phius certified product

P-261002

## Product Information

**Manufacturer:** Dextall
**Product Name:** DWALL 2500
**Last Certified:** June 2026
**Valid Through:** June 2031

## Certification Criteria Summary

| Evaluation Categories | | Report Criteria Items | | | | |
|---|---|---|---|---|---|---|
| 1 | Water Control | 1.1 | 1.2 | 1.3 | | |
| 2 | Air Control | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 |
| 3 | Water Vapor Control | 3.1 | | | | |
| 4 | Critter Control | 4.1 | 4.2 | | | |
| 5 | Indoor Air Quality | 5.1 | 5.2 | 5.3 | 5.4 | 5.5 |
| 6 | Sustainability | 6.1 | 6.2 | | | |
| 7 | Thermal Performance | See Climate Zone Chart | | | | |

Pass
Partial Pass
Improvement Needed
Criterion Not Included

## Climate Zone Recommendations

| Building America Zones | IECC Zones | |
|---|---|---|
| Subarctic | 8 | ✗ |
| Very Cold | 7 | ✗ |
| Cold | 5 & 6 | ✗ |
| Mixed-Humid | 3A & 4A *(above warm-humid line)* | ✓ |
| Marine | "C" Moisture Regime | ✗ |
| Hot-Dry / Mixed-Dry | 1B, 2B, 3B & 4B | ✓ |
| Hot-Humid | 1A, 2A, & 3A *(below warm-humid line)* | ✓ |

## Building Type Application

| Single-Family | Multifamily | Non-Residential |
|---|---|---|
| ✓ | ✓ | ✓ |

**Name of Manufacturer:** Dextall

**Company Website:** www.dextall.com

**Name of Product/System:** DWALL 2500

**Product Description from Manufacturer:**

*"The Dextall DWALL is a light gauge metal-framed modular building component system with fully integrated, factory-installed windows and cladding. Designed for high performance and on-site efficiency, DWALL delivers airtight, watertight façades with non-combustible core insulation built in.*

*The system's gasketed design eliminates the need for exterior work once panels are in place, removing the requirement for scaffolding or suspended platforms entirely.*

***KEY BENEFITS***

- ***High Performance Envelope** — Engineered to meet rigorous airtightness and watertightness standards, supporting Passive House and energy code compliance*
- ***Fire Resistant** — Composed of non-combustible material*
- ***Acoustic Performance** — Designed to reduce sound transmission for enhanced occupant comfort*
- ***Structural Integrity** — Modular components are engineered for structural soundness and dimensional precision*
- ***Design Flexibility** — Cladding and window configurations are adaptable to project-specific aesthetic requirements*
- ***On-Site Simplicity** — The gasketed system requires no exterior scaffolding after panel placement, reducing site labor, risk, and schedule*
- ***Quality Controlled** — Factory manufacturing ensures consistent, inspectable performance across every unit"*

