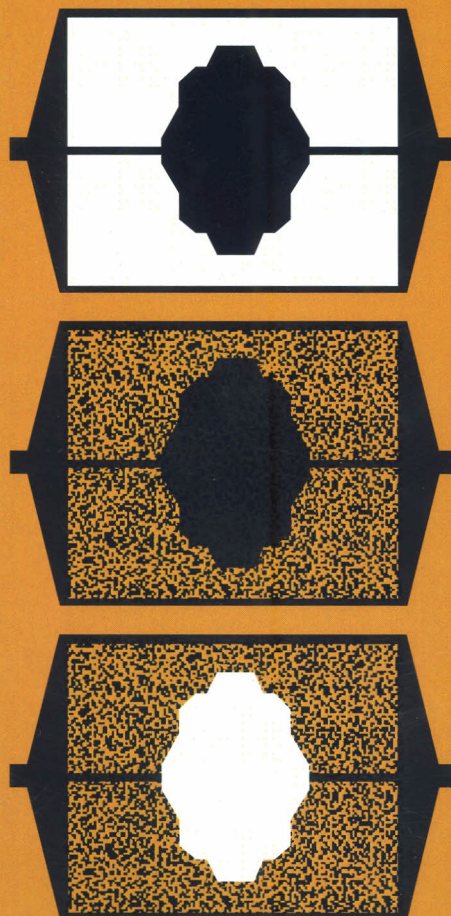


AMERICAN FOUNDRY SOCIETY CAST METALS INSTITUTE



CAST METALS TECHNOLOGY SERIES

FUNDAMENTAL MOLDING SAND TECHNOLOGY



PREFACE

This programmed learning course, prepared by the Cast Metals Institute and the American Foundry Society, is designed to aid those beginning a career in metalcasting. The principles are basic and can be used by experienced foundry personnel as a refresher or reference. The material can be read by an individual, or used to instruct and test groups of beginners.

Fundamental Molding Sand Technology covers the basic principles governing the ability of molding sands to make acceptable molds and to withstand the thermal effects which occur when compacted sand is in contact with molten metal. The format of the presentation is to study the variables affecting the process of compacting the sand grains to produce a mold. The text is divided into these sections:

- Basic Concepts
- Compaction, Grain Size, Void Size
- Clay Bonded Sands
- Supplementary Bonds
- Mixing and Mulling of Molding Sands
- Reused Sand, New Sand Additions, Reclamation
- Bibliography
- Appendix A – Ferrous Sand Formulas and Properties
- Appendix B – Nonferrous Sands
- Appendix C – Illustrations

It is evident that all of the details pertaining to molding sands cannot be discussed in one, small volume. Therefore, this discussion concentrates on basic concepts. Those readers interested in further details are referred to the AFSearch© (www.afslibrary.com) to find papers on the above topics, or go to the AFS E-Store (www.afsinc.org/estore) for publications on sand and molding.