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ICC-ES Listing Report
ESL-1595

Issued June 2024

This listing is subject to renewal June 2025.

CSI: DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 21 00—Thermal Insulation

Product Certification System:

The ICC-ES product-certification system includes evaluating reports of tests of standard manufactured product, prepared by accredited testing laboratories and provided by the listee, to verify compliance with applicable codes and standards. The system also involves factory inspections, and assessment and surveillance of the listee's quality system.

Product: TIMBERFILL DENSE-PACK INSULATION AND TIMBERBATT THERMAL AND ACOUSTIC INSULATION

Listee: TIMBERHP BY GOLAB INC.

Evaluation: TimberFill Dense-Pack Insulation and TimberBatt Thermal and Acoustic Insulation have been evaluated based on tests on the load bearing wall assemblies consisting of building-material components described in the ICC Design Nos. TMP-1595-01 through TMP-1595-06 within this Listing Report. The tests were conducted in accordance with the following standards:

- ASTM E119-18B, Standard Test Methods for Fire Tests of Building Construction and Materials, ASTM International.
- UL 263-11 (with revisions through March 2018), Standard for Fire Tests of Building Construction and Materials, Underwriters Laboratories, Inc.

Findings: Evaluation of TimberFill Dense-Pack Insulation and TimberBatt Thermal and Acoustic Insulation as components of the load bearing walls is based on tests in accordance with the applicable test method as referenced in each ICC Design No., and as referenced in the applicable sections of the following code editions:

- 2021 *International Building Code®* (IBC)
  Applicable Section: 703.2
- 2021 *International Residential Code®* (IRC)
  Applicable Section: R302

Identification:

1. The ICC-ES mark of conformity, electronic labeling, or the listing report number (ICC-ES ESL-1595) and/or the ICC-ES evaluation report (ESR-5203) for TimberFill Dense-Pack Insulation or ESR-5388 for TimberBatt Thermal and Acoustic Insulation), and when applicable the ICC-ES listing mark, along with the name, registered trademark, or registered logo of the listee must be included in the product label.
2. In addition, each package containing the TimberFill Dense-Pack Insulation and TimberBatt Thermal and Acoustic Insulation described in this listing report is identified by a stamp bearing the manufacturer's name (TimberHP by Golab Inc.), the product name, the address of the manufacturing plant, and the date of manufacture.
3. The report holder's contact information is the following:

   TIMBERHP BY GOLAB INC.
   1 MAIN STREET
   POST OFFICE BOX 119
   MADISON, MAINE 04950
   (207) 715-3636
   www.timberhp.com

Installation: TimberFill Dense-Pack Insulation and TimberBatt Thermal and Acoustic Insulation must be installed in accordance with the ICC-ES evaluation report (ESR-5203) for TimberFill Dense-Pack Insulation or ESR-5388 for TimberBatt Thermal and Acoustic Insulation), the manufacturer's published installation instructions and applicable codes.

Conditions of Listing:

1. The listing report addresses only conformance with the standards and code sections noted above.
2. Approval of the product's use is the sole responsibility of the local code official.
3. The listing applies only to the materials tested and as submitted for review by ICC-ES.
4. The ASD design loads used in testing for the load-bearing wood-framed walls are based on the allowable axial compressive load of the wall framing studs and support bracing (if applicable) in accordance with the NDS (National Design Specification for Wood Construction), unless noted otherwise. Sheathing was not considered in the calculation of the design loads.
5. The ASD design loads used in testing for the load-bearing cold-formed steel-framed walls are based on the allowable axial compressive load of the wall framing studs and support bracing (if applicable) in accordance with AISI S100 (North American Specification for the Design of Cold-Formed Steel Structural Members), unless noted otherwise. Sheathing was not considered in the calculation of the design loads.
6. Greater stud sizes (depths) are permitted to be used in wood- or metal-stud wall systems in accordance with Section 12.5.2 of ASTM E2032 (Standard Guide for Extension of Data from Fire Resistance Tests Conducting in Accordance with ASTM E119) and the principles pertaining to the fire resistance rating of wall assemblies.
7. For a wall assembly tested in accordance with ASTM E119, the assembly rating are applicable to both sides of the wall assembly (fire from either face of the wall), unless noted otherwise.
8. For Design Nos. TMP-1595-05 and TMP-1595-06, load-bearing double wall assemblies, the respective portion of the design load intended to be supported by each wall section, must be applied individually to each wall section in accordance with Section 7.4.1.1(2) of ASTM E119.
9. TimberFill Dense-Pack Insulation and TimberBatt Thermal and Acoustic Insulation are manufactured under a quality control program with inspections by ICC-ES.

ICC Design No. TMP-1595-01

ESL-1595

Issued June 2024

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Applicant: TIMBERHP BY GOLAB INC.

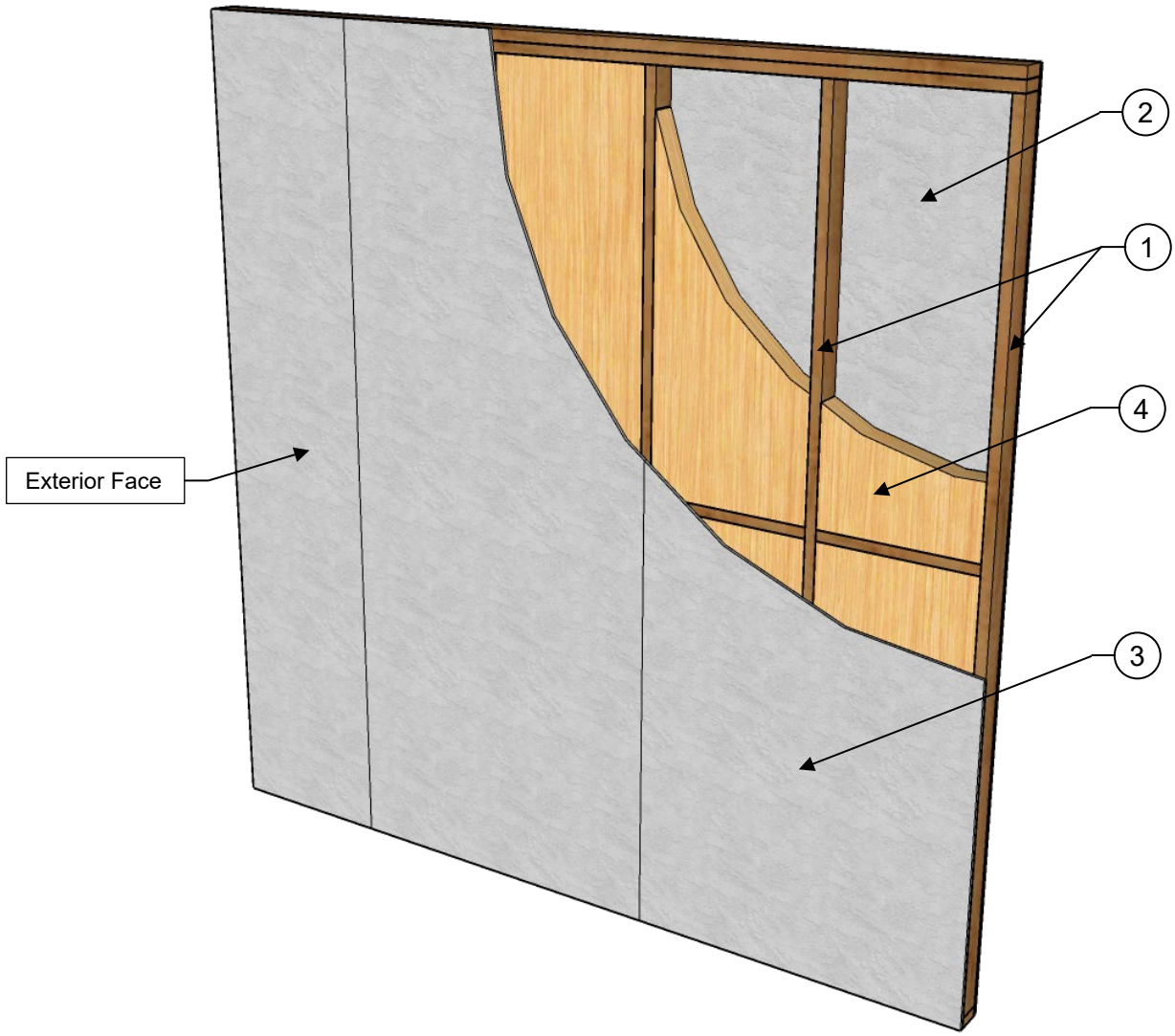
Product: TIMBERFILL DENSE-PACK INSULATION AND TIMBERBATT THERMAL AND ACOUSTIC INSULATION

