AUTODESK **UNIVERSITY** 2015

MSF12001-L

Advance Steel: Customizing the Profile Database

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Learning Objectives

- Learn how to create a custom profile within the default database
- Learn how to modify existing profiles for design purposes
- Learn how to include customized objects in BOM and detail drawings
- Learn how to increase design potential with ability to add custom objects

Description

In this class you will learn how to use and configure the Advance Steel software profile database. At the end of this course you will have the knowledge to add new and modify existing steel profiles within the database for future use. You will also be able to add profiles that are required by the project and the manufacturer catalog to enhance your design experience.

Your AU Experts

Stephen Bessette *is a Technical Sales Specialist for Autodesk, Inc., providing technical support for Autodesk AutoCAD, Autodesk AutoCAD Verticals, Autodesk Revit, and Autodesk Advance Steel software. He is a graduate of the NHTI Architectural Engineering Technology program as well as a certified computer-aided draftsman. Stephen has over 15 years of experience within the design and construction industry, including fire protection design, residential design, construction management and estimating, land surveying, quality control of construction materials, and structural steel inspection. In addition, Stephen has instructed technical classes for AutoCAD software and its 3D functionalities at NHTI in Concord, NH.*

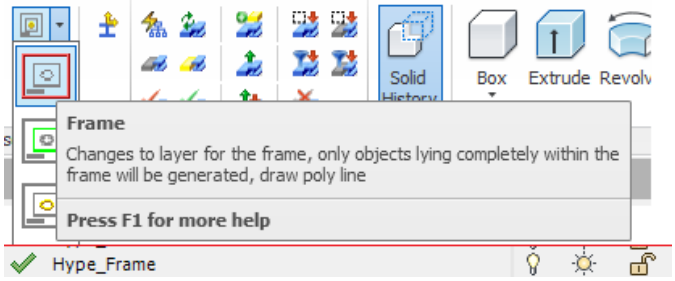
Learn how to create a custom profile within the default database

Different Types of Custom Sections

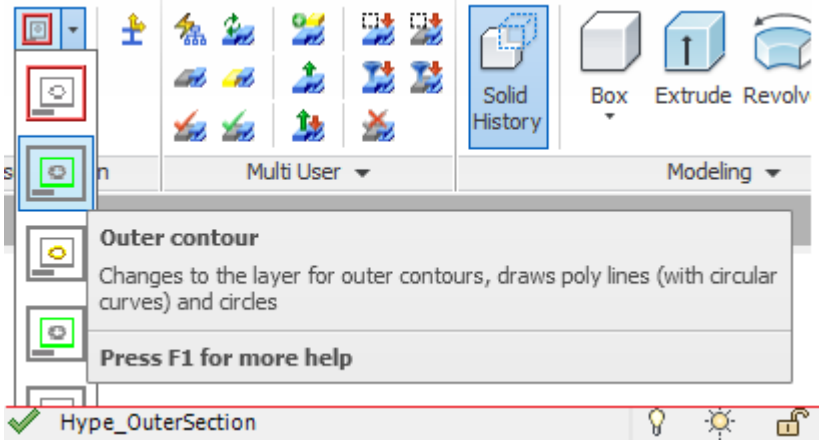
- Non – Standard shapes
    - Using the USER SECTION feature you can add profiles of any shape. These can be constructed by using simple Autodesk AutoCAD tools. Then these shapes can be used to create Advance Objects, similar to beams, within your model
- Standard shapes
    - New sizes can be added to existing profiles

To define user sections

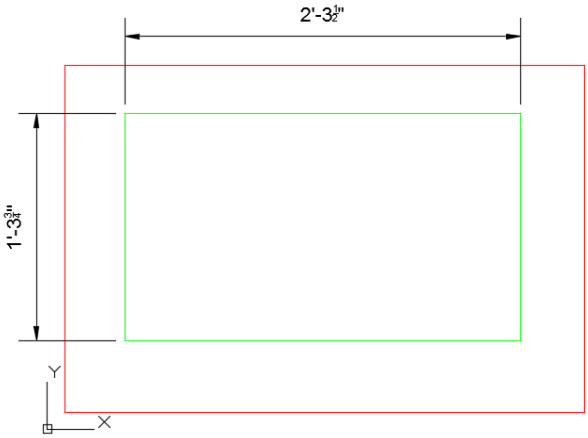
1. On the *Extended Modeling* ribbon tab, in the *User Section* panel, select the FRAME command to set the "Hype_Frame" layer as the current layer



