



“Gheorghe Asachi” Technical University of Iasi, Romania



INFLUENCE OF ELECTRIC MOTORS DESIGN ON THEIR BEHAVIOUR DURING TESTING IN EXPLOSIVE MIXTURES

Mihai Magyari*, Sorin Burian, Lucian Moldovan, Dragoş Fotău, Marcel Rad

National Institute for Research and Development in Mine Safety and Explosion Protection - INSEMEX, 32-34 G-ral Vasile Milea Street, Petrosani, Hunedoara, Romania

Abstract

The research carried out in the specialized Laboratory of the National Institute for Research and Development in Mine Safety and Explosion Protection - INSEMEX Petrosani has identified the causes of high pressure peaks occurrence in the case of large electric motor enclosures as: the extremely large internal volume, the geometrical shape of motor enclosures and the very intricate and complex internal arrangement of such motor enclosures, having in mind the tendency of motor manufacturers for chemical and petrochemical industry to manufacture motors having more complex geometrical shapes.

These results proved to be very useful in assisting designers of large flameproof electric motors to improve motors design so as to make them more reliable when testing in explosive mixtures.

Key words: electric motor, explosive atmospheres, flameproof enclosure, pressure, pressure pilling

Received: September, 2018; Revised final: January, 2019; Accepted: April, 2019; Published in final edited form: April, 2019

* Author to whom all correspondence should be addressed: e-mail: mihai.magyari@insemex.ro; Phone: +40 254541621; Fax: +40 254546277