

foundry charge calculation

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Foundry charge calculation is a critical process for ensuring the correct alloy composition and optimizing material costs in metal casting. It involves meticulously determining the precise mix of raw materials, including virgin metals, scrap, and ferroalloys, to achieve desired metallurgical properties. Accurate calculations are essential for quality control, reducing waste, and maximizing operational efficiency in any foundry operation.

These articles serve as a quick reference for both beginners and advanced learners.

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Foundry Calculations and Drawing

Reflecting the changes that have occurred in making castings, this book provides a practical reference for all those concerned with making castings in any of the commonly used alloys by any of the usual moulding methods. International SI units, Metric and Imperial units are used throughout.

Foseco Foundryman's Handbook

Directional Solidification of Steel Castings summarizes the results of a large number of investigations, mostly scientific in character, on the directional solidification of steel castings. The influence of design on the technical possibilities of producing casting in the foundry is examined. Diagrams, simple basic rules, and formulae are provided, along with many practical examples. This book is comprised of 16 chapters and begins with an introduction to the technical and psychological aspects of steel casting before turning to a discussion of the influence of shape and dimensions on the time it takes for castings to solidify. The thermal gradient, feeder heads, and cavities in steel castings are then considered. In particular, the effect of the thermal gradient on solidification and feeding range are examined. Methods for increasing the thermal gradient in the casting are described, including the use of mold heating pads, breaker cores or Washburn cores; external cooling (iron chills); cooling fins; internal chills; and exothermic pads. Cavities in steel castings which are commonly mistaken for true shrinkage cavities are also analyzed. This monograph is particularly suitable for foundry managers, foremen, technicians, casting designers, and students.

Directional Solidification of Steel Castings

The Foseco Ferrous Foundryman's Handbook is a practical reference book for all those concerned with making castings in any of the commonly used alloys, by any of the usual moulding methods. International SI units are used throughout, but in almost all cases conversions to the more familiar Metric and Imperial units are given. Wherever possible, Casting Alloy Specifications include equivalent

specifications for several countries as well as international specifications. Individual chapters cover the casting of light alloys, copper-based alloys, all types of cast-iron and steel. For each group of alloys, specifications and typical applications are described, together with details of melting practice, metal treatment and casting practice. Sand moulding materials, including green sand and chemically bonded sands are also included.

Foseco Ferrous Foundryman's Handbook

Tables and general data; Sands and sand bonding systems; Coatings for moulds and cores; Light alloy castings; Copper and copper alloy castings; Iron castings; Die-castings; Steel castings; Feeding of castings; Computer modelling of solidification of castings, the SOLSTAR system; Filtration of castings; Principal Foseco products.

Foseco Ferrous Foundryman's Handbook

In This Book, The Topics/Syllabus Adequately Cover Metal Casting Subject In The Courses Of Mechanical, Production And Metallurgy Branches For B.E., B.Tech. As Well As Production And Industrial Metallurgy For M.Tech. With His Direct Experience In Metal Casting Industry And Teaching Academics The Author Attempts To Bridge The Gap Existing Between Essential Theory In Books And Vital Practical Applications In Industry. It Contains All The Molding Processes Normally Used With Details Of Ingredient Testing, Different Stages Of Casting Production Essential Theory Of Gating And Riser, As Well As Finishing, Inspection And Quality Control. Over 80 Line Sketches Facilitate Easy Understanding. Information Given Through Over 20 Tables Help Easy Comprehension, Comparison And Remembrance. Exhaustive Examples Of Specific Components Normally Made By Casting Process Help To Build Confidence When Entering Industry. Over 200 Technical Books And Research Papers Up To May 1996 Are Referred. Examples Of Working Computer Programs Given, Form The Basis For Modern Practice-Oriented Projects In Final Year. For Practising Engineers, Managers And Entrepreneurs, This Book Provides Useful Theory And Practical Aspects On Foundry Management. Exhaustive Treatment Of Critical Gating & Riser With Many Industry Examples, Practical Solutions To Melting Problems, Casting Defects Analysis Through Cause-Effect Diagrams Will Be Very Useful. Essential Information. On Energy Conservation And Environmental Pollution Control Is Also Given In The Last Chapter.

West's Moulders' Text-book

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Metallurgical Technology

Hardbound. Provides practical guidance, suggestions and recommendations on making castings by all common casting methods. Aided by clear diagrams and comprehensive physical data tables, the text defines technical terms, details the procedures used in good foundry practice, describes the industrial plant used and gives lucid explanations of casting phenomena with helpful advice on overcoming problems encountered in casting processes. Thoroughly updated, the revisions for this edition include important new sections covering metal filtration, computer applications, resin-bonded sand, self-setting processes, mould and core coatings and feeding aids. Essential reading for anyone with an interest in foundry practice.

Iron Melting Cupola Furnaces for the Small Foundry

Since its creation in 1884, Engineering Index has covered virtually every major engineering innovation from around the world. It serves as the historical record of virtually every major engineering innovation of the 20th century. Recent content is a vital resource for current awareness, new production information, technological forecasting and competitive intelligence. The world's most comprehensive interdisciplinary engineering database, Engineering Index contains over 10.7 million records. Each year, over 500,000 new abstracts are added from over 5,000 scholarly journals, trade magazines, and conference proceedings. Coverage spans over 175 engineering disciplines from over 80 countries. Updated weekly.

Current Foundry Practices

Cast iron offers the design engineer a low-cost, high-strength material that can be easily cast into a wide variety of useful, and sometimes complex, shapes. This handbook from ASM covers the entire spectrum of one of the most widely used and versatile of all metals.

Advances in Manufacturing Technology

Metal Casting: Principles And Practice