

## Text and Scale Factors

### Scale Factors

Drawings are always drawn at full scale. One complication of this is that text and symbols that are inserted model space must be scaled up. A scale factor can be determined based on the scale that the drawing will be displayed at. Once the scale factor is determined you will also use the value to set the DIMSCALE, and LTSCALE (AutoCAD variables).

For engineering scales the scale factor is the same as the scale. For example, at a scale 1=20 the scale factor is 20.

To find the scale factor for architectural scales a little algebra is used.

For example:             $1/4" = 1'$             basic scale  
                               $1/4" = 12"$             convert feet to inches  
                               $1" = 48"$             multiply both sides by 4  
                              The scale factor is 48

### Text Heights

Text entered into an AutoCAD Model space must take the scale factor into consideration. To determine the height to enter text into a drawing use the equation or table shown below.

**Equation:      Drawing Text Height = Plotted Height x Scale Factor**

Examples:      You want the plotted text height to equal 0.12" (almost 1/8" high) and you are working at a scale of 1 = 20. Therefore the scale factor is equal to 20.

$$\text{Drawing Text Height} = 0.12 \times 20 = 2.4$$

You want the plotted text height to equal 1/8" and you are working at a scale of 1/4" = 1'. From the scale factor example above we can determine the scale factor to be 48.

$$\text{Drawing Text Height} = 1/8" \times 48 = 6$$

### Text Height Table – Architectural

For class work normal text will be 1/8"

Text Hght (Point)	10	12	18	24	DIMSCALE / LTSCALE
Paper Space 1 = 1	3/32	<b>1/8</b>	3/16	1/4	
<b>Scale:</b>	Text Heights in Model Space				
1/16" = 1'-0"	18"	<b>24"</b>	36"	48"	192
1/8" = 1'-0"	9"	<b>12"</b>	18"	24"	96
3/16" = 1'-0"	6"	<b>8"</b>	12"	16"	64
1/4" = 1'-0"	4.5"	<b>6"</b>	9"	12"	48
1/2" = 1'-0"	2.25"	<b>3"</b>	4.5"	6"	24
3/4" = 1'-0"	1.5"	<b>2"</b>	3"	4"	16
1" = 1'-0"	1.125"	<b>1.5"</b>	1.5"	3"	12
3" = 1'-0"	0.375"	<b>0.5"</b>	.75"	1"	4

**Text Height Table – Civil**

Text Hght (Point)	10	12	18	24	<b>DIMSCALE / LTSCALE</b>
Paper Space 1 = 1	0.1	0.12	0.18	0.24	
<b>Scale:</b>	Text Height in Model Space				
1 = 5	0.5	0.6	0.7	1.2	5
1 = 10	1.0	1.2	1.4	2.4	10
1 = 20	2.0	2.4	2.8	4.8	20
1 = 30	3.0	3.6	3.2	7.2	30
1 = 40	4.0	4.8	5.6	9.6	40
1 = 50	5.0	6.0	7.0	12	50
1 = 60	6.0	7.2	8.4	14.4	60
1 = 100	10.0	12.0	14	24	100