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P2.154 Welding analysis for the 1/16 VV sector of CFETR mock-up

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This paper mainly analyzes the process of the 1/16 sector vacuum vessel (VV) welding from two 1/32 VV sectors in the 1/8 VV sector research and development project of China Fusion Engineering Test Reactor (CFETR). In the numerical simulation, the inherent strain method was applied to analyze the welding deformation and shrinkage of 1/16 VV sector with and without welding tools respectively. What's more, it predicts the deformation trend and magnitude, which are used to compensate welding shrinkage. In the actual welding process, the welding tools and compensation are adopted, the deformation are measured through controlling points. The results show that the welding tools are effective in controlling deformation and improving the manufacturing accuracy, the trend and magnitude are consistent to the analysis result before removing the welding tools.

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