ZITHA TECH SPECIALTY CABLES (Pty) Ltd

Bolt torque values for communication towers



Overview

WO2430 This document is a communication from AIC Steel to Nokia Arabia Limited regarding recommended torque values for bolts used in AWWA C207 TORQUE TABLE.

Key Takeaways

Torque for communication tower bolts depends on bolt size, grade, and application, typically ranging from M12 to M48 high-strength bolts tightened to manufacturer-specified or ISO-standard torque values using calibrated tools.

Bolt Types and Applications

Monopole Towers: Flange bolts are critical structural fasteners, usually M20–M36 Grade 8.8 or 10.9 hex bolts, tightened to documented preload using a calibrated torque wrench or tensioner. Foundation anchor bolts are M30–M48 J-bolts or anchor rods, transferring loads from the tower to the foundation, and must also be torque-checked during installation and annual inspections .

Lattice Towers: Leg members typically use M16–M24 Grade 8.8 bolts, while cross braces use M12–M16 Grade 8.8 bolts. All primary structural bolts must conform to ISO 4014/4017 standards, and anti-vibration measures such as lock nuts, spring washers, or thread adhesive are recommended to prevent loosening from wind-induced vibration .

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Antenna and Equipment Mounting: Antenna clamps, RRU mounts, and microwave dishes use M12–M16 Grade 8.8 bolts, often with vibration-dampening washers (e.g., Nord-Lock) and anti-corrosion coatings like 316 stainless steel or heavy HDG for coastal environments .

Recommended Torque Practices
• Calibration: Always use a calibrated torque wrench and verify calibration before use .

• Torque Verification: Torque testing should be performed after tower erection to ensure nuts and bolts meet the specified preload .

• Break-Away Bolts: For specialized clamping bolts (e.g., M16 aluminum alloy or M12 stainless steel), torque is applied to the upper head until it breaks away within ±10% of the supplier's design torque, and records of installation torque and failure torque should be maintained .

• Inspection: Annual inspection of all accessible structural bolts is recommended to check for looseness, corrosion, or missing hardware .
Summary of Typical Torque GuidelinesBolt SizeGradeTypical ApplicationTorque NotesM12–M168.8Cross braces, RRU mountsUse lock washers or thread adhesive; torque per manufacturer specsM16–M248.8Lattice tower legsAnti-vibration measures required; torque per ISO standardsM20–M368.8/10.9Monopole flange boltsTighten to documented preload using calibrated torque wrenchM30–M488.8/10.9Foundation anchor boltsTorque-checked during installation; inspect annuallyM12–M168.8Antenna clamps, microwave dishesUse vibration-dampening washers; anti-corrosion coatings recommended

Proper torque application ensures structural integrity, prevents bolt loosening due to vibration, and maintains tower safety over time. Always follow manufacturer-specified torque values and use high-quality, high-tensile bolts for all critical connections .

Article Content

WO2430

This document is a communication from AIC Steel to Nokia Arabia Limited regarding recommended torque values for bolts used in

AWWA C207 TORQUE TABLES.xlsx

All valuesare based on AWWA C207 Table B, D or E. Contact GPT engineering for Tabe F values.

Table 2-4. Recommended Torque Values for Stainless Steel Fastener

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

(2) Level all nuts with surveyor''s transit or tower pier locations and the hoist location with a transit

Electrical Bolt Torque Specifications

The document contains 4 tables providing bolt torque values for different types of electrical connections. Table 100.12.1 lists torque

TORQUE-TENSION REFERENCE GUIDE

The torque values can only be achieved if nut or tapped hole has a proof load greater than or equal to the bolt''s minimum tensile

Telecom Tower Fasteners Complete Guide: monopole,...