Standard: ASTM E119 (UL 263)

Assembly Rating: 1-Hour

Load: Load Bearing (100% Design Load) – See Conditions of Listing Item 4

TMP = Thermal and Moisture Protection



COMPONENTS OF CONSTRUCTION:

ITEM NO.	COMPONENTS	MATERIALS
1	**Wood Framing**	Nominal 2-inch by 4-inch (50.8 mm by 101.6 mm) wood studs with a governing slenderness ratio (l_e/d) of 38.5, spaced maximum 24 inches (609.6 mm) on center, with blocking at mid-height in the weak-axis direction, are secured to top and bottom plates with 3-inch (76.2 mm) long by 0.131-inch (3.33 mm) diameter smooth shank framing nails. A double top plate is secured to the first top plate with 3-inch (76.2 mm) long by 0.131-inch (3.33 mm) diameter nails spaced 16 inches (406.4 mm) on center. Full-depth blocking is installed between each stud at mid-height of the wall assembly and secured with 3-inch (76.2 mm) long by 0.131-inch (3.33 mm) diameter nails. Note: See Conditions of Listing Items 4 and 6 of ESL-1595. Optional Framing – Fire-retardant-treated wood (FRTW) framing members may be used in lieu of structural sawn lumber framing members. FRTW framing members must comply with 2021 IBC Section 2303.2. Design values for strength of framing members must be adjusted in accordance with 2021 IBC Section 2303.2.5.
2	**Interior Sheathing**	One layer of minimum $^5/_8$-inch (15.9 mm) Type X or Type C gypsum wallboard, complying with ASTM C1396, must be secured directly to the framing, on the interior side of the wall assembly, using minimum 1 $^5/_8$-inch (41.3 mm) long Type W bugle-head steel screws spaced at 8 inches (203.2 mm) on center along the perimeter and 12-inches (304.8 mm) on center in the field of the gypsum board. Gypsum wallboard must be installed vertically to the studs. All vertical seams must fall on studs and must be staggered from one side of the assembly to the opposite side of the assembly. All sheathing joints must be treated with two coats of joint compound with nominal 2-inch (50.8 mm) wide paper tape embedded in the first layer of compound over all joints. All fastener heads must be covered with one layer of joint compound.
3	**Exterior Sheathing**	One layer of minimum $^5/_8$-inch (15.9 mm) Type X or Type C gypsum wallboard, complying with ASTM C1396, must be secured directly to the framing, on the exterior side of the wall assembly, using minimum 1 $^5/_8$-inch (41.3 mm) long Type W bugle-head steel screws spaced at 8 inches (203.2 mm) on center along the perimeter and 12-inches (304.8 mm) on center in the field of the gypsum board. Gypsum wallboard must be installed vertically to the studs. All vertical seams must fall on studs and must be staggered from one side of the assembly to the opposite side of the assembly. All sheathing joints must be treated with two coats of joint compound with nominal 2-inch (50.8 mm) wide paper tape embedded in the first layer of compound over all joints. All fastener heads must be covered with one layer of joint compound. **(Optional – Not Shown) –** Where the assembly is used as an exterior wall, Wood Structural Panels (WSP), complying with 2021 IBC Section 2303.1.5, may be added as a base layer underneath the exterior sheathing or as a face layer over the exterior sheathing without reducing the fire-resistance rating. Where installed as the base layer, the WSP must be secured directly to the framing, and fastener penetration into the framing members must be, at a minimum, the same depth as the exterior sheathing fastening. Where installed as the face layer, the WSP must be secured through the exterior sheathing to the framing, and fastener penetration into the framing must be, at a minimum, the same depth as the exterior sheathing fastening. Joints between the base and face layers must be staggered. Face layer fasteners must be staggered from the base layer fasteners.
4	**Cavity Insulation** Use either A or B	**A — TimberFill Dense-Pack Insulation** (ESR-5203) installed at a nominal thickness of 3 $^1/_2$-inch (89 mm) and a nominal density of 3.0 lbs./ft^3 (48 kg/m^3), fully filling each stud cavity. The insulation is retained within each stud cavity using a thin, woven fiber mesh secured to the framing members with $^1/_2$-inch (12.7 mm) crown staples and installed in accordance with the manufacturer's published installation instructions. The insulation thickness must match the stud cavity depth. **B — TimberBatt Thermal and Acoustic Insulation** (ESR-5388) installed at a nominal thickness of 3 $^1/_2$-inch (89 mm) and a nominal density of 3.0 lbs./ft^3 (48 kg/m^3) is friction-fit into each stud cavity. The insulation thickness must match the stud cavity depth.
5	**Exterior Cladding (Not Shown)**	Where the assembly is used as an exterior wall, any exterior cladding may be included, as authorized by the authority having jurisdiction, and must be installed in accordance with the manufacturer's installation instructions.

For **SI:** 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 lbs./ft^3 = 16.01 kg/m^3.

ICC Design No. TMP-1595-02

ESL-1595

Issued June 2024

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Applicant: TIMBERHP BY GOLAB INC.

