

Evaluation of Prediction Method for Pressure Drop and Condensation Heat Transfer Coefficient Inside Internally Helically-Grooved Horizontal Tubes

Norihiro Inoue and Masao Goto

*Department of Electronics and Mechanical Engineering, Tokyo University of Marine Science and Technology,
Tokyo, Japan*

In this paper, we show methods for predicting the pressure drop of two-phase flow and condensation heat transfer coefficients, which were derived from measured friction factor data in single-phase flow experiments of fourteen kinds of internally helically-grooved tubes with 6.35 mm outer diameter. The results were evaluated by comparing the predicted values with experimental data measured by Haraguchi et al. (1994) for an internally helically-grooved tube and by Miyara et al. (2000) for an internally herringbone-grooved tube. The results indicate that the predicted values of pressure drop and condensation heat transfer coefficients agree with the measured data within $\pm 30\%$ and that the proposed methods can produce accurate predictions for many kinds of internally grooved tubes.