INFLUENCE OF BAVEL ANGLE IN WELDING ALUMINIUM 5083 BY THE GMAW PROCESS

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Abstract

Big or small angle of bevel is parameter of welding which can influence result from GMAW (Gas Metal Arc Welding) welding 5083 Aluminium, examination taken is interesting test to result of welding at determined angle, examination wear to use standard of ASME IX, natural test specimen of treatment of angle variation 30°, 40°, and 50° bevels.

Its process of research him with interesting tensile examination and with bend test / and also note every conducted for process yield test data. Perception of its welding moment till finish also very needed, to know the percentage of strand deposit of filler metal (workmanship time and weight filler used) and time which required for each angle.

In the tensile test results, test material was broken in the weld metal with the results of rejection in all specimens. Largest tensile value at bevel angle 50° with 250 N/mm² tensile value and the lowest tensile value at the shrinkage 30° bevel with 160 N/mm² tensile value. With a diameter of ≤ 40 mandrell he is reject all, just got a cracking pressure of immediate moment, means that material is very brittle. 50° bevel angle need filler 115.67 grams and takes 138 seconds to weld, bevel angle 40° filler need 81.65 grams and 161 seconds in the weld, while the bevel angle of 30° require filler 56.1 grams and 138 seconds in welding, because of the large angle requires more welding layer and a longer time.

keyword : angle of bevel, GMAW, bend test, tensile test