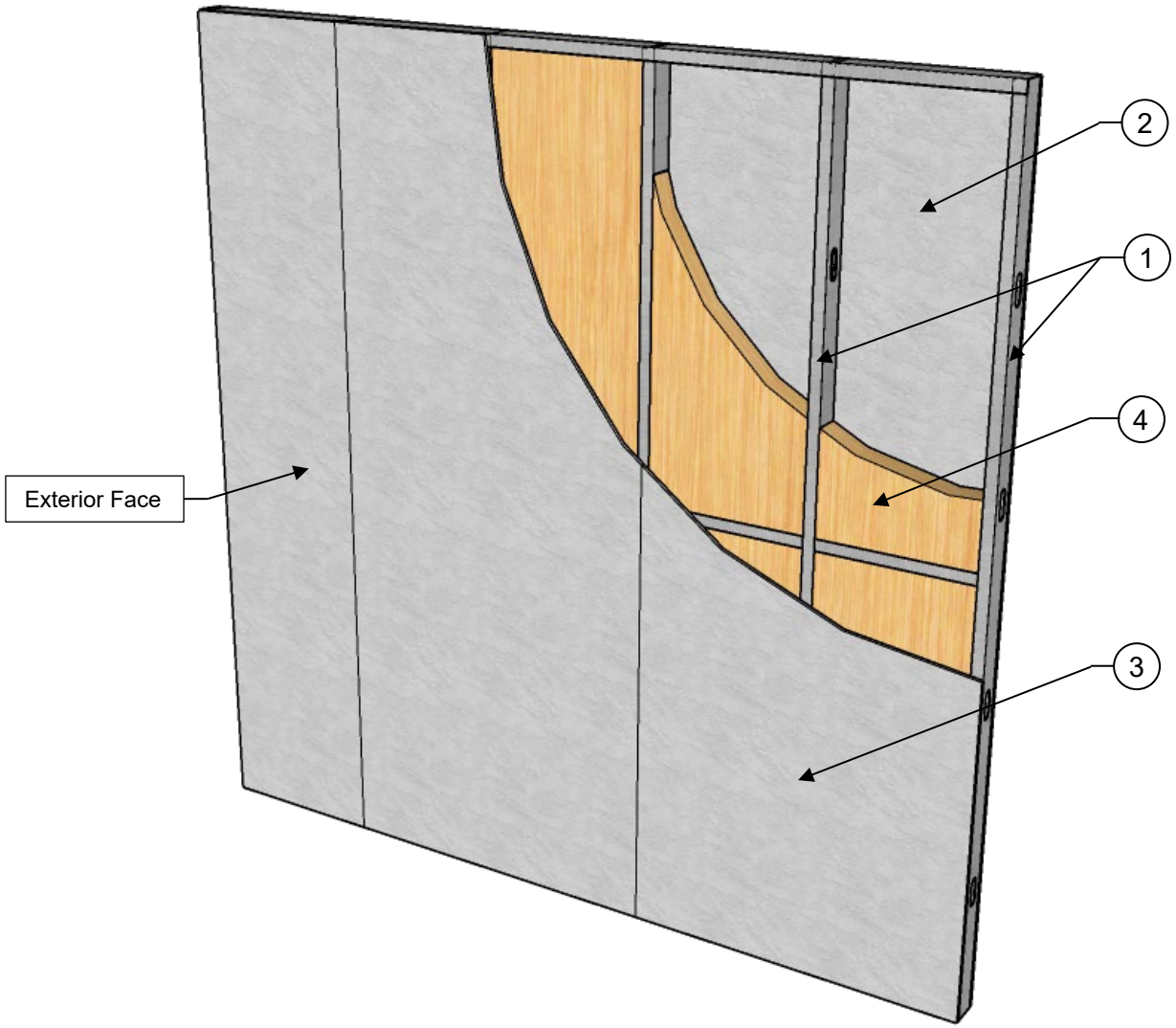
Product: TIMBERFILL DENSE-PACK INSULATION AND TIMBERBATT THERMAL AND ACOUSTIC INSULATION

Standard: ASTM E119 (UL 263)

Assembly Rating: 1-Hour

Load: Load Bearing (80% Design Load) – See Conditions of Listing Item 5

TMP = Thermal and Moisture Protection



COMPONENTS OF CONSTRUCTION:

ITEM NO.	COMPONENTS	MATERIALS
1	**Cold-Formed Steel Structural Members**	Minimum $3^5/_8$-inch (92 mm) deep, minimum 20 gauge (37.5 mils), corrosion-protected or galvanized steel channel-shaped studs with a governing slenderness ratio (l_e/d) of 40, spaced maximum 24 inches (609.6 mm) on center, with blocking at mid-height in the weak-axis direction, are secured to top and bottom track members (with same gauge thickness as studs) with $^1/_2$-inch (12.7 mm) long No. 8 wafer head self-drill screws. Steel studs must have minimum $1^5/_8$-inch (41.3 mm) flanges and $^1/_2$-inch (12.7 mm) return. Mid-height bracing of minimum 16-gauge (62.5 mils) galvanized steel channel blocking, with $1^1/_2$-inch (38.1 mm) flanges and $^1/_4$-inch (6.4 mm) legs, is installed between each stud at mid-height of the wall assembly and attached with 16 gauge (62.5 mils) thick $1^1/_2$-inch by $1^1/_2$-inch (38.1 mm by 38.1 mm) galvanized steel angles at each end with two $^1/_2$-inch (12.7 mm) long No. 8 pan head self-drilling screws. Note: See Conditions of Listing Items 5 and 6 of ESL-1595.
2	**Interior Sheathing**	One layer of minimum $^5/_8$-inch (15.9 mm) Type X or Type C gypsum wallboard, complying with ASTM C1396, must be secured directly to the framing, on the interior side of the wall assembly, using minimum $1^1/_4$-inch (31.8 mm) long Type S bugle-head steel screws spaced at 8 inches (203.2 mm) on center along the perimeter and 12-inches (304.8 mm) on center in the field of the gypsum board. Gypsum wallboard must be installed vertically to the studs. All vertical seams must fall on studs and must be staggered from one side of the assembly to the opposite side of the assembly. All sheathing joints must be treated with two coats of joint compound with nominal 2-inch (50.8 mm) wide paper tape embedded in the first layer of compound over all joints. All fastener heads must be covered with one layer of joint compound.
3	**Exterior Sheathing**	One layer of minimum $^5/_8$-inch (15.9 mm) Type X or Type C gypsum wallboard, complying with ASTM C1396, must be secured directly to the framing, on the exterior side of the wall assembly, using minimum $1^1/_4$-inch (31.8 mm) long Type S bugle-head steel screws spaced at 8 inches (203.2 mm) on center along the perimeter and 12-inches (304.8 mm) on center in the field of the gypsum board. Gypsum wallboard must be installed vertically to the studs. All vertical seams must fall on studs and must be staggered from one side of the assembly to the opposite side of the assembly. All sheathing joints must be treated with two coats of joint compound with nominal 2-inch (50.8 mm) wide paper tape embedded in the first layer of compound over all joints. All fastener heads must be covered with one layer of joint compound. **(Optional – Not Shown) –** Where the assembly is used as an exterior wall, Wood Structural Panels (WSP), complying with 2021 IBC Section 2303.1.5, may be added as a base layer underneath the exterior sheathing or as a face layer over the exterior sheathing without reducing the fire-resistance rating. Where installed as the base layer, the WSP must be secured directly to the framing, and fastener penetration into the framing members must be, at a minimum, the same depth as the exterior sheathing fastening. Where installed as the face layer, the WSP must be secured through the exterior sheathing to the framing, and fastener penetration into the framing must be, at a minimum, the same depth as the exterior sheathing fastening. Joints between the base and face layers must be staggered. Face layer fasteners must be staggered from the base layer fasteners.
4	**Cavity Insulation** Use either A or B	**A — TimberFill Dense-Pack Insulation** (ESR-5203) installed at a nominal thickness of $3^5/_8$-inch (92 mm) and a nominal density of 3.0 lbs./ft^3 (48 kg/m^3), fully filling each stud cavity. The insulation is retained within each stud cavity using a thin, woven fiber mesh secured to the framing members with a sprayed-applied adhesive in accordance with the manufacturer's published installation instructions. The insulation thickness must match the stud cavity depth. **B — TimberBatt Thermal and Acoustic Insulation** (ESR-5388) installed at a nominal thickness of $3^5/_8$-inch (92 mm) and a nominal density of 3.0 lbs./ft^3 (48 kg/m^3) is friction-fit into each stud cavity. The insulation thickness must match the stud cavity depth.
5	**Exterior Cladding (Not Shown)**	Where the assembly is used as an exterior wall, any exterior cladding may be included, as authorized by the authority having jurisdiction, and must be installed in accordance with the manufacturer's installation instructions.

