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Color Your World: Quick and Professional-Looking Images for Inventor

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Learning Objectives

- Discover the difference between a Materials and an Appearance override
- Learn how to create new Material and Appearance overrides with custom libraries
- Describe how Visual Styles affect Appearance colors
- Learn how to make professional-looking rendered images directly from your working models

Description

Have you ever searched the standard Autodesk, Inc., Material and Appearance libraries and wondered why the color you need doesn't exist? That's because you haven't created it yet! This class explains the difference between a Material and an Appearance override and describes how you use them in your Inventor software model. We'll look at how to create just the right color for your needs, how changing the Visual Style settings can change how that color will display, and how to create your own custom Inventor software Material and Appearance libraries. Finally, we'll look at creating professional-looking rendered images directly from your working models.

Your AU Expert

Based in Novi, Michigan, Timothy works as a technical consultant for i GET IT Online Training For Engineers from Tata Technologies. Focusing on online e-training for engineers using Autodesk software, Timothy has created numerous online training courses for i GET IT in both text and video format. Courses he has created include the programs Autodesk® Inventor®, AutoCAD®, Autodesk® Revit®, Autodesk® Inventor® Fusion, & Autodesk® Fusion 360. Prior to working for Tata Technologies, Timothy worked in manufacturing as a designer and engineer in the tooling and special machine field for 15 years. Most of that time was in Automotive manufacturing and assembly using Autodesk® Inventor®.

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Materials and Appearance Overrides

Appearances

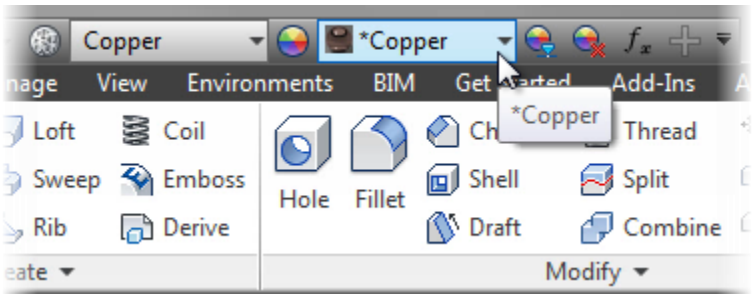
Appearance styles are the colors that are applied to the Inventor model.

Part Level

For a part file you can have up to four different appearance styles supplied.

1. **Material Style**. The main appearance color applied your model comes from the material style and its appearance properties. The material appearance property is applied to the entire part.

2. **Part Level Appearance Override.** An appearance style applied to the entire part is the part level appearance override. The appearance color overrides material appearance.
   Note: The star next to the appearance name indicates the currant appearance color is overriding the material appearance color.



3. **Body Level Appearance Override**. The body level appearance override is applied by selecting a body in a multibody part and then selecting a different appearance style. The new appearance color is only applied to the body that was selected and overrides the part level appearance and material appearance colors.

4. **Surface Level Appearance Override**. The face or surface level appearance, overrides the color on a selected face of the part. The appearance color applied to a face overrides all appearance colors applied to the body, part or from the material.

Assembly Level

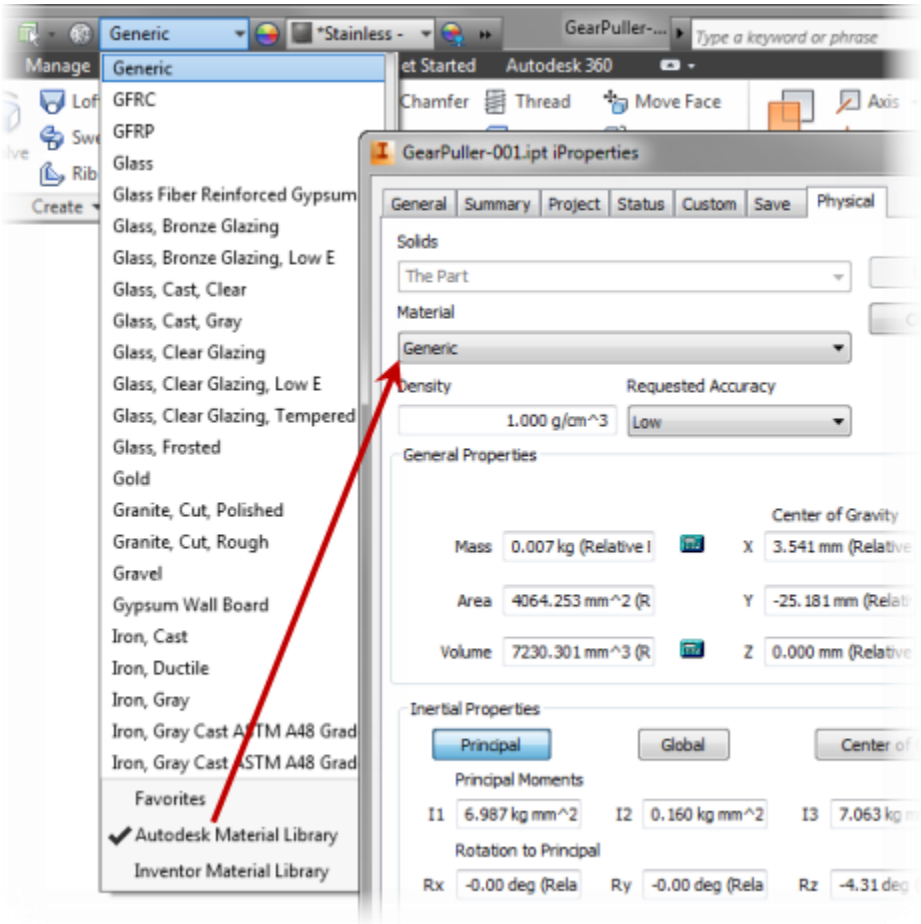
An appearance override set at the assembly level overrides all colors making everything in that assembly the same color.

Materials

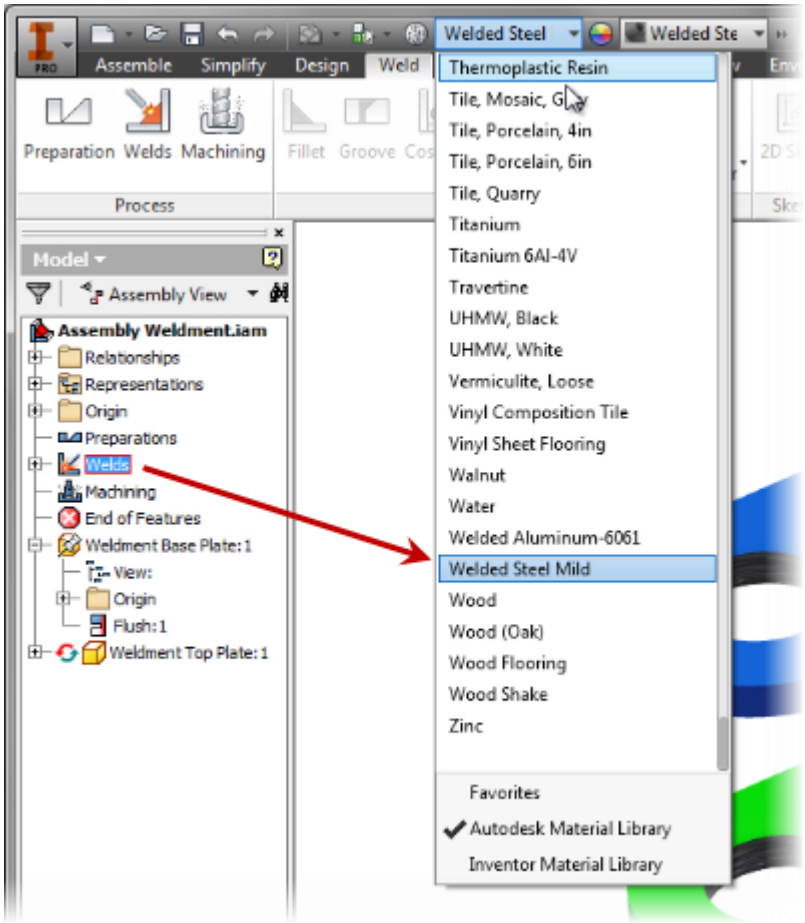
Material styles contain information for the physical properties about a material that can be applied to your designs. Each material style contains its own appearance properties. The appearance properties can be unique to that material style or reference an existing appearance style.

