Brushing conversion coating on magnesium alloys: a promising dry-in-place phosphate conversion treatment with high corrosion resistance for coating repair on Mg alloys

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Abstract The remanufacture of damaged conversion coatings requires a dry-in-place, no rinsing process. This work reports a novel brushing conversion treatment method. The SEM and TEM analyses demonstrate a porous but more compact structure, whereas electrochemical measurements prove an enhanced corrosion resistance of brushing conversion coatings, as compared with the conventional immersion coatings. The more compact structure was ascribed to the accelerated coating growth kinetics under the continuous brushing, and the enhanced corrosion resistance was attributed to the retard of the penetration of corrosive ions in the maze-like porous structure. **Keywords** Corrosion; Mg alloy; surface treatment;

Reference

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