MITEK INSIGHTS TO COMBAT THE 2020 LUMBER SHORTAGE

August 29th, 2020

MiTek®

2020 LUMBER SHORTAGE

As if dealing with a worldwide pandemic isn't enough, the Component Manufacturing industry is also working to overcome a lumber shortage. This spring, several US mills shut down or slowed production in anticipation of reduced demand. However, that never happened. Instead, consumers decided to use their time at home to build decks, and we continue to see strong lumber demand from the nation's homebuilders, leaving many MiTek customers looking for ways to reduce lumber usage. For the most part, reduced mill production caused an inventory shortage for wide lumber cuts (2x8, 2x10, and 2x12).

MiTek wants to assist customers in navigating the lumber shortage. Recently, a group of MiTek engineers and salespeople brainstormed ways to reduce customer dependency on lumber. While production levels should return to normal by the end of the year, there are several options for lowering lumber consumption, detailed in this article.

Content

FLOOR TRUSSES VS. CONVENTIONAL LUMBER

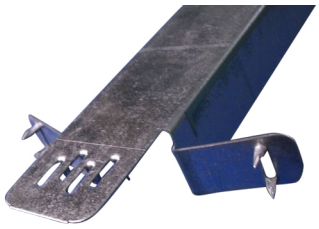
During the lumber shortage, it may be challenging to fulfill orders for conventionally framed floor systems, especially when they call for deep members (2x8, 2x10, and 2x12). With deep members hard to find, you may have an opportunity to convert customers to trussed floor systems. Floor trusses are built mainly with 2x4 members. Also, with floor trusses, there are several opportunities to reduce lumber, including:

- Posi-Strut® metal webs
- Take advantage of wider floor truss spacing (24" on-center vs. 19.2" or 16").
- Use the Advanced Stiffness feature, which takes into account sheathing during the design process, and often produces more efficient results.
- If allowed by the Engineer of Record, consider replacing full depth rim boards with ribbon boards.

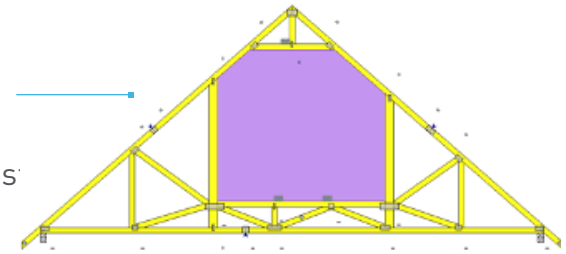
ROOF TRUSS DESIGN OPPORTUNITIES

When designing roof trusses during the lumber shortage, take into account the following suggestions for reducing lumber usage:

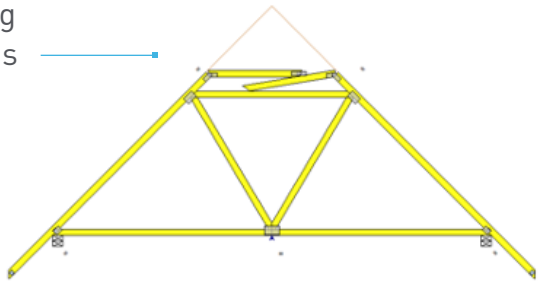
→ Use Stabilizer lateral braces instead of dimension lumber.



→ When designing attic trusses, use floor truss bottom chord instead of 2x10 or 2x12 dimension lumber.
  - o Also, when applicable, reduce live loading in attics to 30 ps



→ Use hinge plates for piggyback trusses as opposed to building cap trusses. This reduces truss lumber and bracing as well as field labor.



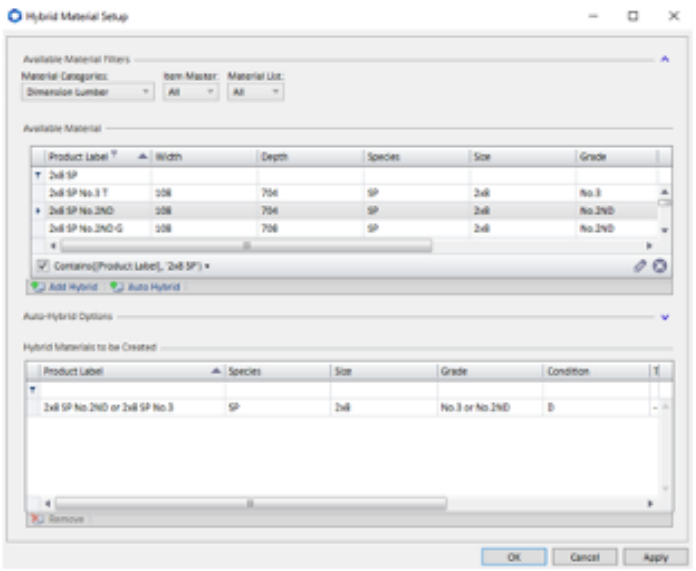
→ Utilize higher-grade lumber in chord material and reduce the number of webs.

→ Reduce spacing on agricultural trusses.
  - o This change helps customers utilize smaller lumber sizes (2x6 vs. 2x10).

→ TPI 1 allows the use of properly graded finger-jointed lumber. In some situations, this may prove to be more cost effective and it may be easier to purchase finger-jointed material.

HYBRID LUMBER

MiTek Materials offers a material selection option based on the blend of design values of various species/grade combinations. This method of member selection is known as Hybrid Lumber.



