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[\[Image PDF \(502K\)\]](#) [\[References\]](#)**The Effect of Magnesium Oxide Supplementation to Aluminum Oxide Slip on the Jointing of Aluminum Oxide Bars**[Tetsurou ODATSU](#)¹⁾, [Takashi SAWASE](#)¹⁾, [Kohji KAMADA](#)¹⁾, [Yohsuke TAIRA](#)¹⁾,
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Abstract:

The purpose of this study was to investigate the effect of modifying aluminum oxide slips with magnesium oxide (MgO) to create a jointing material for In-Ceram[®] Alumina. Jointed In-Ceram[®] Alumina bars with In-Ceram[®] Alumina slips containing 0—1.0 mass% MgO were examined by a three-point bending test. Joint-free bars were also tested as controls. Fracture surfaces were evaluated by scanning electron microscopy. In addition, linear shrinkage and fracture toughness were assessed.

The 0.3 mass% MgO group showed the highest flexural strength among the jointed groups, and there were no statistical differences between the joint-free control groups. The fracture surface of 0.3 mass% MgO group showed increased sintering densification with reduced micropore size. No linear shrinkage was observed with the addition of MgO to the alumina slip. Added MgO was also effective in boosting fracture toughness. The present findings indicate that the MgO-supplemented binding material is useful for clinical applications.

Key words:[Aluminum oxide](#), [Magnesium oxide](#), [Jointing](#)

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