent connection to fixed (external) wiring, this requirement applies only to the use of solid or rigid stranded conductors. The test is made with rigid stranded conductors.

Compliance is checked by the following test.

Terminals are fitted with a conductor having the composition given in Table 14.3.

Table 14.3 – Composition of conductors

Terminal size	Number of strands and nominal diameter of strands ($n \times$ mm)	
	Flexible conductors	Rigid stranded conductors
0	32 × 0,20	–
1	30 × 0,25	7 × 0,50
2	50 × 0,25	7 × 0,67
3	56 × 0,30	7 × 0,85
4	84 × 0,30	7 × 1,04
5	84 × 0,30	7 × 1,35
6	80 × 0,40	7 × 1,70
7	126 × 0,40	7 × 2,14

Before insertion in the terminal, strands of rigid conductors are straightened and flexible conductors are twisted in one direction so that there is a uniform twist of one complete turn in a length of approximately 20 mm.

The conductor is inserted in the terminal for the minimum distance prescribed or, where no distance is prescribed, until it just projects from the far side of the terminal and in the position most likely to allow the strand to slip out. The clamping screw is then tightened with a torque equal to two-thirds of that given in the appropriate column of Table 14.4.

For flexible conductors, the test is repeated with a new conductor which is twisted as before, but in the opposite direction.

After the test, no strand of the conductor shall have slipped out through the gap between the clamping means and the retaining device.

14.4.3 Terminal sizes up to and including size 5 shall allow the conductor to be connected without special preparation.

Compliance is checked by inspection.

NOTE The term "special preparation" covers the application of additional solder to the strands of the conductor, use of cable lugs, formation of eyelets, etc., but not the reshaping of the conductor for its introduction into the terminal or the twisting of a stranded conductor to consolidate the end.

The bonding together by heating of the tinned strands of a flexible conductor without the addition of solder is not considered special preparation.

14.4.4 Terminals shall have adequate mechanical strength.

Screws and nuts for clamping the conductors shall have a metric ISO thread. Terminals for external wiring shall not serve to fix any other component, except that they may also clamp internal conductors if these are so arranged that they are unlikely to be displaced when fitting external conductors.

Screws shall not be of a metal which is soft or liable to creep, such as zinc or aluminium.

Compliance is checked by inspection and by the tests of 14.3.3, 14.4.6, 14.4.7 and 14.4.8.

14.4.5 Terminals shall be resistant to corrosion.

Compliance is checked by the corrosion test specified in Section 4.

14.4.6 Terminals shall be fixed to the luminaire or to a terminal block or otherwise fixed in position. When the clamping screws or nuts are tightened or loosened, the terminals shall not work loose, internal wiring shall not be subjected to stress, and creepage distances and clearances shall not be reduced below the values specified in Section 11.

These requirements do not imply that the terminals should be so designed that their rotation or displacement is prevented, but any movement shall be sufficiently limited so as to ensure compliance with this standard.

Covering with sealing compound or resin is sufficient to prevent a terminal from working loose, provided that the sealing compound or resin is not subject to stress during normal use and the effectiveness of the sealing compound or resin is not impaired by temperatures attained by the terminal under the most unfavourable conditions specified in Section 12.

Compliance is checked by inspection, by measurements and by the following test.

A rigid copper conductor of the largest cross-sectional area given in Table 14.2 is placed in the terminal. Screws and nuts are tightened and loosened five times by means of a suitable test screwdriver or wrench, the torque applied when tightened being equal to that given in the appropriate column of Table 14.4 or in the appropriate table of Figure 12, 13, 14, 15 or 16, whichever is the higher.

Table 14.4 – Torque to be applied to screws and nuts

Nominal diameter of thread mm	Torque Nm				
	I	II	III	IV	V
Up to and including 2,8	0,2	–	0,4	0,4	–
Over 2,8 up to and including 3,0	0,25	–	0,5	0,5	–
Over 3,0 up to and including 3,2	0,3	–	0,6	0,6	–
Over 3,2 up to and including 3,6	0,4	–	0,8	0,8	–
Over 3,6 up to and including 4,1	0,7	1,2	1,2	1,2	1,2
Over 4,1 up to and including 4,7	0,8	1,2	1,8	1,8	1,8
Over 4,7 up to and including 5,3	0,8	1,4	2,0	2,0	2,0
Over 5,3 up to and including 6,0	–	1,8	2,5	3,0	3,0
Over 6,0 up to and including 8,0	–	2,5	3,5	6,0	4,0
Over 8,0 up to and including 10,0	–	3,5	4,0	10,0	6,0
Over 10,0 up to and including 12,0	–	4,0	–	–	8,0
Over 12,0 up to and including 15,0	–	5,0	–	–	10,0

The conductor is moved each time the screw or nut is loosened.