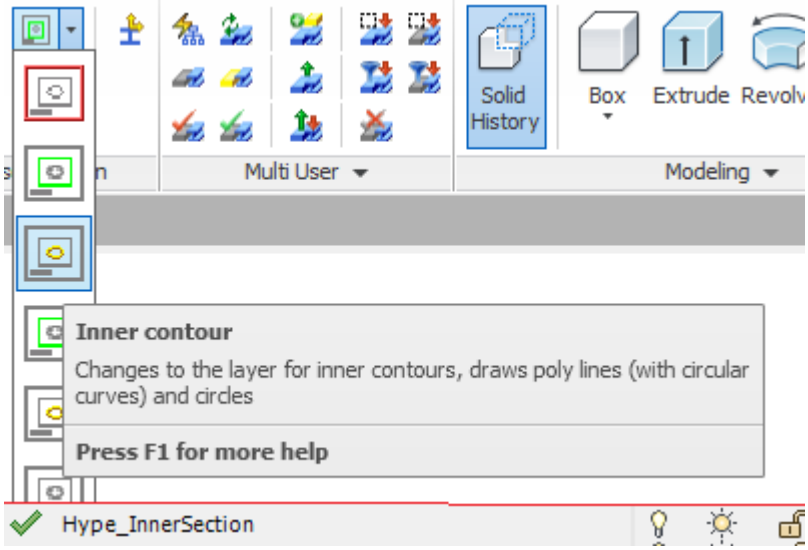
2. On this layer, create a rectangular frame that defines the workspace where the user section is to be created
3. Using the same command found in step 1, set the "Hype_OuterSection" to the current layer. The outer contour describes the standard shape of the section



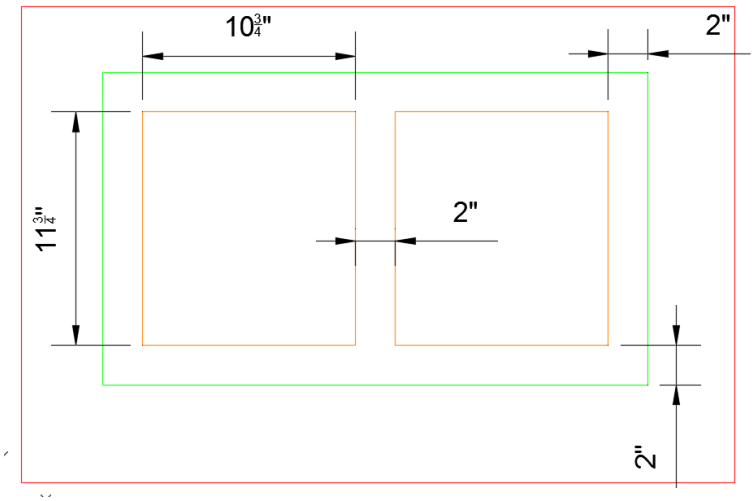
4. Draw the following outer contour:



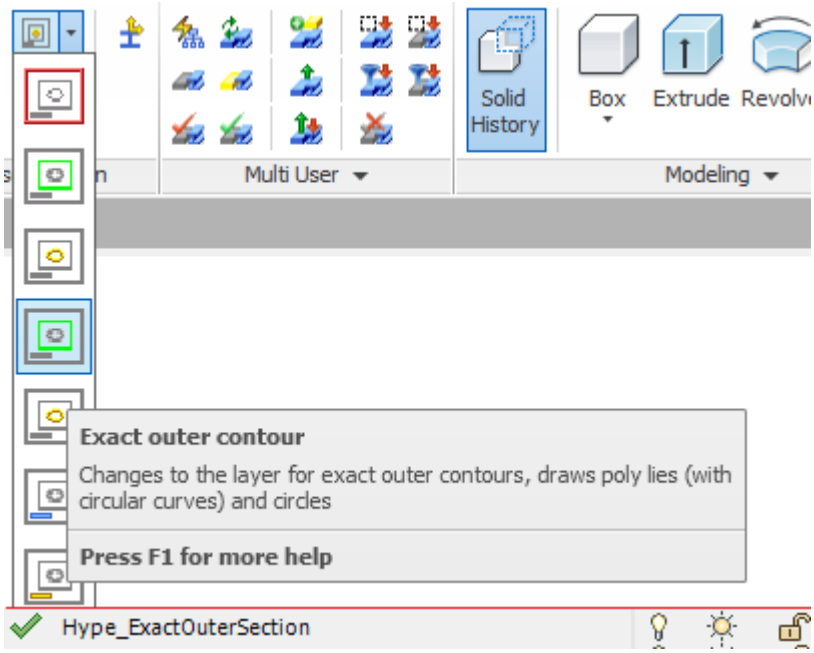
5. Set the current layer to “Hype_InnerSection” to define the hollow section



