
Preparation and characterization of high strength glass fiber from fly ash

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Abstract

Glass fiber was made with different content of fly ash (25%, 35%, 45%) with silica, magnesia and calcium oxide. The influence of fly ash content on the glass drawing process and the properties of glass fiber were investigated. The results show that there is no crystallization occurring during the preparation process of fly ash glass fiber. The temperature needed for normal drawing increased with the increase of fly ash content, and the drawing flow rate decreased with the increase of fly ash content at the same temperature. The higher the fly ash content, the higher the tensile strength. Fly ash fiber acid resistance is superior to alkali resistance. The higher the content of fly ash, the acid resistance is better and the alkali resistance is worse.

Keywords: glass fiber, flyash, tensile strength, chemical stability

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