Column I applies to screws without heads if the screw, when tightened, does not protrude from the hole, and to other screws which cannot be tightened by means of a screwdriver with a blade wider than the diameter of the screw.

Column II applies to nuts of mantle terminals with cap nuts which are tightened by means of a screwdriver.

Column III applies to other screws which are tightened by means of a screwdriver.

Column IV applies to screws and nuts, other than nuts of mantle terminals, which are tightened by means other than a screwdriver.

Column V applies to nuts of mantle terminals in which the nut is tightened by means other than a screwdriver.

Where a screw has a hexagonal head with means for tightening with a screwdriver and the values in columns III and IV are different, the test is made twice, first applying to the hexagonal head the torque given in column IV, and then on another set of samples, applying the torque given in column III by means of a screwdriver. If the values in columns III and IV are the same, only the test with the screwdriver is made.

During the test, terminals shall not work loose and there shall be no damage, such as breakage of screws or damage to the head slots, threads, washers or stirrups that will impair the further use of the terminals.

For mantle terminals, the specific nominal diameter is that of the slotted stud. The shape of the blade of the test screwdriver shall suit the head of the screw to be tested. The screws and nuts shall not be tightened in jerks.

14.4.7 Terminals shall clamp the conductor reliably between metal surfaces.

For lug terminals, a spring washer, or equally effective locking means, shall be provided and the surface within the clamping area shall be smooth.

For mantle terminals, the bottom of the conductor space shall be slightly rounded in order to obtain a reliable connection.

Compliance is checked by inspection and by the following test.

The terminals are fitted with rigid conductors of the smallest and largest cross-sectional areas given in Table 14.2, the terminal screws being tightened with a torque equal to two-thirds of that given in the appropriate column of Table 14.4.

If the screw has a hexagonal head with a slot, the torque applied is equal to two-thirds of that given in column III of that table.

Each conductor is then subjected to a pull of the value, in newtons, given in Table 14.5; the pull is applied without jerks, for 1 min, in the direction of the axis of the conductor space.

Table 14.5 – Pull to be applied to conductor

Terminal size	0	1	2	3	4	5	6	7
Pull (N)	30	40	50	50	60	80	90	100

During the test, the conductor shall not move noticeably in the terminal.

14.4.8 Terminals shall clamp the conductor without undue damage to the conductor.

Compliance is checked by inspection of the conductors, after conductors of the smallest and largest cross-sectional areas given in Table 14.2 have been clamped once and loosened, the torque applied to clamp the conductor being equal to two-thirds of that given in Table 14.4.

If the screw has a hexagonal head with a slot, the torque applied is equal to two-thirds of that given in column IV of Table 14.4.

NOTE Conductors are unduly damaged if they show deep or sharp indentations.

SECTION 15: SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS

15.1 General

This section specifies requirements for all types of terminals and electrical connections, that do not employ screws, for solid or stranded copper conductors up to 2,5 mm^2 for internal wiring of luminaires and for connections to external wiring of luminaires.

Some examples of screwless terminals and electrical connections are shown in Figures 17, 18 and 19. IEC 61210 provides further examples of screwless terminals and electrical connections.

15.2 Definitions

15.2.1 Screwless terminals

Parts required to make connections in electrical circuits by mechanical means without screws.

15.2.2 Permanent connections

Connections designed to be made only once with the same conductor (for example wire wrapping or crimping).

15.2.3 Non-permanent connections

Connections which allow lead assemblies or conductors to be connected and disconnected several times (for example pin or tab and receptacle, or some spring-type terminals).

15.2.4 Lead assemblies

Conductors fitted with auxiliary parts, usually by permanent connection.

15.2.5 Non-prepared conductors

Conductors without special preparation or auxiliary parts. Insulation may, however, be stripped to expose the conductor.

NOTE The term "special preparation" covers the application of additional solder to the strands of the conductor, use of cable lugs, tabs and receptacles, formation of eyelets, etc., but not the reshaping of the conductor for its introduction into the terminal or the twisting of a stranded conductor to consolidate the end.

The bonding together by heating of the tinned strands of a flexible conductor without the addition of solder is not considered to be special preparation.

15.2.6 Test current

Current assigned to a terminal or connection by the manufacturer. When terminals are part of a component, the test current shall be the rated current of the component.