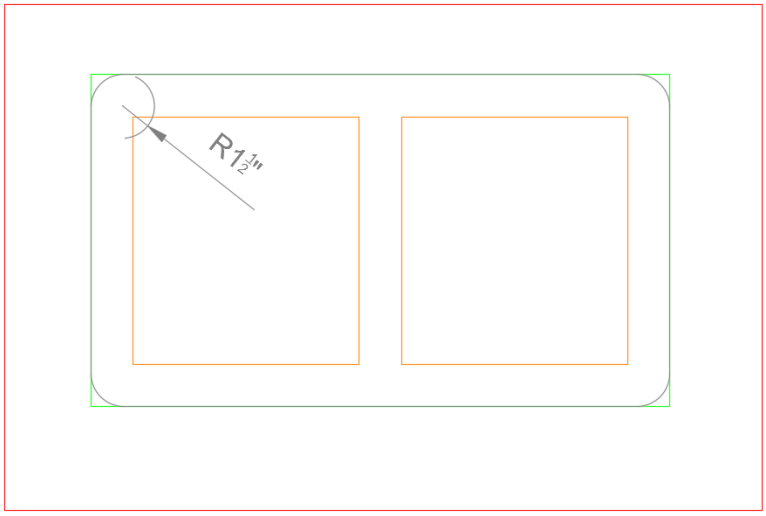
6. Draw the inner contour



7. Change the current layer to the “Hype_ExactOuterSection” layer so the exact profile section can be established

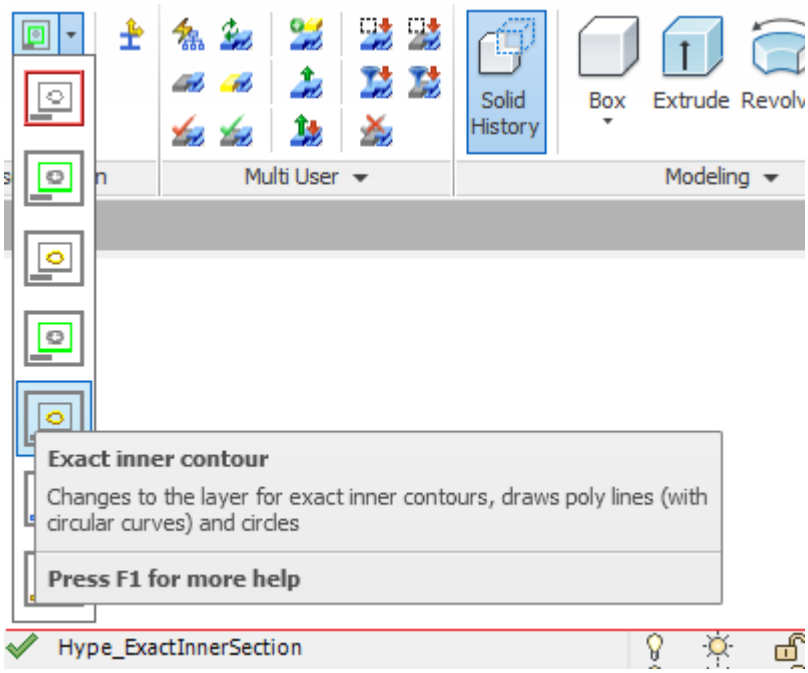


8. Draw the exact outer section of the custom profile

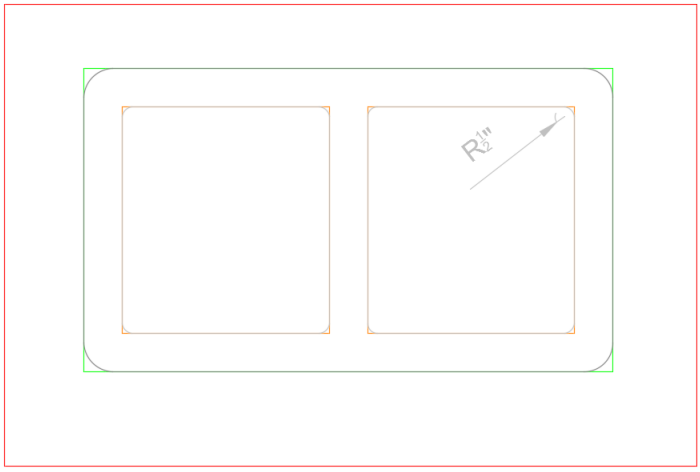


- HINT: Draw the exact outer contour and add the “Fillet” in a different location than the existing contour. Then move the “exact” contour into place. Use the “Midpoint” snap to align the two contours

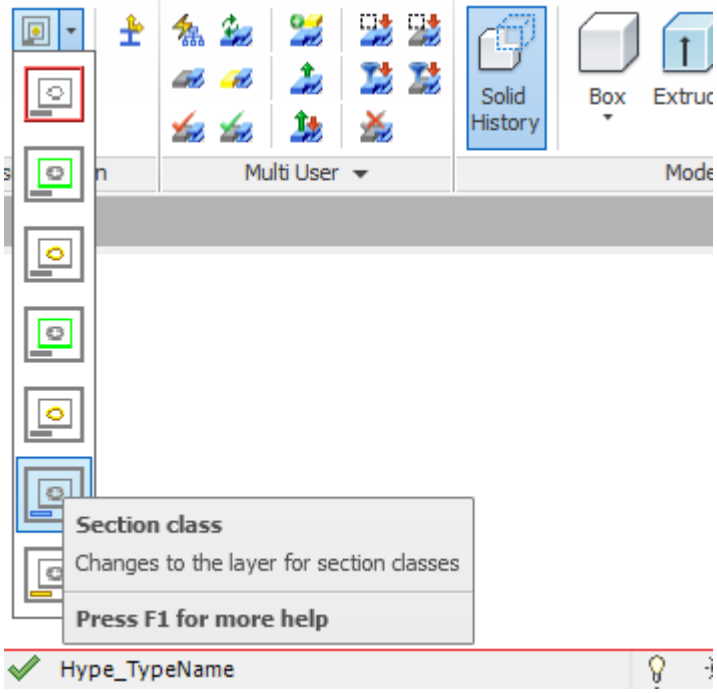
9. Change the current layer to “Hype_ExactInnerSection” to establish the exact inner contour of the shape



