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RESEARCH ON WELDABILITY OF WIRES WITH COATING DURING RESISTANCE SPOT WELDING

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The main goal of this work is to investigate the influence of the coating material on the weldability of wires with different coating during resistance spot welding (RSW). RSW is one of the most widely used processes, which produces coalescence at surfaces of joining materials in one spot by the heat, obtained from resistance to current that flow through two details pressed together. The main problem in joining of wires with different coatings is weldability and stability of joints quality. Investigation was consisting of theoretical and experimental part. It was established, that the strength of the welding point after RSW depends on the value of the sum of areas ($A + 2B$) (Fig.), where A – weld point and B – smelt coating. For multifilament wires this expression is as follows: $nA + 2B + (n - 1)C$, where C – value that depends on step of turn of filaments. The analogue model of one of the main characteristics of RSW process – heat distribution during welding Q – is elaborated and proved by experiments.

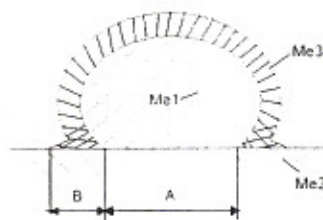


Fig. Scheme of the welding joint of wires with low melting coating: $Me1$ – wire; $Me2$ and $Me3$ – coatings

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