



ANGLE SECTION, ORIENTATION, DEFLECTION, STRONG WEAK AXIS

1- Question : November 6, 2008

I have an issue in using the steel calculator to select an angle Data: steel angle 7 x 4 x 3/8 with 7 vertical (this automatically is the preferred orientation from the steel calculator). Load applied in the global vertical axis is $F_y = -0.450$ k/ft dead and -0.267 k/ft live. Total deflection limit selected was span /720 (Span 9.6 ft.). The calculator tells me I have a failed selection with $3.123 \times$ the permissible deflection of $10 \times 12 / 720$. However if I check manually $defl = 5/384 \times (717 \text{ lb / ft} \times 10 \times 10 \times 10 \times 10 \times 1728 / 29000 \times 20.6) = 0.23$. This is about span /500 not adequate but a very different assessment of the angle. Is there an issue with the loading direction on an angle?

Answer

As you have a single angle (non symmetric section), even if you apply a vertical load you get lateral deflection in the direction of the weak axis (if nothing supports the single angle to move laterally). Please note that all results are displayed according to the strong and weak axis, not on the axis parallel to the flanges. It also means that the load you apply is decomposed in their components parallel to the strong and weak axis. On your current file, when I input the loads as you specified, I get a deflection of 0.2" (or $L/576 = 1.25 \times L/720$) in the internal Y (strong axis) and 0.5" ($L/230 = 3.12 \times L/720$) in the internal Z (weak axis).

If you think that your single angle is restraint against displacement on its weak axis then you should compute the deflection based on the inertia along the flanges. Please note that the software do not cover this last case. Then you would have to compute it by hand.

DIAGRAM, COPY

2- Question : January 30, 2009

While using the calculator I noticed, in the results window showing the tabular and diagrams, that the diagrams has a copy button. Please advise what action the button completes for the user. Since some diagrams are small, I am wondering if by copying one can place a number on one page?

While trying to find where the copy might be I found the files in Safi working directory. What is there purpose and how can they be accessed?

Answer

The copy button copies the diagram to the clipboard in a vectorial form. You may then paste the diagram in external applications like in a Word document.

Following question: February 2, 2009

I have been trying this and only get a symbol in word. How do I get the proper document, are there options that need to be changed etc.?

Answer

It looks like a problem we are experiencing with Microsoft Word. It seems to use the clipboard to manage plug-in toolbar buttons like Adobe Acrobat toolbar. Try to open MS Word and then use the copy button.

PROFILÉ HSS CANADIEN

3- Question : 14 avril 2009

Comment faire pour entrer un profilé HSS canadien classe H (Hot) sur une membrure ?

Réponse

Je suppose que la question s'applique à la calculatrice d'acier. On doit utiliser une section CISC CSA ... et dans les "paramètres de conceptions" on doit sélectionner la valeur 1 pour le champ de données "Courbe de compression". Pour plus d'information sur cette valeur, voir l'aide à cet endroit du logiciel. La courbe 2 (même si la valeur affichée est 0) par défaut est celle des *Cold rolled*. Dans SAFI le principe est presque le même, sauf que la courbe de compression doit être associé à une section dans la table correspondante.



SECTION CIRCULAIRE, BIBLIOTHÈQUE SECTION NON-STANDARD

4- Question : 1er juin 2009

Je veux utiliser la calculatrice avec une section circulaire. Comment créer une bibliothèque de section non-standard pour utiliser dans la calculatrice.

Réponse

Pour créer une bibliothèque de profile non-standard, il faut avoir une licence minimale de SAFI 3D. Vous devez tout d'abord créer les sections non-standards dans SAFI. Par la suite, vous pouvez créer la bibliothèque a partir de la commande Table->Sections->Bibliothèques->Éditeur de bibliothèques. Lorsque la bibliothèque est créée, elle apparait automatiquement dans la calculatrice d'acier.