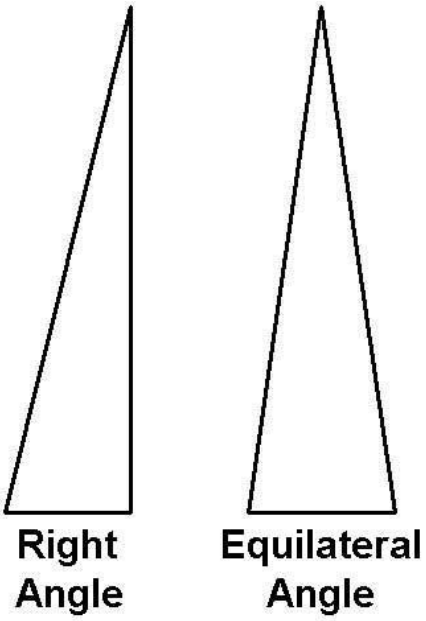
Made-to-Order Steel Wedge Worksheet

When laying out the dimensions for a steel wedge, it is important to consider its ultimate purpose. A steel wedge can either be used for:



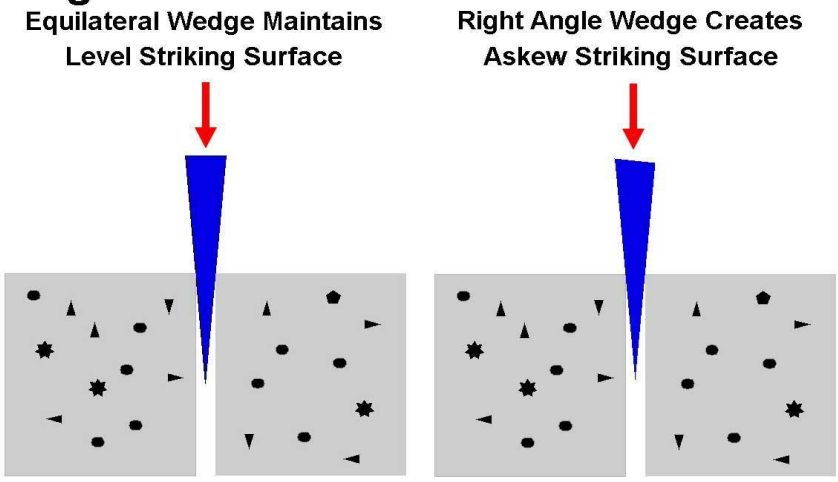
☐ **Lifting**

☐ **Exerting expansive force**

☐ **Shimming**

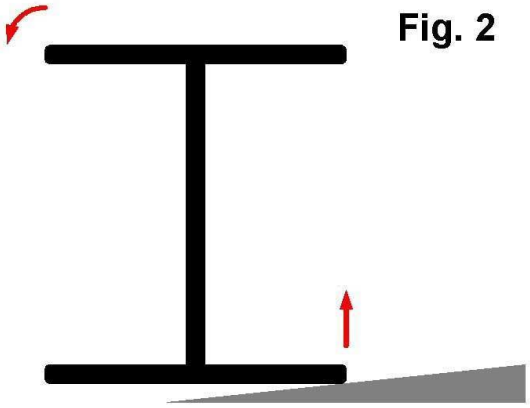
In each case, first consider the shape of the wedge, and whether it's a right angle or equilateral angle. For lifting and shimming, right angle wedges are used most often. For exerting expansive force, such as in Fig. 1, an equilateral wedge is often used. In Fig. 1, the case described involves the demolition of a lock on the Mississippi River. Large sections of concrete were being cut into blocks that could be lifted out of place and removed. To keep the cut sections from collapsing in and pinching, the saw blade wedges were driven into the crack left by the saw blade. Technically, both the right angle wedge and the equilateral wedge exert expansive force. The equilateral wedge is used in this case because it continues to present a square surface at the striking end as it is driven into place.

