Dangers of electrical current in the human body

An electric shock is the pathophysiological effect of an electric current through the human body.

Its passage affects essentially the muscular, circulatory and respiratory functions and sometimes results in serious burns. The degree of danger for the victim is a function of the magnitude of the current, the parts of the body through which the current passes and the duration of current flow.

The protection of persons against electric shock in LV installations must be provided in conformity with appropriate national standards and statutory regulations, codes of practice, official guides and circulars, etc. Relevant IEC standards include: IEC 60364 series, IEC 60479 series, IEC 60755, IEC 61008 series, IEC 61009 series and IEC 60947-2.

The Standard IEC 60479-1 “Effects of current on human beings and livestock” is a guide about the effects of current flowing through the human body to be used for the definition of electrical safety requirements. This Standard shows, on a time-current diagram, four zones to which the physiological effects of alternating current (15 – 100 Hz) passing through the human body have been related.