

# tnxCable

Version 2.1 General Reference



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## Minimum System Requirements

Operating system: Windows XP, Vista, 7 and 8. Both 32 and 64-bit versions are supported.

Processor:	Intel Pentium III or better, 1.5 GHz minimum
Ram Memory:	512 Mb minimum
Disk Space:	100 Mb free for data files.
Screen Resolution:	1024x768 recommended, 32 bit color (True Color).
Printer:	8 1/2x11 bw minimum, 11x17 color recommended

The display should be set to display Normal Fonts (do not use Large Fonts as they may distort some of the graphics images).

## Installing the Program

tnxCable is installed as part of a tnxTower installation. Please refer to the following documents, available on [www.townrx.com](http://www.townrx.com), for detailed instructions on tnxTower stand-alone and network installations:

[www.townrx.com/downloads/StandAloneInstallationInstructions.pdf](http://www.townrx.com/downloads/StandAloneInstallationInstructions.pdf)

[www.townrx.com/downloads/NetworkInstallationsInstructions.pdf](http://www.townrx.com/downloads/NetworkInstallationsInstructions.pdf)

## Un-Installing the Program

To un-install the program, go to the Windows Control Panel and choose Add/Remove Programs. Then select tnxTower. All files, registry entries and icons that were installed will be removed. Any files that were created after the program was installed will not be removed and will have to be manually removed through Windows Explorer.

## Technical Support

Before contacting technical support, please verify the version number of the program you are running. This may be found by clicking on Help|About in the main menu. The About dialog box contains a button which, when pressed, will display the current Readme.txt file. This file contains information about changes, enhancements and bug fixes.

Technical support is usually handled via email. Send your questions to [support@townrx.com](mailto:support@townrx.com). You may do this directly from within the tnxTower program using the File|Send menu command. This command will attach your current model file directly to the email. Note that some non-Microsoft

compatible mail systems may not work using this method and you will have to manually attach the model file to the email.

Technical questions may also be faxed to 781-538-6463.

Technical support is also available via phone at 781-862-0966. Hours are from 9 a.m. to 5:00 p.m. ET.

Technical support questions should be limited to the use of the program. Should you have specific questions about the TIA standard or designing towers in general, we will try to direct you to other tnxTower users who may be available to consult with you.

# Licensing

tnxCable technical support and program updates are licensed on a yearly renewal basis.

The license is available for stand-alone or network installations. Software licensing is controlled by hardware locks (USB dongles).

## License Agreement

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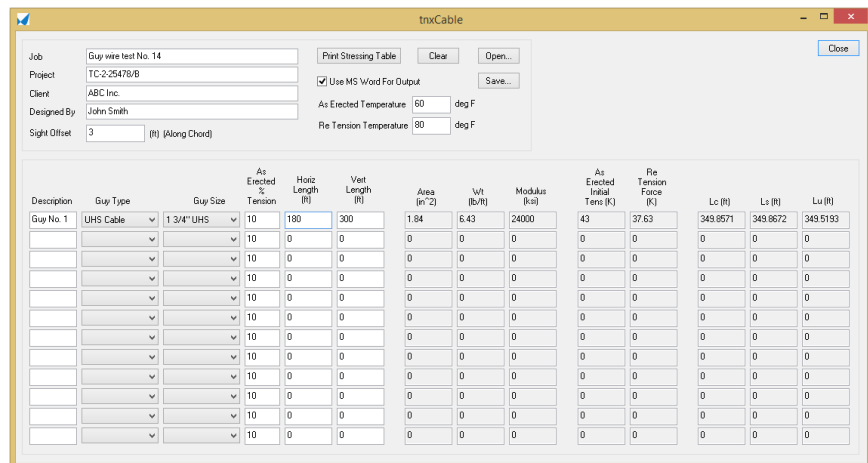


## Summary

### Overview

tnxCable is a program for calculation of cable tension changes due to temperature differences. The program will also calculate the tangent intercept distance that may be used to determine the tension in a guy wire (refer to ANSI/TIA-222-G, Annex K: Measuring Guy Tensions, Section B).

tnxCable requires that [tnxTower](#) be installed in the same directory. It uses tnxTower Registry data, tnxTower guy wire databases, and other files. Any changes to the databases need to be made through the tnxTower GUI.



The interface of the program includes the following items:

### Data Entered by the User

**Job, Project, Client, Designed By** – Project information and description.

**Use MS Word For Output** - When selected, the program will use MS Word (if present) to output the report. Otherwise, the output file will still be generated but not opened. The output file is created in the same folder where the tnxCable input file is located.

**As-Erected Temperature** - Guy temperature at the time of the original guy tensioning.

**Re-Tension Temperature** – Guy temperature when the re-tensioning is performed.

**Sight Offset** – Distance, along the chord of the guy, from the assumed anchorage point to the point where the line of sight is tangent to the cable.

**Description** - Label that will identify the guy for which calculations are performed. It is necessary to enter this text first to activate the balance of the input fields in the row.

**Guy Type** - One of the four types included in the tnxTower database: EHS, BS, UHS, and Miscellaneous.

**Guy Size** – Specific guy designation from sizes included in the database.

**As Erected % Tension** - Original guy pre-tensioning force expressed as a percentage of its breaking strength.

**Horizontal Length** – Horizontal distance between the start and the end of the cable.

**Vertical Length** – Vertical distance between the start and the end of the cable. The distance is fixed for a given cable profile and does not change with temperature.

## Data Retrieved from the Database

**Area.** Metallic area of the cable.

**Weight.** Linear weight of the cable. The data should include any additional weight due to ice, etc.

**Modulus.** Modulus of elasticity of the cable.

## Values Calculated by the Program

**As Erected Initial Tension.** Initial tension force at the as-erected temperature (based on a percentage of the guy breaking strength).

**Re-Tension Force.** Required value of the tension force at the re-tension temperature to ensure the initial tension force value at a temperature equal to the as-erected temperature.

**Lc.** Chord length of the cable.

**Ls.** Stressed length of the cable.

**Lu.** Unstressed length of the cable.

## tnxCable Report

The printed output of the program includes the following calculated values:

For the initial tension and temperature: guy angle at the anchor, guy chord angle, chord cable length, unstressed cable length.

For 12 temperature values below and above the As-Erected Temperature: stressed cable length, intercept for the sight line tangent at anchor, intercept for the sight line tangent at offset point, guy tension at tower, anchor, and average.

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