Hybrid lumber saves time when customers are not sure what species and/or grade of lumber will be used for fabrication. During the lumber shortage, purchasing departments may not know what kind of lumber they are receiving. So, instead of continually updating lumber grades and species in MiTek Materials, system administrators can use hybrid lumber to define several types of lumber. Then the software uses the worst-case scenario when designing trusses.

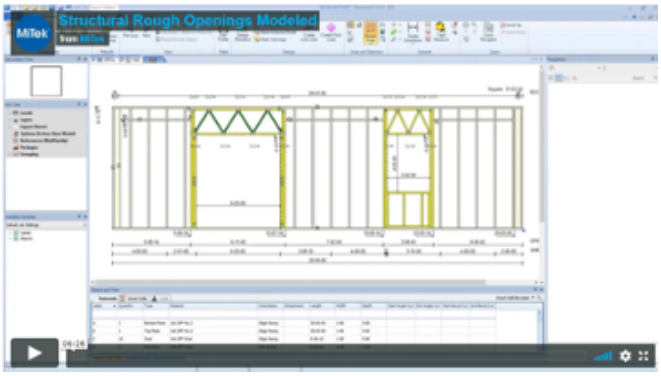
For additional information, please review a hybrid lumber video on the MiTek Support site.

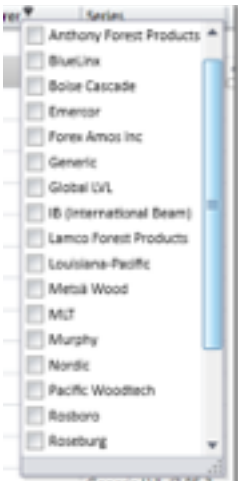
WALLS AND HEADERS

There are several options available for reducing lumber usage in walls, including:

- Lumberyards can implement MiTek Supply, MiTek's software solution for producing accurate lumber takeoffs, reducing job site waste, and reducing the number of materials that are requested at the last minute to complete a project. MiTek Supply eliminates estimating guesswork and creates take-offs that everyone agrees on.
- Structural Rough Openings (SROs) - Introduced in MiTek Structure in version 8.2.3, SROs can reduce dependency on deep wall headers.
- Use MiTek Structure to design headers and specify material based on whole-house loading.
- MiTek Materials includes several potential engineered wood suppliers. Review all of your options!
- When possible, specify 4x2 material for headers.
- Advanced Framing Techniques - There are several articles written about Advanced Framing. Many of these articles promote options for reduced lumber in wall corners, increased stud spacing, use of a single top plate, and optimized header use. A quick Google search produces several results about advanced framing techniques. Use the following link as a starting point: betzwood.com/2012/08/09/optimize-framing

MiTek Engineers also support the use of spliced lumber for top plate material with certain restrictions. Please ask your MiTek salesperson or engineer for a copy of a letter with details.





LATERAL LOAD RESISTANCE

For lateral load resistance when using continuous tie down rod system with wood shearwalls, consider shared corners for overturning moment where two orthogonal walls come together. This should result in reduced threaded rod usage, and reduced compression wood.

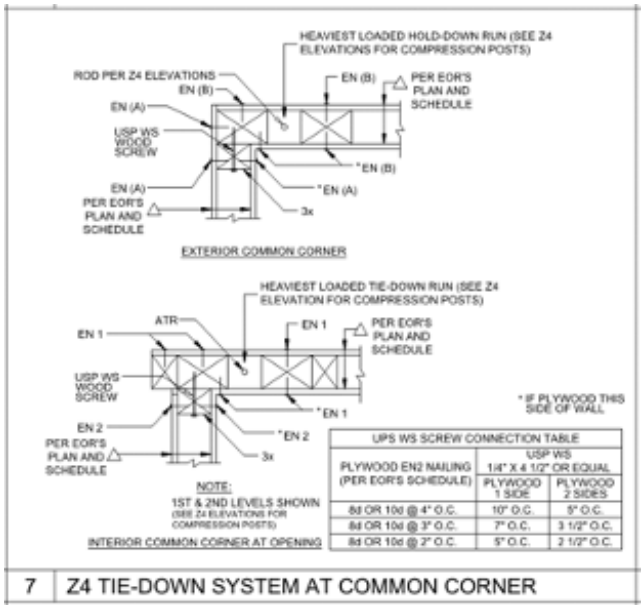
NOTES

- This strategy requires review and approval by the Engineer of Record.
- A similar concept can be used for traditional holddowns.

→ On heavily loaded walls, use of LVL compression posts can reduce lumber requirements.

→ Use Hardy Frames or MiTek's new CFS Moment Frames to significantly reduce sheathing material and labor.
- Review an example from MiTek Project 1.

→ MiTek Lateral Load Engineeers stand ready to help the EORs with these ideas.



7 Z4 TIE-DOWN SYSTEM AT COMMON CORNER

IN THE SHOP

Design isn't the only area where lumber savings can be realized. Other options include:

- Evaluating MiTek's linear saws and ask your salesperson how a Matchpoint BLADE™ Wood Processing System can help your operation eliminate waste.
- Utilizing off-site wall panel construction. Use MiTek software to design optimized wall panels and deliver only what's needed to the job site.

SUMMARY

The year 2020 has presented several challenges to Component Manufacturers, including a lumber shortage that will be prevalent for the remainder of the calendar year. MiTek suggests reviewing your design and production practices and using the suggestions outlined in this article to reduce lumber usage. For more information on these innovative solutions to your lumber problems, reach out to your MiTek Engineer or Sales Representative.

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