Keywords: microclimate, otverstye, air, duct, teploutylyzator

Annotation.*Experimental studies rational geometry of the openings in the duct heat exchanger is installed, what version of the hole (prepared according to the theoretical studies) it is the most effective since it ensures a uniform air flow distribution along the length of heat exchanger.*

Key words: climate, hole, air pipe, heat recovery units

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EXPERIMENTAL STUDY OF CONCRETE ELEMENTS compressed-bent circular SECTION The action of transverse forces

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Abstract.*The results of experimental studies of reinforced concrete columns with round cross-section to bend the previous compression and without compression, showed an increase bearing capacity of the columns from the previous compression to 43.7%.*

Keywords: testing, concrete construction

Formulation of the problem. In recent years, concrete elements of circular cross section have been used widely for columns frame buildings, frame elements operating in earthquake zones, bored pile retaining walls, anti buildings. However, the research strength of compressed concrete elements bent-round section under the action of transverse forces are practically absent, and accounting for lateral oblique sections force, under the rules of performing both bending elements, excluding the impact of longitudinal compressive force.

Analysis of recent research. Research on the columns of rectangular section [1, 2] showed that application of longitudinal compressive force with eccentricity relative to the geometrical axis of the column, directed towards cross bending or in the opposite direction, the convergence or divergence of longitudinal and transverse bending, the number of transverse reinforcement has a significant impact on strength and crack resistance sloping sections.

the purpose of the following study was to evaluate the influence of noncentral applied longitudinal compressive force that compressed

loadable transverse bending area, the carrying capacity of elements of circular cross section under the action of transverse forces.

Results. The study was performed on columns of circular section made of concrete class C 25/30 diameter 190 mm with longitudinal reinforcement in the form of six rods and fittings Ø10 A240S transverse spiral reinforcement of reinforcing wire Ø4VrI installed increments 100 mm, Span the cutoff when tested two equal columns column diameters less concrete cover 30 mm. The length of the samples was column 1000mm. It was tested three samples of each series of transverse compression level less than 0.25 R have been destroyed. in compression. The value of eccentricity was 4 cm. Size reduction efforts amounted to 150 kN. Buckling reduction from the previous column was carried out in the same direction as the cross next bend of the transverse forces applied.

To test was made special setting, Fig. 1. To create a preliminary reduction efforts columns used fairly rigid frame consisting of two traverse two guides hinge device for setting the eccentricity of load application, Jack. To create a transverse force in the vertical direction using a rigid traverse, two guides are fixed on one side to power streams poll, on the other hand guides fastened nuts on a traverse. Reinforced concrete element of circular cross section set in special hinge pillar made of steel pipes half the diameter of the column that spiral screw 2 supporting stands that have height adjustment. A second hydraulic jack installed vertically between the cross-piece and column. The load in both horizontal and vertical direction was carried out by a special pumping station. Investigations of concrete in the area of cross-bending performed using the clock type indicators point value 10^{-3} mm. Deflection measured indicator watch-type 10-point value^2 mm.

