

Abstract

The present thesis deals with potentially collapsible soils in the Czech Republic. Collapsibility is one of the dangerous phenomena of soils and in some cases it causes extreme deformation of structures. Hydrocollapse may happen especially at quaternary sediments – loess and in the made ground - spoilheaps. Loess is present at a large part of the Czech Republic and the risk of collapsibility may therefore be considerable. First, in the state of the art an overview of soil collapsibility is provided and the regions where the collapsible soils are present are identified. The main part of the thesis deals with the evaluation of the collapse potential and assessing the degree of collapsibility. It is concluded that in the Czech Republic only slight to moderate degree of collapsibility should be expected in natural soils. With respect to the made ground the fresh lumpy clay fills may exhibit a substantial degree of collapsibility if the macro-voids (high intergranular porosity) are retained until sudden saturating. Finally the possible methods of soil improvement to minimise the collapsibility of loess deposits are briefly summarised.