

## COMPOSITE WET-WALL SYSTEM

TECHNICAL DATA SHEET FOR ARCHITECTURAL SPECIFICATION (V1.0)

### 1. PRODUCT OVERVIEW & MATERIAL COMPOSITION

**NexaWall** is a high-performance, 12mm thick, non-structural sandwich composite liner engineered specifically for internal wet areas and high-impact commercial environments.

- **Core Material:** Purenit C rigid high-density functional core.
- **Surface Finish:** High-Pressure Laminate (HPL) balancing skins applied to the face and reverse.
- **Factory Bonding Agent:** Factory-laminated sandwich panel structure using premium Cantac HSE-Tac high-heat-resistant contact adhesive.
- **Edge Profile:** Interlocking Tongue & Groove (T&G) system.

### 2. PHYSICAL DIMENSIONS & TOLERANCES

- **Standard Sheet Size:** 2400 mm × 600 mm
- **Extended Sheet Size:** Custom options to 3000 mm × 600 mm
- **Thickness:** 12 mm

### 3. NEW ZEALAND BUILDING CODE (NZBC) PERFORMANCE DATA

#### Clause C3: Protection from Fire (Surface Finishes)

**NexaWall** satisfies the requirements of **NZBC C/AS2 Appendix C** via European fire classification alignment.

- **Performance Classification: Group 2-S** (Suitable for standard occupied commercial spaces, public spaces, and exit ways).
- **Core Certification:** Evaluated to **EN 13501-1:2007 + A1:2009**, achieving **Class C-s2, d0** (tested via EN ISO 11925-2 and EN 13823).
- **Mandatory Substrate Compliance for Fire-Ratings:** To maintain the verified **Group 2-S** performance, the panels must be fixed strictly using **Structural PU Glue** and **Mechanical Fasteners (Screws)** over the following compliant substrates: Light gauge steel, wood substrates (from 10mm, 472.5 kg/m<sup>3</sup>), plasterboard (from 12mm, 525 kg/m<sup>3</sup>), or Euroclass A1/A2-s1, d0 backings.

## Clause E3: Internal Moisture

- **Performance:** Meets **E3/AS1 Clause 3.1.2** requirements for impervious, easily cleaned surfaces.
- **Moisture Resistance:** The closed-cell purenit C core absorbs 0% moisture. If a joint boundary fails, the panel remains dimensionally stable and cannot warp, rot, swell, or support fungal growth.

## Clause B2: Durability

- **Performance:** Exceeds the **15-year** durability framework under **B2/AS1**.

## Clause F2: Hazardous Building Materials

- **Performance:** Inert, fully cured matrix. **Zero volatile organic compound (VOC) emissions** and formaldehyde-free. Factory adhesive solvents completely flash off during manufacturing.

## 4. SPECIFIED FIXING & INSTALLATION METHODOLOGIES

**NexaWall** supports two primary wall-fixing variations depending on the application context and compliance framework:

### Method 1: Structural Polyurethane and Mechanical Fasteners (PU) Glue

*(Approved for Group 2-S Fire-Rated Commercial Systems)*

- Apply continuous beads of high-performance structural polyurethane (PU) adhesive directly to the compliant substrate.
- Beads must be oriented vertically and spaced at a maximum of 300 mm centres.
- Secure panels using countersunk steel screws or proprietary low-profile framing anchors.
- Fasteners must be spaced at a maximum of 800 mm centres through the tongues directly into solid framing or compliant solid backings.

### Method 2: High-Bond Double-Sided Foam Tape *(Approved for General*

*Residential & Non-Fire-Rated Systems)*

- Utilise structural high-bond acrylic double-sided foam tape in vertical strips combined with countersunk steel screws or proprietary low-profile framing anchors. secondary adhesive daubs to provide immediate initial grab on flat, solid substrates is allowable.
- *Note: This method is restricted to standard residential configurations or applications where a Group 2-S fire rating is not legally mandated.*

## 5. THERMAL & PHYSICAL PROPERTIES

- **Thermal Conductivity ( $\lambda_D$ ):** Nominal **0.096 W/(m·K)** (EN 12667). Assists in mitigating thermal bridging across timber and steel framing to support **NZBC H1** energy efficiency criteria.
- **Operating Temperature Threshold:** Continuous environment range of **-25°C to +75°C** (safely within the **+120°C Cantac HSE factory adhesive limit**).
- **Bulk Matrix Density:** Nominal **550 kg/m<sup>3</sup> (pm 40 kg/m<sup>3</sup>)** (EN 1602).
- **Compressive Strength / Stress:** **7.1 MPa (7,100 kPa)** at yield (EN 826), providing maximum structural resistance to impact and crushing in high-traffic spaces.

## 6. SPECIFICATION CLAUSE FOR MASTER SPEC DOCUMENTS

### PROJECT SPECIFICATION CLAUSE:

"The internal wall lining in [Insert Room/Space] shall be Nexawall 12mm Waterproof Composite Panels supplied by NexaWall Panel Systems Limited (comprising a Purenit C core, HPL skins, and factory-laminated Cantac HSE adhesive). The system must be installed over a solid substrate meeting the minimum density requirements (472.5 kg/m<sup>3</sup> for timber / 525 kg/m<sup>3</sup> for plasterboard). For areas requiring a Group 2-S Fire Rating, the panel must be fixed strictly using [Select: Structural Polyurethane (PU) Glue / Mechanical Screws] in accordance with the manufacturer's Technical Data Sheet.