

## STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES

### TABLE OF CONTENTS

Section	Page	Section	Page
Objective	1	<b>9 Prestressing and Proof Loading of Guys</b>	21
Scope	1	9.1 Definitions	21
<b>1 Material</b>	1	9.2 Standard	22
1.1 Standard	1	<b>10 Initial Guy Tension</b>	22
<b>2 Loading</b>	2	10.1 Definition	22
2.1 Definitions	2	10.2 Standard	22
2.2 Nomenclature for Section 2 Loading	3	10.3 Method of Measurement	22
2.3 Standard	4	<b>11 Operational Requirements</b>	22
2.4 References	11	11.1 Definitions	22
<b>3 Stresses</b>	11	11.2 Standard	22
3.1 Standard	11	<b>12 Protective Grounding</b>	23
<b>4 Manufacture and Workmanship</b>	18	12.1 Definitions	23
4.1 Standard	18	12.2 Standard	23
<b>5 Factory Finish</b>	18	<b>13 Climbing and Working Facilities</b>	23
5.1 Standard	18	13.1 Definitions	23
<b>6 Plans Assembly Tolerances and Marking</b>	18	13.2 Standard	23
6.1 Standard	18	<b>14 Maintenance and Inspection</b>	24
<b>7 Foundations and Anchors</b>	19	14.1 Standard	24
7.1 Definitions	19	<b>15 Analysis of Existing Towers and Structures</b>	24
7.2 Standard	19	15.1 Standard	24
7.3 Special Conditions	20	<b>16 County Listings of Min. Basic Wind Speeds</b>	25
7.4 Foundation Drawings	21		
<b>8 Safety Factors of Guys</b>	21		
8.1 Definition	21		
8.2 Standard	21		

#### Annexes

A. Purchaser Checklist	59	E. Tower Maintenance and Inspection Procedures	83
B. Design Wind Load on Typical Microwave Antennas/Reflectors	61	F. Criteria for the Analysis of Existing Structures	101
C. Table of Allowable Twist and Sway Values for Parabolic Antennas, Passive Reflectors, and Periscope System Reflectors	71	G. SI Conversion Factors	103
D. Determination of Allowable Beam Twist and Sway for Cross-Polarization Limited Systems	77	H. Commentary on Ice Design Criteria for Communication Structures	105
		I. Geotechnical Investigations for Towers	109
		J. Corrosion Control Options for Guy Anchors in Direct Contact with Soil	111

#### Notice

TIA/EIA Engineering Standards and Publications are designed to serve the public interest through eliminating misunderstandings between manufacturers and purchasers, facilitating interchangeability and improvement of products, and assisting the purchaser in selecting and obtaining with minimum delay the proper products for his particular need. Existence of such Standards and Publications shall not in any respect preclude any member or nonmember of TIA/EIA from manufacturing or selling products not conforming to such Standards and Publications, nor shall the existence of such Standards and Publications preclude their voluntary use by those other than TIA/EIA members, whether the standard is to be used either domestically or internationally.

Standards and Publications are adopted by TIA/EIA in accordance with the American National Standards Institute (ANSI) patent policy. By such action, TIA/EIA does not assume any liability to any patent owner, nor does it assume any obligation whatever to parties adopting the Standard or Publication.

This standard does not purport to address all safety problems associated with its use or all applicable regulatory requirements. It is the responsibility of the user of this Standard to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before its use.

(From Standards Proposal No. 3278, formulated under the cognizance of the TR-14.7 Structural Standards for Steel Antenna Towers and Antenna Supporting Structures Subcommittee)  
Published by Telecommunications Industry Association 1996, Standards and Technology Department, 2500 Wilson Boulevard, Arlington, VA 22201  
Price: Please refer to current Catalog of EIA, JEDEC, and TIA Standards and Engineering Publications or call Global Engineering Documents, USA and Canada (1-800-854-7179) International (303-397-7956)

All rights reserved  
Printed in U.S.A.