Materials are applied at the part level and can be accessed on the Quick Access Toolbar from the Material drop-down list or from the iProperties dialog box.

Note: The materials shown on the iProperties dialog box are those of the currently active material library.



In an assembly all materials are placed at the part level. The one exception to this is in the weldment environment. Selecting the Welds item in the browser you can then select the material for all welds with in that weldment assembly.

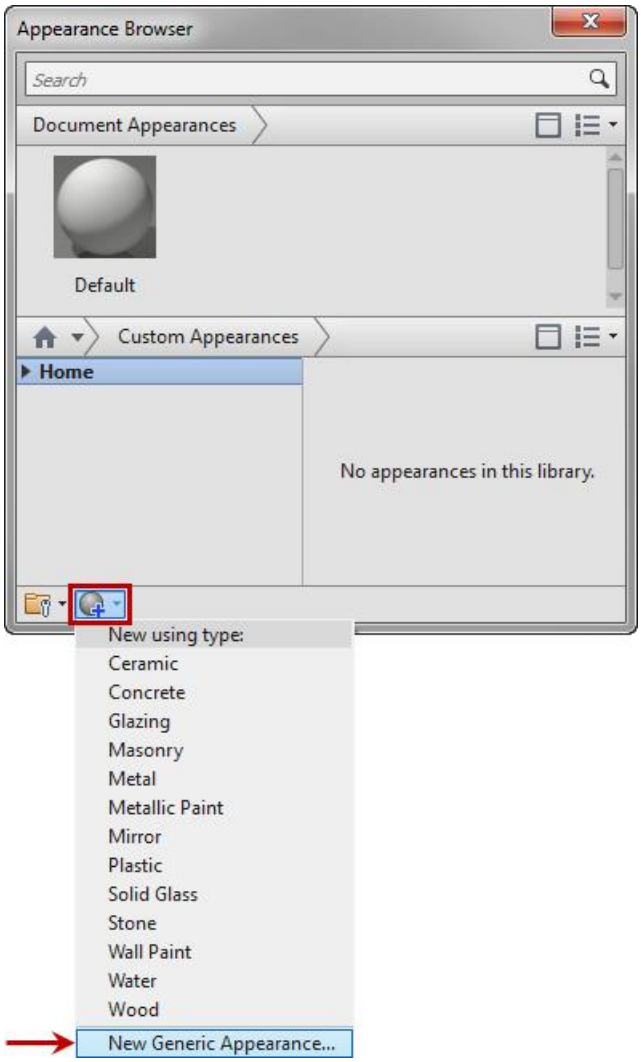


Creating a New Material and Appearance Override

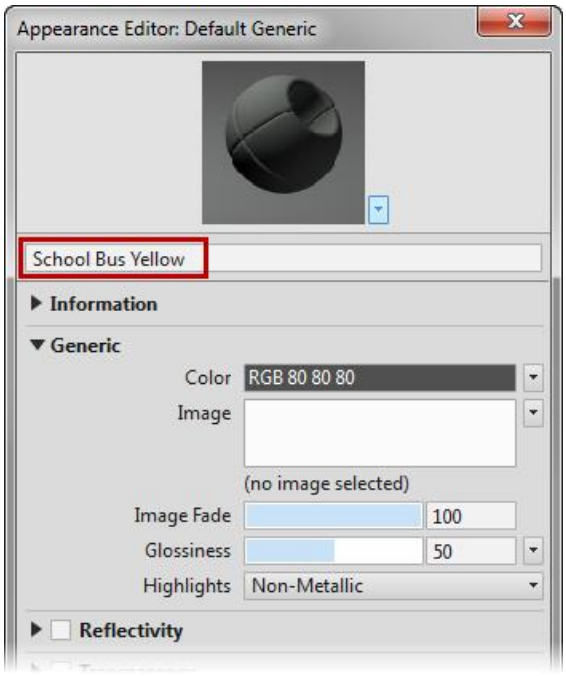
Create Appearance Style

- On the **Quick Access Toolbar**, click the **Appearance** tool

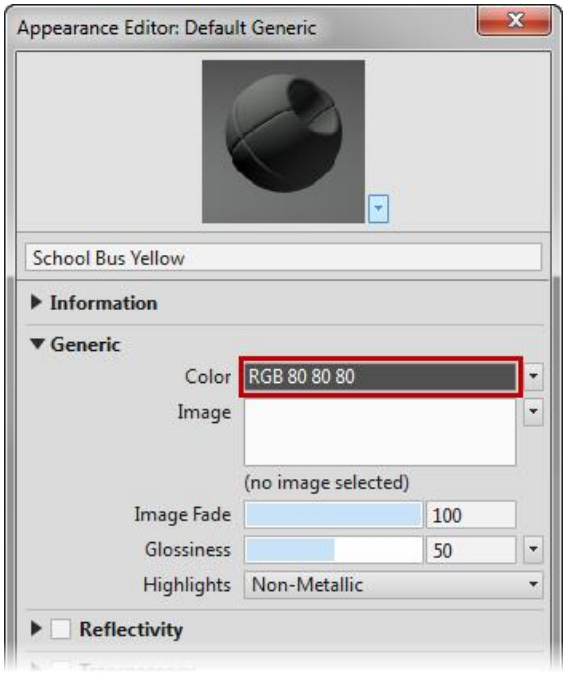
- Click the **Create Appearance** button in the lower left corner of the **Appearance Browser**.
  NOTE: The **New Generic Appearance** options give access to all Appearance settings



- In the **Appearance Editor** dialog box, edit the **Appearance** name:



- Edit the color by clicking on the RGB value:

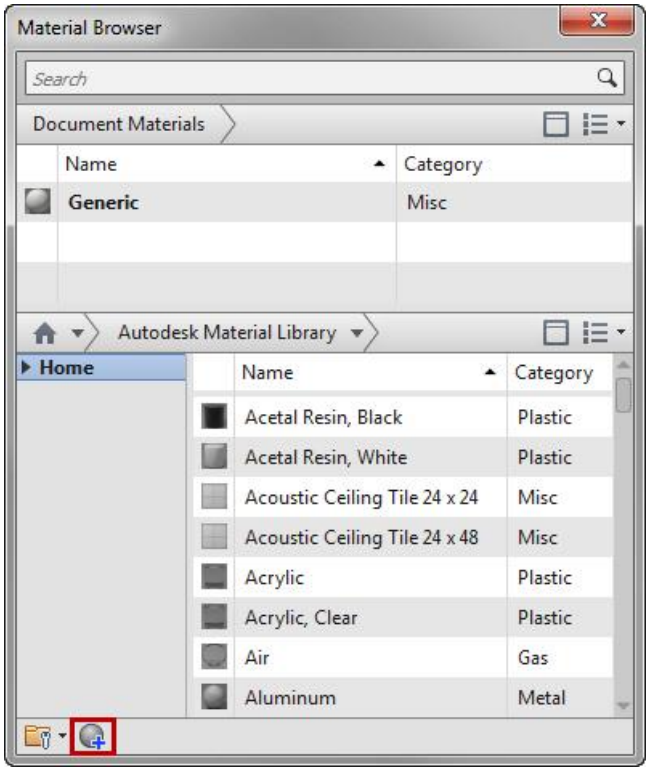


- Edit additional options as required.

