Reinhard Doebbelin, Thoralf Winkler, Andreas Lindemann

Resulting from the connection between the change rate of a magnetic field and the induced currents in an exposed hu-man body, pulsating magnetic fields have to be evalu-ated analysing the waveforms of the field or the field-generating current. A corresponding assessment guideline is given in the German safety regu-lation on “Electromagnetic Fields” BGV B11. Considering the specific output current waveforms of resistance welding installa-tions, in the paper appropriate procedures to determine the waveform-dependent exposure limits are explained by the examples of an a.c. resistance welding machine and a resistance welding inverter.

Based on investigations of the field distribution the occurring actual flux density values are compared to the ascertained exposure limits and a practical method to de-termine minimum distances ensuring compliance with the given regulations is shown.

Download full text