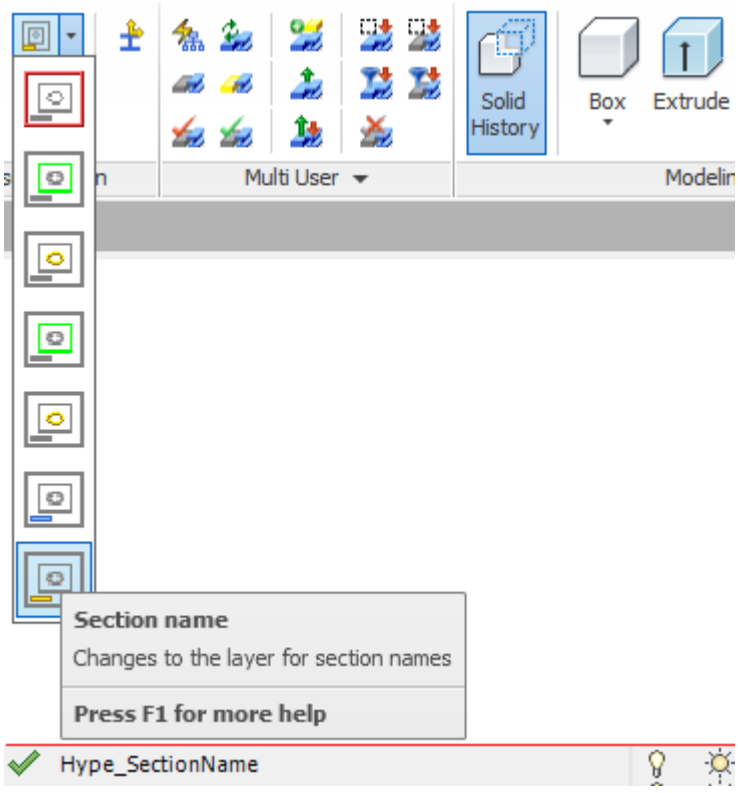
10. Draw the exact inner contour similar to the process used in Step 8



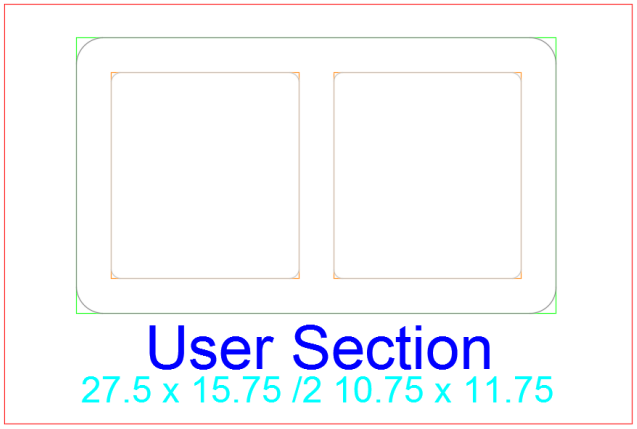
11. Change the current layer to “Hype_TypeName” so the section class name can be established



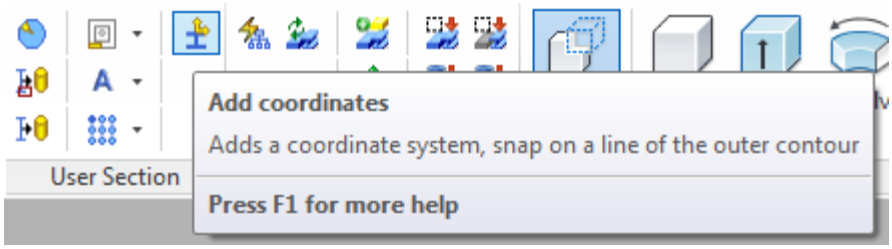
12. Place a single line of text that contains the section class (TEXT Command)
13. Change the current layer to “Hype_SectionName” to establish the shape name



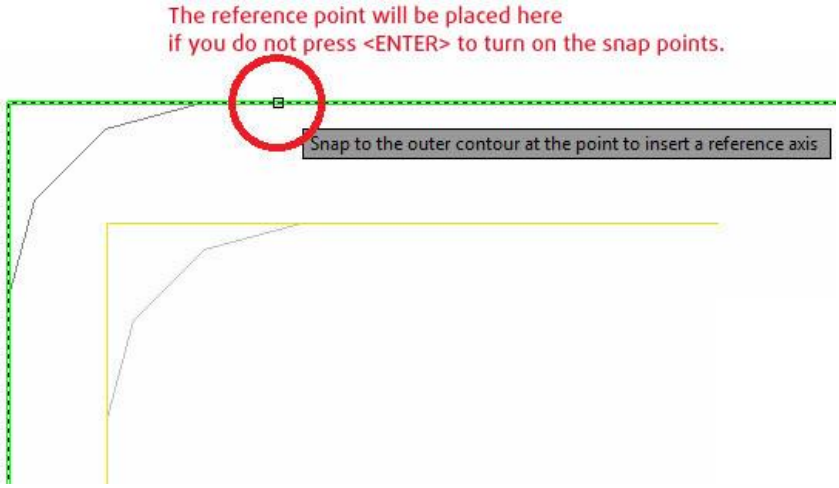
14. Again, place a single line of text that contains the section name (TEXT Command)

