

А. П. ЯКУШЕВА

Научный руководитель С. Д. СЕМЕНЮК, д-р техн. наук, доц.

Консультант Г. И. СВИДИНСКАЯ

БЕЛОРУССКО-РОССИЙСКИЙ УНИВЕРСИТЕТ

World practice of structures with external sheet reinforcement shows the efficiency of their use. The main advantage of this kind of structures is their external reinforcement, which at the same time carries out power and isolation function that makes it possible to reduce the cross-sectional constructions. Steel-concrete structures are used in energy construction, industrial and civil construction, bridge construction, hydraulic engineering, agricultural building. One of the main objectives of the pilot studies is to compare the strength characteristics of the steel-concrete specimens with molded steel with specimens with molded steel and reinforcing bars.

As an object of study chosen the design, representing two concrete prisms interconnected with an I-beam rolling shelves with welded reinforcing anchors, which have 2 of the reinforcing bars. The concrete mixture was prepared in the laboratory manually. Formulations were dosed by weight. All samples were molded in a half - form panels. Dial gauges are applied to measure the shear strain. Initially, the load is gradually applied until 40 % of the expected breaking load is achieved, and then cyclically ("load - unload") 25 times in a range between 5 % and 40 % of the expected breaking load . Successive increment of the load is performed in such a way that the destruction occurs not earlier than in 15 min. Deformation by contact shift should be measured at least as long as the load is reduced by 20 % of the maximum load. The test results are shown in the diagram:

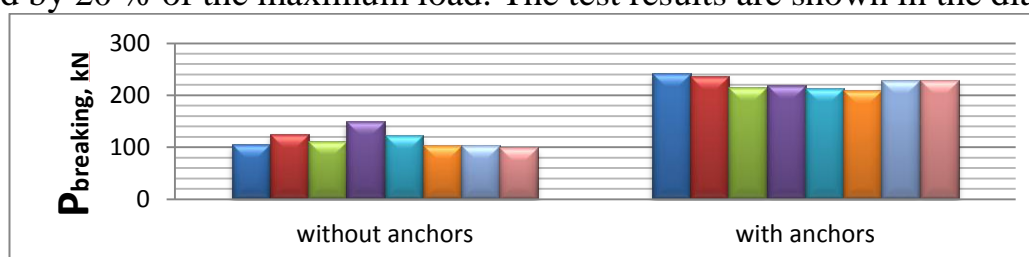


Fig. 1. Diagram of physical and mechanical characteristics of the samples tested

Thus, it can be concluded that, to increase the adhesion of the reinforcing member with the concrete structure is expedient to apply reinforcing bars. The values of breaking loads of samples with the additional anchoring as compared to the samples without anchoring increased by 90–95 %.