Fig. 1



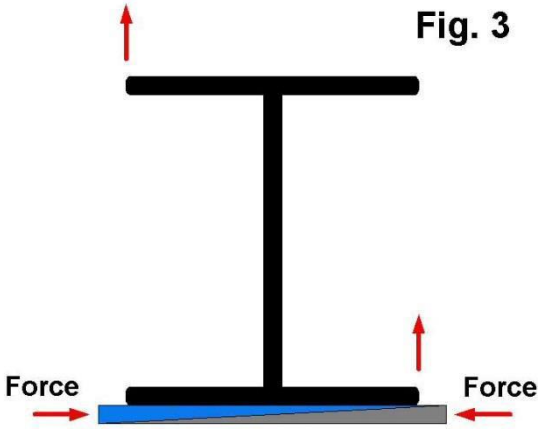
Often, wedges are used as steel shims and only need to fill up a gap or space void. In these cases, the slope of the hypotenuse (Fig. 2) should be considered as it can create deflection if used individually. The way to avoid this is using the wedges in pairs as shown in Fig. 3. If access is available from both sides, reciprocally using a pair of wedges will produce a straight uplifting force with no deflection that is adjustable to the height required.

Fig. 2



in.

Fig. 3

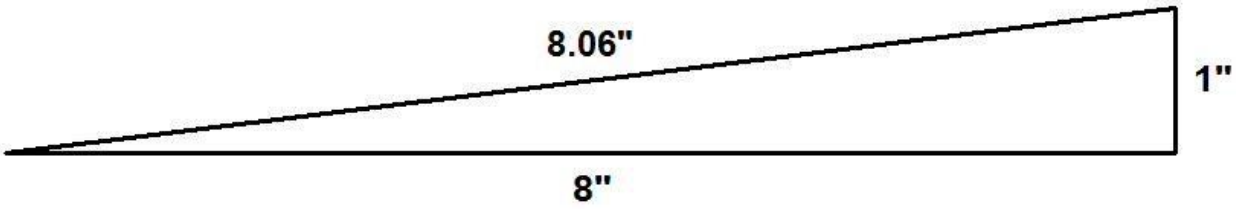


It is also important to know how much weight it will be lifted and how much force will be available to drive the wedge.

The equation for calculating the lifting force of a steel wedge is as follows:

Weight Being Lifted / Mechanical Advantage = Length of Wedge / Height of Wedge

Fig. 4



For Example:

Fig. 5

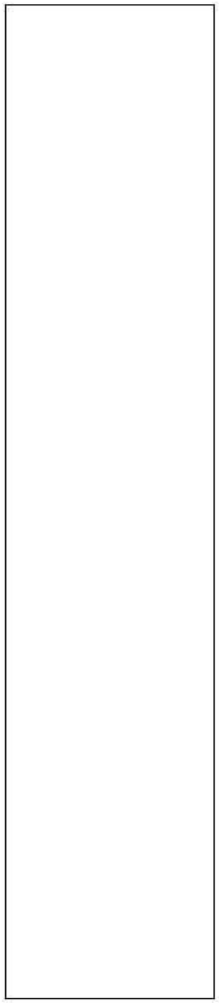
100 lbs./x = 8.06 / 1
100 lbs./x = 8.06
100 lbs. = 8.06x
12.40 lbs. = x

Using the wedge shown in Fig. 4, Fig. 5 assumes the weight being lifted is 100 lbs. Working through the equation, it is concluded that a driving force of 12.40 lbs. striking the wedge will lift a 100 lb. object. This equation will hold true for right angle and equilateral Wedges.

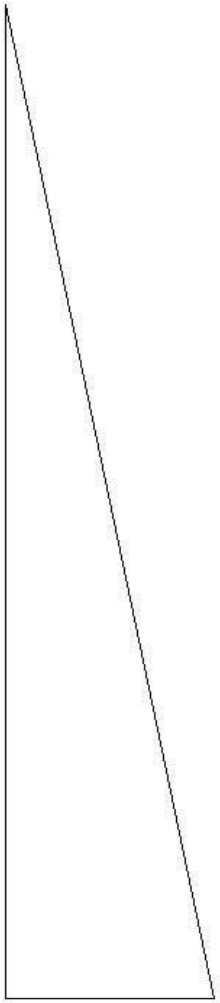
Using this information, select the drawing below that suits your application and indicate your specific dimensions. The Steel Supply Company can produce steel wedges, plastic wedges and even rubber wedges in almost any dimensions.