**Submitted by:** Nicole Grembowiec — Technical Director, Dextall

**Location of Final Manufacturing Facilities:** Portugal and Lithuania

## CERTIFICATION REQUIREMENTS & EVALUATIONS

### 1. Water Control

| Criteria / Requirements | Evaluation |
|---|---|
| **[1.1]** Water control system is conceptually sound. Cladding and roofing materials are either 1) Included in the scope of prefabrication, 2) Included as a kit of separate materials to be attached on-site, or 3) Specified in generic terms in the application instructions for the system, to be specified in detail and acquired separately by building project teams. | Follows option 1 – cladding included in the scope of prefabrication. The main air/water control layer is gypsum board with fibre mat reinforcement such as GlasRoc®. (Design manual sheets 01.03, 01.07, 0.10, 0.12) Multiple Fabrication drawings cover gasketing, taping, and silicone sealing (PDM- 015, 016, 017, 018, 019-1_SM,019-2_SM, 020-1) |
| **[1.2]** If the scope of the product system's application includes residential construction, the system meets all applicable provisions of the ENERGY STAR Certified Homes Version 3 Water Management System Builder Requirements. | Said checklist applies to single-family but not to multifamily residential construction, and the system appears to be intended only for multifamily construction above grade, thus mostly not applicable.<br>However, there is a relevant vapor-control provision 4.3<br>*"In Warm-Humid climates, Class 1 vapor retarders not installed on the interior side of air permeable insulation in above-grade walls, except at shower and tub walls."*<br>See water vapor control below. |
| **[1.3]** Application instructions include guidance on the kinds of cladding and roofing with which the system is intended to be compatible. | Install manual has ten drawing sheets covering Parapet installation (IM-014.01 to IM-014.09), no application shown for roofs with eaves. Design manual sheet 01.10 shows products-by-others for parapet.<br>Cladding is included in the prefab system. |

### 2. Air Control

| Criteria / Requirements | Evaluation |
|---|---|
| There is a continuous primary air barrier: The air barrier is on the exterior. The main air/water control layer is gypsum sheathing board with fibre mat reinforcement such as GlasRoc®. (Design manual sheets 01.03, 01.07, 01.10, 01.12). Structural supports do not penetrate the air barrier (01.24 to 01.32). | |
| **[2.1]** Clearly identify all air barrier components of each envelope assembly on construction documents and detail the joints, interconnections, and penetrations of the air barrier components. | Fabrication drawings address taping the air barrier for each panel (PDM-014 to PDM-018), panel edge gasketing (PDM-019) and taping at windows (PDM-020). |

| Criteria / Requirements | Evaluation |
|---|---|
| **[2.2]** Join and seal the air barrier materials of each assembly to the air barrier materials of adjacent assemblies, allowing for the relative movement of these assemblies and components. Clearly identify air barrier system continuity on the plan and section construction drawings. | Design manual addresses outside corner (01.08), inside corner (01.09), parapet (01.10), panel-to-panel connection (01.13), window install details (01.18, 01.20, 01.21, 01.22, 01.23) and foundation connection (01.33) |
| **[2.3]** Provide details to seal all penetrations of the air barrier assembly, including but not limited to electrical, plumbing and HVAC components, windows and doors, and compatibility of materials with one another. | Design manual addresses ventilation box (01.43), and windows (01.18, 01.20, 01.21, 01.22, 01.23, 01.39). Installation manual calls for silicone sealant and is specific about some kinds of tape but not all. Electrical and plumbing penetrations are not addressed. |
| **[2.4]** Support the air barrier so that it shall withstand the maximum positive and negative air pressures that will be placed on the building without displacement or damage. Forces due to pressure differences are transferred to the structure. The air barrier assembly must be durable to last the anticipated service life of the envelope. | The fiberglass-faced gypsum board is supported by horizontal and vertical metal framing. |
| **[2.5]** Application instructions for the system must include advice to meet these additional provisions[1]:<br>• *Provide a motorized damper in the closed position and connect it to the fire alarm system to open on call and fail in the open position for any fixed open louvers such as at elevator shafts. Dampers and controls shall close all ventilation or make-up air intakes and exhausts, atrium smoke exhausts and intakes, etc., where leakage can occur during inactive periods. Garages under buildings shall be compartmentalized by providing airtight vestibules at building access points. Provide airtight vestibules at building entrances with high traffic.*<br>• *Compartmentalize spaces under negative pressure such as boiler rooms and provide make-up air for combustion.* | Near the beginning of Installation Manual. |

[1] U.S. Army Corps of Engineers Air Leakage Test Protocol for Building Envelopes, version 3, section 2.1, items 5 and 6.

