The Loss of Hydraulic Load at the Horizontal Drainage

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Keywords: share, loss of hydraulic load, double-layered soil, drainage, DrenVSubIR program

SUMMARY

The objective of this paper is to establish the weight of different load loss and their total value on double-layered soils in permanent regime with the help of the program DrenVSubIr. Thus, to the three load losses: vertical \(h_v\), horizontal \(h_0\) and radial \(h_r\) from the Ernst equation of underground drainage projector it is being added the load loss at the entrance in the drainage-filter system, \(h_i\), introduced by I. David. Having this four load losses, the whole load loss can be calculated. Until now appreciations on the real weight of the leaks in load losses at the projections of underground drainage systems haven’t been made. The access at the values of the four load losses is facilities of the application DrenVSubIR in the projection module of the underground drainage. Here are presented the numeric results with the precision of five decimals, so that the specialist can calculate the weights and conclude on the drainage working regimes. The study of the weight of load losses presents in this paper three cases \(K_1 < K_2\) for which the application DrenVSubIr has been applied with entrance parameters and the numeric results presented in the tables and pictures in the paper.

This study reveals the fact that by introducing calculation relations of loss of hydraulic load at the entrance in drain-filter system, by I. David makes the projection of the subsurface drainage system complete from technical-mathematical point of view and to assure a precision over the results applied in the field.

The final conclusions resulted from the study made previously shows that this analyzed case for \(K_1 < K_2\), has a different distribution of the intersection points \(I_{o-d}, I_{o-r}\) regarding the distance between drains, and that is why the position of the current point can be accurate. So, the drainage working regime of the respective subsurface drainage: permanent or impermanent.