



IMAGINE BUILDING DIFFERENTLY

PRODUCT DATA SHEET

# 51-Floor Assembly B.PUBLIC Prefab

## PRODUCT OVERVIEW

### Product Description

The 51-Floor assembly is a high-performance vapor-open floor assembly. Prefabricated in controlled environments to meet exacting standards, B.PUBLIC assemblies exemplify best practices in construction and building science for unparalleled performance, durability, health, and environmental sustainability. The 51-Floor provides industry-leading comfort, quiet, and speed to today's construction.

### Application

The 51-Floor is designed to meet typical type V construction requirements up to 3 stories coast to coast and in ICEE climate regions 4 through 7. B.PUBLIC assemblies and component connections are thermally-bridge-free per PHI standards, allowing for unprecedented design freedom without sacrificing performance.

### Installation

Floor assemblies come wrapped in rated weather resistant barriers for durability during delivery and installation. Our unique isolated cavity design coupled with a redundant air-barrier ensures that prefabricated assemblies exceed Passive House air-tightness requirements.

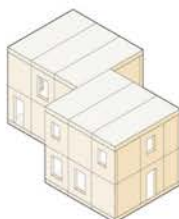
### Key Attributes

- Vapor open assembly
- Consistent high R-Value
- Industry leading acoustic performance
- Thermal bridge free per PHI standards
- Carbon storing / Low embodied energy
- > 70% post consumer recycled content by weight
- Living Building Challenge compliant - Red list free
- No dangerous off-gassing
- Urea-Formaldehyde & foam free



### TECHNICAL OVERVIEW

<b>Description</b>	Off-site prefabricated light wood frame floor assembly
<b>R-Value</b>	Whole Assembly <b>R-51</b> (PHPP)
<b>Air- barrierl</b>	3/4" Glued subfloor with all seams taped
<b>Cavity Insulation</b>	Dense-pack Cellulose / Borate treated for fire / mold / insect resistance.
<b>Weather Barrier</b>	Fully adhered monolithic non-porous vapor-open weather barrier / rated 4 months exposure.
<b>Thickness</b>	<b>16.25"</b> (including 1.5" Ext. furring)
<b>Structure</b>	APA rated web joist @ 24" OC 3/4" Subfloor sheathing glued and screwed







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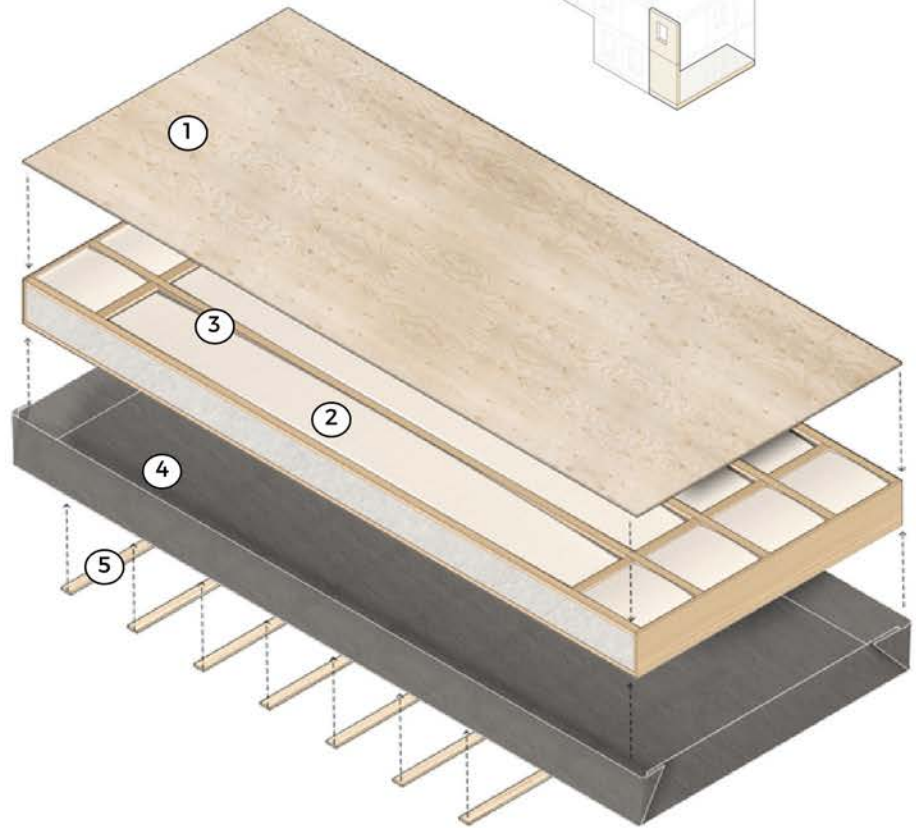
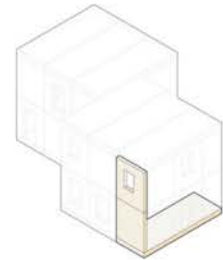
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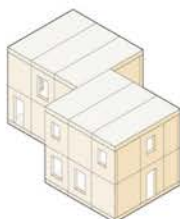
## MATERIAL SPECIFICATIONS

