عنوان مقاله:

Long-term performance of composite pipes under aqueous environments

محل انتشار:

سومین کنفرانس بین المللی مکانیک، ساخت، صنایع و مهندسی عمران (سال: 1399)

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خلاصه مقاله:

In this study, the E-glass/Epoxy composite pipes are produced by thefilament winding method. The specimens are cut according to ASTMD2290 standard for determining the Hoop Tensile Strength (HTS) andexposed to different environmental conditions. The first group of samplesis kept intact and the second group is immersed in water at differenttemperatures. At the specified time intervals, samples are subjected to thesplit-disk test to determine the HTS and equivalent hydrostatic burstpressure of composite pipes. Applying the hygrothermal conditions to thesamples, the equivalent hydrostatic burst pressure decreasessignificantly. SEM images showed that the moisture absorptiondecreases the bonding between the fibers and matrix and also reductionof bonded epoxy on the outer surface of the fibers in saturated specimensis clearly seen.

کلمات کلیدی:

Composite; Hoop tensile strength; Hygrothermal effects; Split-disk