

Paneling with Purpose



By Aleeta Dene, P.E.

Disclaimer: This presentation was developed by a third party and is not funded by WoodWorks or the Softwood Lumber Board.

Top 3 Panel Points

Wood is Directional



Moisture = Movement



Panel Detailing

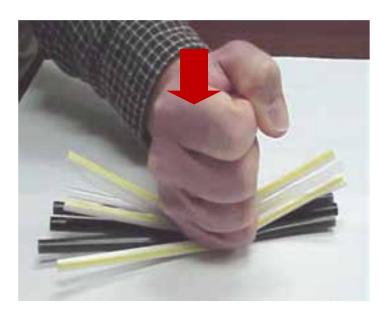
Wood is Directional

Parallel



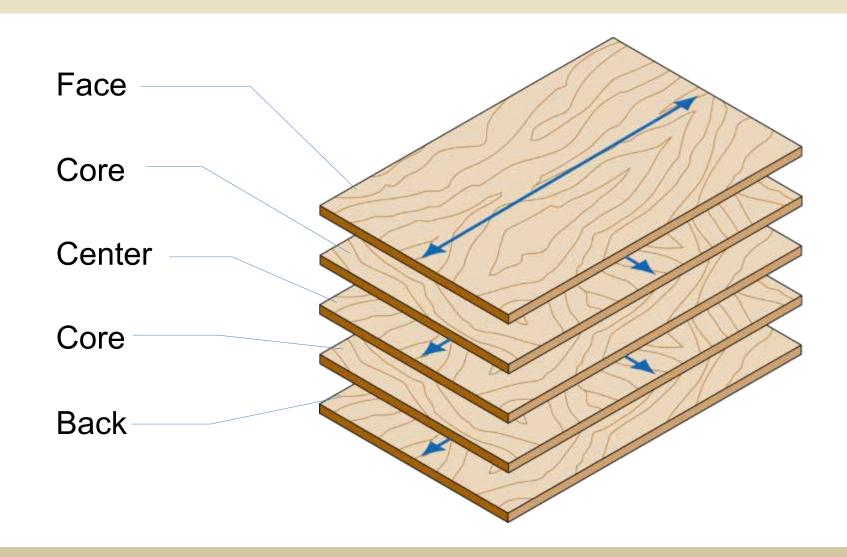
Stronger

Perpendicular



Weaker

Plywood Layup

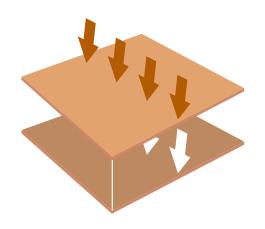


Oriented Strand Board Layup



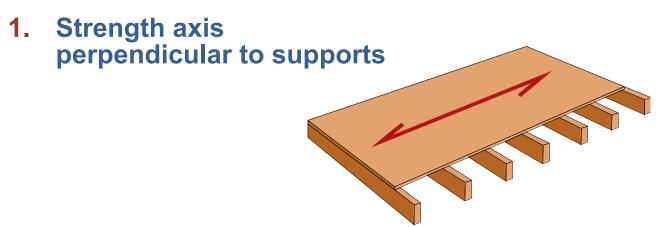
Wood is Directional



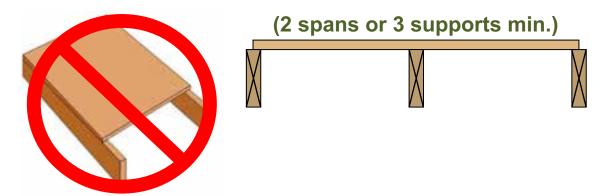


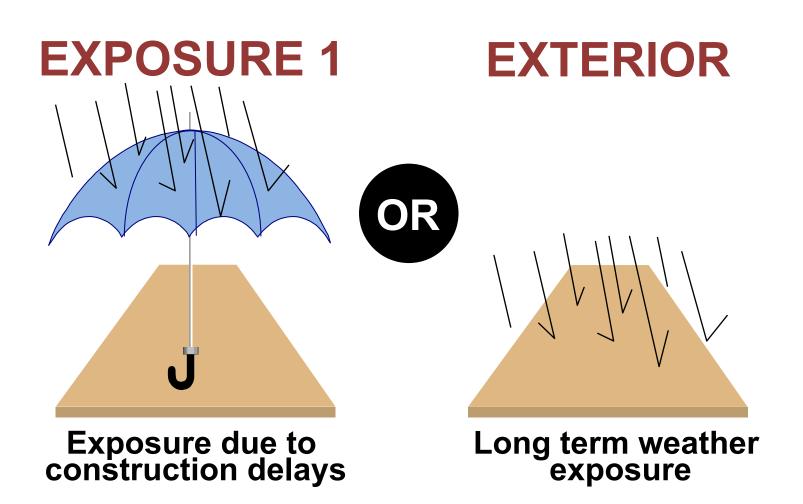
Roof Span L/240 30 PSF live 10 PSF dead

Floor Span L/360 100 PSF live 10 PSF dead



2. Continuous across two or more spans









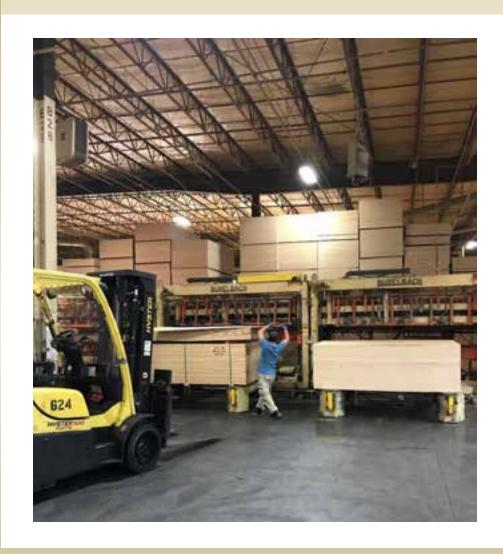
Moisture Content upon arrival

V.

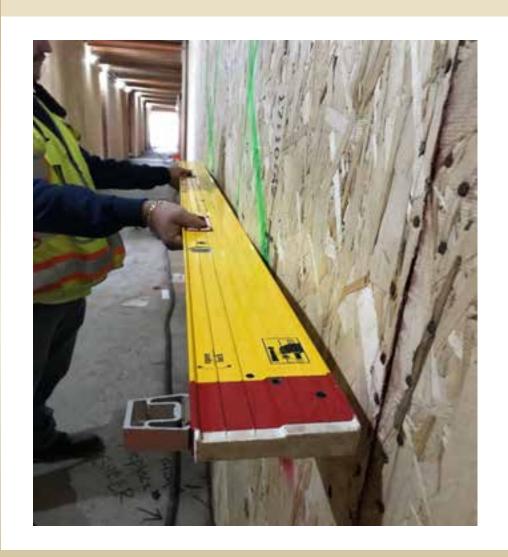
Moisture Content upon installation

V.

Moisture Content in service



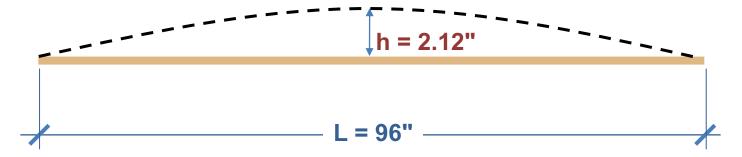
APA-rated panels are manufactured well below 16% moisture content



Your design makes a difference!

The contractors' challenges are also your challenges.

L (after expansion) = 96.125"



L (after expansion) = 48.125"

Responding to Wood Structural Panel Complaints

BENERAL AFFERACE

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TYPICAL PARKE COMPLANTS

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Remarkable Except physican party for horizons in the first party and the first party in t

The best, halon, which we sufficient year are not disposed on Debbed (special and media) benducts on the constitute of which the property of the best of the constitute of the property of the best of the constitute of the property of the p



