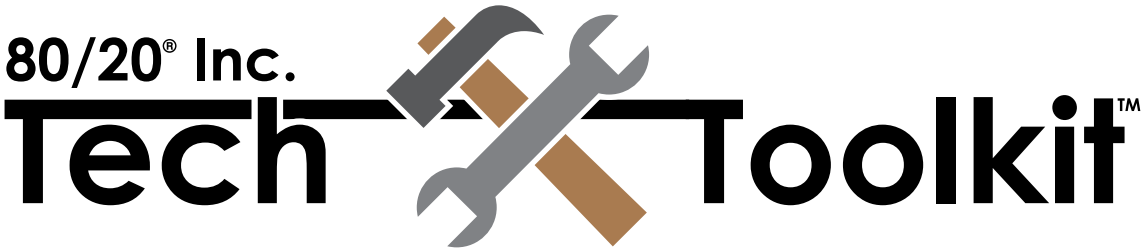
80/20® Inc.

*The **Industrial** Erector Set®*



Users Guide

Version 1.0

Table Of Contents

I. What you will find in 80/20's Tech Toolkit™

The 80/20 Tech Toolkit™ is a collection of useful tools to help you select the proper profile for your applications and to help speed up your design process.

Deflection Calculator:

The deflection calculator is used to find how much a T-slotted profile will deflect when a load is placed upon it.

Conversion Calculator:

The conversion calculator is used to easily convert units. Areas include linear conversions, area, weight, force, pressure and moments of inertia.

Miter Cut Worksheet:

The miter cut worksheet is designed to allow you to quickly and easily design T-slotted profile with angled miter cuts and counterbores. This tool is build using 80/20 standard machining services.

II. System Requirements

- Intel Pentium II or later, with 400MHz or faster processor, or compatible
- 500 MB RAM
- 100 MB free disk space
- 1024 x 768 VGA with true color (minimum)
- DVD drive
- Mouse, trackball, or compatible pointing device
- Microsoft Windows 98/ME/NT 4.0 (SP6a or later)/2000/XP/Vista/Windows 7

III. Installation

To install 80/20's Tech Toolkit™ run the setup.exe file found in the Tech Toolkit™ directory of the 80/20 DVD or download from www.8020.net. YOU MAY NEED TO EXTRACT FILES TO YOU SYSTEM BEFORE INSTALL

Follow the prompts to install the Microsoft® Visual Studio 2010 Report Viewer.

Agree to the install terms of service and select a storage location if prompted.

IV. Using The Deflection Calculator

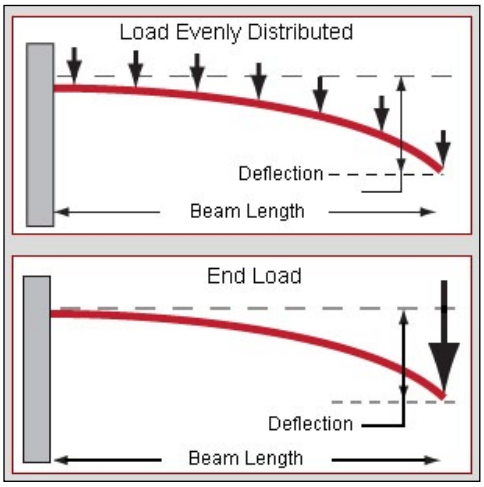
A. The Three Deflection Types.

Fixed On One End:

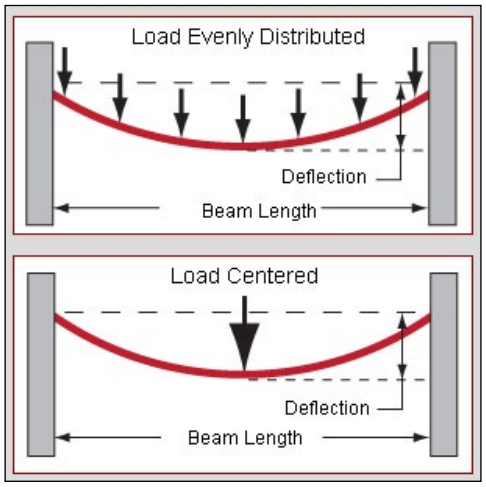
The profile is fixed to one vertical element and open on the opposite end. (Example: 1)