For **SI:** 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 lbs./ft^3 = 16.01 kg/m^3.

ICC Design No. TMP-1595-03

ESL-1595

Issued June 2024

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Applicant: TIMBERHP BY GOLAB INC.

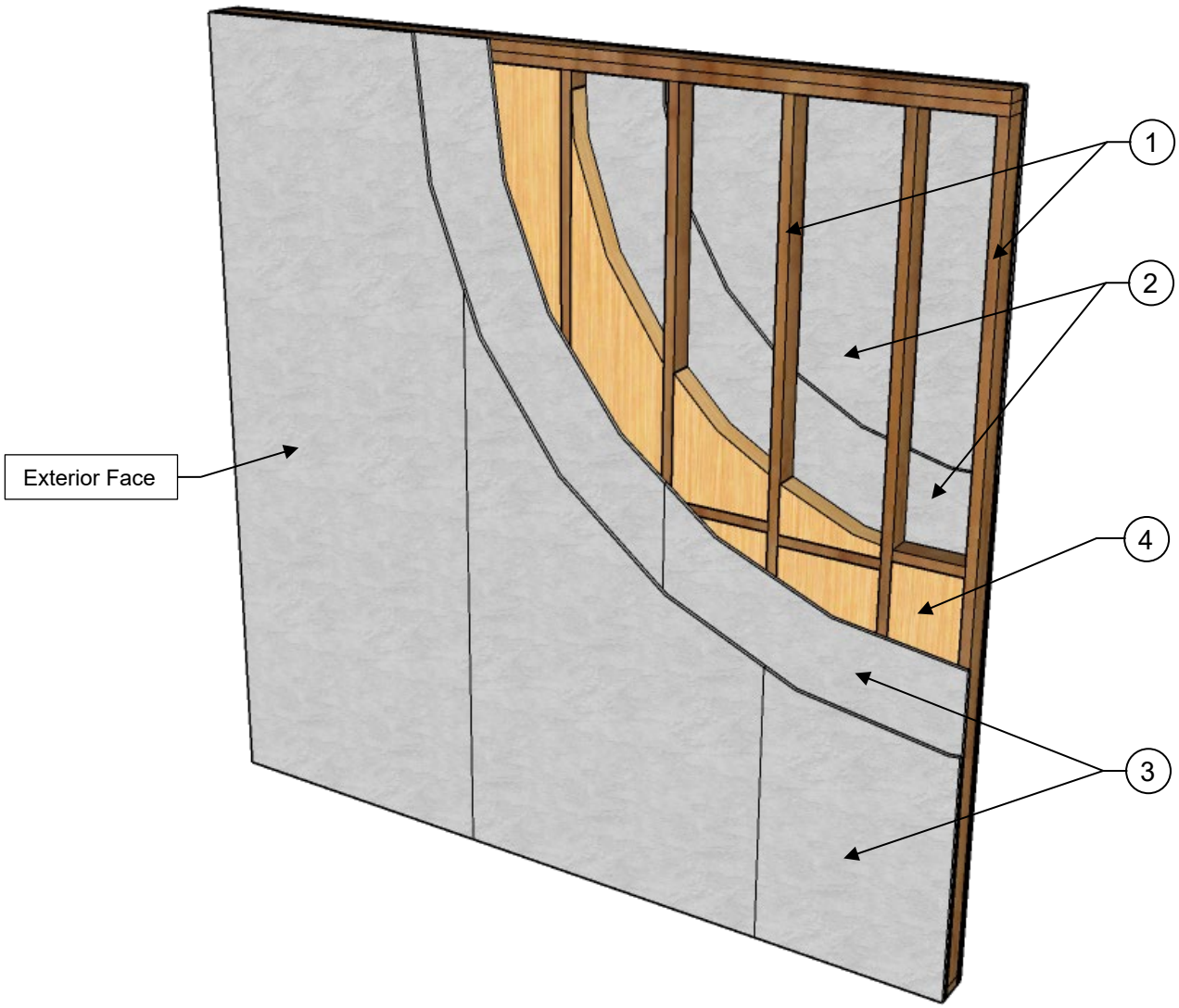
Product: TIMBERFILL DENSE-PACK INSULATION AND TIMBERBATT THERMAL AND ACOUSTIC INSULATION

Standard: ASTM E119 (UL 263)

Assembly Rating: 2-Hour

Load: Load Bearing (100% Design Load) – See Conditions of Listing Item 4

TMP = Thermal and Moisture Protection



COMPONENTS OF CONSTRUCTION:

