

PRESENTATION

This work is in collaboration with, Dit – Dipartimento Innovazioni Tecnologiche e Sicurezza degli Impianti, Prodotti ed Insediamenti Antropici, Ministero del Lavoro e delle Politiche Sociali , Federmacchine (main Italian association of manufactures), Gruppo Interregionale Macchine e Impianti (machine and plant country coordination group), Cei (Italian Electrotechnical Committee)TC44X - Electrical equipment of industrial machines, Uni (Italian standardization Body). It has the objective to make available, in an immediate and intuitive way, an enforcement tool of main reference standards to avoid dangerous parts of machinery and work equipment been reached, thus protecting operators from accidental contact with these parts. The project is targeted at manufacturers , designers, and also at suppliers and employers.

These products are consistent with Inail research, prevention, culture and diffusion of information concerning safety, in the particular and current aim of helping employers, often workers and users of their own machines, to catch the results of the applied research, growing their skills. They use a clear language, pictures and help.

These software are extremely useful for employers that have to give workers safe machines and equipment in particular when safeguards (protective structure and/or protective equipment) are:

-supplied and installed after machinery or equipment construction,

- installed in order to respect the provisions for no CE machines (in Italy these provisions are contained in the 5th attachment of Decree n°81/2008).

In these cases it is possible to carry on the calculation easily and to compare different layout changing for example the placement and/or the kind of safeguards (protective structure and/or protective equipment), always taking into account the provisions of the standards.

It has to be highlighted that this work can't and hasn't to substitute the risk assessment and evaluation that someone, implicated in different steps of machine life, has to carry on. This means that manufacturers , designers, suppliers and also employers have to take under consideration the applicable regulation: in the European Community Machinery Directive 98/37/CE and 2006/42/CE and harmonized standards that are a way of satisfying the state of the art and respecting health and safety requirements and other local regulation, in Italy Decree n°81/2008. Moreover we'd like to remember that there are some difference between values of safety distance and other local regulation indicated in type¹ C - Standards compared with values contained in type A and type B – Standards.

The standards considered are: EN 13857:2008 “Safety of machinery - Safety distances to prevent hazard zones being reached by the upper and lower limbs” and EN 13855:2010 “Safety of machinery — Positioning of safeguards with respect to the approach speeds of parts of the human body”.

¹ a) type-A standards (basic safety standards) giving basic concepts, principles for design, and general aspects that can be applied to all machinery;

b) type-B standards (generic safety standards) dealing with one safety aspect or one or more type(s) of safeguard that can be used across a wide range of machinery:

– type-B1 standards on particular safety aspects (e.g. safety distances, surface temperature, noise);

– type-B2 standards on safeguards (e.g. two-hand controls, interlocking devices, pressure-sensitive devices, guards);

c) type-C standards (machine safety standards) dealing with detailed safety requirements for a particular machine or group of machines

Furthermore the working group is designing and developing additional upgrade, such as calculations relating to the use of protective systems such as laser scanners , pressure-sensitive mats , two-hand control devices , interlocking guards without guard locking etc. according with future changes in standard ISO 13855. The following additional information is provided to better define their respective fields of application. With regard to EN 13855, in addition to those explained above, it was taken into account protection through safeguards such as active optoelectronic protective devices in their different positioning in view of a direct approach (orthogonal, parallel and angular) to the detection zone. With regard to the standard EN 13857 only the tables for adults over 14 years were taken into account, considering the potential users of the software.