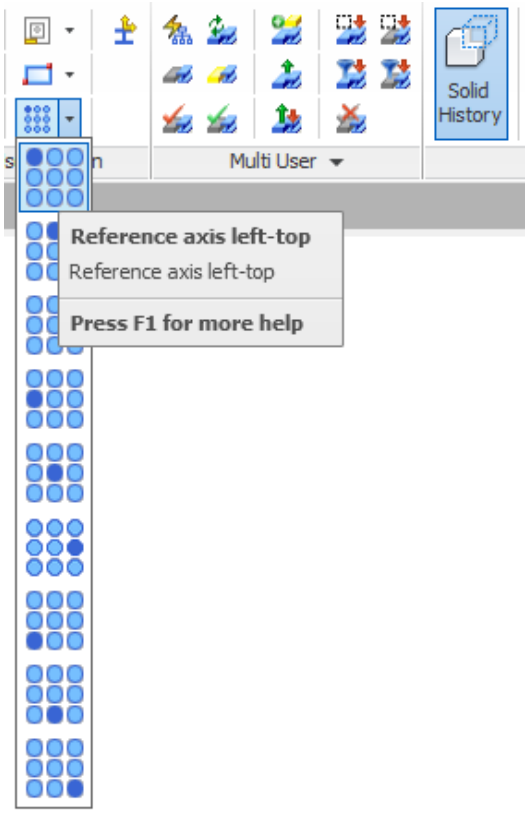


15. To define the coordinate system that represents the local axis, select the outer contour

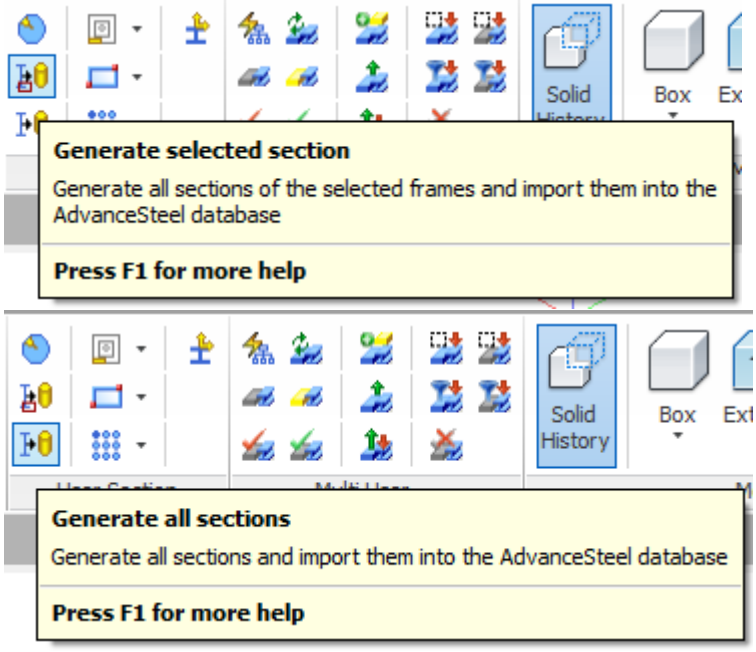


- For example, to position the reference axis in the top left, select the command and when the "Snap on the outer contour at the point to insert a reference axis" message appears, click for placing the snap points. If you do not click the point where the reference axis should be inserted then the axis will be positioned where the point is selected on the outer contour.

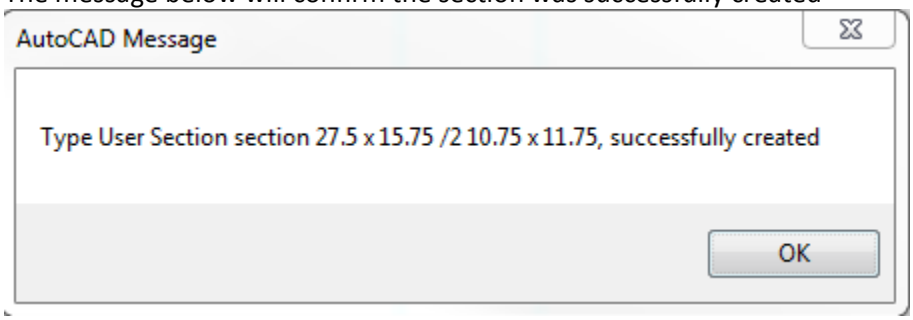




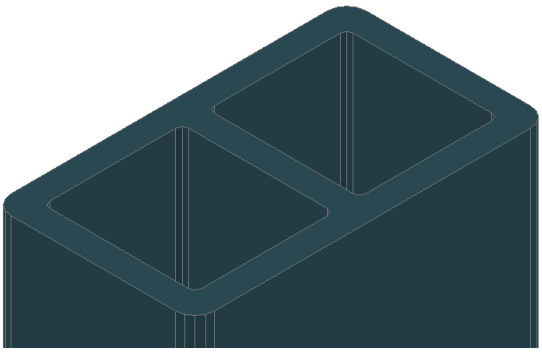
16. To create the section, use the “Generate select section” command for a single section, or “Generate all sections” command for multiple sections

