THERMAL PERFORMANCE OVERVIEW

1/5/2023

Back-Lattice$_{sm}$ Wall System is a high-performance wall assembly that rivals the best:

"Back-Lattice$_{sm}$ wall system represents a **novel, high-performance assembly**. It is hygrothermally resilient, thermally efficient, and readily energy code compliant. Its effective R-value **rivals the best systems on the market** while offering a core assembly for any cladding type." Three attributes stand out that are critical to this system's moisture and thermal performance. First the vapor permeable Air and Water Barrier **(AWB) is outboard of the primary insulation**. The AWB is therefore accessible for proper sealing and quality control. Also, the AWB is integral to the rainscreen space and thus facilitates drying at critical AWB interfaces. Secondly, the **thermally broken system, combined with incremental fastening, avoids thermal inefficiencies**. Lastly, the polyurethane foam applied directly to the back side of the sheathing, offers a robust thermal and moisture management system that accommodates transient water vapor while preventing unwanted moisture accumulation. *(Per Steven Doggett, PhD, Built Environments, Inc. 8/13/2021) (Back-Lattice is a patented wall assembly method of Back-Lattice Wall System, Inc.)*

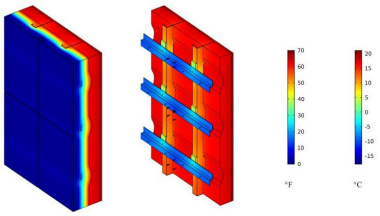

*Figure 1: BKL, No Batt, 1 1/2"ci, **R10ci**, R24 Total, **U0.063 if Studs @ 16"oc, U0.054 if studs @ 24"oc.***

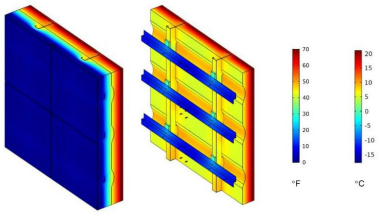

*Figure 2: BKL, with optional R15 batt, 1 1/2"ci, **R10ci** plus R15 unfaced batt insulation, R39 Total, **U0.050 if studs @ 16"oc, U0.042 if studs @ 24"oc.***

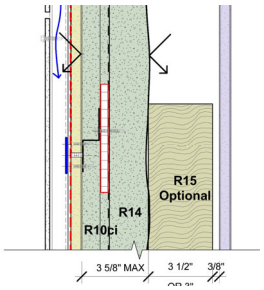

*Figure 3: BKL with R1.55 thermal break. If without Batt, 1 1/2"ci, **R10ci**, R24 Total. OPTIONAL: If BKL with R15 unfaced batt, 1 ½"ci, **R10ci**, plus R14 plus R15, R39 Total.*

Back-Lattice$_{sm}$ System meets NFPA 285 with continuous insulation ranging from 1 ½" (R10ci) up to 3" (R19.8).

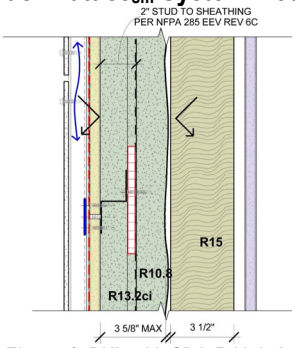

*Figure 4: BKL with 2"ci, **R13.2ci**, plus R10.8 plus R15 Batt, R39 Total.*

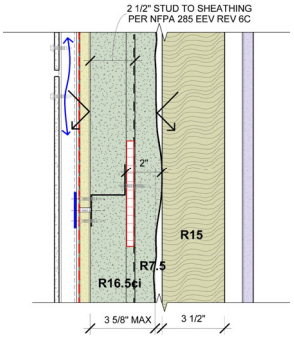

*Figure 5: BKL with 2 1/2"ci, **R16.5ci**, plus R7.5, plus R15 Batt, R39 Total.*

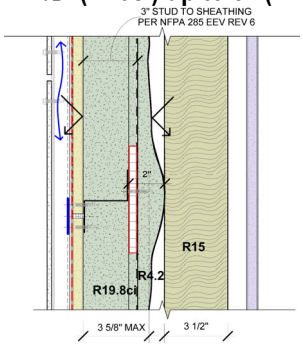

*Figure 6: BKL with 3"ci, **R19.8ci**, plus R4.2, plus R15 Batt, R39 Total.*

Back-Lattice$_{sm}$ is WUFI proven in Climate Zones 2, 4, 5 and 6 to maintain dryness and avoid unwanted condensation.

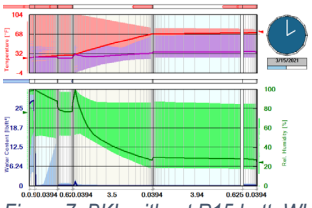

Figure 7: BKL without R15 batt, WUFI, CZ5, March. Small seasonal moisture at sheathing to closed-cell foam, requires vapor-permeable air and weather barrier. Remainder of year is dry.

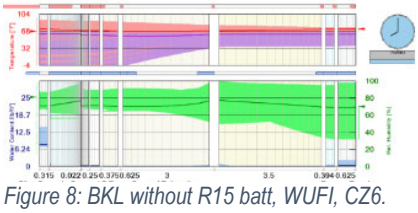

Figure 8: BKL without R15 batt, WUFI, CZ6. Does not show moisture buildup or problem condensation.

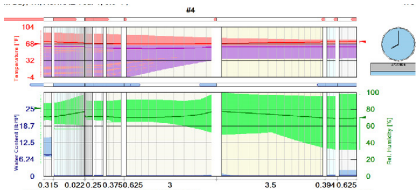

Figure 9: BKL with R15 batt, WUFI, CZ6, March. Does not show moisture harboring or inward condensation due to R15 batt.

Back-Lattice$_{sm}$ Wall System has true thermal breaks and incremental fasteners, resulting in Net-Zero Energy and high-performance.