Minimizing Buckling of Wood Structural Panels

TECHNICAL NOTE

Farm DitSIN Sentember 2012

Bucking, of wood structural parts of weathing such as physicol in orderined struct board, OSSR occasionally result is when time sood measures conditions closes the two do expand, Such bucking may according supports on between males along supports. Although similatinal properties are unaffected, the waveness affects due braillang's appearance and may lead to complaines. Builders can agenticately reduce the potential for buckling by assuring minimal measures control mensage on severe analytic growing feet to a natural (filters).

MECHANISM OF BUCKLING

All weed hased products absorb receiver from or give up menture to the environment, until they wash a measure contern in equilibrium with their surroundings. This results in swilling or shrinking of the weed for whit wood, this separation is 200 of 0 times at good across the giant as deong the giant. Structural panels have good dimensional stability because the tendency of individual sensess or straints to swell or shrink crosswers is greatly restricted by the absent weaters or straints.

Integral disading applications, relates hunday right vary between 40 percent and 80 percent, with corresponding orgalization missions content of the panish ranging between 6 percent and 14 percent. Total dimensional change of an untrestrated 48 inchices we studies panish appeared to this range of conductors expectedly averages 158 such in widels or length. If the panish surplify gets wer, dimensional change could be slightly getater. Dimensional change in smalled panish is partially notational for dimension and farming.

