PREFACE

The MBMA Metal Building Systems Manual incorporates the results of research undertaken by MBMA, its member companies and other industry groups. In many respects, it reflects refinement and advances in the knowledge of load application methods and design. This edition of the Metal Building Systems Manual replaces the 2006 edition with 2010 Supplement.

Most municipalities in the United States have now adopted a building code. In the past, where a building code did not govern the design, the recommended loads in the MBMA Low-Rise Building Systems Manual (the predecessor to the Metal Building Systems Manual) were often specified. In recognition of the decreased need for MBMA loads, the Metal Building Systems Manual now focuses on how to apply the loads specified by the International Building Code and ASCE 7. Although the information in the new manual can be applied to low-rise buildings in general, it concentrates on issues related to design, code compliance and specification of metal building systems.

Use of this manual is totally voluntary. Each building manufacturer or designer retains the prerogative to choose its own design and commercial practices and the responsibility to design its building systems to comply with applicable specifications and safety considerations.

This 2012 edition of the MBMA Metal Building Systems Manual brings the manual into conformance with the 2012 Edition of the International Building Code and ASCE 7-10. It incorporates the results of research and development undertaken by MBMA, its member companies and other industry groups. It also updates referenced standards to the current editions.

Although every effort has been made to present accurate and sound information, the responsibility for individual project's rests with the design professional and contract parties. MBMA assumes no responsibility whatsoever for the application of this information to the design or construction of any specific building system.

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Chapter I  Design Practice and Load Application

1.1 Background

Historically, there have been approximately 5,000 building codes in the United States, patterned after the three model building codes and various national and industry standards. Before entering into a brief discussion of these documents, it may be worthwhile to point out the difference between a national or industry standard (e.g., this manual), and a local building code. The purpose of a building code is to provide legal standards for the design and construction of buildings and structures in order to protect life, health and welfare of the citizenry. Thus, in its simplest context, a code is intended to provide for the safe use of buildings and structures under "normal" conditions. A national or industrial design standard, on the other hand, may be more inclusive, address other areas or reflect particular industry applications. Such documents usually contain more sophisticated design procedures and may predict design loads more accurately.

Most cities, counties, and other governmental jurisdictions have traditionally adopted one of the three model codes, with local modifications. These are the National Building Code, promulgated by Building Officials and Code Administrators International, Inc. (BOCA); Standard Building Code, promulgated by Southern Building Code Congress International, Inc. (SBCCI); and Uniform Building Code, promulgated by the International Conference of Building Officials (ICBO). This regional approach to code development has undergone a transition to national model codes. The International Code Council (ICC) was established in 1994 by BOCA, SBCCI, and ICBO as a nonprofit organization dedicated to developing a single set of comprehensive and coordinated national model construction codes. Their International Building Code (IBC) has been adopted by a large number of municipalities, although one must check with the local authorities to see if they have adopted any amendments to the IBC.

A few of the more important national standards promulgating bodies and industry practice developers are:

- Metal Building Manufacturers Association (MBMA)
- American Iron and Steel Institute (AISI)
- American Institute of Steel Construction (AISC)
- American Society of Civil Engineers (ASCE)
- Building Seismic Safety Council (BSSC)
- American Welding Society (AWS)
- American Society for Testing and Materials (ASTM)
- American National Standards Institute (ANSI)
- Underwriters Laboratories (UL)
- National Institute of Standards and Technology (NIST)
- American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE)
- Department of Energy (DOE)
- International Accreditation Service (IAS)