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Reinforcement effects of polyvinyl alcohol and polypropylene

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composites

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Abstract: In this paper, the fracture behavior of polyvinyl alcohol (PVA) fiber reinforced sulphoaluminate cement (SAC)was experimentally investigated, and it was compared with those of polypropylene(PP) fiber reinforced SAC and PVA fiber reinforced Portland cement (PC). In the investigation, three-point bending tests were carried out for notched beam samples of all cement composites studied. Special attentions were paid on their strain hardening and multiple cracking. The different fracture behaviors between the SAC and PC matrix were evaluated using the double-K fracture model. The results show that the PVA fiber reinforced SAC composite exhibits better flexural behaviors when compared with the PVA fiber reinforced PC composite, although the plain PC matrix displays stronger fractural behaviors than that of plain SAC matrix. This implies that the bond strength between SAC matrix and PVA fiber is better than that between PC matrix and PVA fiber. In

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