Analysis of Thermomechanical Processing of AA5083-H116 for Corrosion Resistance

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ISSUE:
- Al-Mg (5xxx) alloys are strong, light weight, and resistant to corrosion. AA5083-H116 is used specifically in ship hulls.
- Exposure to elevated temperatures over long periods of time, however, allows Mg to precipitate, forming Al₃Mg₂.
- This is dangerous because Al₃Mg₂ galvanically corrodes, leading to stress corrosion cracking in ship hulls.

PROJECT FOCUS and GOAL:
- Literature has shown that this precipitation can be partially mitigated by thermo-mechanical processing (TMP).
- The goal of this research project was to understand and provide insight to why TMP improves corrosion resistance.