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TECHNICAL FACULTY IN BOR



BOOK OF ABSTRACTS

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SAFETY AND HEALTH IN COKING PLANTS THROUGH THE APPLICATION OF ENGINEERING MEASURES

Students: Alida Kusić, Ilma Bošnjak

Mentor: doc. dr. sc. Miliša Todorović

University of Zenica, Faculty of engineering and natural sciences, Zenica, Bosnia and Herzegovina

Abstract

Coke plants are plants where coal is carbonized for the manufacture of coke in slot or beehive ovens. To make steel in a blast furnace, coal must first be turned into coke. Coke has a dual role in the steelmaking process. First, it provides the heat needed to melt the ore, and second, when it is burnt, it has the effect of ‘stealing’ the oxygen from the iron ore, leaving only the pure iron behind. In the coking plant, coal is heated in the absence of oxygen to 1250c. This removes any impurities in the coal, resulting in coke, which is a porous substance that is nearly all carbon. As we can conclude from the above, the process in the coking plant is quite complex but useful. From that complexity comes numerous dangers. In order to check and reduce these dangers, this is where occupational safety comes into play. Most of the health hazards in coke production come from volatile chemicals that are released from the coal during coking, and dust from the production process causes respiratory illnesses. In addition, the heat required for production causes heat stress. Safety hazards in coke production also include mobile equipment, burns, fire and explosion.

This paper presents the most common hazards and dangers and engineering measures to prevent them in the coke oven. Along with the theory, the research that was done in a coke plant in Bosnia and Herzegovina was also presented.

Keywords: *Coke plant, Hazards, Prevention, Engineering*

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