Right Angle Wedge

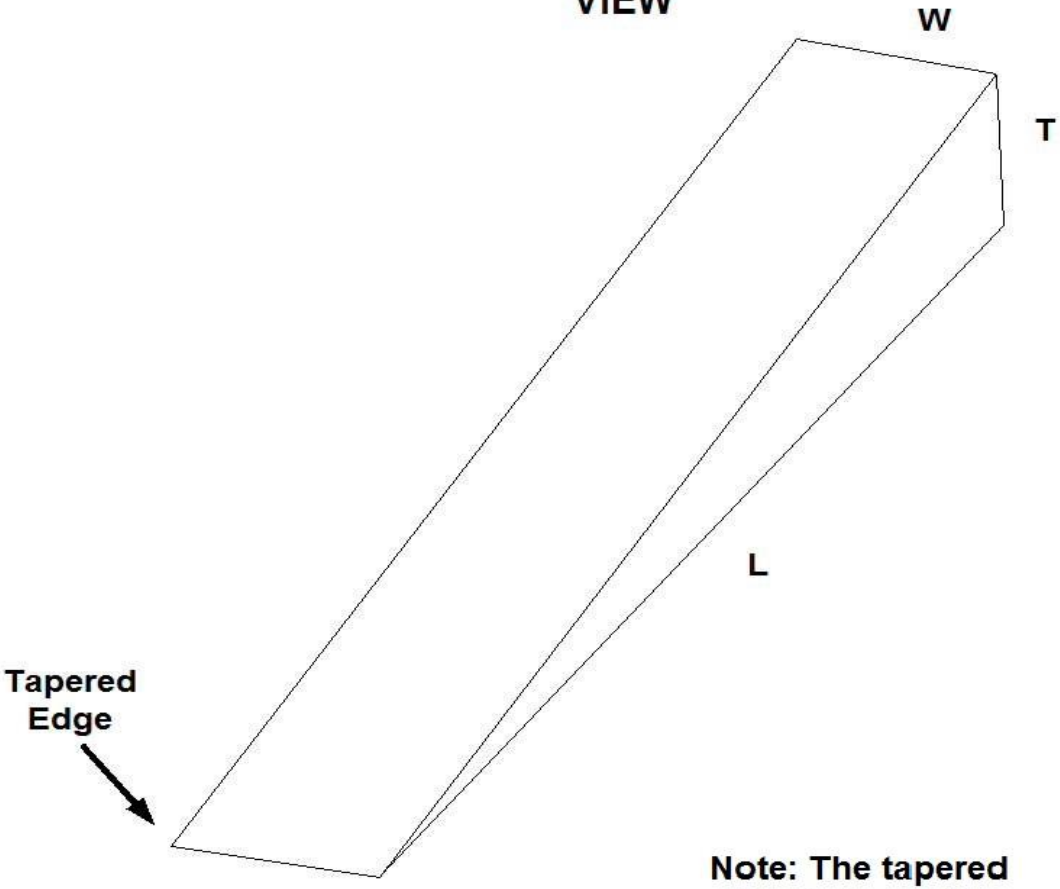
TOP



SIDE



ANGLE VIEW



Material _____

W _____

T _____

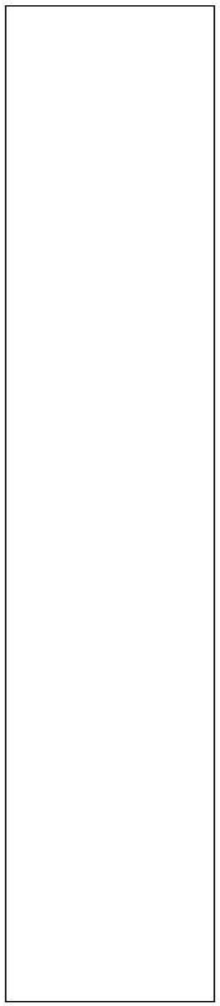
L _____

Note: The tapered edge is typically between 1/16" and 1/8". If your design requires a specific edge thickness, indicate the size here: _____

