

This is a preview of "ASME STS-1-2011". Click here to purchase the full version from the ANSI store.

**ASME STS-1–2011**  
**(Revision of ASME STS-1–2006)**

# Steel Stacks

---

**AN AMERICAN NATIONAL STANDARD**



**The American Society of  
Mechanical Engineers**

**ASME STS-1-2011**  
**(Revision of ASME STS-1-2006)**

# Steel Stacks

---

**AN AMERICAN NATIONAL STANDARD**



**The American Society of  
Mechanical Engineers**

Three Park Avenue • New York, NY • 10016 USA

Date of Issuance: April 26, 2011

The next edition of this Standard is scheduled for publication in 2014. There will be no addenda issued to this edition.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Standard. Periodically certain actions of the ASME STS Committee may be published as Cases. Cases and interpretations are published on the ASME Web site under the Committee Pages at <http://cstools.asme.org> as they are issued.

ASME is the registered trademark of The American Society of Mechanical Engineers.

This code or standard was developed under procedures accredited as meeting the criteria for American National Standards. The Standards Committee that approved the code or standard was balanced to assure that individuals from competent and concerned interests have had an opportunity to participate. The proposed code or standard was made available for public review and comment that provides an opportunity for additional public input from industry, academia, regulatory agencies, and the public-at-large.

ASME does not "approve," "rate," or "endorse" any item, construction, proprietary device, or activity.

ASME does not take any position with respect to the validity of any patent rights asserted in connection with any items mentioned in this document, and does not undertake to insure anyone utilizing a standard against liability for infringement of any applicable letters patent, nor assumes any such liability. Users of a code or standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, is entirely their own responsibility.

Participation by federal agency representative(s) or person(s) affiliated with industry is not to be interpreted as government or industry endorsement of this code or standard.

ASME accepts responsibility for only those interpretations of this document issued in accordance with the established ASME procedures and policies, which precludes the issuance of interpretations by individuals.

No part of this document may be reproduced in any form,  
in an electronic retrieval system or otherwise,  
without the prior written permission of the publisher.

The American Society of Mechanical Engineers  
Three Park Avenue, New York, NY 10016-5990

Copyright © 2011 by  
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS  
All Rights Reserved  
Printed in U.S.A.

# CONTENTS

Foreword .....	iv
Committee Roster .....	v
Correspondence With the Steel Stacks Committee .....	vi
Introduction .....	vii
<b>1 Mechanical Design .....</b>	<b>1</b>
<b>2 Materials .....</b>	<b>4</b>
<b>3 Linings and Coatings .....</b>	<b>7</b>
<b>4 Structural Design .....</b>	<b>12</b>
<b>5 Dynamic Wind Loads .....</b>	<b>20</b>
<b>6 Access and Safety .....</b>	<b>23</b>
<b>7 Electrical .....</b>	<b>29</b>
<b>8 Fabrication and Erection .....</b>	<b>29</b>
<b>9 Inspection and Maintenance .....</b>	<b>31</b>
<b>10 References .....</b>	<b>33</b>
<b>Figures</b>	
6.2.6-1 Example of the General Construction of Cages .....	24
6.2.6-2 Minimum Ladder Clearances .....	25
6.3.6-1 Ladder Dimensions, Support Spacing, and Side Clearances .....	26
6.3.8-1 Landing Platform Dimensions .....	27
<b>Tables</b>	
4.4.6-1 Factors of Safety .....	16
4.4.7-1 Minimum Fabricated Plate Thickness and Maximum Stiffener Spacing .....	16
4.10.1.3-1 Cable Selection Criteria .....	18
5.2.1.2-1 Representative Structural Damping Values ( $\beta_s$ ) .....	21
<b>Mandatory Appendix</b>	
I Structural Design .....	35
<b>Nonmandatory Appendices</b>	
A Mechanical Design .....	46
B Materials for Ambient and Elevated Temperature Service .....	60
C Linings and Coatings .....	75
D Structural Design .....	80
E Example Calculations .....	86
F Conversion Factors: U.S. Customary to SI (Metric) .....	95