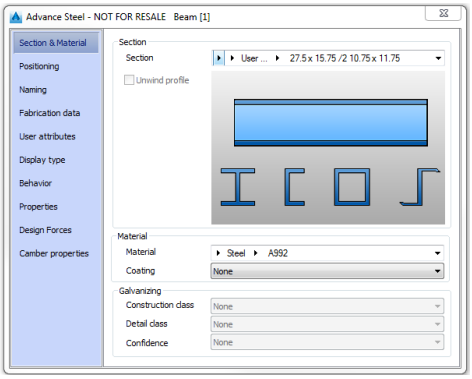


17. The message below will confirm the section was successfully created



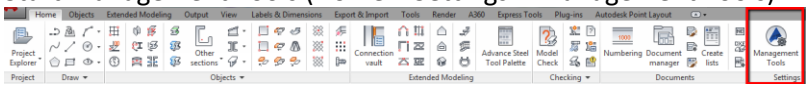
18. To draw the new section, choose a profile from the menu or in the properties dialog box, in the "Other section" category, select the "User Section" class. Select the section from this class



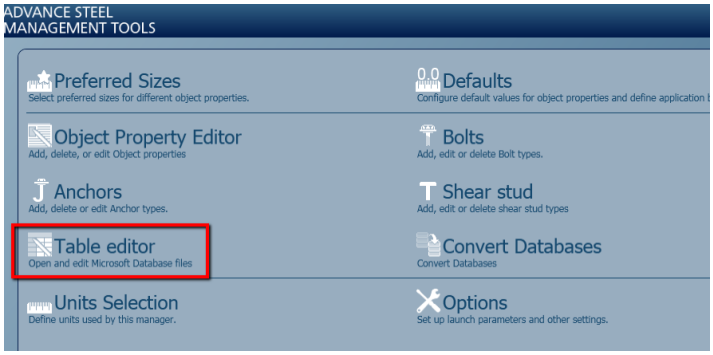


Learn how to modify existing profiles for design purposes

- **To add a new size to an existing shape**
  - Adding a new size to an existing shape requires editing the AstorProfiles database using the Table Editor within the Management Tools 2016 application or any other database (.mdb) file editor (e.g. Microsoft Access). The AstorProfiles2016.mdb database is located by default in C:\ProgramData\Autodesk\Advance\Data.
    1. Start Management Tools (Home > Settings > Management Tools)



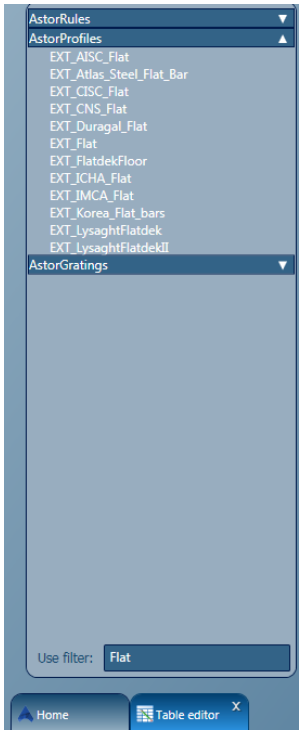
    2. Click "Table Editor"



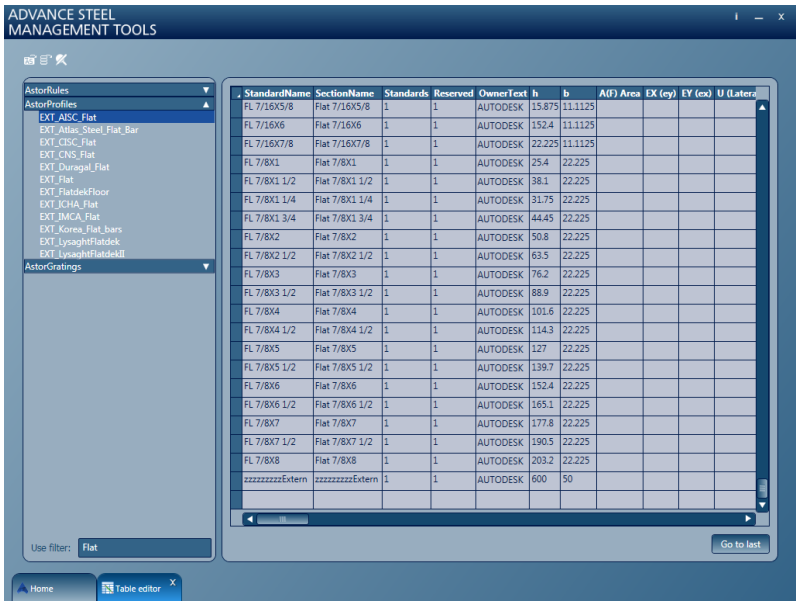
3. Select “Open ODBC”



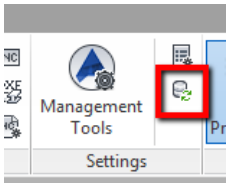
4. Expand the “AstorProfiles” menu. Use the “Filter” to navigate to the appropriate table