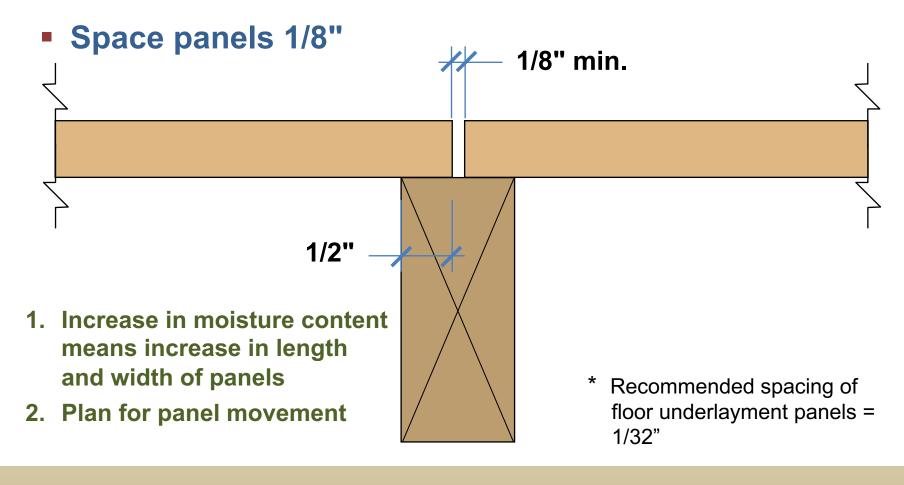
The sendown of expansion to case building in institutely parels is obtact to rescharial properties, physical proporties and natural characteristics of wood it is also a function of not spacing panel ends and edge to allow for expansion. Mechanical properties odd, as parel stallness oddies to the length of span as important. You agont good, a thin parel has a greater tendency to backle upon expansion than a linker panel. Pupokad properties and characteristics of the panel include the numeral growth variability of wood, motioner absorption rate of the wood, and panel wantables such as species and orientation of veneras or extands. Some of these inherent panel properties are thinked on the natural characteristics of wood and are generally either impossible or impractical to control. Therefore, the user disold attroops to grown high motionar conditions by providing adequate ventilation, and also to manusate the effects of motioner.





There is A LOT of information on this topic.

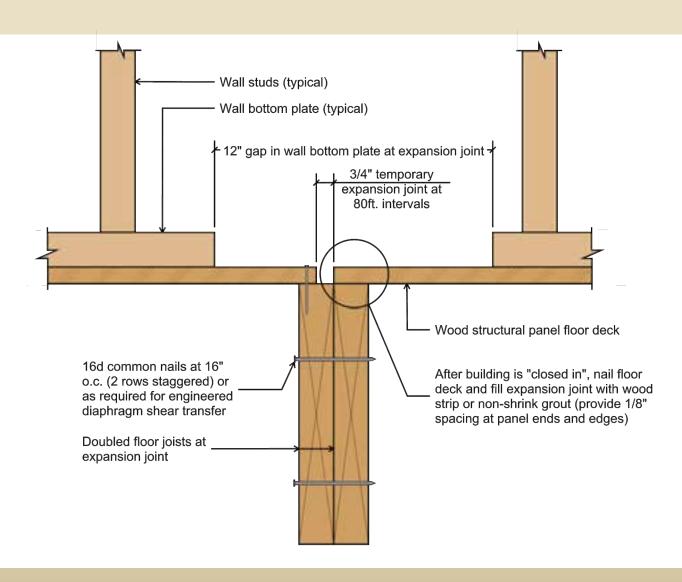
Installation Recommendations*

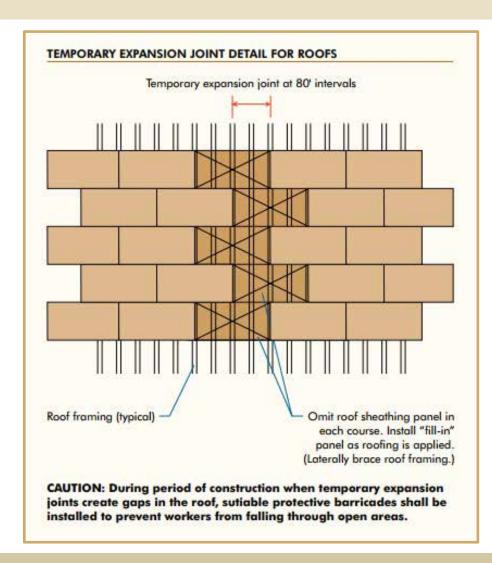


Panel expansion in large structures

- Panel expansion may accumulate through the framing of large, continuous floor or roof decks
- Provide temporary expansion joints to minimize displacement when building plan dimension exceeds 80'







Provisions for large structures

Roofs:

- Sheath 80-foot sections, omitting a roof sheathing panel between sections
- Complete installation with fill-in panels immediately before sheathing is covered with roof underlayment