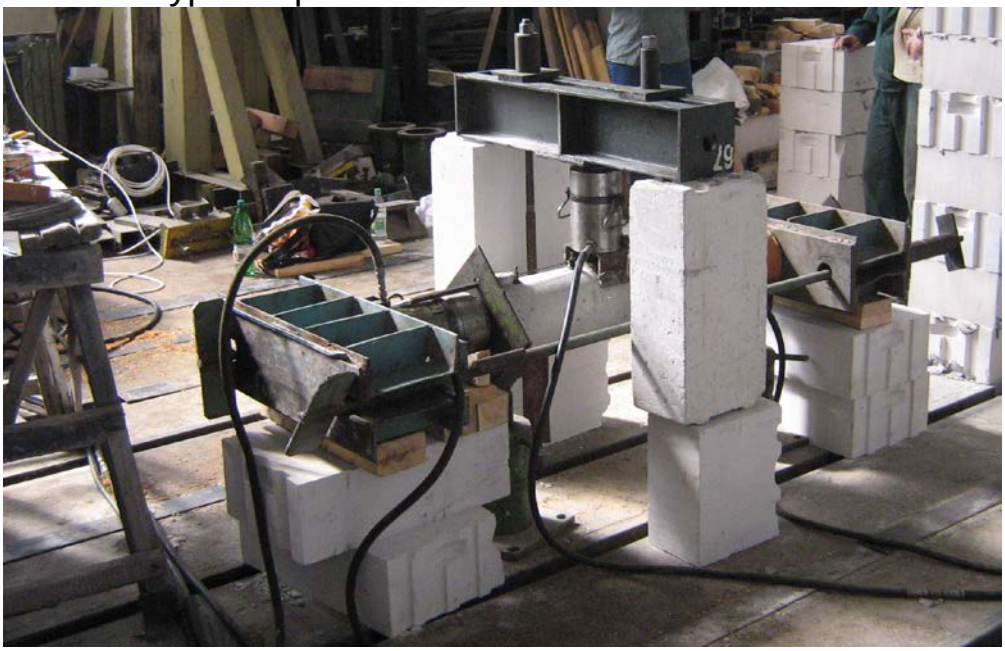

Fig. 1. Installation for testing columns with previous compression.

The test results showed that the stress of compression deformation does not exceed the elastic values. In the future, after the previous compression columns bending cross first appeared normal cracks in the tension zone in the area of application of force to load approximately 0.42 Rruyn and deformations in the compressed zone εv = 152h10-5 that approximately two times higher than the strain in the compressed area elements without reduction in normal time of occurrence of cracks.

Further, with the opening of normal cracks at the site of application of the transverse force was reducing the height of the compressed zone on this split and the formation of inclined cracks. Before the moment of destruction in the compressed area formed both longitudinal crack. The process of destruction occurred in old section, Fig. 2. The process of deformation of columns transverse bend until the formation of inclined cracks similar to the process of deformation in the "pure" bend. As the experiments inclined crack appears after a significant reduction of the height of the compressed zone point to fractures. Previous compression on one side loadable compressed zone of the column and, thereby, increases the compression deformation, on the other hand hinders disclosure inclined cracks, preventing rotation of one section against the other, as it happens in the normal transverse bending. The destruction of the previous column compression occurs in old section with longitudinal splitting of concrete compressed zone.

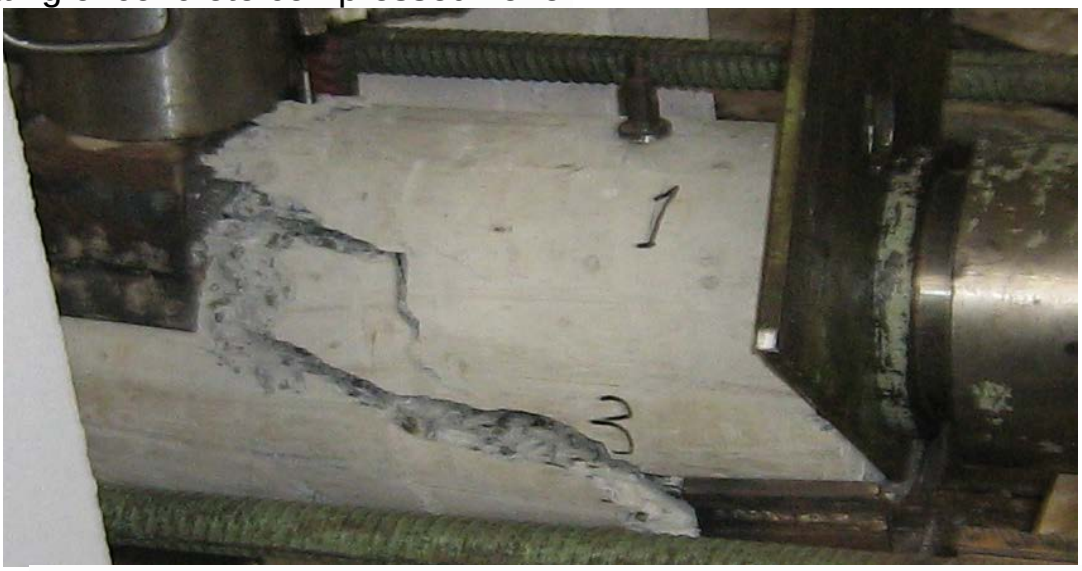

Fig. 2. The destruction of the previous column compression on an inclined section.

Comparison of dependency "moment-curvature" for columns with transverse compression and without transverse compression obtained test results are shown in Fig. 3.