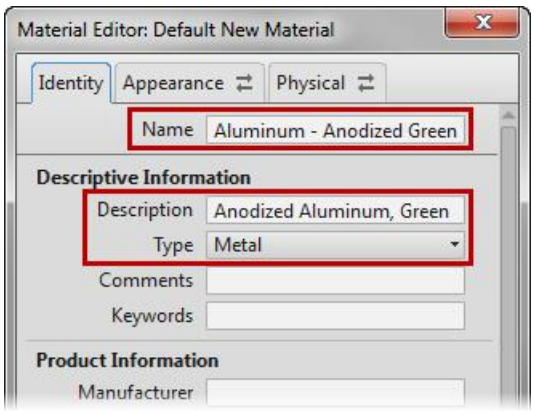
Create Material Style

- On the **Quick Access Toolbar**, click the **Materials** tool

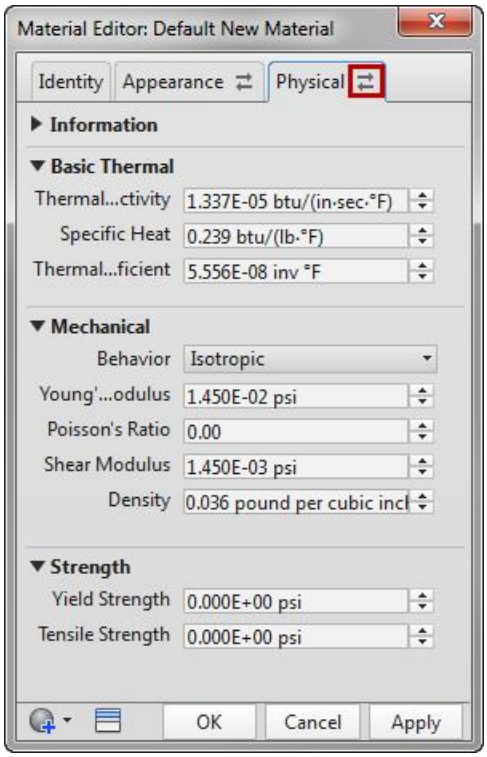
- Click the **Create Material** button in the lower left corner of the **Material Browser**.



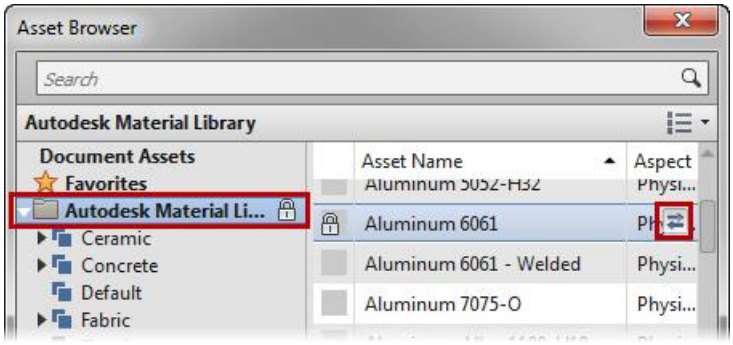
- In the **Material Editor** dialog box, edit the Identity information



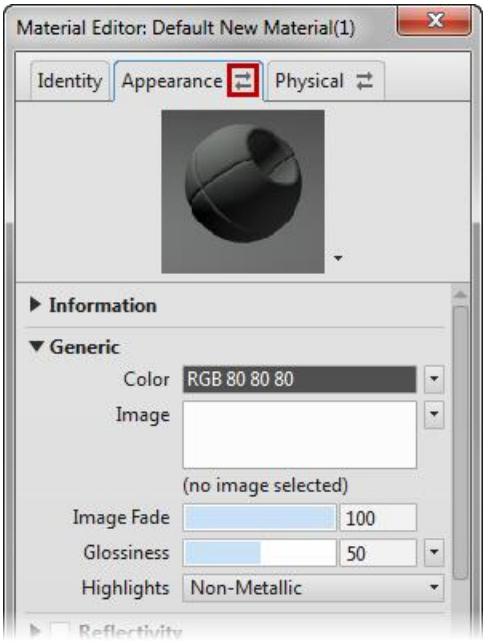
- In the **Material Editor** dialog box, on the **Physical** tab click the **Replace Asset** button to open the **Asset Browser**.



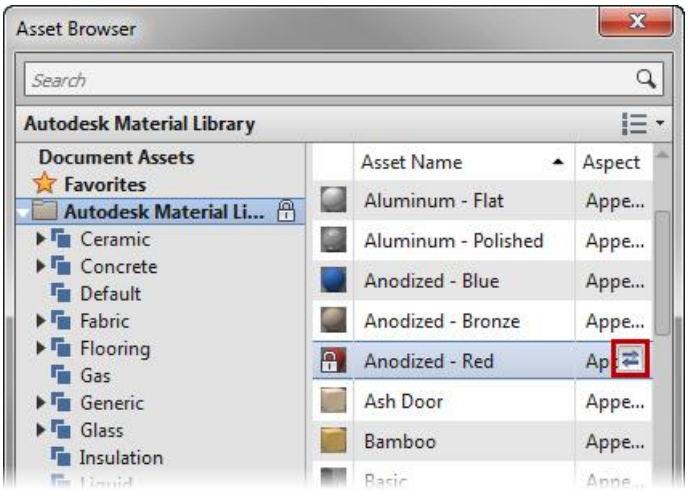
- In the **Asset Browser**, select a material asset, click the **Replace Asset** button.



- In the **Material Editor** dialog box, on the **Appearance** tab click the **Replace Asset** button to open the **Asset Browser**.

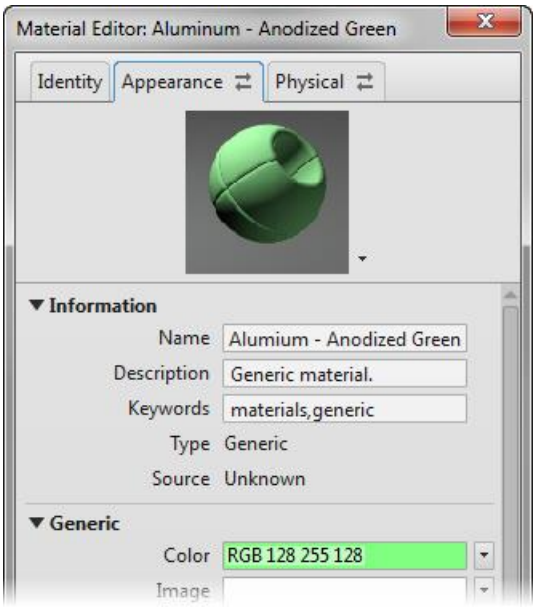


- In the **Asset Browser**, select a similar appearance asset to what is desired for the final style, click the **Replace Asset** button.



- In the **Material Editor** dialog box, on the **Appearance** tab click the RBG color swatch to edit the appearance color.

- In the **Material Editor** dialog box, on the **Appearance** tab enter a new appearance name:

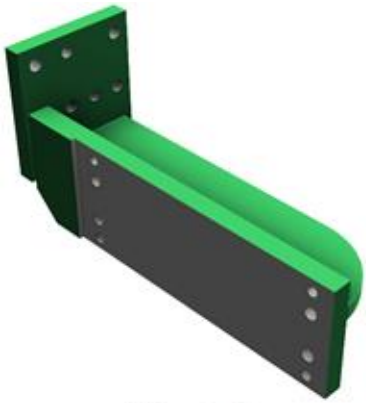


- Edit additional options as required.