The profile is fixed to two vertical element, one on the left and one on the right. (Example: 2)

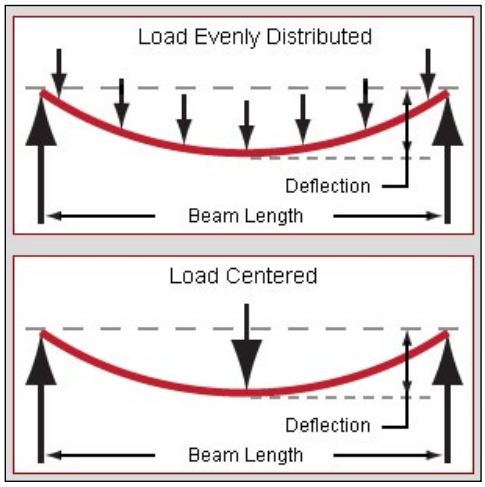
The profile is sitting on top of two vertical elements spaced on the end of the profile left and right. (Example: 3)



Example: 1



Example: 2



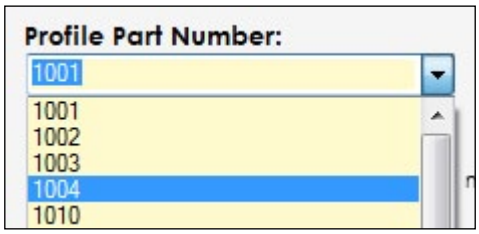
Example: 3

B. Selecting A Profile.

Profiles available for deflection include 80/20 Fraction and Metric T-slotted profiles, select 80/20 HT Series profiles, and 80/20 Quick Frame profiles. (Example: 4)

Example: 4

Select the button for the desired profile type and pick the profile part number from the drop down list. (Example: 5)

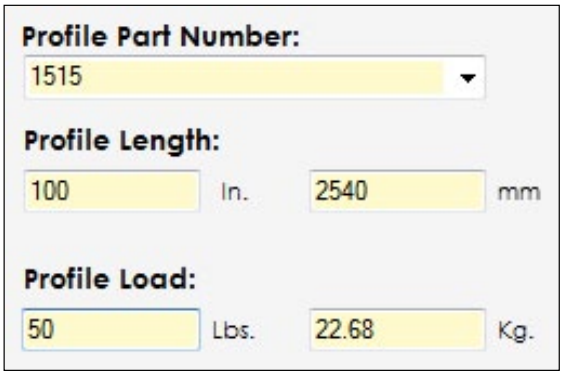


Example: 5

C. Entering Values

The deflection calculator can provide the deflection of a profile in two ways. First, by entering the profiles length and determining the deflection based on the profiles weight only. Second, by entering the profile length and entering the weight of the load to be placed on the profile.

The deflection calculator allows you to enter values either in fractional or metric units. The tool will automatically convert the value entered to the opposite unit type. (Example: 6)

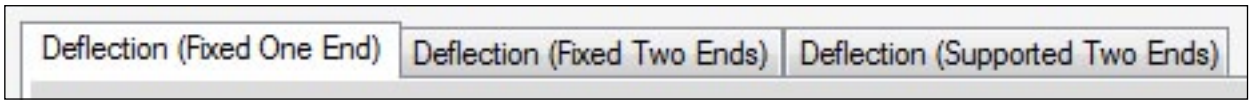


Example: 6

D. Calculating The Deflection

Once you have selected a profile, entered the profile length, and entered a load (if applicable) you will be ready to calculate the profile's deflection.

