

Abstract:

Recently, heavy thick plates of high strength steel have been applied to the columns of high-rise buildings in Japan. The maximum thickness of the plates reaches 100 mm and the application of SA440 steel, having yield strength of 590 N/mm², has now become common. In addition, unprecedented high welding performance, such as higher than 70 J CV at 0°C for the welded metal, is now required to fabricate these plates. The authors have developed a new welding system to combine the narrow gap welding process with high speed rotating arc (Pat-

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