Paneling with Purpose

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

Moisture = Movement

Panel Detailing
Wood is Directional

Parallel

Stronger

Perpendicular

Weaker
Plywood Layup

- Face
- Core
- Center
- Back
Oriented Strand Board Layup
Wood is Directional

1. Strength axis perpendicular to supports
2. Continuous across two or more spans

Roof Span L/240
- 30 PSF live
- 10 PSF dead

Floor Span L/360
- 100 PSF live
- 10 PSF dead
Panels & Moisture

EXPOSURE 1

Exposure due to construction delays

OR

EXTERIOR

Long term weather exposure

APA
RATED SHEATHING
32/16
SIZED FOR SPACING
EXPOSURE 1
THICKNESS 0.451 IN.
000
PS 2-10 SHEATHING
PRP-108 HUD-UM-40
15/32 CATEGORY
Panels & Moisture

Moisture Content upon arrival
v.
Moisture Content upon installation
v.
Moisture Content in service
APA-rated panels are manufactured well below 16% moisture content.
Panels & Moisture

Your design makes a difference!

The contractors’ challenges are also your challenges.
Panels & Moisture

L (after expansion) = 96.125"

L = 96"

h = 2.12"

L (after expansion) = 48.125"

L = 48"

h = 1.5"
Panels & Moisture

Minimizing Buckling of Wood Structural Panels

There is a LOT of information on this topic.
Panel Detailing

Installation Recommendations*

- Space panels 1/8"

1. Increase in moisture content means increase in length and width of panels
2. Plan for panel movement

* Recommended spacing of floor underlayment panels = 1/32"
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’
Panel Detailing

- Wall studs (typical)
- Wall bottom plate (typical)
- 12" gap in wall bottom plate at expansion joint
- 3/4" temporary expansion joint at 80ft. intervals
- Wood structural panel floor deck
- 16d common nails at 16" o.c. (2 rows staggered) or as required for engineered diaphragm shear transfer
- Doubled floor joists at expansion joint
- After building is "closed in", nail floor deck and fill expansion joint with wood strip or non-shrink grout (provide 1/8" spacing at panel ends and edges)
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

Panel Detailing
APA Field Staff
Find your Local Field Services Representative
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OR
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