

# BIULETYN

## INSTYTUTU SPAWALNICTWA



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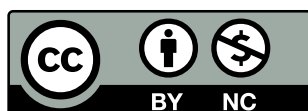
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INSTITUTE OF WELDING

The International Institute of Welding  
and The European Federation for Welding,  
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## Summaries of the articles

### **A. Kiszka, T. Pfeifer - Use of anti-spatter substances in welding processes**

The article presents the course and results of tests involving the use of anti-spatter substances. The study determined the effect of the anti-spatter substance applied on the surface of workpieces on the quality and properties of welded joints as well as the effect of the anti-spatter substance applied on the welding torch elements on the active life of nozzles and contact tubes used in MIG/MAG welding and plasma cutting processes.

### **J. Czuchryj, P. Irek - Dye penetrant method of the assessment of the pores size in welded joints made of aluminium and its alloys**

The work included the penetrant inspection carried out on AlMg5 aluminium alloy provided with artificial discontinuities, i.e. pores (drilled openings). The tests involved the measurements of indication sizes depending on the time of development and various diameters and depths of openings. The dependences determined enable estimating the depth of pores in welded products made of aluminium and its alloys. The information obtained should enable the decision-making concerning the acceptance of a product for operation or the necessity of repairing it. The tests also included the determination of optimum indication development time for aluminium and its alloys.

### **M. St. Węglowski, J. Dworak, S. Błacha – Electron beam welding – equipment and accessories**

Electron beam welding has been known and used for a long time, yet the recent years have seen increasing advancements in equipment fully utilising this welding method potential. Electron beam welding machines can be both universal and highly specialised, which can translate to significant operating and, first of all, welding costs

reduction. Modern electron beam welding devices are provided with control systems and safety features which maximise operator's anti-radiation protection and enable carrying out technological processes in vacuum conditions.

### **R. Kaczmarek, R. Krawczyk - Analysis of dimensions of test joints in the process of technology qualification according to PN-EN ISO 15614-1 in the aspect of ultrasonic testing according to PN-EN ISO 17640**

Quality assurance systems in welding engineering demand that the manufacturers of welded structures and welding equipment should apply qualified welding technologies. The most commonly used mode of welding technology qualification is testing a given welding technology by making test joints and carrying out their examination. This article presents the analysis of test joint dimensions recommended in PN-EN ISO 15614-1 in relation to the possibility of testing the quality of such joints using ultrasonic testing according to recommendations of currently valid related standards. The article contains a proposal how to determine the width of a test joint on the basis of the nomogram developed. The target readers of the article include welding engineers and technologists, other welding coordination personnel involved in the preparation of test joints as well as NDT personnel, due to the extensive analysis concerning the selection of testing methods and ultrasonic examination of test joints.

### **R. Krawczyk - Welding parameter ranges in relation to metal transfer method in welding arc**

The study is concerned with MAG welding. The issues presented are directly related to the transfer of metal in the welding arc depending on power applied. The main objective of the study

was to present the ranges of welding parameters in relation to the mode of metal transfer in the welding arc. The subject of the study was inspired by the introduction of new standard PN-EN ISO 9606-1 concerning the qualification of welders. This standard features the mode of metal transfer in the welding arc as a new welder qualification variable. As a result, these issues have acquired new significance in terms of this process.

## W. Zeman, M. Rostecka – Welding industry against economic fluctuations of 2006 – 2012

The article aims to determine the scale of applying welding technologies, the role of welding engineering in production and economy and the impact of economic fluctuations on the dynamics of sales in industries applying welding techniques and on the demand for welding equipment and consumables.

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