ITEM NO.	COMPONENTS	MATERIALS
1	**Wood Framing**	Nominal 2-inch by 4-inch (50.8 mm by 101.6 mm) wood studs with a governing slenderness ratio (l_e/d) of 38.5, spaced maximum 16 inches (406.4 mm) on center, with blocking at mid-height in the weak-axis direction, are secured to top and bottom plates with 3-inch (76.2 mm) long by 0.131-inch (3.33 mm) diameter smooth shank framing nails. A double top plate is secured to the first top plate with 3-inch (76.2 mm) long by 0.131-inch (3.33 mm) diameter nails spaced 16 inches (406.4 mm) on center. Full-depth blocking is installed between each stud at mid-height of the wall assembly and secured with 3-inch (76.2 mm) long by 0.131-inch (3.33 mm) diameter nails. Note: See Conditions of Listing Items 4 and 6 of ESL-1595. Optional Framing – Fire-retardant-treated wood (FRTW) framing members may be used in lieu of structural sawn lumber framing members. FRTW framing members must comply with 2021 IBC Section 2303.2. Design values for strength of framing members must be adjusted in accordance with 2021 IBC Section 2303.2.5.
2	**Interior Sheathing**	Two layers of minimum $^5/_8$-inch (15.9 mm) Type X or Type C gypsum wallboard, complying with ASTM C1396, are secured directly to the base wall system framing, on the interior side of the wall assembly. The base layer must be secured to the framing using minimum $1^5/_8$-inch (41.3 mm) long Type W screws spaced at 8 inches (203.2 mm) on center along the perimeter and 12-inches (304.8 mm) on center in the field of the gypsum board. The face layer, with vertical panel joints staggered from the base layer, must be secured to the framing using $2^1/_2$-inch (63.5 mm) long Type W screws spaced at 8 inches (203.2 mm) on center along the perimeter and 12-inches (304.8 mm) on center in the field of the gypsum board, with the face layer screws staggered 4 inches (101.6 mm) from the base layer screws. Gypsum wallboard must be installed vertically to the studs. All vertical seams must fall on studs and must be staggered from one side of the assembly to the opposite sides of the assembly. All face layer sheathing joints edge joints must be treated with two coats of joint compound with nominal 2-inch wide paper tape embedded in first layer of compound over all joints. All fastener heads must be covered with one layer of joint compound.
3	**Exterior Sheathing**	Two layers of minimum $^5/_8$-inch (15.9 mm) Type X or Type C gypsum wallboard, complying with ASTM C1396, are secured directly to the base wall system framing, on the exterior side of the wall assembly. The base layer must be secured to the framing using minimum $1^5/_8$-inch (41.3 mm) long Type W screws spaced at 8 inches (203.2 mm) on center along the perimeter and 12-inches (304.8 mm) on center in the field of the gypsum board. The face layer, with vertical panel joints staggered from the base layer, must be secured to the framing using $2^1/_2$-inch (63.5 mm) long Type W screws spaced at 8 inches (203.2 mm) on center along the perimeter and 12-inches (304.8 mm) on center in the field of the gypsum board, with the face layer screws staggered 4 inches (101.6 mm) from the base layer screws. Gypsum wallboard must be installed vertically to the studs. All vertical seams must fall on studs and must be staggered from one side of the assembly to the opposite sides of the assembly. All face layer sheathing joints edge joints must be treated with two coats of joint compound with nominal 2-inch wide paper tape embedded in first layer of compound over all joints. All fastener heads must be covered with one layer of joint compound. **(Optional – Not Shown) –** Where the assembly is used as an exterior wall, Wood Structural Panels (WSP), complying with 2021 IBC Section 2303.1.5, may be added as a base layer underneath the two layers of exterior sheathing or as a face layer over the two layers of exterior sheathing without reducing the fire-resistance rating. Where installed as the base layer, the WSP must be secured directly to the framing, and fastener penetration into the framing members must be, at a minimum, the same depth as the exterior sheathing fastening. Where installed as the face layer, the WSP must be secured through the exterior sheathing to the framing, and fastener penetration into the framing must be, at a minimum, the same depth as the exterior sheathing fastening. Joints between the layers must be staggered. Fasteners must be staggered between layers.
4	**Cavity Insulation** Use either A or B	**A — TimberFill Dense-Pack Insulation** (ESR-5203) installed at a nominal thickness of $3^1/_2$-inch (89 mm) and a nominal density of 3.0 lbs./ft^3 (48 kg/m^3), fully filling each stud cavity. The insulation is retained within each stud cavity using a thin, woven fiber mesh secured to the framing members with $^1/_2$-inch (12.7 mm) crown staples and installed in accordance with the manufacturer's published installation instructions. The insulation thickness must match the stud cavity depth. **B — TimberBatt Thermal and Acoustic Insulation** (ESR-5388) installed at a nominal thickness of $3^1/_2$-inch (89 mm) and a nominal density of 3.0 lbs./ft^3 (48 kg/m^3) is friction-fit into each stud cavity. The insulation thickness must match the stud cavity depth.
5	**Exterior Cladding (Not Shown)**	Where the assembly is used as an exterior wall, any exterior cladding may be included, as authorized by the authority having jurisdiction, and must be installed in accordance with the manufacturer's installation instructions.

For **SI:** 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 lbs./ft^3 = 16.01 kg/m^3.

ICC Design No. TMP-1595-04

ESL-1595

Issued June 2024

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Applicant: TIMBERHP BY GOLAB INC.

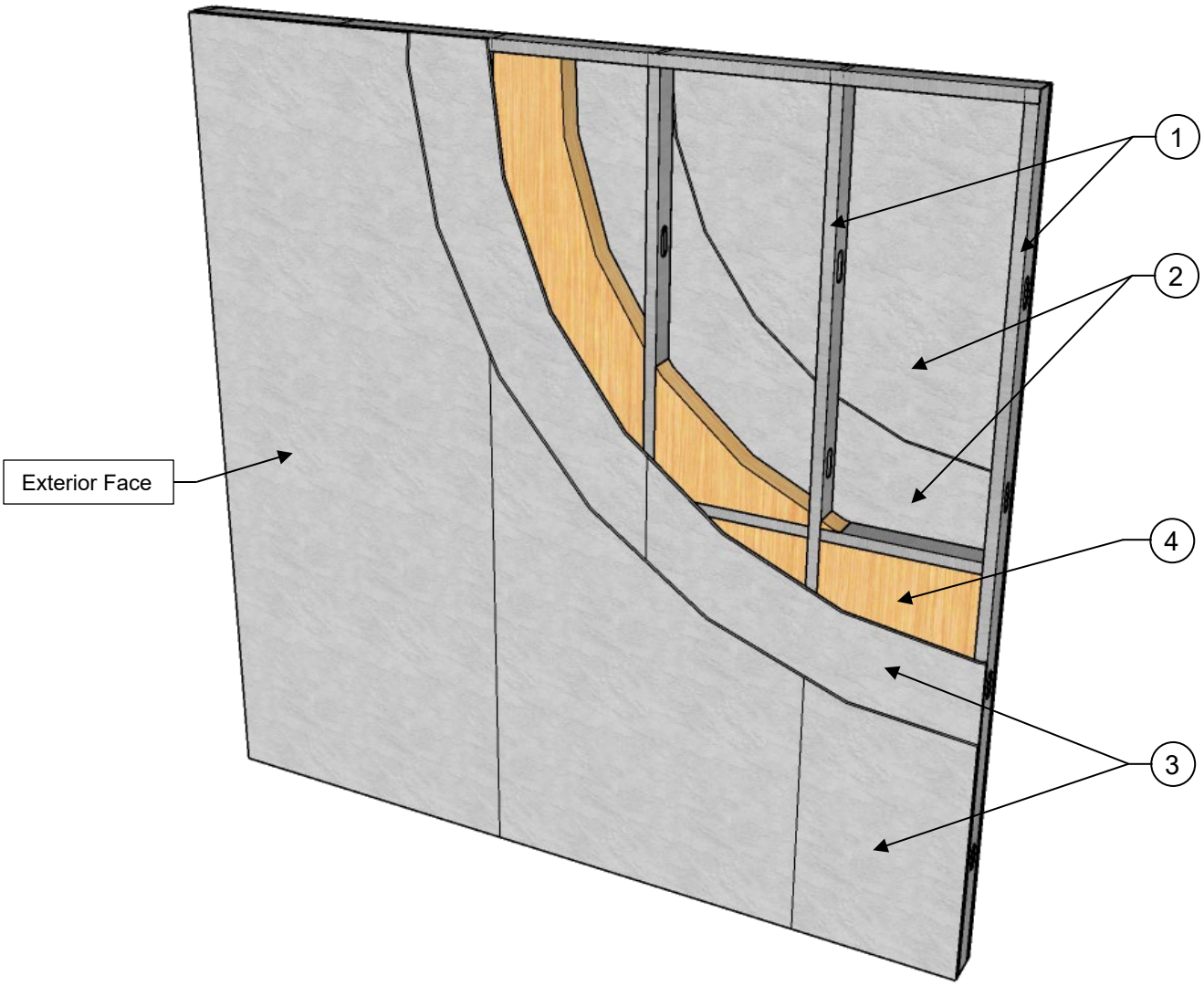
Product: TIMBERFILL DENSE-PACK INSULATION AND TIMBERBATT THERMAL AND ACOUSTIC INSULATION

Standard: ASTM E119 (UL 263)