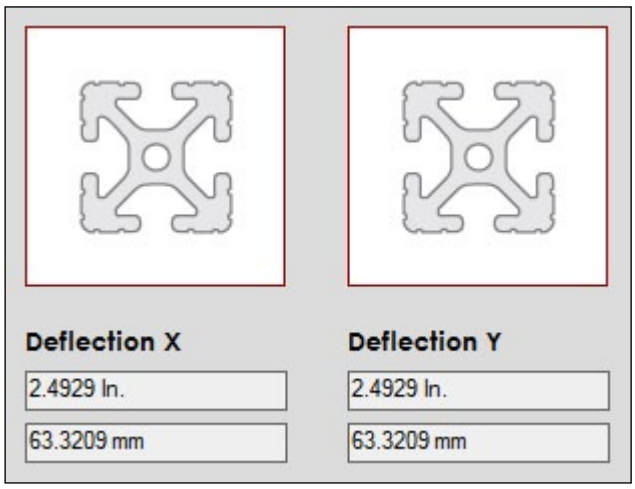
Simply select the tab for the deflection type you desire. (Example: 7)



Example: 7

Then click the "Calculate Deflection" button (Example: 8), and you will see the deflection listed in the profile X and profile Y boxes for each deflection type. (Example: 9)

Example: 8



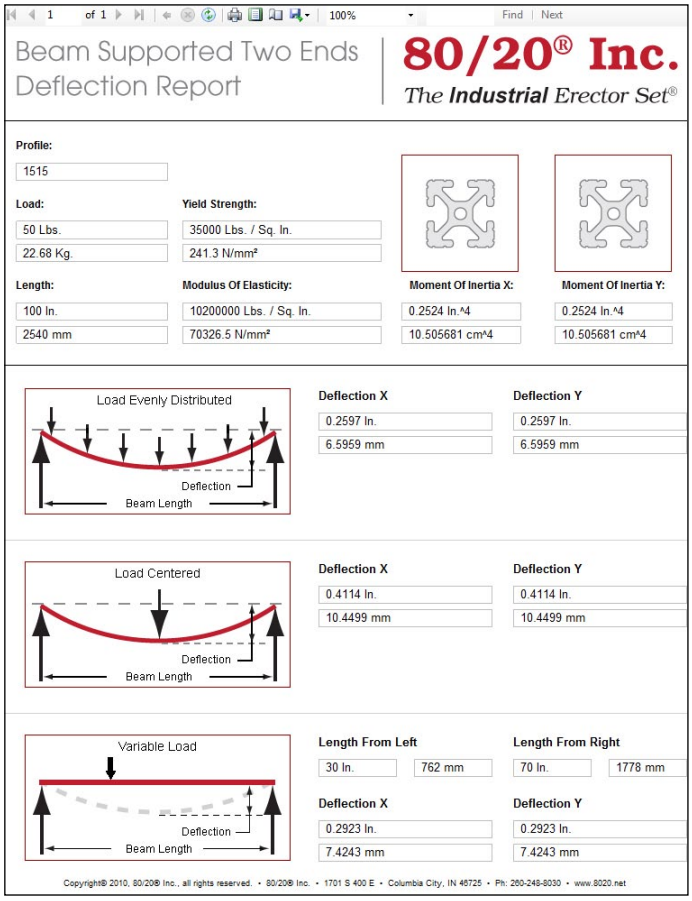
Example: 9

E. Generating A Report

Once you have finished calculating your profile deflection and are ready to generate a report simply click the "Print Report" button. (Example: 10)

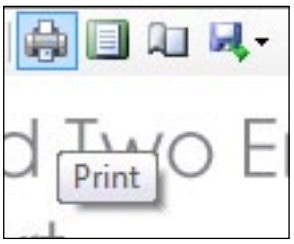
Example: 10

The report will open in a new window. (Example: 11)



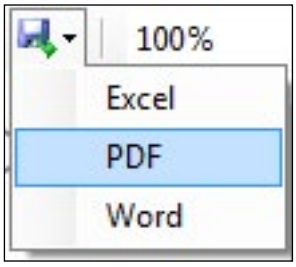
Example: 11

You may then print the report. (Example: 12)



Example: 12

You may also save the report as a PDF, Microsoft® Word, or Microsoft® Excel file. (Example: 13).



Example: 13

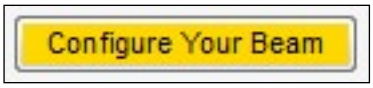
F. Entering A Custom Beam

You may create your own beam for the deflection calculator by following these steps.