Re-torquing procedure — never rely on feel when re-torqueing tower bolts; use documented torque values; for structural

Bolt Torque Chart — Fastener Tightening Values

Proper bolt torque ensures that fasteners achieve the required clamping force without yielding the bolt. This reference provides

TorqueSpec — Bolt Torque Specification Database

Free bolt torque specification database. Torque values for metric ISO and imperial SAE bolts by size, grade, and surface condition,

Bolt Torque Chart | SAE & Metric Specs

Find accurate bolt torque chart with SAE and metric torque specifications, clamp load guidance, and installation tips. Reference

CW Milestone – Part 8

Below are some common toque values used in tower telecom erections. Note: These values are just for a guide only if

Michigan Ancillary Structure Inspection Manual (MiASIM)

13.1 Definitions Communication towers support ITS infrastructure and communication antennae and consist of three main vertical

Tower Crane Bolt Torque: Important for Owners and

These machines require frequent assembly and disassembly, which means tower crane bolt

Structural Steel Bolt Torque Requirements Explained

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Proper torque for bolts is crucial in structural applications. Learn how to meet steel bolt torque

Design of Anchor Bolt For Communication Tower TIA-G

Design guidelines for anchor bolts in communication towers, including specifications and applications.

ERECTION OF GUYED TOWERS

3. When high-strength bolts are used in a tower assembly, place a hardened steel washer under the nut or bolt head whichever is to

Bolt Tightening in Power Transmission Towers – According to SEC ...

In this video, we explore “Bolt Tightening in Power Transmission Towers – According to

Telecommunication Tower Reinforced Concrete Foundation

So very stable structure types like lower lattice towers and towers built of reinforced concrete are used in most cases, although also

Best Practice Guide for Hot Dip Galvanized Bolts and Bolted Joints

Hot dip galvanized (HDG) bolts, nuts and washers are widely accepted as the most economical, reliable, and easy to use structural

Bolt Tightening in Power Transmission Towers – According ...

Randomly inspect at least 10% of the bolts in each tower using a calibrated torque wrench. Re-tighten after 24 hours in high-stress

AD 302: Tightening of Ordinary Bolts.

These torque values are irrespective of the bolt grade used and in no way imply that installation by power tools is to be

Telecom Tower Fasteners Complete Guide: monopole,...

Maintenance and Inspection Requirements Telecom tower fastener maintenance is critical for safety and uptime: Annual inspection

Telecommunications Mast Installation Guide | PDF | Pipe (Fluid

This document outlines technical specifications for the installation of telecommunications masts and towers. It discusses general

Torque-Tension Relationship for A307A, Grade 5, 8 & 9 Bolts

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

The torque values can only be achieved if nut (or tapped hole) has a proof load greater than or equal to the bolt''s minimum ultimate

Bolt Torque Chart — Fastener Tightening Values

Bolt torque chart for structural fasteners: A325, A490, Grade 8.8, and Grade 10.9. Tightening torque values by bolt diameter for

Torque Charts and Anchor Bolts

Do torque charts for tensioning fasteners apply to anchor bolts? The AISC Steel Construction Manual, 13th Edition

Best Safety Practices for Tower Crane Bolt Torque

Follow best safety practices for tower crane bolt torque to ensure operational reliability and worker safety.

Installation Torque Tables for Noncritical Applications

The values used to define the maximum torques for each fastener size were taken from bolt preload tables from the Goddard Space

(PDF) Design of telecommunication tower

This project focuses on the structural design and analysis of a 40-meter telecommunication tower, aimed at ensuring optimal

Torque Calculator

These estimated torque values are derived from the standard torque formula Torque = KDF utilizing a standard "free-spinning" nut

Michigan Ancillary Structure Inspection Manual (MiASIM)

13.1 Definitions Communication towers support ITS infrastructure and communication antennae and consist of three main vertical

Tower Crane Bolt Torque: Important for Owners and

These machines require frequent assembly and disassembly, which means tower crane bolt

Structural Steel Bolt Torque Requirements Explained

Proper torque for bolts is crucial in structural applications. Learn how to meet steel bolt torque

Design of Anchor Bolt For Communication Tower TIA-G

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Design guidelines for anchor bolts in communication towers, including specifications and applications.

ERECTION OF GUYED TOWERS

3. When high-strength bolts are used in a tower assembly, place a hardened steel washer under the nut or bolt head whichever is to

Bolt Tightening in Power Transmission Towers – According to SEC ...

