

## Cable Glossary

### General Information

#### Conductors

<b>conductor</b>	part of a cable which has the specific function of carrying current	<i>IEV ref. 461-01-01</i>
<b>solid conductor</b>	conductor consisting of a single wire Note – The solid conductor may be circular or shaped.	<i>IEV ref. 461-01-06</i>
<b>stranded conductor</b>	conductor consisting of a number of wires, all or some of which are wound in a helix	<i>IEV ref. 151-12-36</i>
<b>plain conductor</b>	metal cable conductor in which the wire or wires are not coated with an additional metal	<i>IEV ref 461-01-02</i>
<b>tinned conductor</b>	metal-coated conductor in which the metal coating is of tin	<i>IEV ref 461-01-04</i>
<b>flexible conductor</b>	stranded conductor having wires of diameters small enough and so assembled that the conductor is suitable for use in a flexible cable	<i>IEV ref 461-01-11</i>
<b>sector-shaped conductor</b>	shaped conductor the cross-section of which approximates to a sector of a circle	<i>IEV ref 461-01-13</i>
<b>compacted conductor</b>	stranded conductor in which the interstices between the component wires have been reduced by mechanical compression or by drawing or by suitable choice of the shape and disposition of wires	<i>IEV ref 461-01-14</i>

#### Insulations

<b>insulation</b>	assembly of insulating materials incorporated in a cable with the specific function of withstanding voltage	<i>IEV ref 461-02-01</i>
<b>thermoplastic insulation</b>	insulation made of a plastic capable of being repeatedly softened by heating and hardened by cooling through a temperature range characteristic of the plastic and, in the softened state, capable of being repeatedly shaped by extrusion	<i>IEV ref 461-02-10</i>
<b>thermosetting insulation</b>	insulation made of plastic which, when cured by heat or other means, such as radiation, catalysts, etc., changes into a substantially infusible and insoluble product	<i>IEV ref 461-02-11</i>
<b>cross-linked insulation</b>	insulation made of a thermoplastic material or a copolymer or a compound based on one of these materials, the internal molecular structure of which is changed when cured by chemical reaction, such as, crosslinking or vulcanization and/or physical process, such as irradiation	<i>IEV ref 461-02-12</i>
<b>elastomeric insulation</b>	insulation made of a material that deforms under low mechanical stress and returns to its original state upon release of that stress Note – This insulation is normally cross-linked, but it may also be thermoplastic.	<i>IEV ref 461-02-13</i>

## Electrical screens and shields

<b>screen</b>	conducting layer or assembly of conducting layers having the function of control of the electric field within the insulation Note – It may also provide smooth surfaces at the boundaries of the insulation and assist in the elimination of spaces at these boundaries.	<i>IEV ref 461-03-01</i>
<b>conductor screen</b>	electrical screen of non-metallic and/or metallic material covering the conductor	<i>IEV ref 461-03-02</i>
<b>insulation screen / core screen</b>	electrical screen of non-metallic and/or metallic material covering the insulation	<i>IEV ref 461-03-03</i>
<b>shield</b>	surrounding earthed metallic layer which serves to confine the electric field within the cable and/or to protect the cable from external electrical influence Note – Metallic sheaths, foils, braids, armours and earthed concentric conductors may also serve as shields.	<i>IEV ref 461-03-04</i>
<b>drain wire / continuity wire</b>	uninsulated wire laid in contact with a screen or a shield	<i>IEV ref 461-03-07</i>

## Coverings and various components

<b>bedding</b>	cushioning layer or layers applied to a cable immediately beneath a metallic layer such as the armour or the reinforcement	<i>IEV ref 461-05-08</i>
<b>sheath</b>	uniform and continuous tubular covering of metallic or non-metallic material, generally extruded	<i>IEV ref 461-05-03</i>
<b>armour</b>	covering consisting of a metal tape(s) or wires, generally used to protect the cable from external mechanical effects	<i>IEV ref 461-05-06</i>
<b>braid</b>	covering formed from plaited metallic or non-metallic material	<i>IEV ref 461-05-10</i>
<b>spiral binder tape</b>	metallic tape wound in an open helix on wire armour to keep it in place	<i>IEV ref 461-05-07</i>
<b>water blocking tape / swelling tape</b>	tape applied under a sheath or into the interstices of a conductor in order to prevent water migration along the cable Note – Water migration can occur a) under the sheath, for example when the sheath has been damaged, or b) through the conductor, for example when cable layers through to the conductor have become damaged.	<i>IEV ref 461-05-16</i>

## Practices of laying

<b>trefoil formation</b>	formation of three cables so laid as to be mutually equidistant Note 1 – Viewed in cross-section, the fictitious lines connecting the centres of the insulated cables form an equilateral triangle. Note 2 – The formation is known as “close trefoil” formation when the cables are touching each other.	<i>IEV ref 461-13-01</i>
<b>flat formation</b>	formation of a number of cables laid in a plane, usually with equal spacing between adjacent cables	<i>IEV ref 461-13-02</i>

## Handling of cables

<b>cable drum / cable reel</b>	cylinder with flanges on to which cable is wound during manufacture, for storage, transportation and installation	<i>IEV ref 461-20-01</i>
<b>cable coil</b>	cable wound to form a circular package without internal support	<i>IEV ref 461-20-06</i>
<b>end cap</b>	device placed on the ends of a cable to prevent the ingress of moisture during storage, transportation and installation	<i>IEV ref 461-20-07</i>

## Cable laying

<b>roller</b>	free-running cylinder or set of cylinders, suitably shaped to support and to assist in conveying the cable during laying	<i>IEV ref 461-21-01</i>
<b>motorized roller</b>	set of cylinders at least one of which is motor driven in order to apply force for conveying cable during laying	<i>IEV ref 461-21-02</i>
<b>caterpillar drive</b>	pair of motor-driven chains or belts to apply force for conveying cable during manufacture and laying	<i>IEV ref 461-21-03</i>
<b>cable grip / cable stocking</b>	woven tubular device placed around a cable, reducing in diameter as the result of an applied pulling force and used to grip the cable	<i>IEV ref 461-21-04</i>
<b>pulling eye</b>	device attached to the cable conductor(s) and/or the metallic sheath and/or armour in order to apply pulling force to the cable during laying	<i>IEV ref 461-21-05</i>
<b>indicating tape / warning tape</b>	tape or a mesh placed in the ground above a cable circuit in order to warn of its proximity	<i>IEV ref 461-21-06</i>
<b>stabilized backfill / thermal backfill</b>	backfill composed of materials whose thermal characteristics are chosen to facilitate the passage of heat from cables	<i>IEV ref 461-21-07</i>

## Operation

<b>cyclic current rating</b>	current which a cable will carry when subjected to a repetitive specified daily load cycle over a long time such that the conductor attains, but does not exceed, the maximum rated temperature during the cycle	<i>IEV ref 461-23-01</i>
<b>cyclic rating factor</b>	factor by which the permissible steady state rated current corresponding to a 100 % load factor may be multiplied to obtain the permissible peak value of current during a daily cycle such that the conductor attains, but does not exceed, the maximum rated temperature during the cycle	<i>IEV ref 461-23-02</i>

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### Unit of measure

<b>Ampere (A)</b>	Unit of current. One ampere is the current flowing through one ohm of resistance at one-volt potential.
<b>Farads (F)</b>	Unit of capacitance. Capacitance is the ratio of the electrostatic charge on a conductor to the potential difference between the conductors required to maintain that charge. A one farad capacitor is one in which a one coulomb charge produces a one-volt potential difference between the plates.
<b>Henrys (H)</b>	Unit of inductance. Inductance is a property of a circuit or circuit element that opposes a change in current flow, causing current changes to lag behind voltage changes
<b>Hertz (Hz)</b>	Unit of frequency. Frequency is the number of cycles by an alternating current in one second. One hertz is equal to one cycle per second.
<b>Ohm (<math>\Omega</math>)</b>	Unit of electrical resistance. Resistance is a measure of the difficulty in moving electrical current through a medium when voltage is applied. The resistance of a circuit in which a potential difference of one volt produces a current of one ampere.
<b>Volt (V)</b>	The standard unit of electromotive force or electrical pressure. One volt is the amount of pressure that will cause one ampere of current to flow through one ohm of resistance.