SPECIFICATIONS\*

<b>Description</b>	Off-site prefabricated light wood roof assembly
<b>R-Value</b>	Whole assembly <b>R-51</b> (PHPP)
<b>Thickness</b>	<b>18.25"</b> (including 1.5" int furring)
<b>① Subfloor Sheathing</b>	3/4" APA rated sheathing Glued and screwed
<b>② Cavity Insulation</b>	Dense-pack Cellulose 3.5 lb per cubic ft. Borate treated for fire / mold / insect resistance. R-3.76 per inch 85% recycled content Formaldehyde free. Lowest carbon footprint of all insulation types.* -35 GWP value kg CO2e Class A fire rated
<b>③ Structural Framing</b>	14" APA web joist @ 24" OC Continuous blocking 1 1/8" Engineered rim joist
<b>④ Exterior Weather Barrier</b>	Monolithic non-porous vapor-permeable weather resistant barrier. Rated 6 months exposure. Waterproof to >32ft water column Vapor permance 11 perms Airtightness 0.00009 cfm/ft2 Class A fire rated FS:10 SDI:15
<b>⑤ Furring</b>	SPF 2x4 flat @ 24" OC



\*per manufacturer's reports



**B.PUBLIC PREFAB. PBC**  
928 Shoofly Street  
Santa Fe, NM 87505  
505-577-4207

This document is applicable in conjunction with other B.PUBLIC Prefab documents and technical information. National building regulations must be complied with. The customer is responsible for determining if B.PUBLIC Prefab products are suitable for the intended purpose. B.PUBLIC Prefab accepts no responsibility for misuse. This information is subject to change without notice. REV 09-2023





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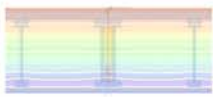
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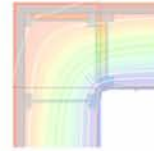
## THERMAL PERFORMANCE

### Vertical Wall Connection



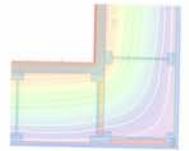
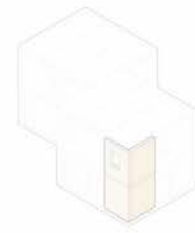
IP = pos 0.002 BTU / (h.ft.F)  
M = pos 0.003 W / (m.K)

### Inside Corner Connection



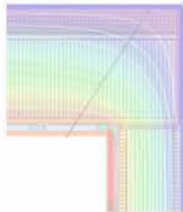
IP = pos 0.016 BTU / (h.ft.F)  
M = pos 0.027 W / (m.K)

### Outside Corner Connection



IP = neg 0.034 BTU / (h.ft.F)  
M = neg 0.058 W / (m.K)

### Roof to Wall Connection\*



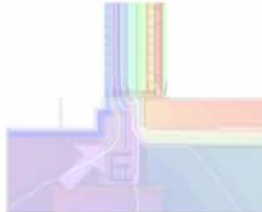
IP = neg 0.041 BTU / (h.ft.F)  
M = neg 0.070 W / (m.K)

### Horizontal Wall Connection



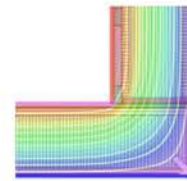
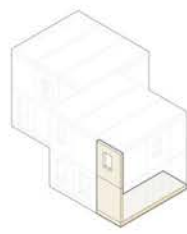
IP = pos 0.006 BTU / (h.ft.F)  
M = pos 0.010 W / (m.K)

### Wall to Slab Connection\*\*



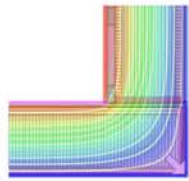
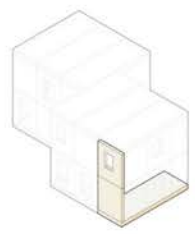
IP = neg 0.048 BTU / (h.ft.F)  
M = neg 0.083 W / (m.K)

### Floor to 35-Wall Connection



IP = neg 0.034 BTU / (h.ft.F)  
M = neg 0.058 W / (m.K)

### Floor to 52-Wall Connection



IP = neg 0.032 BTU / (h.ft.F)  
M = neg 0.055 W / (m.K)

### Criteria for Thermal-Bridge-Free-Design

It was found that for ordinary building geometries, the "thermal bridge free" requirement was almost always adequately met for all linear disturbances if  $\Psi \leq 0.01 \text{ W / (m.K)}$

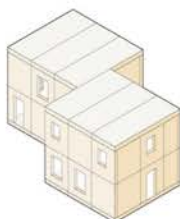
Passive House Institute, Germany

IP = Imperial measure  
M = Metric measure  
neg = Negative result  
pos = Positive result

\*Shown with B.Public R-52 Wall assembly.

\*\*Shown with B.Public standard concrete foundation design.

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