



Remarks on Special Issue on Welding and Joining Technology

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Steel has infinite potential and has been contributing to society by advancing its performance. For example, in the automobile industry, the application of high-strength steel sheets over 1 000 MPa supports global environment protection and better social life through weight reduction of car bodies and improvement of collision safety. In the energy industry, the development of new steel tubes and pipes contributes to stable energy supply and higher energy efficiency such as the OCTG and linepipes used in the arctic climate or under deep sea, and special tubes for power plants used at high temperature exceeding 600°C. The utilization of high-performance structural steel plates and good corrosion-resistant steel plates also enriches social infrastructure by raising the reliability and life cycle of structures. Additionally, new steel products are now under development to prepare for the upcoming new energy society based on hydrogen.

However, these steel products cannot fully show their performances unless they are assembled as structures, such as automobiles, pipelines, power boilers, buildings, bridges, and ships, by customers.

Welding and joining technology starting from rivet joining has been progressing and spreading as an essential technology (e.g., arc welding, resistance welding, and laser beam welding) and it has been assisting in the assembly of steel products as structures.

Meanwhile, with the advance of steel performance, it is becoming increasingly difficult to secure the soundness and reliability of welded joints. Furthermore, demand for coexistence with other materials is gradually growing. Consequently, there is no doubt that welding and joining technology is a future key-technology for monozukuri (manufacturing) using advanced steel products.

Nippon Steel & Sumitomo Metal Corporation has been striving to improve the weldability of our steel products and to develop welding materials and processes which enable production of the best performance of our steel products. This Nippon Steel & Sumitomo Metal Technical Report Special Issue on Welding and Joining Technology introduces some of these activities in various product categories. Through this special issue, we hope that you will be better able to understand our activities and trust our products more than ever before.

Lastly, we would like to thank you for your continued patronage and ask for your continued guidance.