Assembly Rating: 2-Hour

Load: Load Bearing (80% Design Load) – See Conditions of Listing Item 5

TMP = Thermal and Moisture Protection



COMPONENTS OF CONSTRUCTION:

ITEM NO.	COMPONENTS	MATERIALS
1	**Cold-Formed Steel Structural Members**	Minimum $3^5/_8$-inch (92 mm) deep, minimum 20 gauge (37.5 mils), corrosion-protected or galvanized steel channel-shaped studs with a governing slenderness ratio (l_e/d) of 40, spaced maximum 24 inches (609.6 mm) on center, with blocking at mid-height in the weak-axis direction, are secured to top and bottom track members (with same gauge thickness as studs) with $^1/_2$-inch (12.7 mm) long No. 8 wafer head self-drill screws. Steel studs must have minimum $1^5/_8$-inch (41.3 mm) flanges and $^1/_2$-inch (12.7 mm) return. Mid-height bracing of minimum 16-gauge (62.5 mils) galvanized steel channel blocking, with $1^1/_2$-inch (38.1 mm) flanges and $^1/_4$-inch (6.4 mm) legs, is installed between each stud at mid-height of the wall assembly and attached with 16 gauge (62.5 mils) thick $1^1/_2$-inch by $1^1/_2$-inch (38.1 mm by 38.1 mm) galvanized steel angles at each end with two $^1/_2$-inch (12.7 mm) long No. 8 pan head self-drilling screws. Note: See Conditions of Listing Items 5 and 6 of ESL-1595.
2	**Interior Sheathing**	Two layers of minimum $^5/_8$-inch (15.9 mm) Type X or Type C gypsum wallboard, complying with ASTM C1396, are secured directly to the base wall system framing, on the interior side of the wall assembly. The base layer must be secured to the framing using minimum $1^1/_4$-inch (31.8 mm) long Type S screws spaced at 8 inches (203.2 mm) on center along the perimeter and 12-inches (304.8 mm) on center in the field of the gypsum board. The face layer, with vertical panel joints staggered from the base layer, must be secured to the framing using $1^7/_8$-inch (47.6 mm) long Type S screws spaced at 8 inches (203.2 mm) on center along the perimeter and 12-inches (304.8 mm) on center in the field of the gypsum board, with the face layer screws staggered 4 inches (101.6 mm) from the base layer screws. Gypsum wallboard must be installed vertically to the studs. All vertical seams must fall on studs and must be staggered from one side of the assembly to the opposite sides of the assembly. All face layer sheathing joints edge joints must be treated with two coats of joint compound with nominal 2-inch wide paper tape embedded in first layer of compound over all joints. All fastener heads must be covered with one layer of joint compound.
3	**Exterior Sheathing**	Two layers of minimum $^5/_8$-inch (15.9 mm) Type X or Type C gypsum wallboard, complying with ASTM C1396, are secured directly to the base wall system framing, on the exterior side of the wall assembly. The base layer must be secured to the framing using minimum $1^1/_4$-inch (31.8 mm) long Type S screws spaced at 8 inches (203.2 mm) on center along the perimeter and 12-inches (304.8 mm) on center in the field of the gypsum board. The face layer, with vertical panel joints staggered from the base layer, must be secured to the framing using $1^7/_8$-inch (47.6 mm) long Type S screws spaced at 8 inches (203.2 mm) on center along the perimeter and 12-inches (304.8 mm) on center in the field of the gypsum board, with the face layer screws staggered 4 inches (101.6 mm) from the base layer screws. Gypsum wallboard must be installed vertically to the studs. All vertical seams must fall on studs and must be staggered from one side of the assembly to the opposite sides of the assembly. All face layer sheathing joints edge joints must be treated with two coats of joint compound with nominal 2-inch wide paper tape embedded in first layer of compound over all joints. All fastener heads must be covered with one layer of joint compound. **(Optional – Not Shown) –** Where the assembly is used as an exterior wall, Wood Structural Panels (WSP), complying with 2021 IBC Section 2303.1.5, may be added as a base layer underneath the two layers of exterior sheathing or as a face layer over the two layers of exterior sheathing without reducing the fire-resistance rating. Where installed as the base layer, the WSP must be secured directly to the framing, and fastener penetration into the framing members must be, at a minimum, the same depth as the exterior sheathing fastening. Where installed as the face layer, the WSP must be secured through the exterior sheathing to the framing, and fastener penetration into the framing must be, at a minimum, the same depth as the exterior sheathing fastening. Joints between the layers must be staggered. Fasteners must be staggered between layers.
4	**Cavity Insulation** Use either A or B	**A — TimberFill Dense-Pack Insulation** (ESR-5203) installed at a nominal thickness of $3^5/_8$-inch (92 mm) and a nominal density of 3.0 lbs./ft^3 (48 kg/m^3), fully filling each stud cavity. The insulation is retained within each stud cavity using a thin, woven fiber mesh secured to the framing members with a sprayed-applied adhesive installed in accordance with the manufacturer's published installation instructions. The insulation thickness must match the stud cavity depth. **B — TimberBatt Thermal and Acoustic Insulation** (ESR-5388) installed at a nominal thickness of $3^5/_8$-inch (92 mm) and a nominal density of 3.0 lbs./ft^3 (48 kg/m^3) is friction-fit into each stud cavity. The insulation thickness must match the stud cavity depth.
5	**Exterior Cladding (Not Shown)**	Where the assembly is used as an exterior wall, any exterior cladding may be included, as authorized by the authority having jurisdiction, and must be installed in accordance with the manufacturer's installation instructions.

For **SI:** 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 lbs./ft^3 = 16.01 kg/m^3.

ICC Design No. TMP-1595-05

ESL-1595

Issued June 2024

This listing is subject to renewal June 2025.

Applicant: TIMBERHP BY GOLAB INC.