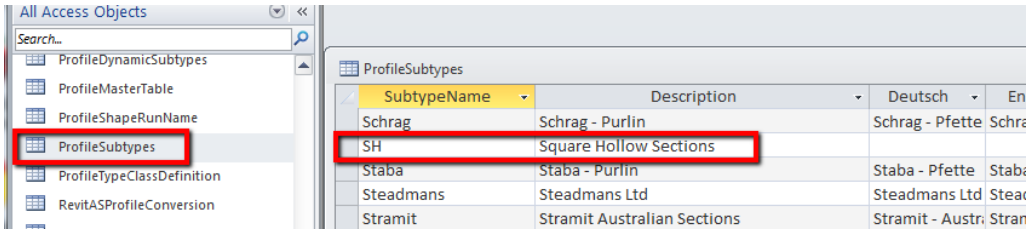
5. Select the last line in the table



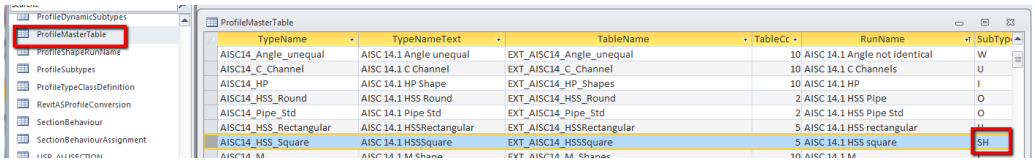
6. Enter a new line with the section size. The columns require the following information
   - StandardName
     - The name that appears at the interface if the column with the installation language is left empty
   - SectionName
     - The profile's internal name that can be used in other configurations. It will not appear at the interface or created documents. It can be the same as StandardName
   - Standards
     - Set this to 1
   - Reserved
     - Set it to 1 for a hot rolled section; 2 for a cold rolled section that is unwindable. For an unwindable section, the geometry needs to allow unfolding. The thickness needs to be constant throughout the whole contour
   - OwnerText
     - Set to the current Author (new authors can be added to Advance Steel from the Options setting in Management Tools)
7. Close Management Tools. In Advance Steel, click "Reload Defaults" to load the new information



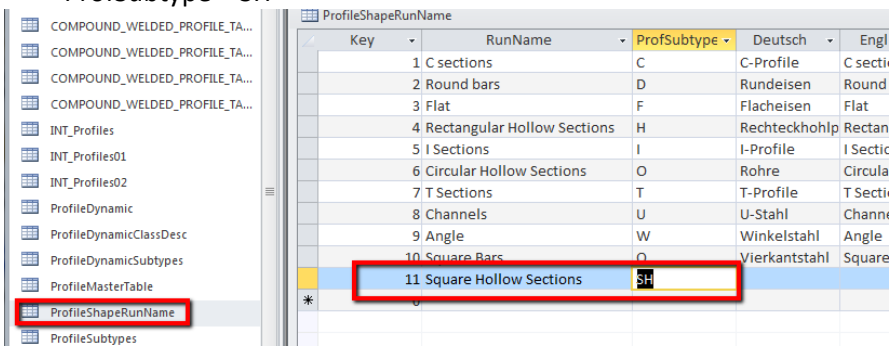
- **How to add a new general class for beams**
  - This will assist in selecting beam classes with more ease for your designs
  - Using the AISC 14.1 HSS square class as an example
    1. Make sure Advance Steel is closed
    2. Within Windows Explorer, navigate to C:\ProgramData\Autodesk\Advance\Data. Open the "AstorProfiles2016.mdb" file in Microsoft Access
    3. Within Microsoft Access, type "Profiles" into the "Search Bar" and press Entler
    4. Double-click the "ProfileSubType" to open the table
    5. At the bottom, add a new row and enter the following information
       - "Subtype Name" = "SH"
       - "Description" = "Square Hollow Sections"



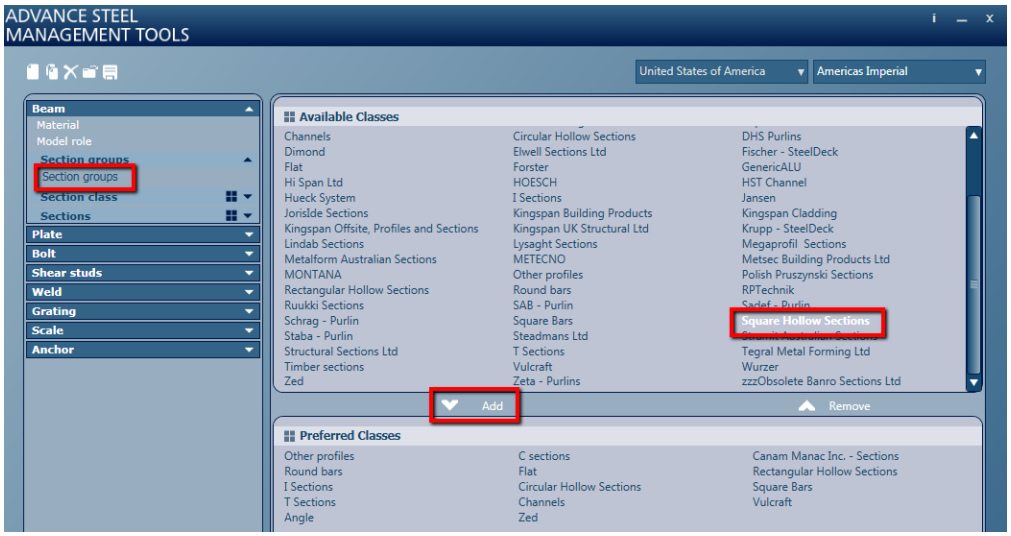
    6. Double-click the "ProfileMasterTable" to open the table
    7. Under the "Type Name" header for the "AISC 14.1_HSSSquare" type, change the value to "SH"



    8. Double-click the "ProfileShapeRunName" to open the table
    9. Create a new row and enter the following information:
       - Key = 11
       - RunName = Square Hollow Sections
       - ProfSubtype = SH



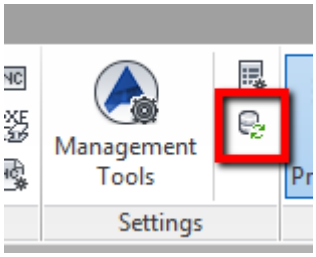
10. Launch Advance Steel
11. Open Management Tools and click Preferred Sizes (Home > Settings > Management Tools)
12. Under the “Beam” header, expand the “Section Class” and select “Square Hollow Sections”
13. Under the “Available Classes” header, select “AISC 14.1 HSS Square”. Click “Add” to add the class to the “Preferred Classes”



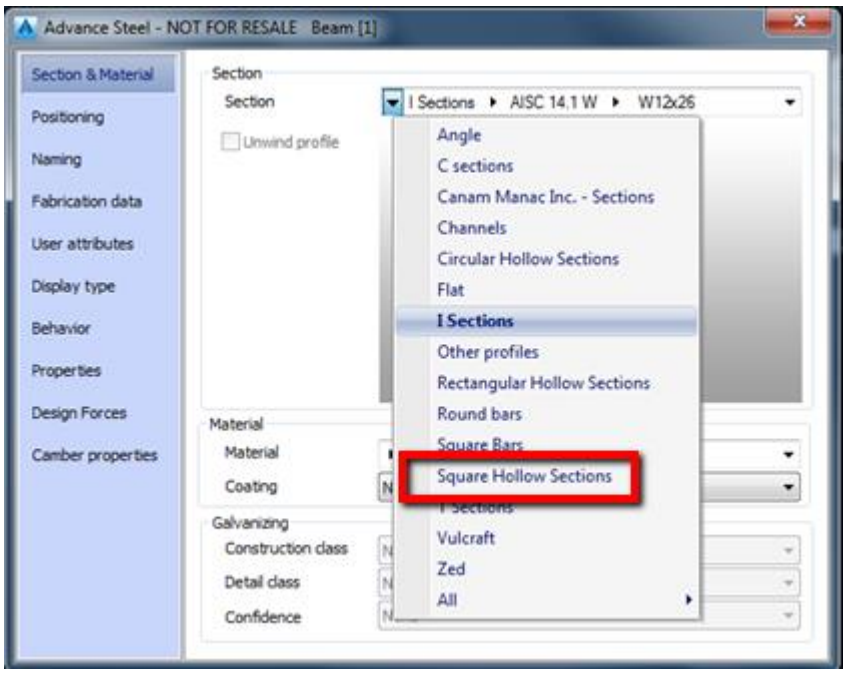
14. Click Apply



15. Within Advance Steel, on the “Home” Ribbon tab, in the “Settings” panel, click “Update Defaults”



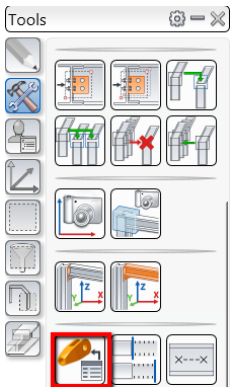
16. To verify that the process was successful, place a “Rolled I Section”. Within the Advance Property dialog box, confirm that the “Square Hollow Sections” are present



- **Note:** Since the “SubType” has been changed, the HSS_Square sections will no longer be included in the “Square / Rectangular hollow sections function”.

Learn how to include customized objects in BOM and detail drawings

- **How to import an Inventor part as an Advance Special Part**
  - You can create special objects in Inventor and then import it into Core AutoCAD Directly. Then by adding it to your model in Advance Steel, it can be documented in your detail drawings and BOM
    1. Open Core AutoCAD
    2. Type “IMPORT” into the command line and press Enter
    3. In the “Import File” dialog box, change the file type to “Inventor (*.ipt, *.iam)”
    4. Select the Inventor file and click Open
    5. Once the part is imported, type EXPLODE and press Enter
    6. Select the part and press Enter. This will create an AutoCAD 3D object
    7. Save the file in the .dwg format and close AutoCAD
    8. Open Advance Steel
    9. In the Advance Tool Palette, click “Tools”
    10. “Click the “Advance Steel special part” icon
    11. Select the Central Point for the block



12. In the “Special Part” dialog box, click “browse”
13. Navigate to your part and click Open.

- Once the special part is inserted into your drawing, you can then draw your Advance objects and create the appropriate connections
- To have your part show in a BOM:
    1. Number your Drawing (Home > Documents > Numbering)
    2. Create a BOM by using any of the templates available.

Reference Links

Advance Steel: How to add custom user section

Advance Steel Forum: Add section to database

Advance Steel: How to add a new general class for beams

Advance Steel: How to import an Inventor part as a Special Part

Autodesk Knowledge Network: Advance Steel