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**DEPENDENCE OF ABNORMAL PRESSURES FROM TENSION
 IN THE ROCK**

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Earth crust rock pressure consists of two components: geostatic pressure and tectonic tension. The geostatic pressure in any point of sedimentary cover is equal to gravitational pressure of higher layers and defines by equation $P_g = \gamma_r \cdot g \cdot H$, where H – depth, m; γ_r – average density of rocks which overlay above the point of P_g -determination, kg/m^3 ; g – acceleration of free fall, m/s^2 .

The geostatic pressure σ_z , which is a reaction of rocks to P_g and quantitatively in various points of sedimentary rock is nearer to it (if not to take into account the quantity of compression of rock’s grains and liquids, which saturate them) has a vertical direction. While tectonic tensions $\sigma_{x,y}$, that are connected in deposits with tangent directed tectonic pressures, have a horizontal direction. It is established, that the value $\sigma_z/(\sigma_{x,y})$ in sedimentary cover of the earth crust practically does not depends on depth and on the average is equal 0,75-0,25.

Quantitatively the definition of tectonic tension is connected with big difficulties. But, the tectonic tensions existence in rocks is established everywhere, where their instrumental measurements were carried out.

The modern values of tectonic tension, which were occurred in sedimental cover at folding in the certain geological conditions can be approximaty estimated by the formation pressures measurements. The additional pressures in collectors occur owing to influence of the various reasons, which one of, as a rule, is basic.

If in the field cross-section there are isolated collectors (tectonical or lithological screened) curved in folds with high pressures, and if there is no sence to connect the reasons of occurrence in them of over-pressures with pressure transmission from underlying deposits or to other reasons, the presence of over-pressures in such collectors is caused by compressing tectonic forces. It is testified by graphic and analytical dependences $K_a = f(i)$ which were already given in many our publications (A.Orlov 1978, A.Orlov 1980 and others). By quantitative definition of over-pressures in the first approximation it is possible to determine the tension value, which cause them. Thereby, the over-pressure value in a layer, is equal $\Delta P = P_{int} - P_r$. The quantity ΔP in this or that point of sedimentary cover differ from the value of a tectonic tension ($\Delta\sigma_{x,y}$), that has caused to it, tension value that was formed due to fluid and rock’s skeleton compression. These values can be taken into account with the help elasticity coefficient

$$\text{Then } \Delta P = \Delta\sigma_{x,y} \beta, \text{ there from } \Delta\sigma_{x,y} = \frac{\Delta P}{\beta}.$$

when β - compression coefficient.

The choice of mathematical model of this phenomenon requires observance of values dimensionality in the left and right parts of the equation. The adequacy of dimensionality can be reached by putting of a square root in the right part of the equation:

$$[\text{Pa}] = \sqrt{\frac{[\text{Pa}]}{[\text{Pa}]^{-1}}} = \sqrt{[\text{Pa}]^2} = [\text{Pa}]$$

Proceeding from this, the final formula for definition of values of tectonic tension increase

will look like $\Delta\sigma_{x,y} = \sqrt{\frac{\Delta P}{\beta}}$.

The final formula of tension definition in seismically dangerous zones will look like:

$$\Delta\sigma_{x,y} = \mu\sqrt{\Delta P}, \text{ Where } \mu = \frac{1}{\sqrt{\beta}} - \text{re-computation coefficient, which takes into account the}$$

elastico-capacious layer property and is accepted constant during researches in a collector.

In the given report the particular examples of tectonic tension values calculation are resulted. On the field Gvizd (Precarpathian foredeep) the mentioned tensions have caused the formation of super-hydrostatic formation pressures (abnormal high formation pressures) in natural reservoir with $\Delta P\sigma_{x,y} = 156 \text{ MP a}$. Also on the field Shebelynske (Dniprovo-Donetsk depression) they have caused abnormal high formation pressure due to $\Delta P\sigma_{x,y} = 128.2 \text{ MPa}$.

It is possible, that the given method of tectonic tension definition on the data of formation pressure can be applied in the certain geological conditions for tracing of tectonic tension increase in seismically - dangerous areas and also in mining openings during the developments of minerals.