Visual Styles and How They Affect Appearance Colors

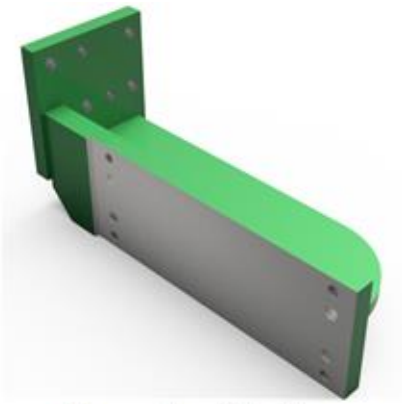
When creating appearance style colors one of the major factors that should be considered is the final lighting style which would be used in your final presentation. Changes in the lighting style can dramatically change the way the colors are displayed on your model. There are several predefined lighting styles located on the **Appearance** panel on the **View** tab.

Some of the image-based lighting styles, such as the lighting style *Photo Booth,* give some of the best color results that match the RGB values of the appearance colors.



Shaded (Graphics Window)

Realistic (Ray Tracing)



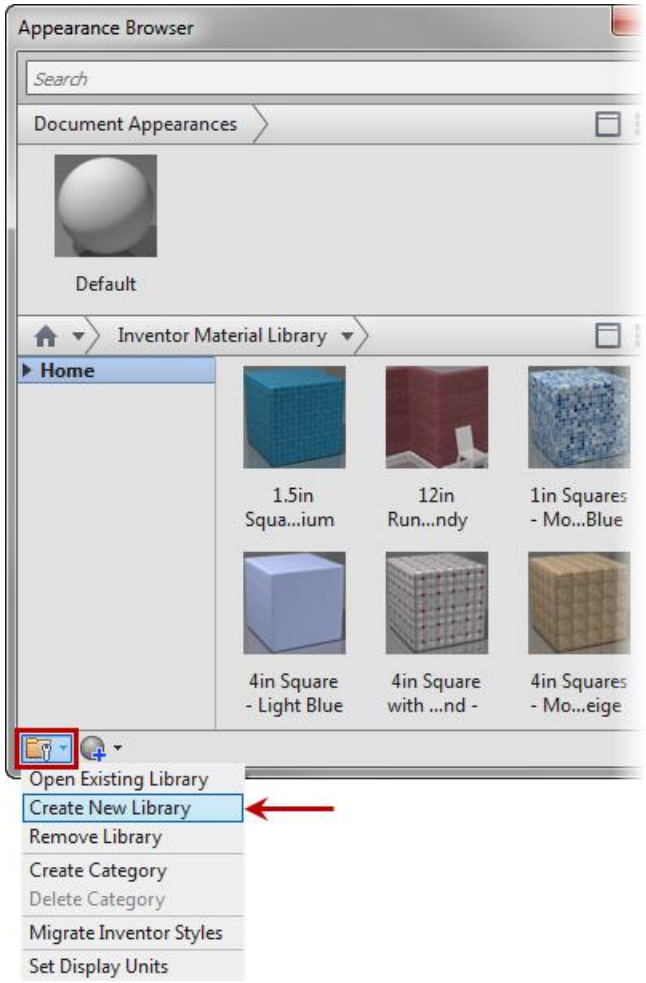
Inventor Studio (Photo Booth)

Creating and Sharing Custom Libraries

Create an Appearance Library

- On the **Quick Access Toolbar**, click the **Appearance** tool

- Click the **User Defined Libraries** button in the lower left corner of the **Appearance Browser.**
  - Select **Create New Library**

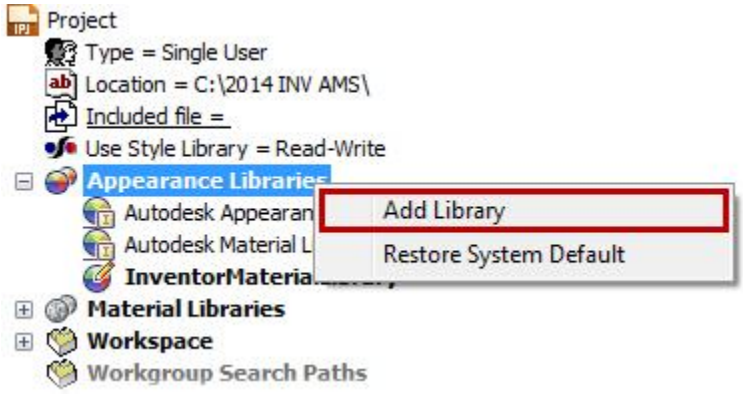


- In the **Create Library** dialog box, enter a file name for the new library and save the new library.

- Open the **Projects** dialog.
  Active the appropriate project.

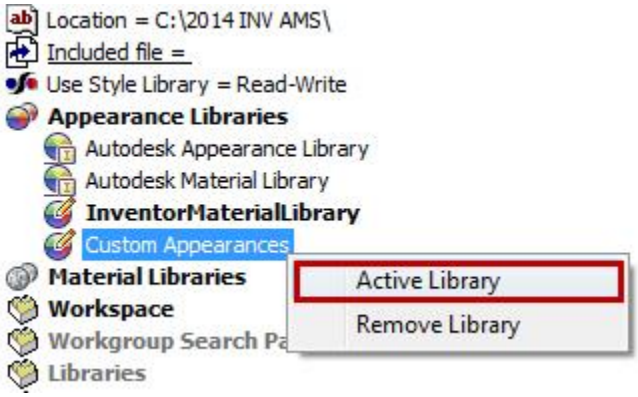
- Right click on **Appearance Libraries**

- Select **Add Library**



- Locate library file.

- Under **Appearance** Libraries, right click on the new library
  - Select **Activate**

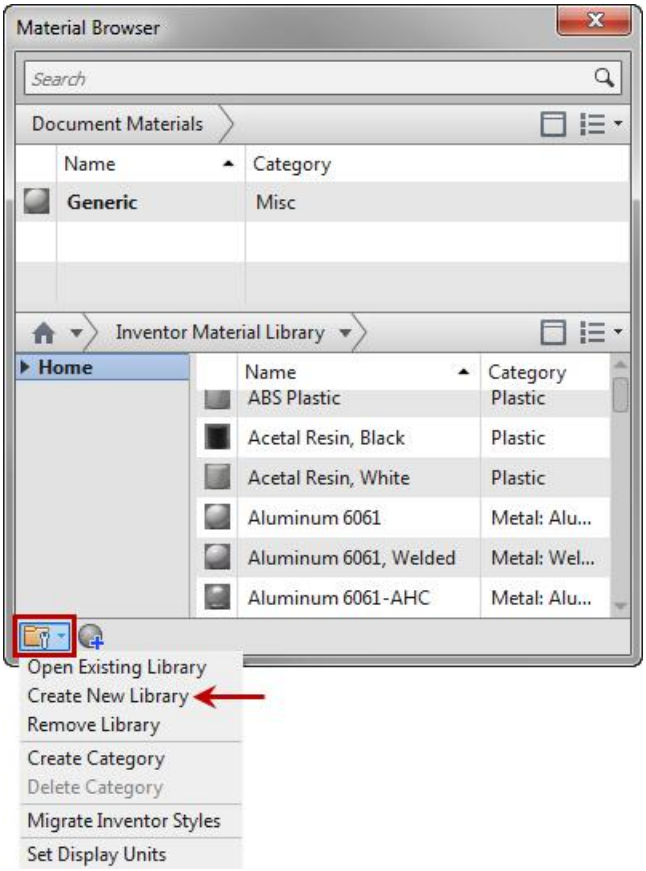


- Save the project

Create a Material Library

- On the **Quick Access Toolbar**, click the **Materials** tool

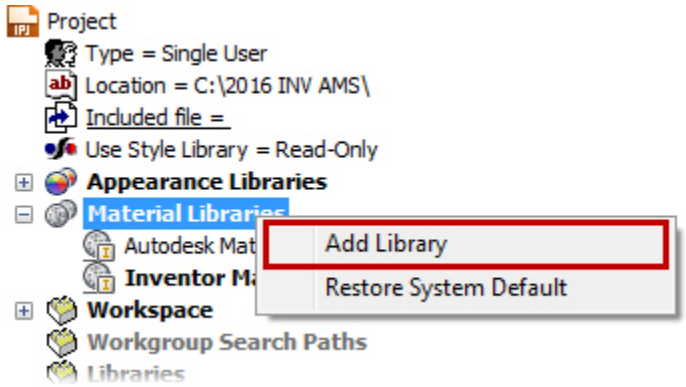
- Click the **User Defined Libraries** button in the lower left corner of the **Material Browser**.
  - Select **Create New Library**



- In the **Create Library** dialog box, enter a file name for the new library and save the new library.

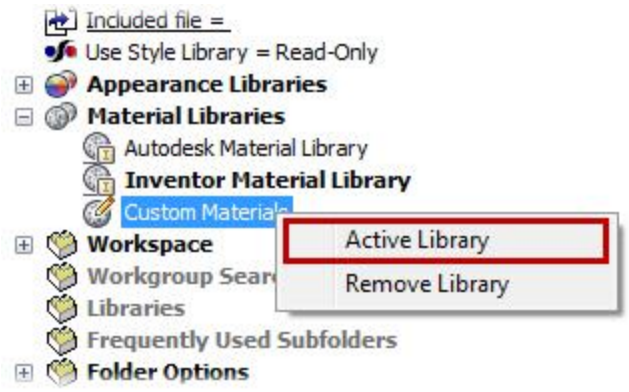
- Open the **Projects** dialog.
  Active the appropriate project.

- Right click on **Material Libraries**
  - Select **Add Library**



- Locate library file.

- Under **Material Libraries**, right click on the new library
  - Select **Activate**



- Save the project

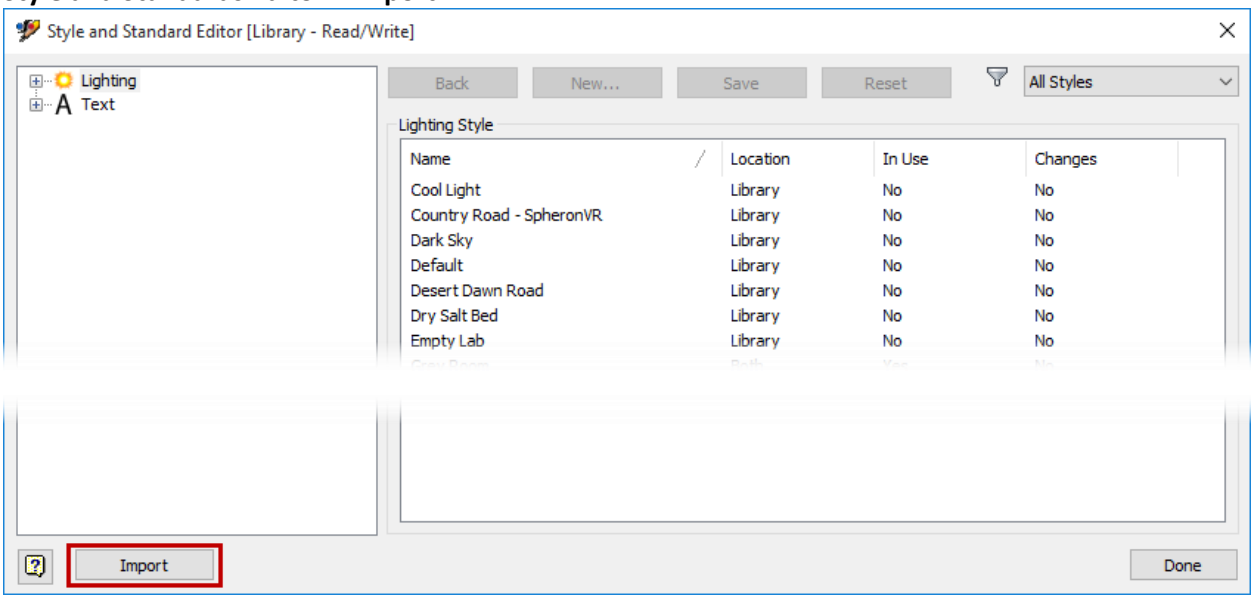
Migrating Legacy Styles to Generic Type

Import legacy colors from Inventor 2012 or older
**.styxml*

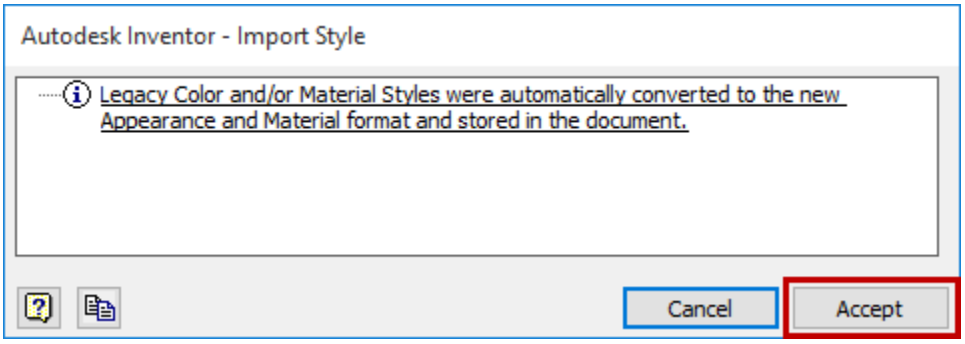
Example Style Export from Inventor 2012
INV2012-DefaultStyles-Colors.styxml