In this video, we explore “Bolt Tightening in Power Transmission Towers – According to

Bolted Steel Tower

Bolted steel towers are a common and versatile choice for various applications, including communication

Recommended Maximum Torque Values

Recommended Maximum Torque Values The information supplied here is intended to be an acceptable guide for normal

Bolting Galvanized Steel

The high cost of maintenance labour and wide use of steel communications towers, exposed industrial structures, steel bridges and

Communications Tower (Step Bolts)

Communications Tower (Step Bolts) Communication Tower (Step Bolts) – Step Bolt Clips, Links, Structural Fasteners GCF

Telecommunication Tower Reinforced Concrete Foundation

So very stable structure types like lower lattice towers and towers built of reinforced concrete are used in most cases, although also

Best Practice Guide for Hot Dip Galvanized Bolts and Bolted Joints

Hot dip galvanized (HDG) bolts, nuts and washers are widely accepted as the most economical, reliable, and easy to use structural

Bolt Tightening in Power Transmission Towers – According ...

Randomly inspect at least 10% of the bolts in each tower using a calibrated torque wrench. Re-tighten after 24 hours in high-stress

WO2430

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

This document is a communication from AIC Steel to Nokia Arabia Limited regarding recommended torque values for bolts used in

AWWA C207 TORQUE TABLES.xlsx

All valuesare based on AWWA C207 Table B, D or E. Contact GPT engineering for Tabe F values.

Table 2-4. Recommended Torque Values for Stainless Steel Fastener

(2) Level all nuts with surveyor''s transit or tower pier locations and the hoist location with a transit

Electrical Bolt Torque Specifications

The document contains 4 tables providing bolt torque values for different types of electrical connections. Table 100.12.1 lists torque

TORQUE-TENSION REFERENCE GUIDE

The torque values can only be achieved if nut or tapped hole has a proof load greater than or equal to the bolt''s minimum tensile

Telecom Tower Fasteners Complete Guide: monopole,...

Re-torquing procedure — never rely on feel when re-torqueing tower bolts; use documented torque values; for structural

Bolt Torque Chart — Fastener Tightening Values

Proper bolt torque ensures that fasteners achieve the required clamping force without yielding the bolt. This reference provides

TorqueSpec — Bolt Torque Specification Database

Free bolt torque specification database. Torque values for metric ISO and imperial SAE bolts by size, grade, and surface condition,

Bolt Torque Chart | SAE & Metric Specs

Find accurate bolt torque chart with SAE and metric torque specifications, clamp load guidance, and installation tips. Reference

CW Milestone – Part 8

Below are some common toque values used in tower telecom erections. Note: These values are just for a guide only if

WO2430

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

This document is a communication from AIC Steel to Nokia Arabia Limited regarding recommended torque values for bolts used in

AWWA C207 TORQUE TABLES.xlsx

All valuesare based on AWWA C207 Table B, D or E. Contact GPT engineering for Tabe F values.

Table 2-4. Recommended Torque Values for Stainless Steel Fastener

(2) Level all nuts with surveyor''s transit or tower pier locations and the hoist location with a transit

Electrical Bolt Torque Specifications

The document contains 4 tables providing bolt torque values for different types of electrical connections. Table 100.12.1 lists torque

TORQUE-TENSION REFERENCE GUIDE

The torque values can only be achieved if nut or tapped hole has a proof load greater than or equal to the bolt''s minimum tensile

Telecom Tower Fasteners Complete Guide: monopole,...

Re-torquing procedure — never rely on feel when re-torqueing tower bolts; use documented torque values; for structural

Bolt Torque Chart — Fastener Tightening Values

Proper bolt torque ensures that fasteners achieve the required clamping force without yielding the bolt. This reference provides

TorqueSpec — Bolt Torque Specification Database

Free bolt torque specification database. Torque values for metric ISO and imperial SAE bolts by size, grade, and surface condition,

Bolt Torque Chart | SAE & Metric Specs

Find accurate bolt torque chart with SAE and metric torque specifications, clamp load guidance, and installation tips. Reference

CW Milestone – Part 8

Below are some common toque values used in tower telecom erections. Note: These values are just for a guide only if

Related Video Reference

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

Contact Us

Continue your research online:

Website: https://zithatech.co.za
Technical inquiry: https://zithatech.co.za/contact.html

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved