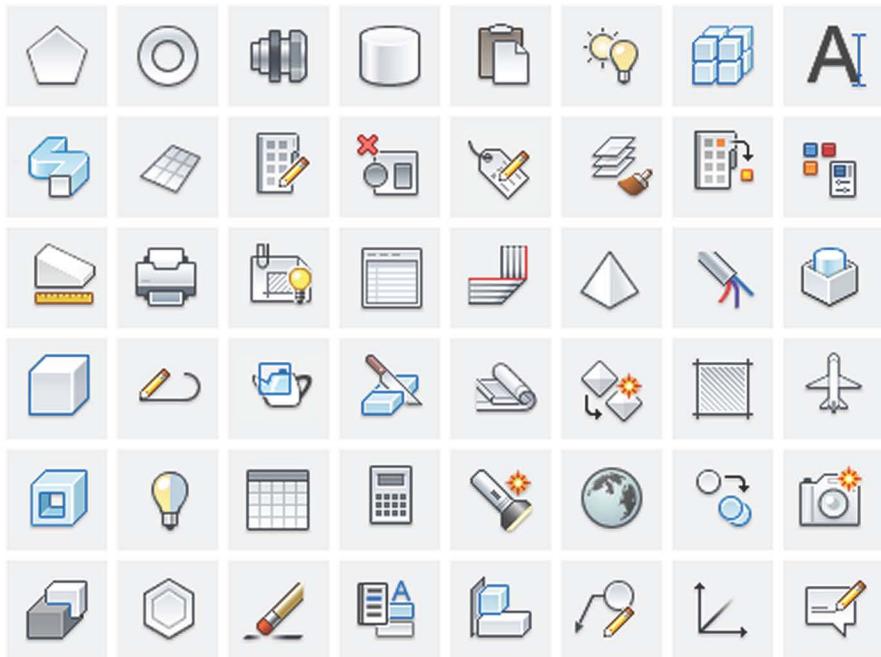


Autodesk Icon Guidelines

Autodesk®

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Autodesk Icon Guidelines

Introduction

The Goals of the System

The Autodesk icon system is designed to accomplish four goals

1 Be Easy on the Eyes

Our customers spend a lot of time staring at their applications. The icons should not become annoying or tiring to look at over time.

2 Icons Will Not Overpower the Canvas

These icons surround a canvas area that should be the focus of the user's attention. We don't want the icons to compete with the design data.

3 Simplicity is Better

Our icons should be as simple as possible. This reduces the amount of overall screen noise. It also avoids making our applications look needlessly complex.

4 Have a Distinctive Style

Our icons should share a distinctive style. They should be identifiable as 'Autodesk icons.' They should look like they belong to the same family of products.

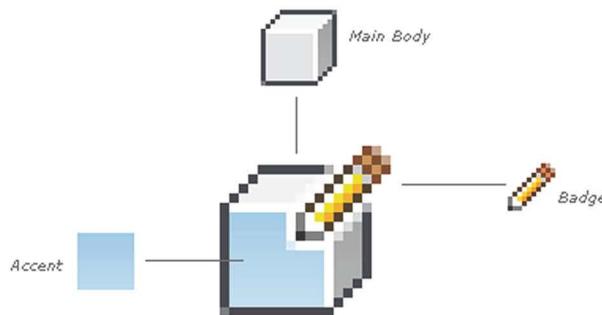
What is represented in this document will serve as a foundation for the Autodesk system. Additions that enrich the system will be made as we serve the needs of each application.

Autodesk Icon Guidelines

Elements of an Icon

The Basic Elements of the System

The foundation of our icons is the main body. Accents and badges enhance their meaning in a systematic way.



Main Body

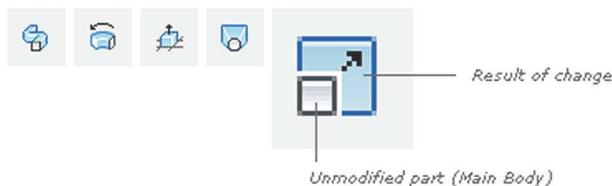
The main body is the basic shape of an icon. It can be thought of as the background on which more vibrant elements sit. Some icons only have main body such as the scissors icon for cut.



Accents

Accents are spot color or an overlay that is applied to main body to enhance meaning and communicate change. Accents include pre- and post states, selection, badging, and grouping. A small set of colors are reserved to communicate specific types of operations.

Blue is reserved for modification operations to show the result of each operation.



Green is reserved for selection operations.



*Additions that enrich the system will be made as we serve the needs of each application.

Autodesk Icon Guidelines

Elements of an Icon

Badges

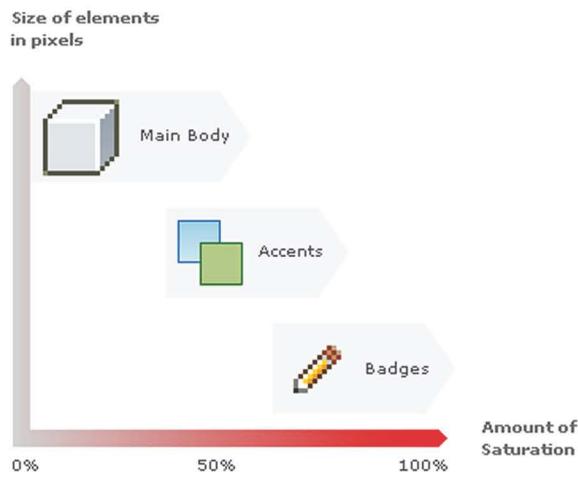
Badges are separate elements laid on top of elements below. In addition to verb-noun pairs, badges enable icon designers to create implied verb-noun pairs such as create new layer.



Autodesk Icon Guidelines

Color

The amount of color saturation which is applied to the icon elements depends on the pixel real estate the element covers. The smaller the element gets the more saturation is applied.



Example: the main body is rendered in grayscale with a hint of blue. Why? A neutral background allows more meaningful color logic elements to 'pop' and allows the mass of the icon to be more neutral so it competes less with the canvas area.

Example: badges are very small and therefore are the most vivid part of an icon. Why? Since badges are small, they require high contrast to show up.

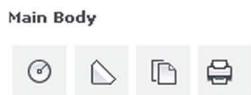
Pick the right color

There are color values for various objects and situations. Make your choice for each element in the icon within the three numbers below. Each combination has unique color values which can be found in the section below.

Note: the color section will expand as we fulfill the product specific needs of each application.

1. Main Elements:

The object to be drawn is either a:



There are special rules for real world items like: printer, pencils etc.



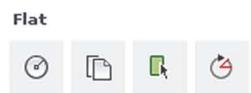
Accents are sub sorted into:
1. Pre & Post States
2. Selections
3. Surface & Nodes, etc.



All badges are predesigned.

2. Dimension:

The element to be drawn is either:



Autodesk Icon Guidelines

Color

3. Standard or Variation Color

Standard

1. The main real estate of the icon must be rendered in the standard gradient.



Variation

1. Use color variations if you need to create a separation between two objects - which is not covered by an accent.



1. Use color variations as starting point for more sophisticated renderings. Anyhow, the main real estate of the icon must be rendered in the standard gradient.



3. There are no variations for accents and lines.

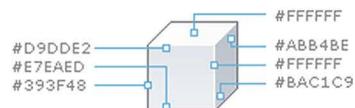
Main Body

Standard Color

Flat:



Three Dimensional:

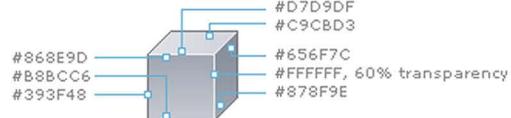


Variation Color

Flat:



Three dimensional:



Standard Lines, Outlines and Arrows



Autodesk Icon Guidelines

Color

Real World Items

- Additional colors may be used in real world items (real world items are: printer, pencil, book etc.). Avoid unnecessary color - use only if they help to translate the metaphor of the icon.



*Note: only the printed page gets additional color.
There is no need to colorize the printer as the metaphor is already clear*

- Not more than two additional colors (beside the grayish standard color) within an icon may be used.

- The two additional colors can be picked from the entire color spectrum; however, they need to be highly desaturated - similar to the examples below - and they must never be more saturated than accents or badges.



Accents

Pre and Poste State

Flat:

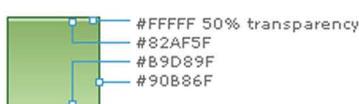


Three Dimensional:

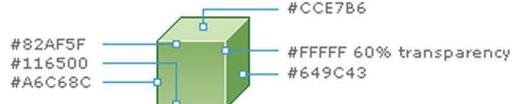


Selections

Flat



Three Dimensional



Surfaces, Nodes

Flat



Autodesk Icon Guidelines

Color

Welded Connections, REM Images, Interferences, Intersections

Flat



Soldered Connections

Flat



Other

Line Highlights & Post States,
Secondary Arrows, Selected Dots



#3399FF
#3399FF

Maskings



#393F48
#C9E8EB

Wires



#DE1F1F

Constraints, Snap-Points/Lines, Cuts



#BD2D1E

Highlights



- Use color variation fill
- Use pre & post accent only if the variation color doesn't supply enough contrast.



These color values are a starting point. It is important to design icons either side-by-side on one page or in context. You may need to adjust the values to achieve visual consistency. See the good practice section for designing visually balanced icons.

Autodesk Icon Guidelines

Color

Other

Line Highlights & Post States,
Secondary Arrows, Selected Dots



#3399FF
#3399FF

Maskings

Wires

Constraints, Snap-Points/Lines, Cuts



#393F48
#C9E8EB

#DE1F1F

#BD2D1E

Highlights



- Use color variation fill
- Use pre & post accent only if the variation color doesn't supply enough contrast.



These color values are a starting point. It is important to design icons either side-by-side on one page or in context. You may need to adjust the values to achieve visual consistency. See the good practice section for designing visually balanced icons.

Indicating Status

Status colors represent meanings people have learned and are considered common associations for established symbols.

When applying color to status symbols, follow the saturation rule at the top of this page: larger pixel areas have less amount of saturation and smaller areas have a greater amount of saturation.



= Go, ok, confirm, current



Outline: #35880D (32x32 and larger)

Fill: #47B911



= Warning, caution, non-critical issue



Outline: #726935

Fill: #FFE200



= Stop, delete, terminal issue



Outline: #9A0700

Fill: #FF6C64



These color values are a starting point. It is important to design icons either side-by-side on one page or in context. You may need to adjust the values to achieve visual consistency. See the good practice section for designing visually balanced icons. For icons that are 24x24 and smaller, you may need to increase the saturation to give the status icons plenty of contrast.

Autodesk Icon Guidelines

Lighting

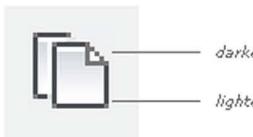
The common light source is always directly above the icon. (Except spheres, cylinders and other three-dimensional rounded objects)



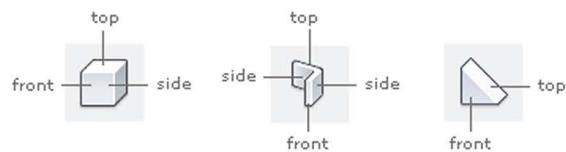
To achieve this use the following techniques:

Surface Fills

1. Flat objects: fills are lightest at the bottom and get darker toward the top. For exact color values refer to the color section



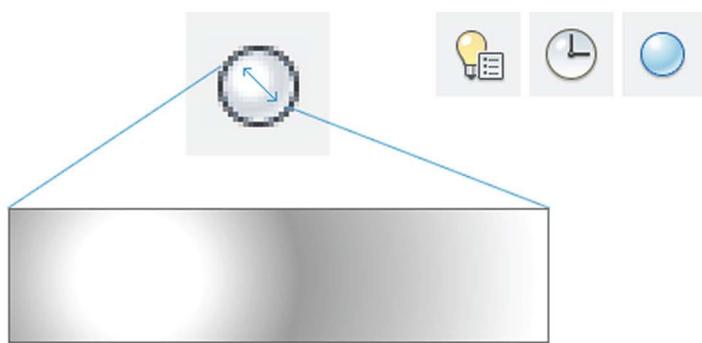
2. Three dimensional objects: use lightest fill for top facing areas, mid gradient for front facing areas and darkest gradient for both sides.



3. Real world objects only: the direction of the gradients can be reversed to achieve more realistic rendering.



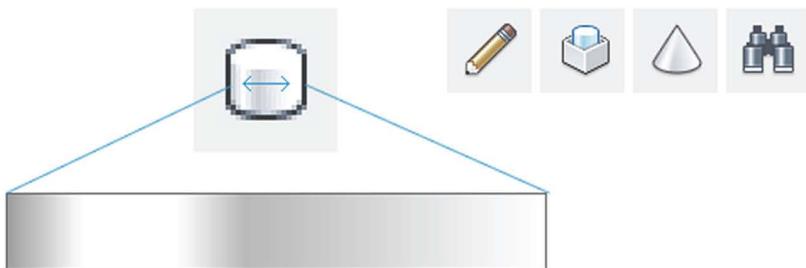
3. Sphere like objects only: The icon light source originates from the top-left of the icon. Apply a 45 degree gradient from top-left to bottom-right. Use the following gradient scheme:



Autodesk Icon Guidelines

Lighting

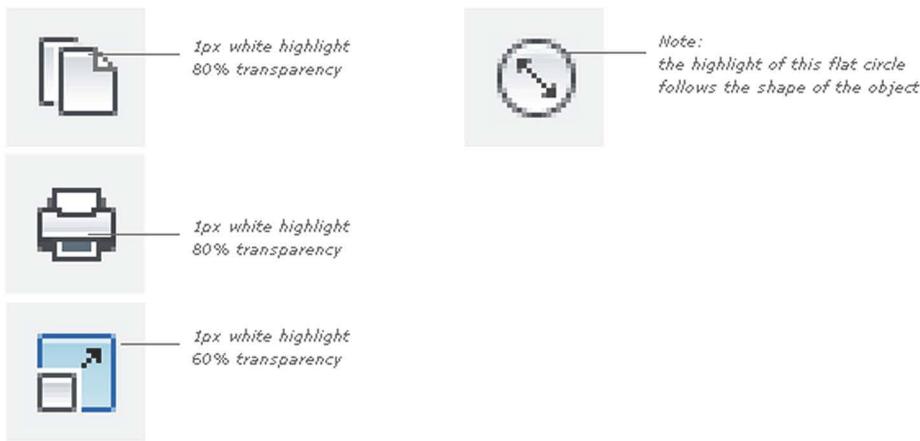
4. Cylinder like objects only: the icon light source originates from the left of the icon. Apply a horizontal gradient. Use the following gradient scheme:



These surface fill rules apply to all icon sizes.

Highlights

- 1 Add a white 1px highlight at the darker end of the surface gradient.
2. For exact color and transparency values refer to the color section



These highlight rules apply to all icon sizes.



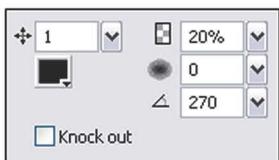
All values on this page are a starting point. It is important to design icons either side-by-side on one page or in context. You may need to adjust the values to achieve visual consistency.

Autodesk Icon Guidelines

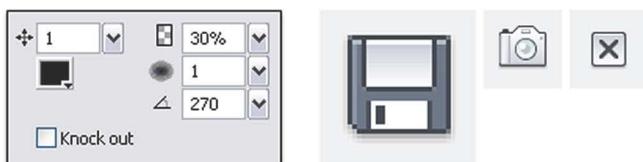
Shadows

1. Do not apply shadows to icons equal to or smaller 16x16px.

2. 24x24px icons use the following Adobe Fireworks preset:



3. 32x32px and larger icons use the following Adobe Fireworks preset:



**Presets for other products will be delivered soon.*

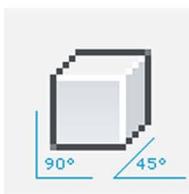


All values on this page are a starting point. It is important to design icons either side-by-side on one page or in context. You may need to adjust the values to achieve visual consistency.

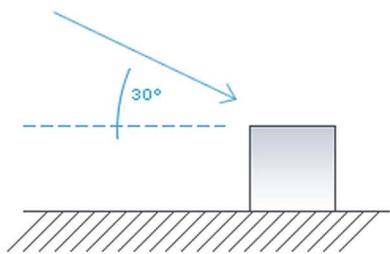
Autodesk Icon Guidelines

Perspective

1. Icons are rendered with a flat plane perspective without dimensional distortion.



2. If there are no defining flat planes available, as in cones or cylinders, draw the object head-on looking at the top of the object from a 30° angle.



Sideview



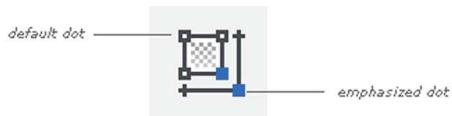
All values on this page are a starting point. It is important to design icons either side-by-side on one page or in context. You may need to adjust the values to achieve visual consistency.

Autodesk Icon Guidelines

The Autodesk Icon Style

Dots & Vertices

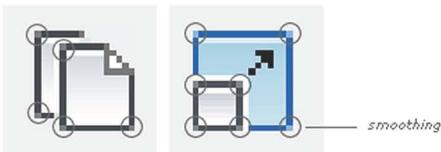
Default vertices have a white fill with a 1px outline. Modified, changed, emphasized and new vertices use a solid blue accent.



Applies to all icon sizes.

Corner Smoothing

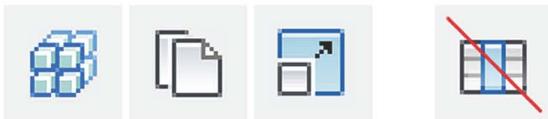
1. Decrease the transparency of outer 90 degree corners by 30%.
2. Applies to all elements
3. Do not apply to objects which are smaller than 6x6 pixels



Applies to all icon sizes.

Outlines

1. All primary outline forms within an icon and its elements are rendered with a dark 1px outline.
2. Never use a color gradients within an outline.



Applies to all icon sizes.

Anti-Aliasing

1. Draw 45°, 30°, 10° angles when possible. These angle produce the sharpest lines possible.
2. Use the "Draw Crisp Outlines" technique described below
3. Adjust the color to achieve visual consistency.

16px icons:

1. Filled shapes only: Apply anti-aliasing to lines other than multiples of 45 degrees, non straight lines and circles larger than 5px.
2. Line icons only: Apply anti-aliasing to all lines, and circles larger than 5px.



No anti-aliasing

Anti-aliasing in icons with filled shapes

Anti-aliasing in line icons

24x24 and larger icons:

Always apply anti-aliasing.

Tip: use the following Adobe Firework's technique to quickly produce thicker anti-aliased lines:

1. Create a copy of the anti-aliased line on top of the initial line to achieve darker and thicker lines.
2. Add a non anti-aliased line on top of the anti-aliased line for crispness.



Example.: for the red line: 2 layers of anti-aliased lines plus one layer of a non anti aliased line is used.
For the grey line: 1 layer of anti-aliased line plus one layer of a non anti aliased line is used.

Autodesk Icon Guidelines

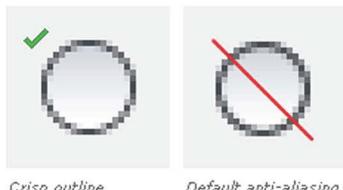
The Autodesk Icon Style

Draw Crisp Outlines

An anti-aliased border on a single solid object is not crisp enough. Rounded outlines or objects containing lines other than 45°, 30°, or 10° angles should be manipulated so they look as crisp as possible.



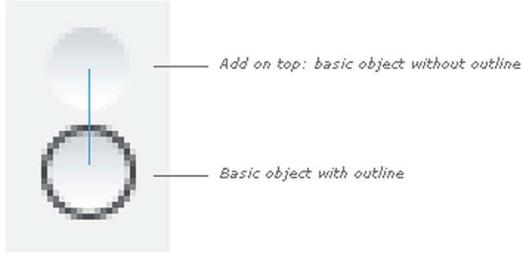
Typical forms that need to be manipulated



Crisp outline Default anti-aliasing

Here is a technique for creating crisp outlines:

1. Create the basic shape with outline
2. Add a copy of the fill without the outline on top



3. Adjust the brightness of the outline to achieve an equally strong footprint compared to other icons
4. Adjust the transparency of the fill on top to show more of the outline underneath and therefore smoothen the outline a bit more.

Soft white outline Hard white outline

Make subtle Gradients in Mappings

1. Mappings are faded towards their button. Use the following values as starting point. Anyhow you may/need to change this value to visually match the icons below.



Autodesk Icon Guidelines

The Autodesk Icon Style

Make subtle Gradients in Mappings

1. Mappings are faded towards their button. Use the following values as starting point. Anyhow you may/need to change this value to visually match the icons below.



Disabled States

When an operation is not available, the icon appears disabled. This is done programmatically most of the time. However, there may be areas of an application where disabling the icons programmatically is not possible. In this case, the developers will require an image swap. The icon designer will provide the Disabled icon.

Active icons



Disabled Icons

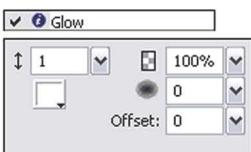
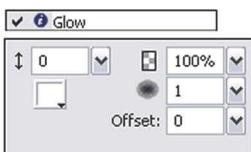


Overlying Elements

1. Separate elements sitting on top of each other should be separated with a 1px white, anti-aliased line with 80% - 90% transparency.



Tip: use the following Adobe Firework presets to quickly produce a white outline around an object.



Soft white outline

Hard white outline

Dashed Lines

1. Use a 2px on + 1px off dashed line not 1px on + 1px off for all dashed lines.



Applies to all icon sizes.



All values on this page are a starting point. It is important to design icons either side-by-side on one page or in context. You may need to adjust the values to achieve visual consistency.

Autodesk Icon Guidelines

Format and Size

Size

Most icons that are used within Autodesk products need to be rendered in 16x16px and 32x32px - 72 pixels/inch. Please confirm with the appropriate developers.

Format

Most icons that are used within Autodesk products use combined ICO files. Please check with the appropriate developers which of the following scenarios applies:

- A1) Both icon sizes need to be combined into a single ICO file.
- A2) Separate ICO files for each size are needed.

B) A different file format and/or sizes are needed.

Autodesk Icon Guidelines

Consistency and Quality

All values and rules are starting points. It is important to design icons either side-by-side on one page or in context.

1. Compare Icons to achieve Consistency and Quality

1. Design icons according to the given rules and values.

2. Compare the icons with the set below.



3. Check:

Overall

- Is the icon readable?
- How strong is the contrast and overall brightness compared to other icons?
- Are the right colors used? Is color needed at all?
- How strong is the saturation of color compared to other icons?
- Does the thickness and darkness of outlines match other outlines?
- Are all anti-aliased shapes crisp enough?

Details:

- Are all elements clearly separated?
- Are all corners rounded?

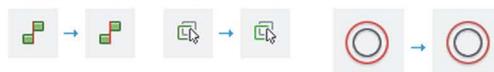
2. How to adjust the Icon to achieve Consistency and Quality

You may need to adjust the given rules and values to achieve visual consistency.
Examples:

Raising contrast



Raising or lowering saturation of colors



Losing edge highlights in small objects



Altering position and shape of badges



Separating elements



Improving Crispness



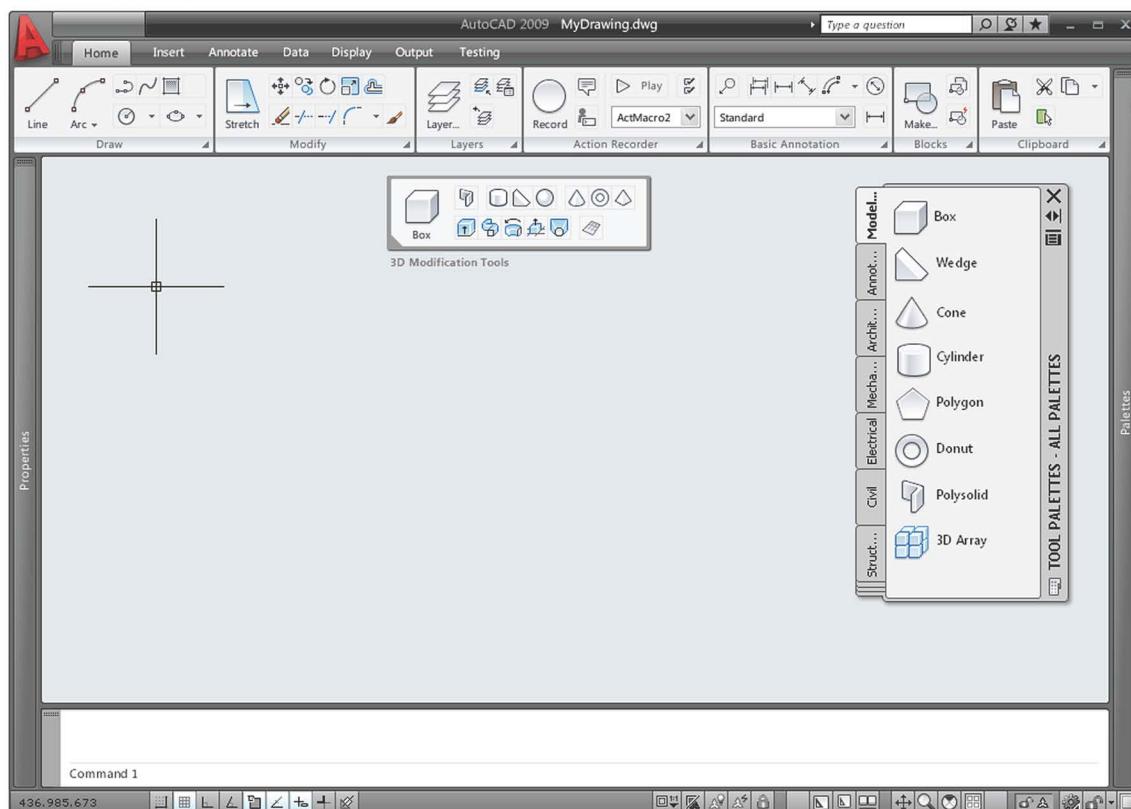
Changing line thickness



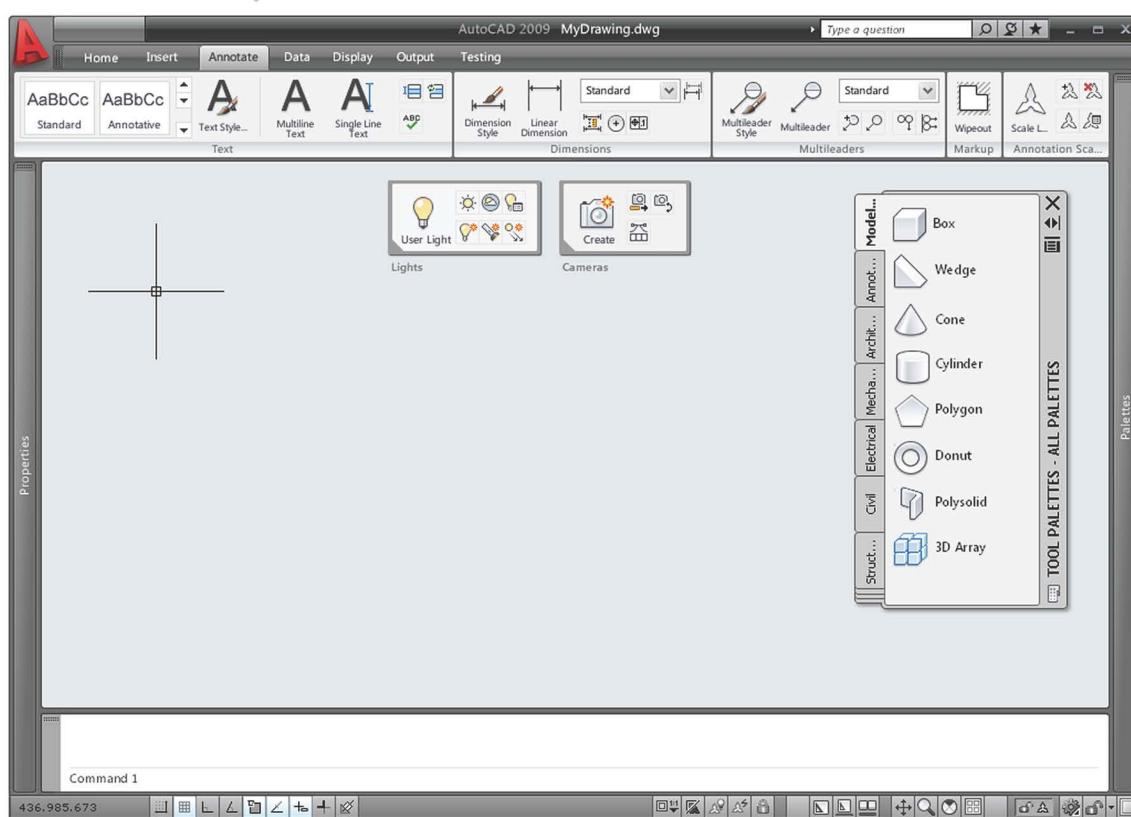
Autodesk Icon Guidelines

Icons in Context

ACAD Default Tab with floating Palette



ACAD Default Annotation Tab with floating Palettes



Autodesk Icon Guidelines

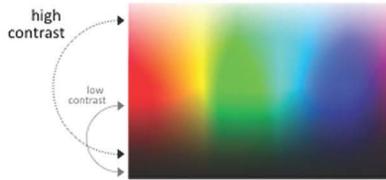
Good Icon Design Practice

This section presents a few good practices developed by the Visual Design Group.

Contrast

Exaggerate differences in lightness between foreground and background colors and avoid pairing colors with similar lightness — even if they differ in saturation or hue. Don't assume that what you perceive is the same as people with color deficiencies. It may be good practice to take your design and increase the contrast by 2%-5%.

- Avoid low contrast color combinations such as Yellow on white or dark red on black.
- Avoid pairing 'hot' colors with 'cool' colors. Hot colors like red paired with a cool color like blue creates a false impression of depth.
- Use as few colors as possible. the Autodesk Icon system intentionally uses a striped down color palette which allows for the effective addition of key colors that are a part of the icon color language.



Designing for People with Color Deficiencies

About nine to twelve percent of the male population suffers from some form of color vision deficiency. It is important for the Icon Design Project to take into account and reduce, or eliminate if possible, any potential confusion that can arise because of color vision deficiencies.

There are two major types of color blindness. The most prevalent causes are confusion between red and green—Deutanopia and Protanopia are forms of red-green color blindness, combined, these affect approximately eight to ten percent of the male population. In extreme cases, the person may be lacking one of their retinal cones — eliminating either the red or green spectrum from their visual spectrum. An additional one to two percent of men suffer from a deficiency in perceiving blue/yellow differences — known as Tritanopia. Less than one percent of women suffer from any form of color blindness.

It is helpful to be familiar with the ways in which colors differ from each other in order to understand and design for people with color deficiencies. An effective way to adjust color is via hue, saturation and brightness (HSB).

Hue is the element that distinguishes one color of the rainbow from another. It is the quality that infuses an object with "orangeness" or "redness" or "blueness". In terms of people with color blindness, red and green hues are not differentiated as well as they should be.

Saturation, the second element of the HSB color model, is the "purity" of the color. High saturation equates to intense, "colorful" color. A color is desaturated by adding varying amounts of its opposite or complementary color. Adding some blue-green desaturates Red. As colors become more desaturated, they tend toward a neutral gray. Less saturated colors are harder for the colorblind to distinguish.

Brightness, is sometimes called "lightness" or "value." (The highest value equals white; the lowest value equals black.) Changing the brightness or value of a color is accomplished by diluting it with white, which makes the color become lighter or pastel, or with black, which makes the color become darker or more subdued. Colors with similar brightness are harder for the color-blind to distinguish.

By manipulating these three color divisions, effective design decisions can be made to increase the contrast and readability of an icon.

Deficiency simulators are available and should be used when analyzing individual and groups of icons. [Color Oracle](#) is a convenient tool and is recommended by the Visual Design Group.

Design in Context

If possible, obtain a screenshot of the user interface where your icons are going to sit. Testing out your designs in context allows you to make quick visual decisions based on the icon's environment.

Building a Comparison Sheet

When designing groups of icons and a screenshot of the user interface is not available, a comparison sheet can help you make visual comparisons between multiple icons.

