



IMAGINE BUILDING DIFFERENTLY

PRODUCT DATA SHEET

59-Roof Assembly B.PUBLIC Prefab

PRODUCT OVERVIEW

Product Description

The 59-Roof assembly is a high-performance vapor-open, unvented roof assembly. Prefabricated in controlled environments to exacting standards, B.PUBLIC assemblies exemplify best practices in construction and building science for unparalleled performance, durability, health, and environmental sustainability. The 59-Roof provides industry-leading **comfort, health, and speed** to today's construction.

Application

The 59-Roof is designed to meet typical type V construction requirements up to 3 stories coast to coast and is suited for construction in ICEE climate regions 3, through 7. B.PUBLIC assemblies and component connections are thermally-bridge-free per PHI standards, allowing for unprecedented design freedom without sacrificing performance. B.PUBLIC Prefab roof assemblies are available in **Low-slope, Pitched, and Shed** configurations and custom options.



TECHNICAL OVERVIEW

Description	Off-site prefabricated light wood frame roof assembly
R-Value	Whole Assembly R-59 (PHPP)
Vapor Control	Class II / vapor variable membrane 0.13 to >13.0 perms Rated WRB- 2 months exposure
Cavity Insulation	Dense-pack Cellulose / Borate treated for fire / mold / insect resistance.
Weather Barrier	Fully adhered monolithic non-porous vapor-open weather barrier / rated 6 months exposure.
Thickness	18" (including 1.5" int furring)
Structure	APA rated web joist @ 24" OC 5/8" Structural sheathing

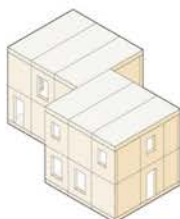


Installation

All prefabricated assemblies come fully 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 level air-tightness requirements.

Key Attributes

- Available in low-slope, pitched, & shed configurations
- 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





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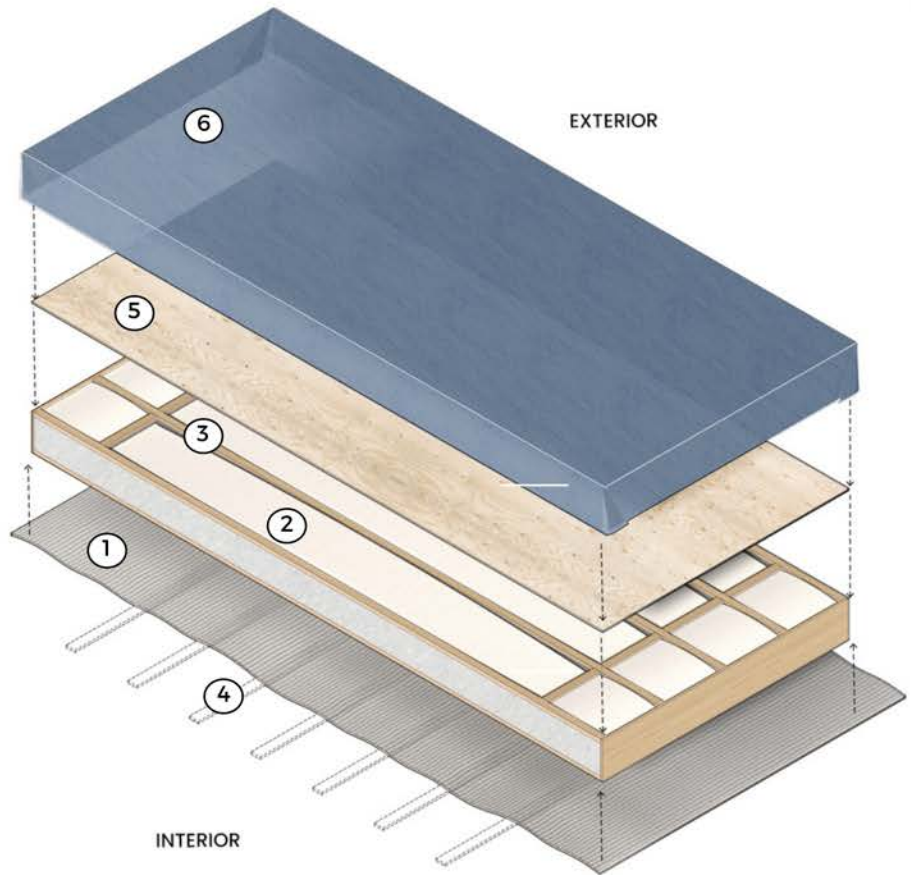
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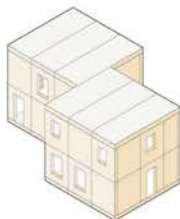
MATERIAL SPECIFICATIONS

SPECIFICATIONS*

Description	Off-site prefabricated light wood roof assembly
R-Value	Whole Assembly R-59 (PHPP)
Thickness	18" (including 1.5" int furring)
① Interior Membrane	IBC / IRC Class II vapor retarder Vapor variable membrane 0.13 to >13.0 perms WRB -rated for 2 months exposure Class A Flame spread index 0 Class A Smoke developed index 35 ICC -ES report ESR-4854 Air permeance 0.00004 cfm/ft
② Cavity Insulation	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
③ Structural Framing	16" APA web joist @ 24" OC with 1 1/8" engineered rim joist Continuous blocking
④ Furring	SPF 2x4 flat @ 24" OC
⑤ Structural Sheathing	5/8" APA rated sheathing Glued & nailed @ 6"E & 12"F
⑥ Exterior Weather Barrier	Fully adhered monolithic non-porous vapor-permeable weather resistant barrier. Rated 6 months exposure. Self-sealing around nail & screw penetrations. Waterproof to >32ft water column Vapor permanence 11 perms Airtightness 0.00009 cfm/ft2 Class A fire rated FS:10 SDI:15



*per manufacturer's reporting



B.PUBLIC PREFAB. PBC
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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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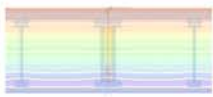
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59-Roof Assembly

B.PUBLIC Prefab

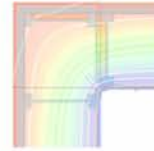
THERMAL PERFORMANCE

Vertical Wall Connection



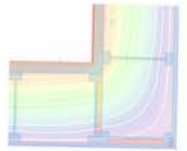
IP = pos 0.002 BTU / (h.ft.F)
M = pos 0.003 W / (m.K)

Inside Corner Connection



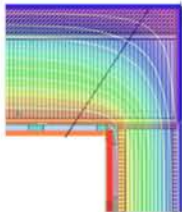
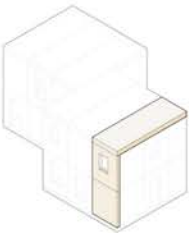
IP = pos 0.016 BTU / (h.ft.F)
M = pos 0.027 W / (m.K)

Outside Corner Connection



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

Roof to Wall Connection*



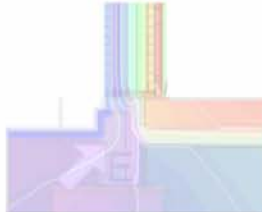
IP = neg 0.046 BTU / (h.ft.F)
M = neg 0.079 W / (m.K)

Horizontal Wall Connection



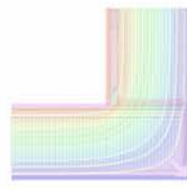
IP = pos 0.006 BTU / (h.ft.F)
M = pos 0.010 W / (m.K)

Wall to Slab Connection**



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

Wall to Frame Floor 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-35 Wall assembly.
**Shown with B.Public standard concrete foundation design.
***Shown with B.Public R-51 Floor assembly

