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

- Face
- Core
- Center
- Core
- 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

(2 spans or 3 supports min.)
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-106 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"
There is a lot of information on this topic.
**Panel Detailing**

**Installation Recommendations**

- **Space panels 1/8"**

  ![Diagram of panel spacing](image)

  - 1/8" min.
  - 1/2"

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

**CAUTION:** During period of construction when temporary expansion joints create gaps in the roof, suitable protective barricades shall be installed to prevent workers from falling through open areas.
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