Textile substrate with structurally integrated, destructible threads to facilitate material separation

Abstract

The newly developed textile substrate (1) consists of three material groups and is produced by means of a weft and/or warp knitting technique. First threads (2) consist of one or more first (e.g. skin-friendly) materials (20) of a first material group, second threads (3) consist of one or more second (e.g. robust) materials (30) of a second material group, and third threads (4) consist of a destructible material (40) of a third material group, which forms a 'textile screw'. This unique composition enables efficient and environmentally friendly separation of the first materials (20) of the first material group from the second materials (30) of the second material group at the end of the service life of the textile substrate (1), making recycling easier. Areas of application for this innovation are, inter alia, clothing, interior fittings and technical textiles which make a contribution, by way of recycling, to environmental protection and to meeting standards such as the EU's Green Deal.

(Figure 1)