### 3. Water Vapor Control

| Criteria / Requirements | Evaluation |
|---|---|
| **[3.1]** The building / panel system's main assemblies must be low risk for moisture problems. There are three compliance paths. | Passes by prescriptive rules except that: The system does have a sheet metal interior vapor barrier inboard of mineral wool insulation, and therefore is not recommended for hot-humid climate. See Energy Star Water Management above. |

### 4. Critter Control

| Criteria / Requirements | Evaluation |
|---|---|
| **[4.1]** Insect control at: overhanging floor at outside corner, wall-to-foundation, deck connection to base of wall. | Overhanging floor is out of scope. Design manual shows Foundation connection (01.33), Terrace connection to panel (01.34). Insect control is not specifically mentioned but the details do not look highly vulnerable, there are no bio-based materials |
| **[4.2]** Corrosion-proof rodent/bird screens installed at all openings that cannot be fully sealed, with the exception of dryer vents. | Near the beginning of Installation Manual. |

**5. Health / Indoor Air Quality**

| Criteria / Requirements | Evaluation |
|---|---|
| **[5.1]** System complies with Section 6 of EPA Indoor airPLUS Version 1 Construction Specifications for Composite Wood, Interior Paints and Finishes, Carpets and Carpet Adhesives. | There are no such materials within the scope of the product system. |
| **[5.2]** Section 6.1 Composite Wood | *Not applicable* |
| **[5.3]** Section 6.2 Interior Paints and Finishes | *Not applicable* |
| **[5.4]** Section 6.3 Carpets and Carpet Adhesives | *Not applicable* |
| **[5.5]** Builder's manual calls for finishing the building in compliance with said specifications, and voids warranty otherwise. | Near the beginning of Installation Manual.<br>Because finishes are out of scope, the warranty requirement is waived. |

**6. Sustainability Assessments or Certifications**

| Criteria / Requirements | Evaluation |
|---|---|
| **[6.1]** The blowing agents for any extruded polystyrene or spray polyurethane foam products used over broad areas in assemblies must be disclosed, and necessary calculations performed using the Phius Insulation Global Warming Potential Calculator. Products used only in spot or linear patterns such as door installation and rim joists are exempt from this requirement. | There are no broad areas of XPS or SPF used. |
| **[6.2]** The product system must select one option from a number of sustainability assessments or certifications to pursue and obtain by July 31, 2022. | Complied by submission of environmental product declarations. |

## 7. Thermal Control

### *Criteria for Suitability by Climate Zone*

| Climate Zone | Minimum Surface Temperature Factor | | Minimum Wall / Roof R-value *(IP)* | | Minimum Foundation Insulation *(against ground)* | Minimum Window Condensation Resistance |
|---|---|---|---|---|---|---|
| **Subarctic** | 0.73 | x | 60 / 80 | x | Whole slab R-40 | 0.74 |
| **Very Cold** | 0.70 | x | 55 / 75 | x | Whole slab R-30 | 0.67 |
| **Cold** | 0.69 | x | 40 / 65 | x | Whole slab R-20 | 0.63 |
| **Mixed-Humid** | 0.67 | ✓ | 25 / 50 | ✓ | 2 ft. R-20 vertical perimeter | 0.56 |
| **Marine** | 0.72 | x | 24 / 45 | ✓ | 4 ft. R-20 vertical perimeter | 0.54 |
| **Mixed-Dry / Hot-Dry** | 0.57 | ✓ | 18 / 40 | ✓ | *No minimum* | 0.63 |
| **Hot-Humid** | N/A | N/A | 12 / 30 | ✓ | *No minimum* | 0.57 |

### *Main Assembly R-values*

| Assembly | Effective R / U value | |
|---|---|---|
| | h•ft²•°F/Btu | W/m²K |
| Wall, 10 inch / 254 mm | 29.6 | 0.192 |
| Floor | N/A | N/A |
| Floor | N/A | N/A |