1. Select the "Custom Beam" radio button. (Example: 14)
   Any created beams will appear in the profile drop down list.

Example: 14

2. Click the "Create Your Beam' button that now appears. (Example: 15)

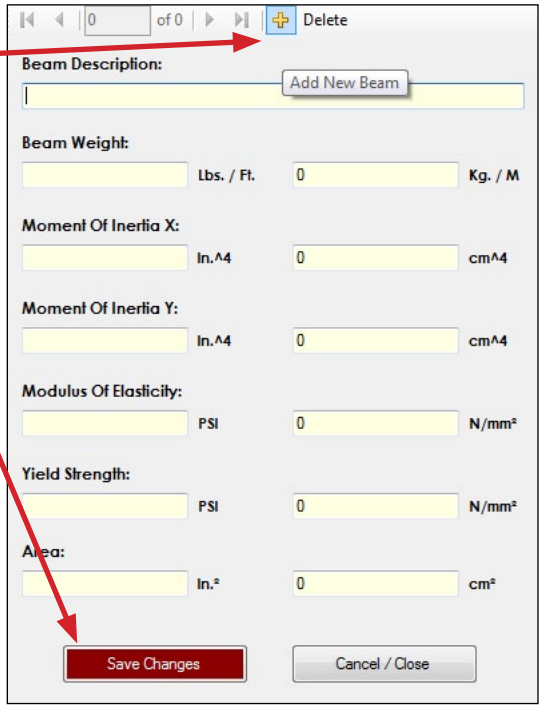


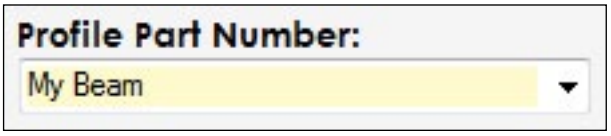
Example: 15

3. The Configure your beam pop-up now appears. Click the **+** to add a new beam. (Example: 16)

4. Enter your beam's values in the listed fields and click the "Save Changes" button. (Example: 17)

5. Click the Cancel / Close button to close the window and your custom beam should new be available in the profile drop box. (Example: 18)





Example: 18

V. Using The Miter Cut Worksheet

The 80/20 Tech Toolkit™ miter cut worksheet is a useful tool to create drawings of standard miter cut T-slotted profiles with and without counterbores.

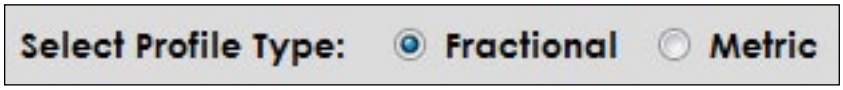
A. Select the Miter Cut Worksheet

To start using the miter cut worksheet you must first click the "Miter Cut Worksheet" tab on the top left of the Tech Toolkit™. (Example: 19)

Example: 19

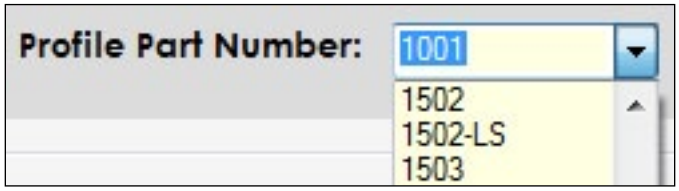
B. Select a T-Slotted Profile

The first step of your miter cut project is selecting the profile to be mitered. Select the radio button from either Fractional or Metric profiles. (Example: 20)



Example: 20

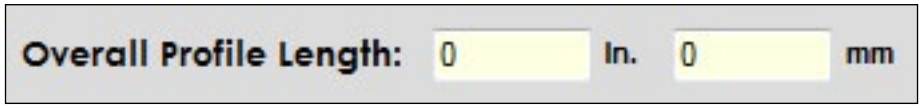
Then select your desired profile from the drop-down menu. (Example: 21)



Example: 21

C. Enter the Profile Length

The next step is to enter the length of the selected profile. You may enter either fractional or metric units. (Example: 22)



Example: 22

D. Setting the Miter Cuts

After you have selected a profile and entered its length you are ready to set miter cuts.

