4. CONTRRUST modifier is not toxic, not harmful to humans and the environment natural material, which is less time consuming, expensive and safe to work compared to known methods, and the economic effect of experimental implementations is already over 65 million UAH.

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ENSURING THE SAFETY OF WORKERS ON CONSTRUCTION SITES

Ensuring labour safety on construction sites is and will be a topical topic. Any construction can pose a threat to the health or even life of workers or just passers-by. To prevent accidents, it is necessary to strictly comply with the requirements of labour protection and safety rules. At construction sites, labour protection is regulated by the «Minimum requirements for labour protection on temporary and mobile construction sites» (hereinafter referred to as «Minimum Requirements»), approved by the Order of the Ministry of Social Policy of Ukraine dated 23.06.2017 No. 1050 [1].

The issue of minimum requirements for the organization of labour protection and workplaces on temporary or mobile construction sites in the implementation of construction works in accordance with the list of types of construction works, which are subject to the Minimum requirements for labour protection on temporary or mobile construction sites approved by the Ministry of Social Policy of Ukraine, is investigated.

The analysis showed that in order to fulfill the Minimum Requirements it is necessary:

1. Customers and managers of construction are obliged not later than 30 calendar days before the start of construction work to send to the territorial body of the State Service of Ukraine for Labour preliminary information on the implementation of construction work in the appropriate form in one of the following cases: if the duration of construction work is provided for more than 30 working days with simultaneous employment in construction work of more than 20 employees and individuals; if the planned volume of construction work exceeds 500 man-days.

2. Appointment by the customer or head of construction of one or more coordinators on labour protection at the stage of development of project documentation for construction and coordinators on labour protection at the construction stage.

3. Occupational health and safety coordinators have the necessary training to perform their functions [2]: higher education in the relevant direction of training; at least 5 years of professional experience in the field of architecture, construction or management of construction sites; confirmed by an independent body qualification by profession of occupational safety engineer (construction).

However, in our opinion, in order to achieve greater safety at construction sites, it is necessary to strengthen monitoring and inspection by third-party organizations of the work of managers and coordinators at all stages of construction.

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ACCOUNTING FOR PARTIAL LATERAL SOIL EXPANSION IN CALCULATIONS SETTLEMENTS OF FOUNDATIONS ON WEAK BASES

Let us briefly consider the process of resistance of the soil base when loading with the foundation by the characteristic phases of their interaction.

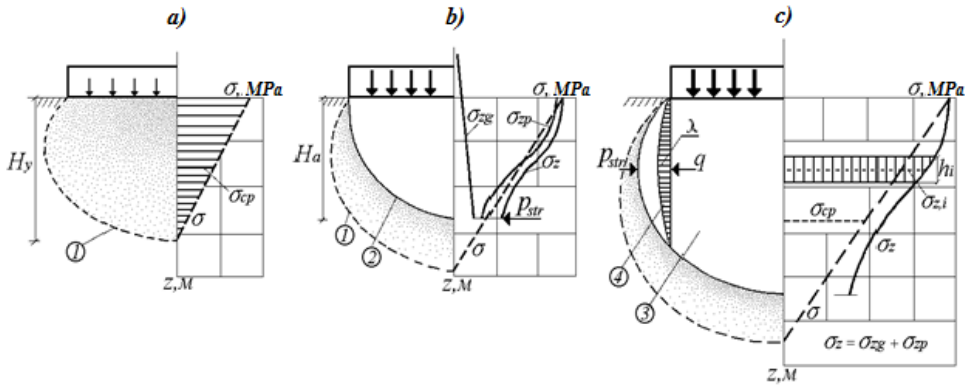

Fig. 1 – Schemes of sequential development of deformations in soils of foundations bases: limits of elastic (1) and residual (2) deformation zones; compressed volume of soil (3); diagram of transverse deformations λ (4).

Phase I (Fig. 1, a) is the initial or elastic stage of the dependence graph s = f (p), where the completely linear relationship between load pressure and settlement is preserved.. The phase limit ends with the value of the load, which is numerically equal to the structural strength of the natural soil of the base. Only elastic settlement is present in the soil of the base, and residual deformations of soil compaction are absent at all. Numerous experimental studies show that the elastic part of the settlement does not exceed a few millimeters and such a small value may not be taken into account.

Phase II (Fig. 1, b) is the second segment of the graph ***s = f (p)***, where the dependence acquires a curvilinear shape and is characterized by exceeding the increase in the amount of settlement compared to the increase in load. In this case, the pressure under the base of the foundation exceeds the structural strength of the natural soil. In the soil under the foundation base, residual deformations of the soil compaction under the foundation contour begin to develop due to a