ABSTRACT: The results of long-term creep tests in air, lasting for up to 14 years, on polypropylene, polyethylene and polyester reinforcing geotextiles are compared with the predictions from accelerated tests under the same loads using the stepped isothermal method (SIM). For three of the four materials tested, the data from SIM tests provide reasonably accurate to good predictions of the actual strain. The accuracy of the predictions were noticeably poorer for a heavy woven polypropylene. For a sheathed polyester strip, the creep-rupture characteristic, the design loads and creep reduction factors predicted using SIM agree well with those predicted from conventional tests. It is recommended that ramp-and-hold tests should be used to allow for variability in the initial strains upon loading, and that 1000 hour long tests be used to confirm the initial course of the creep curves.