Open a New Part File

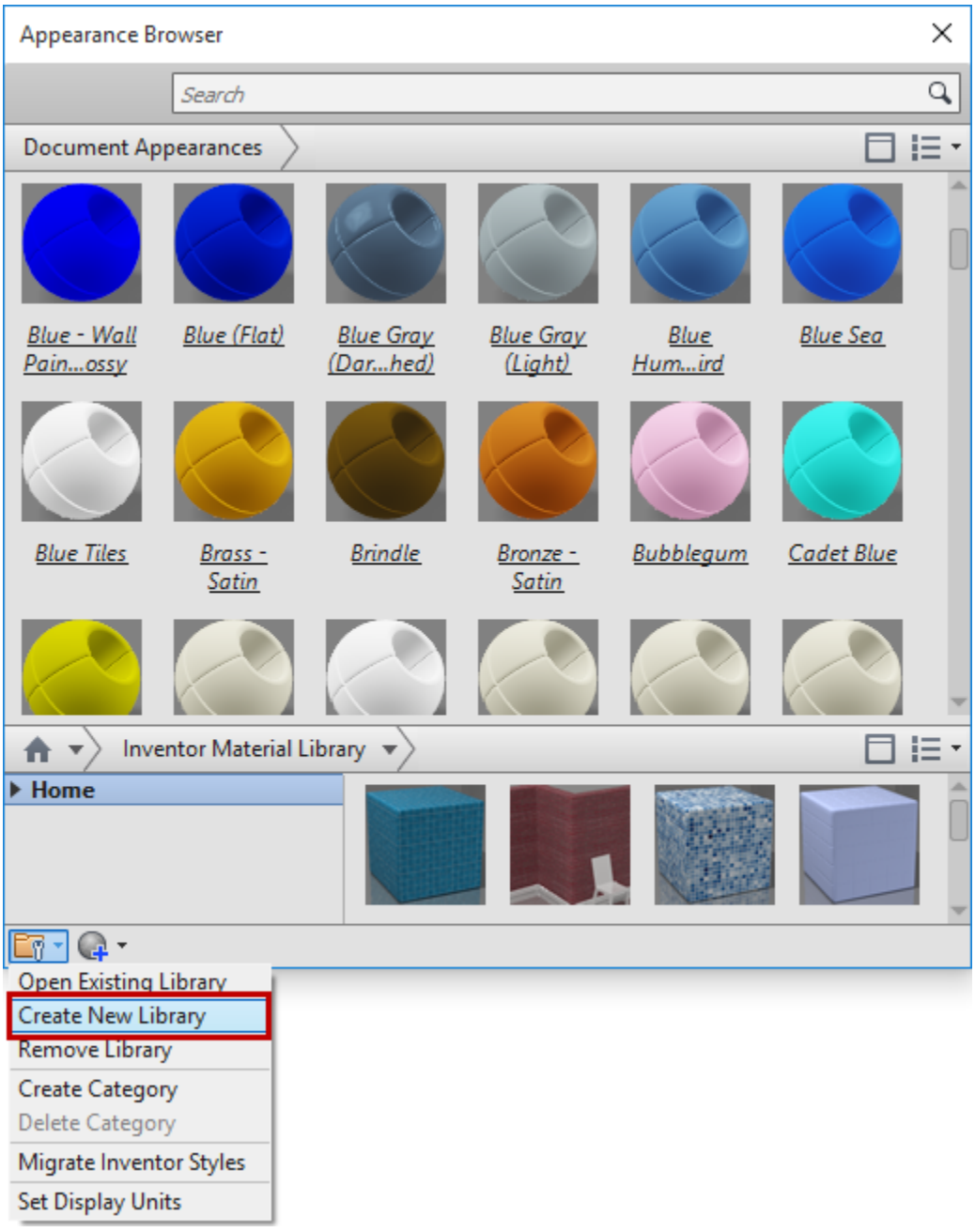
Style and Standards Editor > Import



Accept conversion notice.

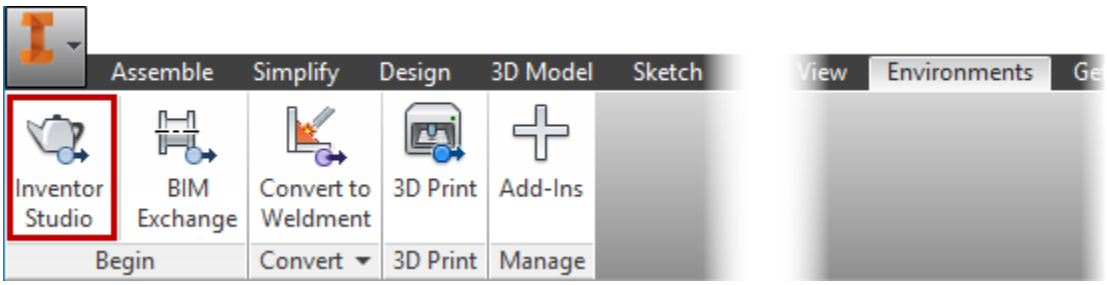


Imported Appearances are show in the **Appearance Browser** as **Document Appearances**.
Create a **New Library** and all the **Document Appearances** to the Library for use in other models.



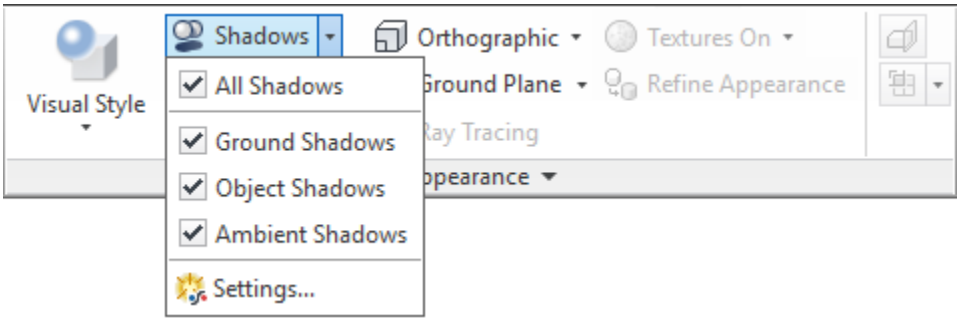
Create a Quick Professional Looking Rendering

Enter the **Inventor Studio** Environment once you have applied all the appearances you want for your models. Note that all recommendations below are suggestions, you may need to adjust some settings to fit your model and the type of image you want to create.