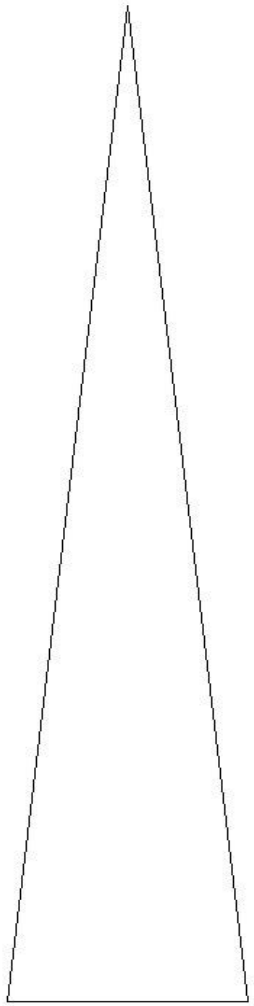
STEEL SUPPLY

Equilateral Angle Wedge

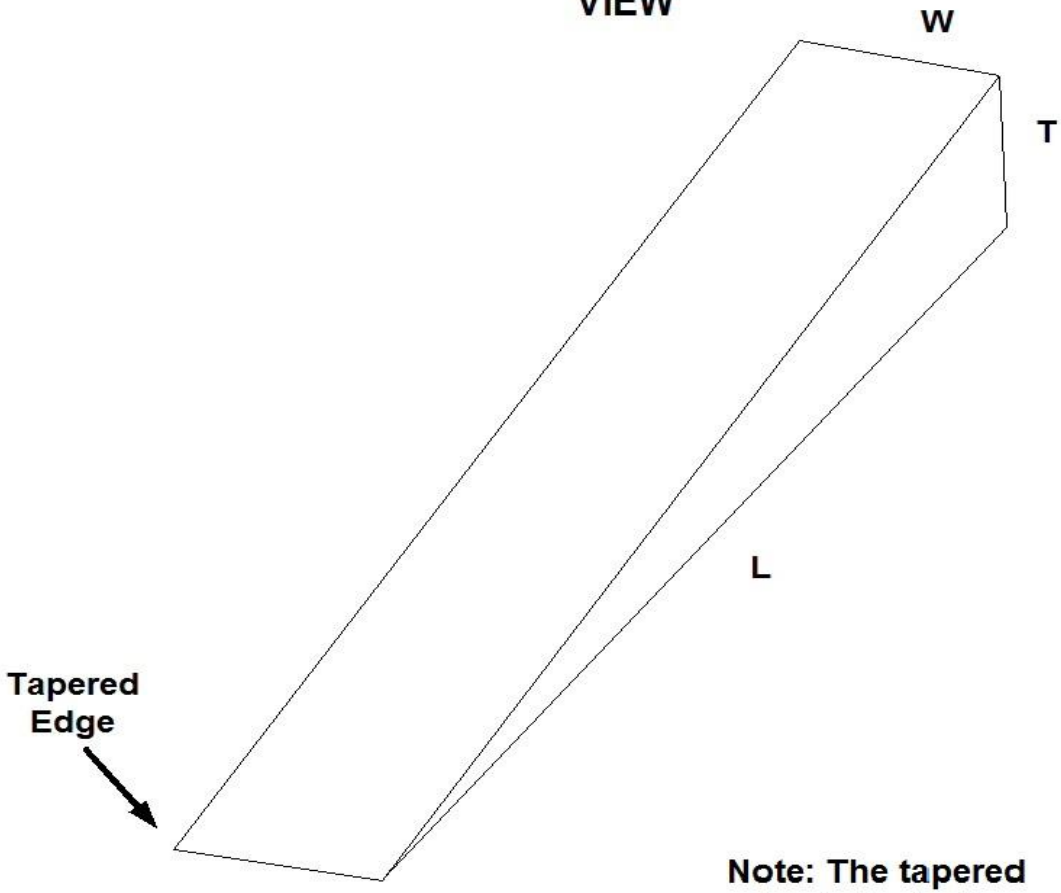
TOP



SIDE



ANGLE VIEW



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