

This paper contributes to a better understanding of how installation damage of geosynthetics can affect soil–geosynthetic interaction during pullout and inclined-plane shear. The effects of installation damage induced in field trials of a woven geotextile and a woven geogrid were studied. The results indicated that after installation the accumulation of a layer of fine particles over the geosynthetic can reduce the skin friction available, particularly for sheet materials. Installation damage can induce premature tensile failure in pullout tests, along the unconfined portion of the geosynthetic, causing a significant reduction in the corresponding coefficient of interaction. The contribution of the bearing members to the coefficient of interaction during pullout was estimated using equations from the literature. Such estimates were too optimistic. The installation damage induced had little influence on the soil–geosynthetic coefficient of interaction in the inclined plane shear test. The different relative movements of the soil and geosynthetic in pullout and inclined-plane shear, as well as the deformation of the reinforcements during pullout, enabled different mobilisation of the interface strength. For the comparable conditions tested, the coefficient of interaction from inclined plane shear tests was larger than that measured from pullout tests. The reduction factor for installation damage obtained from tensile tests overestimated the effects of the installation conditions on the soil–geosynthetic interface from both pullout and inclined plane shear tests.