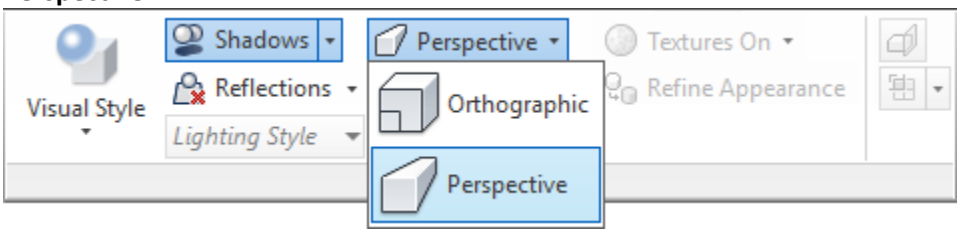


On the **View** panel, use these recommended settings

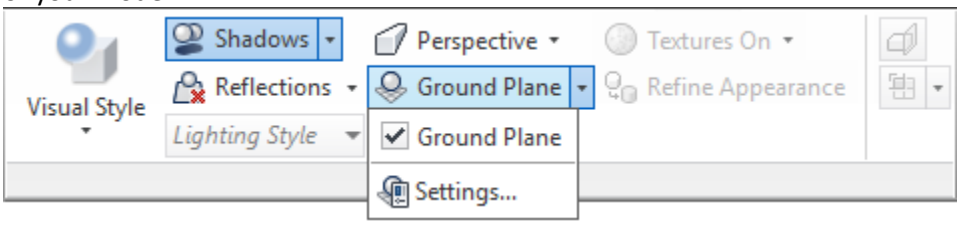
All Shadows On



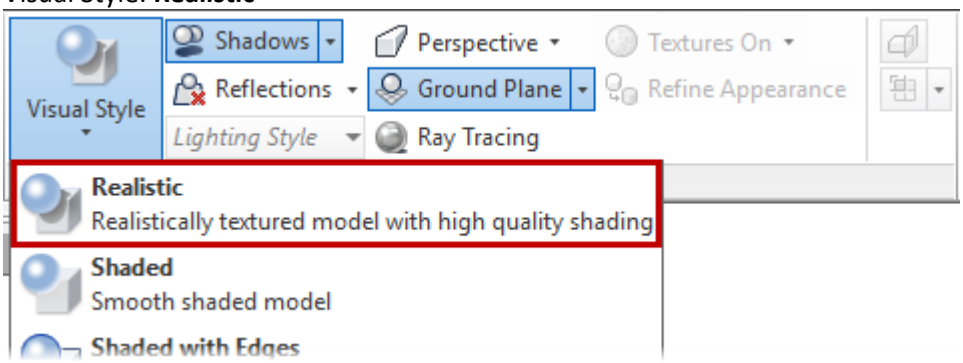
Perspective



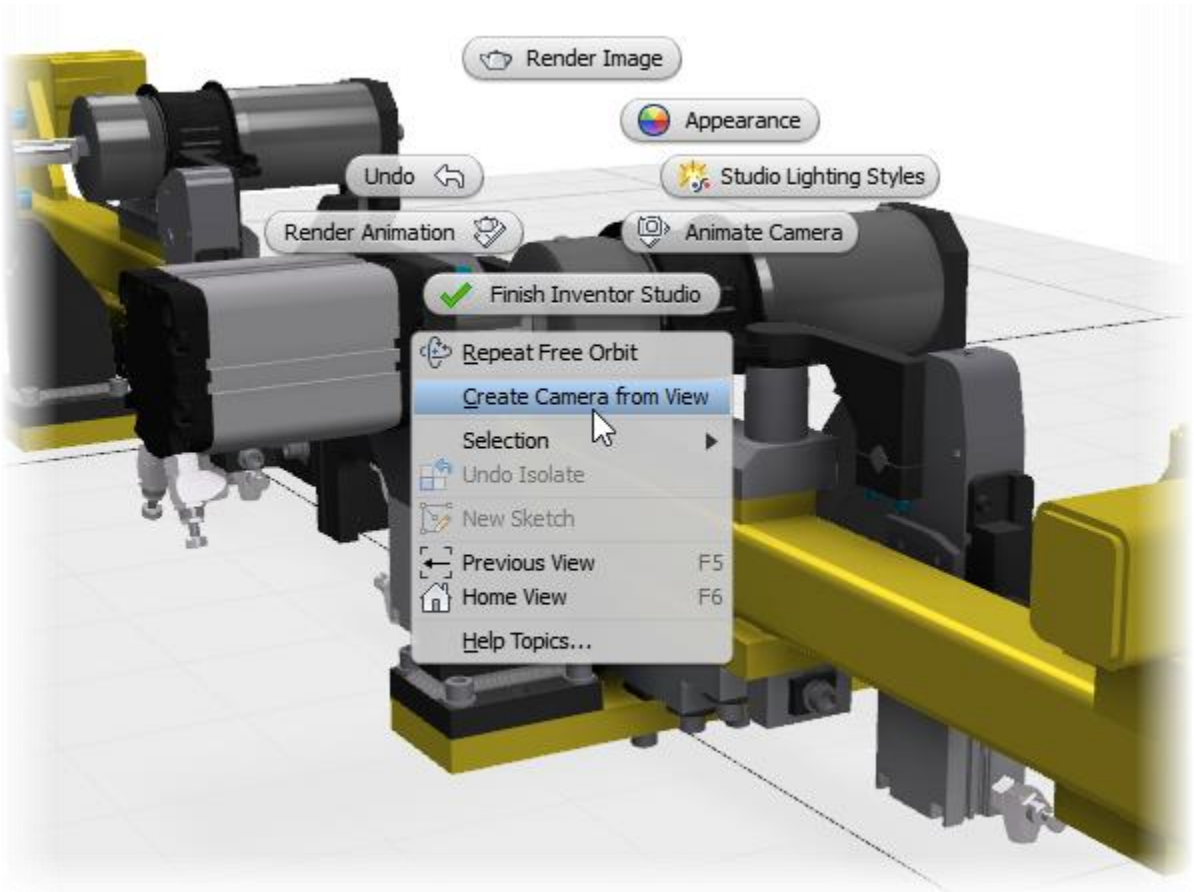
Turn On **Ground Plane**. You may need to adjust the ground plan position depending on the orientation of your model.



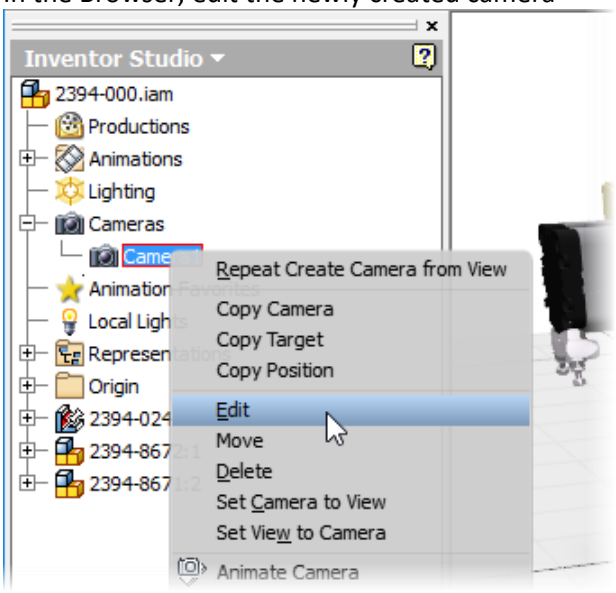
Visual Style: **Realistic**



Position your model in the Graphics Window as required, and then select **Create Camera from View** on the **Marking Menu**.

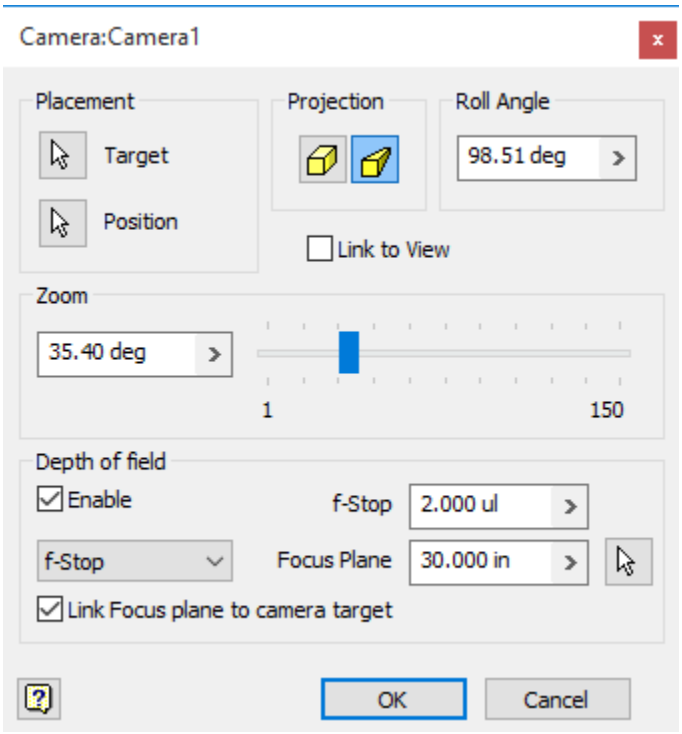


In the Browser, edit the newly created camera

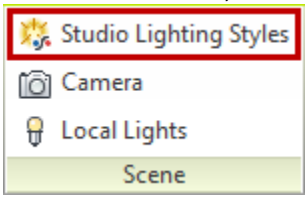


On the Camera dialog box:

- Enable **Depth of Field**
- Enable **Link Focus plane to camera target**
- Select **f-Stop**
- Set **f-Stop** to *2.00 ul*
- Adjust **Focus Plane** as required