Miter cuts can be call out in two ways. First you can enter the miter angle into any of the available fields. (Example: 23) Second, you can use the slider bars available for each available miter side. (Example: 24)

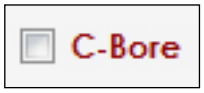
Example: 23

Example: 24

NOTE: Compound miters are not a standard 80/20 machining service. When a miter cut is added to a miter X or Y side fields will become non-active on the opposite side to avoid creating a compound miter.

E. Adding Counterbores

After you have added miter cuts to your profile you will be ready to add counterbores. To easily add a counterbore to your profile simply click the "C-Bore" check box on the miter face. (Example: 25 / Example: 26)



Example: 25

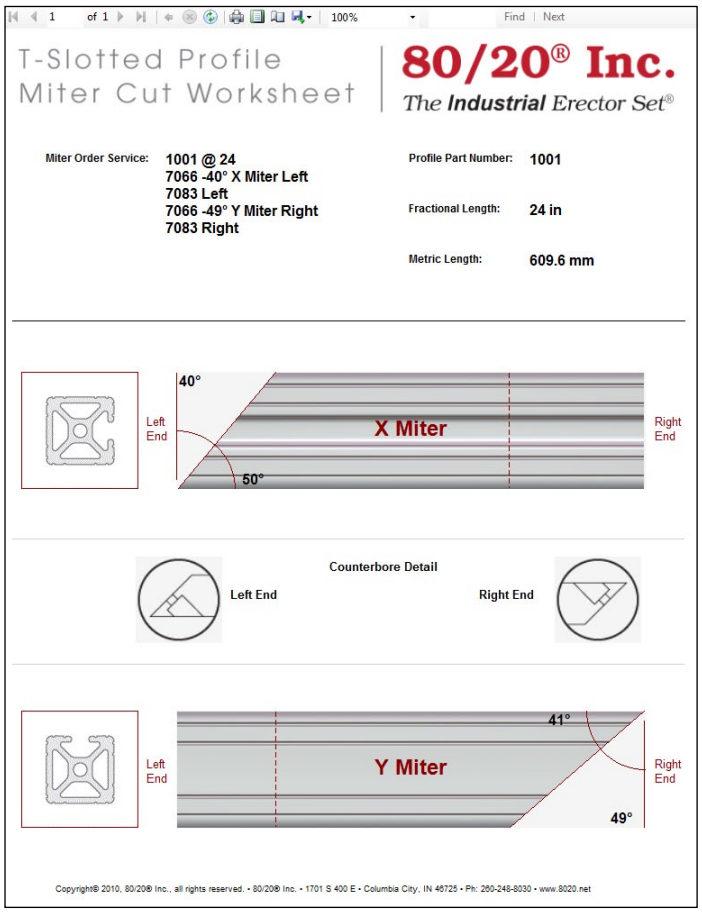
Example: 26

F. Generating A Report

Once you have finished adding miter cuts and counterbores your profile and are ready to generate a report simply click the "Print Report" button. (Example: 27)

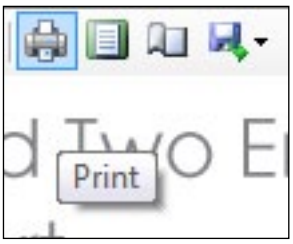
Example: 27

The report will open in a new window. (Example: 28)



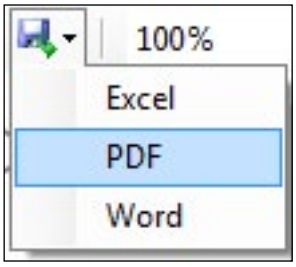
Example: 28

You may then print the report. (Example: 29)



Example: 29

You may also save the report as a PDF, Microsoft® Word, or Microsoft® Excel file. (Example: 30).



Example: 30

Technical Support

The following contact information can be used for Tech Toolkit™ Technical Support:

E-mail: marketing@8020.net

Phone: (260) 248-8030

Fax: (260) 248-8029