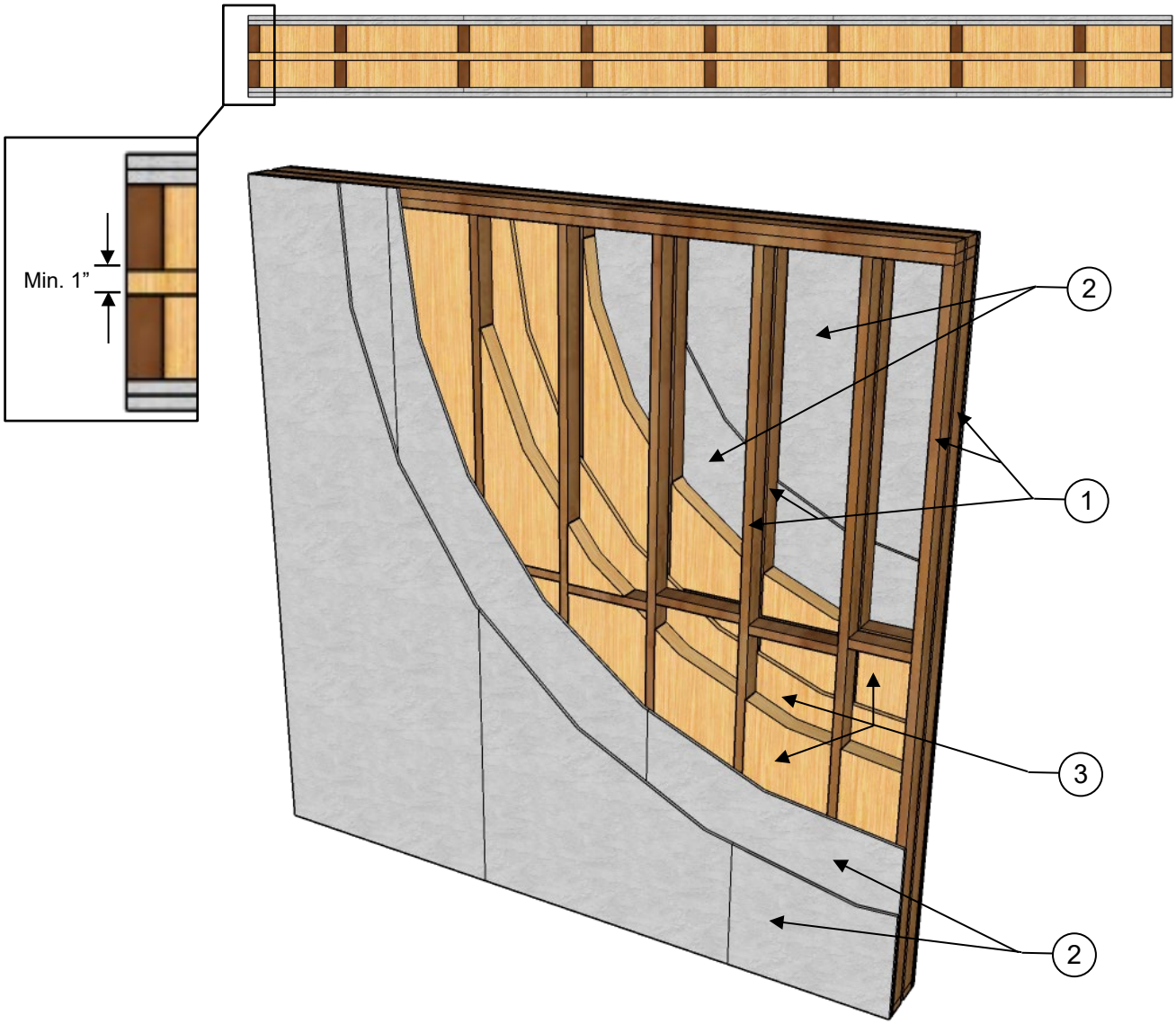
Product: TIMBERFILL DENSE-PACK INSULATION AND TIMBERBATT THERMAL AND ACOUSTIC INSULATION

Standard: ASTM E119 (UL 263)

Assembly Rating: 2-Hour

Load: Load Bearing (100% Design Load) – See Conditions of Listing Items 4 and 8

TMP = Thermal and Moisture Protection



COMPONENTS OF CONSTRUCTION:

ITEM NO.	COMPONENTS	MATERIALS
1	**Wood Framing (Double Wall)**	Each wall section consists of nominal 2-inch by 4-inch (50.8 mm by 101.6 mm) wood studs with a governing slenderness ratio (l_e/d) of 38.5, spaced maximum 16 inches (406.4 mm) on center, with blocking at mid-height in the weak-axis direction, and secured to top and bottom plates with 3-inch (76.2 mm) long by 0.131-inch (3.33 mm) diameter nails. A double top plate is secured to the first top plate with 3-inch (76.2 mm) long by 0.131-inch (3.33 mm) diameter nails spaced 16 inches (406.4 mm) on center. Full-depth blocking is installed between each stud at mid-height of the wall assembly and secured with 3-inch (76.2 mm) long by 0.131-inch (3.33 mm) diameter nails. Wood studs are permitted to be staggered between wall sections. A minimum 1-inch (25.4 mm) air space is required between wall section framing members in the double wall assembly. Note: See Conditions of Listing Items 4, 6, and 8 of ESL-1595. Optional Framing – Fire-retardant-treated wood (FRTW) framing members may be used in lieu of structural sawn lumber framing members. FRTW framing members must comply with 2021 IBC Section 2303.2. Design values for strength of framing members must be adjusted in accordance with 2021 IBC Section 2303.2.5.
2	**Sheathing (Interior Side)** Required for each wall section	Two layers of minimum $^5/_8$-inch (15.9 mm) Type X or Type C gypsum wallboard, complying with ASTM C1396, must be secured to the framing on the interior side of each wall section. The base layer must be secured to the framing using minimum $1^5/_8$-inch (41.3 mm) long Type W screws spaced at 8 inches (203.2 mm) on center along the perimeter and 12-inches (304.8 mm) on center in the field of the gypsum board. The face layer, with vertical panel joints staggered from the base layer, must be secured to the framing using $2^1/_2$-inch (63.5 mm) long Type W screws spaced at 8 inches (203.2 mm) on center along the perimeter and 12-inches (304.8 mm) on center in the field of the gypsum board, with the face layer screws staggered 4 inches (101.6 mm) from the base layer screws. Gypsum wallboard must be installed vertically to the studs. All vertical seams must fall on studs and must be staggered from one side of the assembly to the opposite sides of the assembly. All face layer sheathing joints edge joints must be treated with two coats of joint compound with nominal 2-inch wide paper tape embedded in first layer of compound over all joints. All fastener heads must be covered with one layer of joint compound.
3	**Cavity Insulation** Required for each wall section. Use either A or B	**A — TimberFill Dense-Pack Insulation** (ESR-5203) installed at a nominal thickness of $3^1/_2$-inch (89 mm) and a nominal density of 3.0 lbs./ft^3 (48 kg/m^3), fully filling each stud cavity of each wall section. The insulation is retained within each stud cavity of each wall section using a thin, woven fiber mesh secured to the framing members on the interior side of each wall section with $^1/_2$-inch (12.7 mm) crown staples and installed in accordance with the manufacturer's published installation instructions. The insulation thickness must match the stud cavity depth of each wall section. **B — TimberBatt Thermal and Acoustic Insulation** (ESR-5388) installed at a nominal thickness of 3 $^1/_2$-inch (89 mm) and a nominal density of 3.0 lbs./ft^3 (48 kg/m^3) is friction-fit into each stud cavity of each wall section. The insulation thickness must match the stud cavity depth of each wall section.

For **SI:** 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 lbs./ft^3 = 16.01 kg/m^3.

ICC Design No. TMP-1595-06

ESL-1595

Issued June 2024

This listing is subject to renewal June 2025.

Applicant: TIMBERHP BY GOLAB INC.