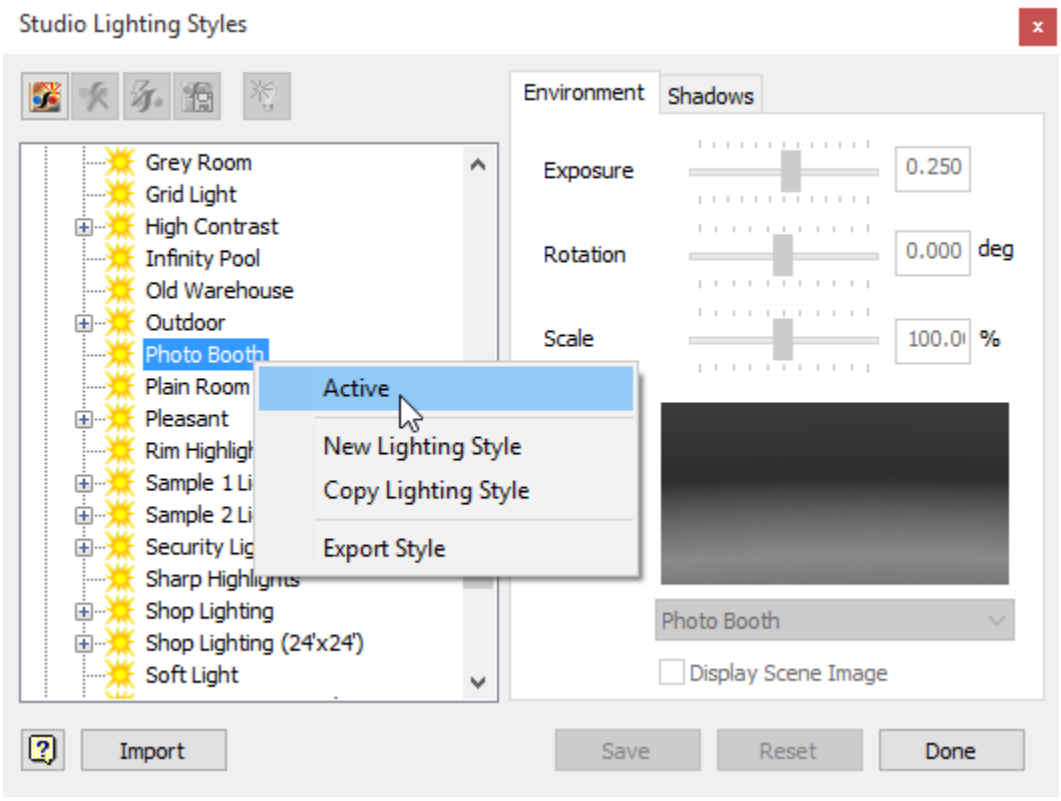


On the **Render** tab, in the **Scene** panel, select **Studio Lighting Styles**

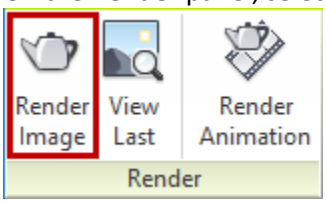


On the **Studio Lighting Styles** dialog box
Right-Click on ***Photo Booth*** and select **Active**

Note: The **Studio Lighting Styles** are **NOT** the same and a Lighting Styles available on the View panel

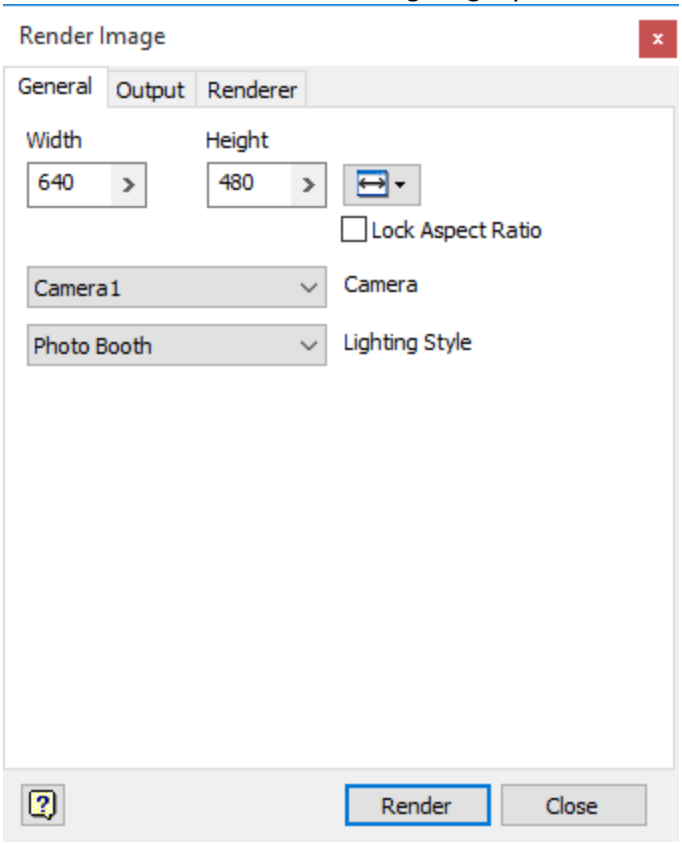


On the **Render** panel, select **Render Image**



On the **Render Image** dialog box **General** tab

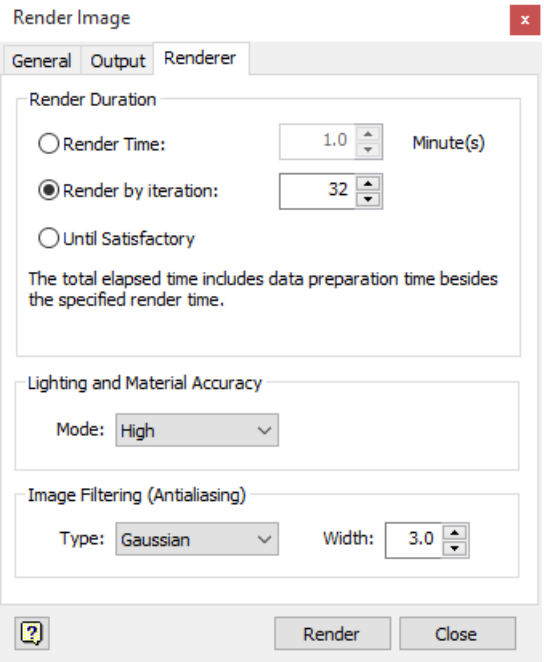
- Set you image size a required
- Select your created Camera
- Insure the **Photo Booth** Lighting Style is active



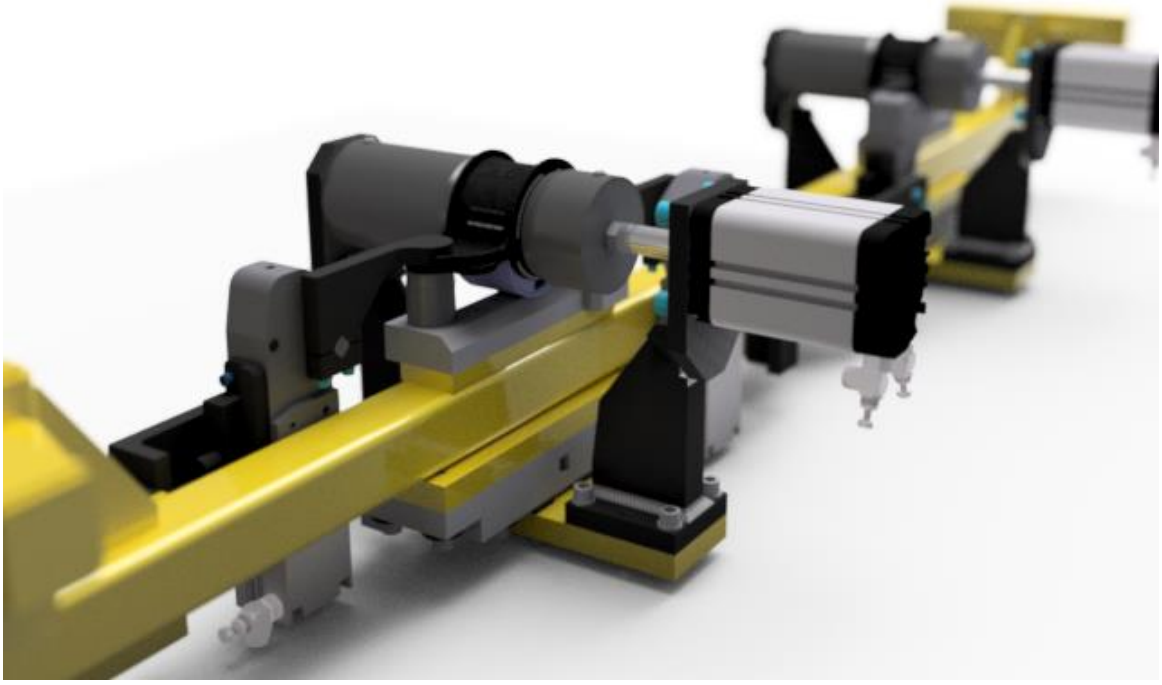
On the **Render Image** dialog box **Render** tab

- Set the number of iterations

The higher number of iterations, the better the image.
Also note that a higher number of iterations will take much longer to render also.



Render your image



Additional Information

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