

HYDRODYNAMICS AND HEAT TRANSFER OF VERTICAL GROUND PILE HELICAL HEAT EXCHANGER

Basok B.I., Novitska M.P., Riasnova E.V.

Department of thermophysical foundations energy-saving technologies,
Institute of Engineering Thermophysics, National Academy of Sciences of Ukraine,
Bulahovskogo str. 2, of.302, Kiev, Ukraine, 03164
Тел. +38(044)424-98-80; E-mail: mmarina@ukr.net

Abstract

A large number of ground-coupled heat-pump systems have been used in residential and commercial buildings. Horizontal and vertical ground heat exchangers could be integrated into such systems. One of the types of vertical ground heat exchangers are energy piles. The numerical simulation results of pile vertical ground heat exchanger are given in this paper. The solution was obtained for one pile positioned in soil array. The transient temperature in the collector outlet and temperature field of soil mass is introduced.