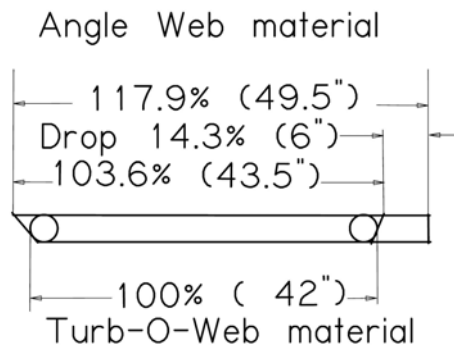


# Why do angle-cut webs require 18% more lumber to produce than Turb-O-Webs?

## There are two (2) reasons for this:-

1. The most significant saving comes from the standard length feature of *Turb-O-Webs* allowing for waste free cutting compared to the somewhat random lengths of angle webs, and.
2. The second source of savings is derived from the round end shape of the Turb-O-Webs enabling the Turb-O-Webs to be that little bit shorter than the angle webs they replace.



***The combined effect of this is that angle cut webs require about 18% more lumber to produce than the Turb-O-Web which can replace it.***

Considering these reasons in turn, it may be proven that angle webs require around **14.3% more lumber** than Turb-O-Webs due to their somewhat random lengths, and a **further 3.7% more lumber** due to the angular cut on the ends being generally longer than the round ends.

Cost of non-standard lengths -On average this cost is 6" of lumber per web.

The practice of cutting angle webs is well known, and need not be described here other than to say

industry practice is to provide in-feed stock every 12", and the "drop" per web cut will vary in length anywhere from 0-0-01 to 0-11-15. Clearly the average "drop" is therefore 6", and since the average length web for a roof truss may be taken as 4', the cost of the "drop" is 12.5% of the finished web length. **Or viewed alternatively the angle web requires 14.3% more lumber on average, than its final finished length.**

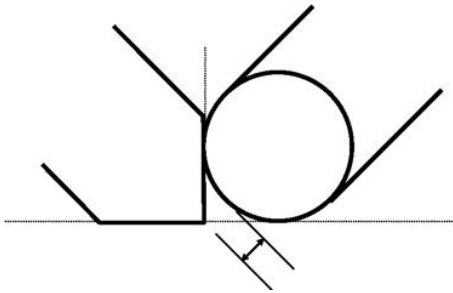
By Comparison, the common practice for Turb-O-Web users is for users to select standard length Turb-O-Webs specifically so that they may be cut from readily available lumber lengths without any significant drop. Typically Turb-O-Webs users select lengths every 6" from, say 1-06-00, 2-00-00, 2-06-00, etc, through to around 9-00-00.

It is obvious that a whole 5-00-00 bunk, or unit, could be converted to 5' Turb-O-Webs without any "drop" or "waste" and similarly, an 8' bunk or unit can be converted to 2 bunks of Turb-O-Webs 3-06-00 and 4-06-00, again without any drop or waste.

It is self apparent then, that when compared to Turb-O-Web cutters, angle cutters use **6" more lumber per web** due to the somewhat random lengths of the angle webs.

Cost of angle web shape v's round shape- On average this cost is an extra 1 1/2" of lumber per web over and above the 6" described above.

The graphic below shows that the actual length of a Turb-O-Web will always be shorter than the length of the angle web it replaces. Our observations show that the Turb-O-Web will be about 1 1/2" shorter, considering both ends..



Whilst this saving may seem insignificant on first appearances, **this source of lumber savings per Turb-O-Web is sufficient by itself to pay the entire License Fee for the average sized truss plant in the USA.**

This saving alone shows that angle webs require a further 3.7% of lumber compared to Turb-O-Webs, which when added to the 14.3% calculated earlier, **brings total lumber savings advantage of Turb-O-Webs to 18%.**

#### **What are these savings worth in Dollars??**

We set out our calculation of the value of these lumber savings for a truss plant processing 5 million board feet of lumber into trusses per year. Our observations over a large range of truss plants and jobs shows that a plant processing 5 million Bd.Ft can use approximately 350,000 Turb-O-Webs per year, saving on average 7.5" of lumber per Turb-O-Web. At \$300/ 1000 bd. ft this **represents a yearly saving of around \$43,750.**

Both the monthly License fee and the *occasional* increase in nail-plate sizes can easily be paid from this single amount and still leave a considerable saving in lumber costs.

Of course there are other savings enjoyed by Turb-O-Web users to be taken into account as well, and our calculations for these are shown separately. The other forms of saving include saw time and saw shed savings, plus efficiency in assembly and increased production through the assembly tables.

**And now for the "What ifs?" ...and "Yeah-buts" ..**

We have made these calculations upon what we regard as reasonable assumptions, and we stand by them, and are keen to provide further explanations at any time, should we be so requested.

*There are a couple of points worth rising now, however:-*

1. Angle cut optimizing: It is true that some waste inherent in angle cutting webs may occasionally be reduced by "optimizing" lengths of angle webs. We have not taken this into our figures because the benefits are so limited as to be largely irrelevant. The process of optimizing angle webs to 12" increments (compared to the 6" increments of Turb-O-Web) often produce no savings in waste at all, and, compared to the designer time involved, is a marginal exercise at best.
2. Tail-cutting is employed periodically by angle-cutters to reduce the "drop". For example 2x 3-09-11 identical angle webs are cut from a single infeed board, reducing the drop to around 2" per web from the 6" we derived. This does work, but at the expense of safety and saw time efficiency. The advantages of tail-cutting are more imagined than real.
3. *These efforts are easily surpassed by a Turb-O-Web user simply purchasing a job lot of lumber (say 13'ers), at a good price and then formulating a cutting plan for the whole batch, virtually eliminating the "drop" completely.*