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ENGINEERING PROTECTION OF TERRITORIES AFFECTED BY LOESSIAL PSEUDOKARST

Loessial pseudokarst is the result of hydrodynamic, gravitational, physicochemical, and biogenic failure of loess or loess-like soils due to their watering. This dangerous geological phenomenon is mainly caused by anthropogenic reasons, and it manifests itself as cavities, swallow holes, collapse sinks, gullies, etc. Their sudden formation is no less serious problem for a civil engineer than a well-known collapse of loessial and loess-like soils; therefore, there is a need to mitigate the consequences of the above phenomena to protect buildings, structures, roads, railways, and agricultural lands from the consequences of the loessial pseudokarst. Many protective actions are identical to those aimed at protection from karst, and they can be attributed to the passive or active type. The first one does not influence the formation of the loess pseudokarst, but the second does.

Passive actions include planning and designing of subsidence-resistant structures, as well as monitoring of their condition. Dewatering of loess or loess-like soil, control over irrigation, organization of the surface water runoff, erection of waterproof screens and hydraulic curtains, filling of pseudokarst cavities and holes, and improving loess or loess-like soil by injecting the grout represent active mitigation actions. Some of them can only be implemented before the construction is initiated, others can be implemented as operative actions in the course of or in the aftermath of the construction, but most of them can have a double nature.

Key words: pseudokarst, loess, mitigation actions.

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