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AC/DC generators with waveform control: innovation in submerged arc welding

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Abstract

The introduction of highly efficient inverter based power systems of the last generation, which allow a full control of the wave shape both in frequency, balance and offset, has changed the possibilities of welding with the Subarc process.

By controlling the parameters which determine the wave form it is possible to achieve outstanding results in terms of productivity, bead shape and penetration, heat input and reduction of distortions.

The paper presents experimental tests made at the laboratory Processi Speciali di Saldatura (PSS) of the Italian Welding Institute, Several beads on C-Mn plates have been deposited both with a conventional Subarc Equipment and with the new technology ‘Full Wave Control’ provided by the Power Wave AC-DC by Lincoln Electric.

The compared results give a clear view of the potential of the new technology.

Keywords:

carbon manganese steels | efficiency | energy input | penetration | plate | process parameters | submerged arc welding | waveform | weld shape | welding inverters | welding power sources

Notes

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