Title: Enhanced Mechanical Properties of Friction Stir Welded 5083Al-H19 Joints with Additional Water Cooling

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PII: S1005-0302(17)30024-5
DOI: http://dx.doi.org/doi:10.1016/j.jmst.2017.01.016
Reference: JMST 903

To appear in:

Revised date: 28-10-2016
Accepted date: 22-11-2016

Please cite this article as: B.B.Wang, F.F.Chen, F.Liu, W.G.Wang, P.Xue, Z.Y.Ma, Enhanced Mechanical Properties of Friction Stir Welded 5083Al-H19 Joints with Additional Water Cooling, http://dx.doi.org/10.1016/j.jmst.2017.01.016

Enhanced Mechanical Properties of Friction Stir Welded 5083Al-H19 Joints with Additional Water Cooling

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[Received 28 September 2016; Accepted 22 November 2016]

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Abstract

3-mm-thick 5083Al-H19 rolled plates were friction stir welded (FSW) at tool rotation rates of 800 and 200 rpm with and without additional water cooling. With decreasing the rotation rate and applying water cooling, softening in the FSW joint was significantly reduced. At a low rotation rate of 200 rpm with additional water cooling, almost no obvious softening was observed in the FSW joint, and therefore a