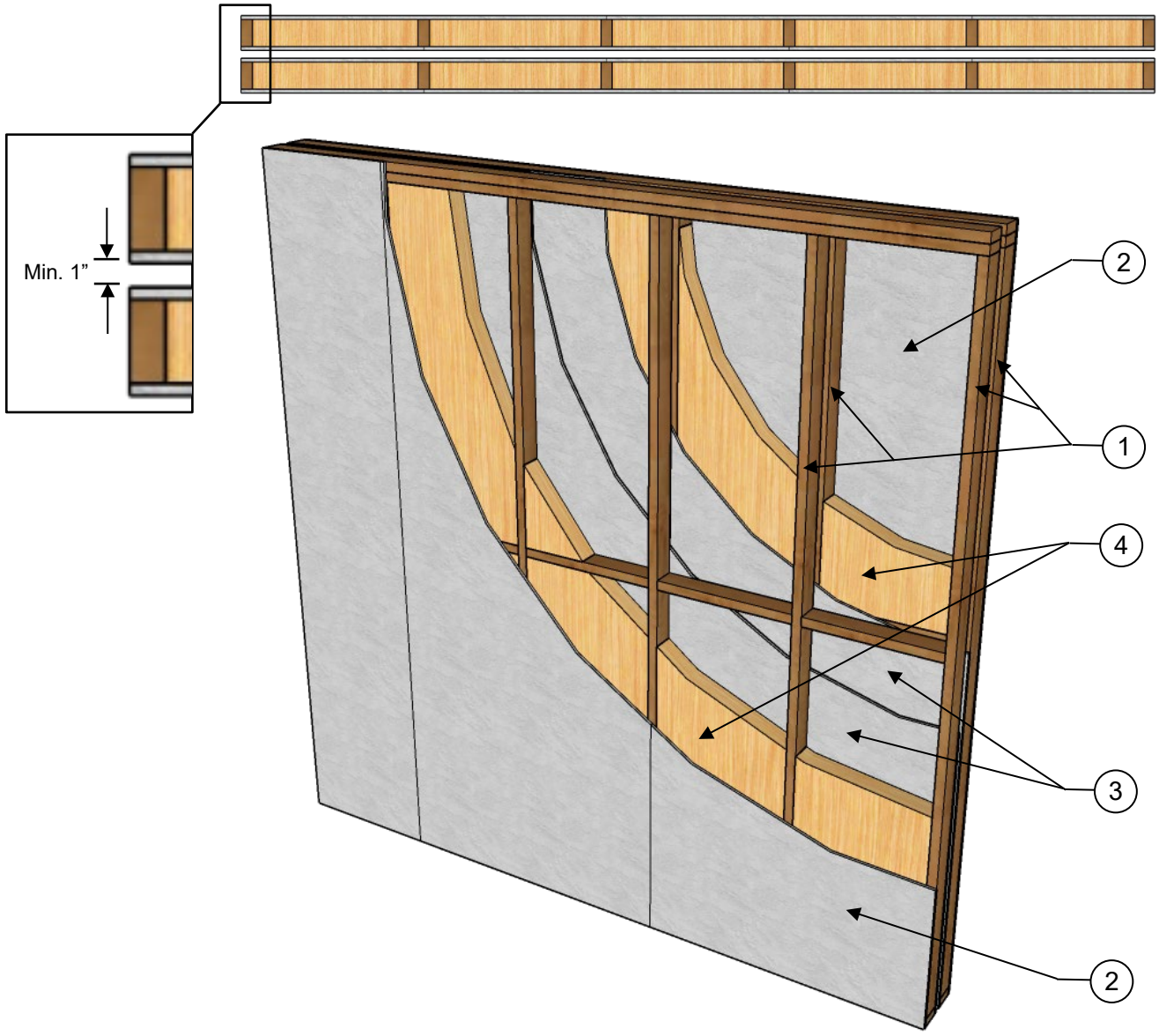
Product: TIMBERFILL DENSE-PACK INSULATION AND TIMBERBATT THERMAL AND ACOUSTIC INSULATION

Standard: ASTM E119 (UL 263)

Assembly Rating: 2-Hour

Load: Load Bearing (100% Design Load) – See Conditions of Listing Items 4 and 8

TMP = Thermal and Moisture Protection



COMPONENTS OF CONSTRUCTION:

ITEM NO.	COMPONENTS	MATERIALS
1	**Wood Framing (Double Wall)**	Each wall section consists of nominal 2-inch by 4-inch (50.8 mm by 101.6 mm) wood studs with a governing slenderness ratio (l_e/d) of 38.5, spaced maximum 24 inches (609.6 mm) on center, with blocking at mid-height in the weak-axis direction, and secured to top and bottom plates with 3-inch (76.2 mm) long by 0.131-inch (3.33 mm) diameter smooth shank framing nails. A double top plate is secured to the first top plate with 3-inch (76.2 mm) long by 0.131-inch (3.33 mm) diameter nails spaced 16 inches (406.4 mm) on center. Full-depth blocking is installed between each stud at mid-height of the wall assembly and secured with 3-inch (76.2 mm) long by 0.131-inch (3.33 mm) diameter nails. Wood studs are permitted to be staggered between wall sections. A minimum 1-inch (25.4 mm) air space is required between walls (minimum 2 $^1/_4$-inch (57.2 mm) gap between wall section framing members) in the double wall assembly. Note: See Conditions of Listing Items 4, 6, and 8 of ESL-1595. Optional Framing – Fire-retardant-treated wood (FRTW) framing members may be used in lieu of structural sawn lumber framing members. FRTW framing members must comply with 2021 IBC Section 2303.2. Design values for strength of framing members must be adjusted in accordance with 2021 IBC Section 2303.2.5.
2	**Sheathing (Interior Side)** Required for each wall section	One layer of minimum $^5/_8$-inch (15.9 mm) Type X or Type C gypsum wallboard, complying with ASTM C1396, must be secured directly to the framing, on the interior side of each wall section, using minimum 1$^5/_8$-inch (41.3 mm) long Type W bugle-head steel screws spaced at 8 inches (203.2 mm) on center along the perimeter and 12-inches (304.8 mm) on center in the field of the gypsum board. Gypsum wallboard must be installed vertically to the studs. All vertical seams must fall on studs and must be staggered from one side of the assembly to the opposite side of the assembly. All sheathing joints must be treated with two coats of joint compound with nominal 2-inch (50.8 mm) wide paper tape embedded in the first layer of compound over all joints. All fastener heads must be covered with one layer of joint compound.
3	**Sheathing (Exterior Side)** Required for each wall section	One layer of minimum $^5/_8$-inch (15.9 mm) Type X or Type C gypsum wallboard, complying with ASTM C1396, must be secured directly to the framing, on the exterior side of each wall section, using minimum 1$^5/_8$-inch (41.3 mm) long Type W bugle-head steel screws spaced at 8 inches (203.2 mm) on center along the perimeter and 12-inches (304.8 mm) on center in the field of the gypsum board. Gypsum wallboard must be installed vertically to the studs. All vertical seams must fall on studs and must be staggered from one side of the assembly to the opposite side of the assembly. All sheathing joints must be treated with two coats of joint compound with nominal 2-inch (50.8 mm) wide paper tape embedded in the first layer of compound over all joints. All fastener heads must be covered with one layer of joint compound.
4	**Cavity Insulation** Required for each wall section. Use either A or B	**A — TimberFill Dense-Pack Insulation** (ESR-5203) installed at a nominal thickness of 3$^1/_2$-inch (89 mm) and a nominal density of 3.0 lbs./ft^3 (48 kg/m^3), fully filling each stud cavity. The insulation is retained within each stud cavity using a thin, woven fiber mesh secured to the framing members with $^1/_2$-inch (12.7 mm) crown staples and installed in accordance with the manufacturer's published installation instructions. The insulation thickness must match the stud cavity depth. **B — TimberBatt Thermal and Acoustic Insulation** (ESR-5388) installed at a nominal thickness of 3 $^1/_2$-inch (89 mm) and a nominal density of 3.0 lbs./ft^3 (48 kg/m^3) is friction-fit into each stud cavity. The insulation thickness must match the stud cavity depth.

For **SI:** 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 lbs./ft^3 = 16.01 kg/m^3.