

FORMULAS AND TABLES FOR HEATING

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Formulas and Tables for Heating by J. H. Kinealy

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J. H. KINEALY

**FORMULAS AND
TABLES
FOR HEATING**

Formulas and Tables FOR HEATING

BEING

GERMAN FORMULAS AND TABLES FOR HEATING
AND VENTILATING WORK FOR THOSE WHO
PLAN OR ERECT HEATING APPARATUS

BY

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PREFACE.

This little book contains formulas and tables which have been translated from the works of German writers, and which were published in serial form in *The Metal Worker*, in order to give those who have to do with heating and ventilation a knowledge of the latest and best work in regard to the transmission of heat through walls and windows, and the methods used to-day by the best German engineers to determine the heat losses of buildings. A proper use of the various formulas and tables which it contains will enable anyone to determine the heat lost through any of the various kinds of walls which may enter into the construction of a building.

The formulas are simple, easy to understand, and easy to apply. English units are used in all the formulas and tables. The translation into English units of the quantities which enter into the formulas and tables has involved considerable labor, but every effort has been made to avoid mistakes. The calculations were in most cases checked by a second person after they were made by the author.

The author hopes that the work will prove of value to those who have to design or arrange heating and ventilating plants, and that it will direct attention to the vast amount of good work which has been done in recent years by German engineers in heating and ventilation.

J. H. KINEALY.

WASHINGTON UNIVERSITY, ST. LOUIS, MO., Oct., 1899.



TABLE OF CONTENTS.

PARAGRAPH.	PAGE.
I. Introduction	5
II. Temperatures	7
III. The Heat Required per Hour	8
IV. The Heat Evolved by Lights	9
V. The Heat Evolved by the Occupants	11
VI. The Heat Carried Off by the Air Supplied for Ventilation	11
VII. The Transmission of Heat Through Walls	14
VIII. How to Determine k	19
IX. How to Determine T	32
X. Some values of k	35
XI. How to Calculate the Heat Lost Through Cooling Surfaces	40
XII. Additions to the Calculated Heat Losses	42
XIII. Determining the Heat Lost	45
XIV. To Determine the Heating Surface Required ..	48
XV. Values of h	50
XVI. Estimating the Heating Surface Required	53

TABLES.

NUMBER.	PAGE.
I. Temperatures of Heated Rooms.....	7
II. Temperatures of Rooms Not Heated.....	8
III. Heat Evolved per Candle Power per Hour....	10
IV. Heat Given Off by Persons in an Atmosphere of Medium Temperature.....	11
V. Amount of Air to Be Supplied to Rooms per Hour.....	12
Va. Amount of Air to Be Supplied to Rooms per Hour, from Dr. W. Prausnitz.....	12
VI. Values of c	20
VII. Values of d	21
VIII. Values of T , Used by Rietschel.....	21
IX. Recknagel's Values of a for Brick Walls....	22
X. Values of e for Different Materials.....	23
Xa. Values of e for Metals.....	24
XI. Values of k Adopted by the State of Prussia, Germany.....	36
XII. Values of k from Rietschel and Recknagel....	36
XIII. Values of k Calculated by the Author.....	40
XIV. Rietschel's Values of k for Steam Radiators...	51
XV. Rietschel's Values of k for Warm Water Ra- diators.....	51

FORMULAS AND TABLES FOR HEATING.

I.—INTRODUCTION.

The subject of heating and ventilating buildings has received a great deal of attention in Germany during the past years, and scientists and engineers alike have devoted time and thought to it. The scientists have been spending much time determining the proper formulas and methods to be used in designing heating and ventilating plants, and the engineers have been testing these formulas and methods by applying them to practical problems. The amount of work that has been done, in the way of gathering data and formulating rules for designing, is something surprising. And all of it has been done in that thorough, painstaking way that characterizes most of the work done by German scientists.

As an evidence of the great interest in subjects relating to heating and ventilating that is shown in Germany, it may be stated that two papers, the *Zeitschrift für Heizungs-, Lüftungs-, und Wasserleitungstechnik*, and the *Zeitschrift für Lüftung und Heizung*, both devoted to these subjects exclusively, are published there, and that one other, the *Gesundheits-Ingenieur*, pays a great deal of attention to them. Engineers and professors of the different technical schools are constantly contributing valuable articles to these papers.

The work that has been done in Germany is largely a continuation of the work that was done by Peclét in