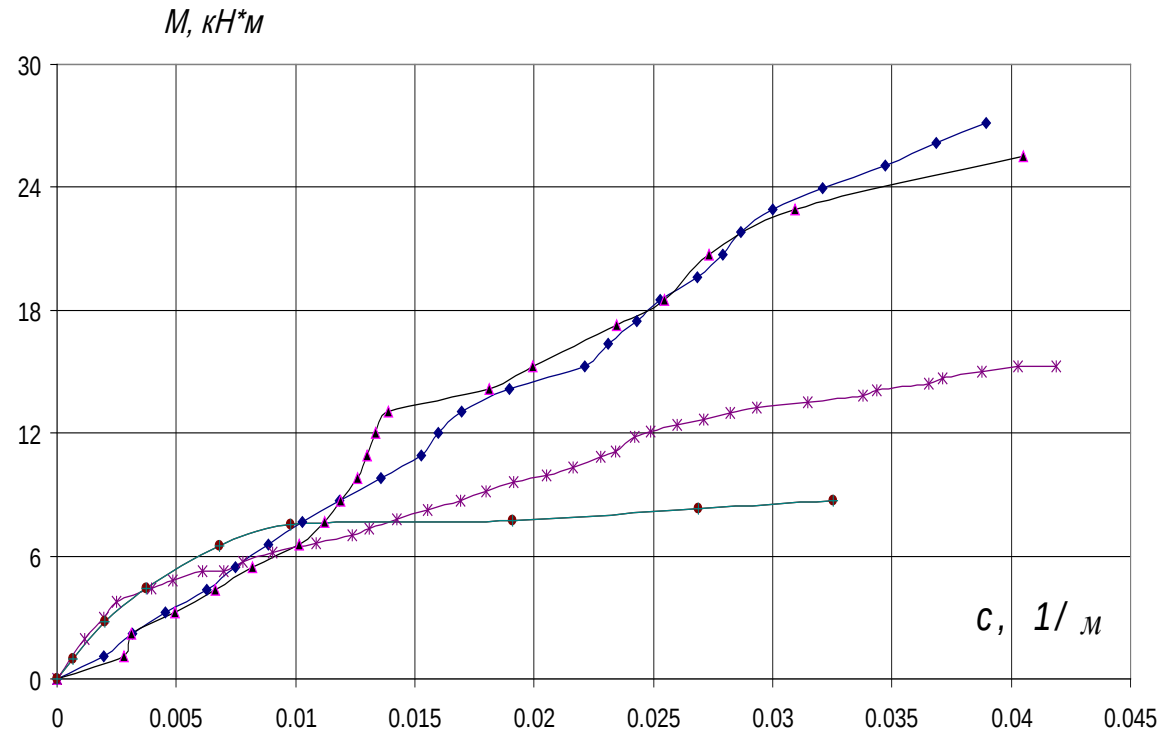

Fig. 3. Comparison of dependency "moment-curvature" Column transverse bend and cut the span and = 2h0: , - Columns with pre-compression; - Columns without compression with transverse reinforcement; - Kolonnы without compression and without transverse reinforcement.

As shown in Fig. 3, pre-compression increases the carrying capacity of columns of circular cross section compared with columns, tested transverse bending without compression at the same span of cut (a = 2h0) and identical transverse and longitudinal reinforcement to 43.7%. A comparison of columns of circular cross section, tested transverse bend without prior reduction showed that the carrying capacity for columns without transverse reinforcement was by 43.3% lower than the columns with transverse reinforcement.

Conclusion. Tests columns with previous compression scheme corresponds to a real settlement building downloaded vertical and horizontal efforts. The obtained experimental results allow to formulate preconditions estimated the new method of calculation of compressed-bent elements of circular cross section transverse bending.

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Abstract.*In Article pryvedenы results of research эksperymentalnыh of columns of reinforced concrete circular cross-section on poperechnыy yzhyb s preliminary cogging and without preliminary cogging, an increase nesuschey been detected abilities of columns with preliminary cogging 43.7%.*

Keywords: trials, concrete, Constructions

Annotation.*In paper the results of experimental studies of reinforced concrete columns of circular cross section on the transverse bending with advanced compression and without compression, there was an increased carrying capacity of the column with the preliminary compression by 43.7%.*

Key words: ***test, concrete, construction***

UDC 631.23

DESIGN FEATURES OF MODERN Soshnikova seeders AND COMPLIANCE Precision Agriculture

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Abstract. *A two-phase system for Soshnikova method of planting crops with automated control certain depth of seeding, which ensures even distribution of seed in the soil and optimal conditions for seed germination.*

Keywords: sowing, automated control, two-phase method schilynoutvoryuvach sowing, pressing disc set seed distribution, precision agriculture

Formulation of the problem. Planting is one of the most important operations for growing crops. The quality, method and timing of planting depends on the uniformity and speed of germination, further development, and eventually harvest and crops. Of particular importance