### *Performance Ratings of Connection Details*

| Connection Type *(per design manual drawing sheet)* | Surface Temperature Factor | Linear thermal bridge coefficient *(ref. to exterior dimensions)* | |
|---|---|---|---|
| | | Btu/h•ft•°F | W/m•K |
| **Plan views:** | | | |
| Wall corner, exterior – 01.08A | 0.90 | 0.034 | 0.059 |
| Wall corner, re-entrant – 01.09B | 0.93 | 0.096 | 0.166 |
| Inset Window/door jamb – 01.18CD | 0.74 | 0.044 | 0.076 |
| Outset Window/door jamb – 01.20AB | 0.74 | 0.055 | 0.095 |
| Window jamb at max size – 01.23A | 0.74 | 0.124 | 0.215 |
| Wall panel, vertical joint – 01.13A | 0.93 | 0.024 | 0.042 |
| Canopy fastening channel – 01.41A | 0.92 | 0.026 | 0.045 |
| Canopy fastening bolts – 01.41A | 0.92 | 0.029 | 0.050 |
| Wall at interior wall | | | |

| **Connection Type** *(per design manual drawing sheet)* | **Surface Temperature Factor** | **Linear thermal bridge coefficient** *(ref. to exterior dimensions)* | |
|---|---|---|---|
| | | **Btu/h•ft•°F** | **W/m•K** |
| **Section views:** | | | |
| Foundation perimeter | | | |
| Uncond. Basement ceiling at exterior wall | | | |
| Uncond. Basement ceiling at interior wall | | | |
| Cond. Basement wall to uncond. basement ceiling | | | |
| Cond. Basement floor to uncond. Basement wall | | | |
| Cond. Basement floor to cond. Basement wall | | | |
| Floor slab to cond. Basement wall | | | |
| Floor slab to interior wall | | | |
| Door sill | | | |
| Wall panel – horizontal joint – 01.13B | 0.92 | 0.030 | 0.052 |
| Parapet | | | |
| Roof to wall above | | | |
| Overhanging floor to wall above | | | |
| Exterior wall at intermediate floor, top mounted bracket without embed – 01.24 | 0.90 | 0.029 | 0.050 |
| Exterior wall at intermediate floor, face mounted bracket – 01.30A | 0.91 | 0.030 | 0.052 |
| Eave | | | |
| Skylight sill | | | |
| Skylight head | | | |
| Skylight jamb/curb | | | |
| Roof ridge/ hip | | | |
| Roof valley | | | |
| Roof rake | | | |
| Roof to interior wall | | | |
| Inset Window head – 01.18A | 0.73 | 0.042 | 0.073 |
| Inset Window sill – 01.18B | 0.68 | 0.032 | 0.055 |
| Outset Window head – 01.20C | 0.75 | 0.042 | 0.073 |
| Outset Window typ sill – 01.21A | 0.71 | 0.038 | 0.066 |
| Window jamb at max size – 01.23A | 0.74 | 0.124 | 0.215 |
| Window head/sill at max size – 01.23B | 0.69 | 0.111 | 0.192 |
| Wall to overhang above | | | |

## MANUFACTURER'S ADDITIONAL TEST DATA

| | |
|---|---|
| ASTM E283, Air Infiltration/Exfiltration | Passed - 0.06 cfm/ft2 at 6.26 psf |
| ASTM E331, Static Pressure Water Resistance | Passed - No water penetration is permitted at a test pressure difference of 15 lbf/SF |
| AAMA 501.1, Dynamic Water Resistance | Passed - No water penetration is permitted at a test pressure difference of 15 lbf/SF |
| ASTM E90, Sound Transmission Loss | OITC 37-39 |
| ASTM E119, 1-hr Fire Testing | Passed with Dextall's aluminum cladding |
| NFPA 285, Evaluating Fire Propagation for Combustible Components | Dextall's Panelization system is non-combustible. Therefore, NFPA 285 does not apply to non-combustible cladding. |
| Slab Fireproofing, 2-hr Floor to Floor | Engineering Judgements from STI and Hilti |
| ASTM E136, Method for Accessing Combustibility | Passed - insulation, sheathing board, fiber cement, and ultrahigh compact stone |