



# BXUV.V454

## Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

## BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

[See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States Design Criteria and Allowable Variances](#)

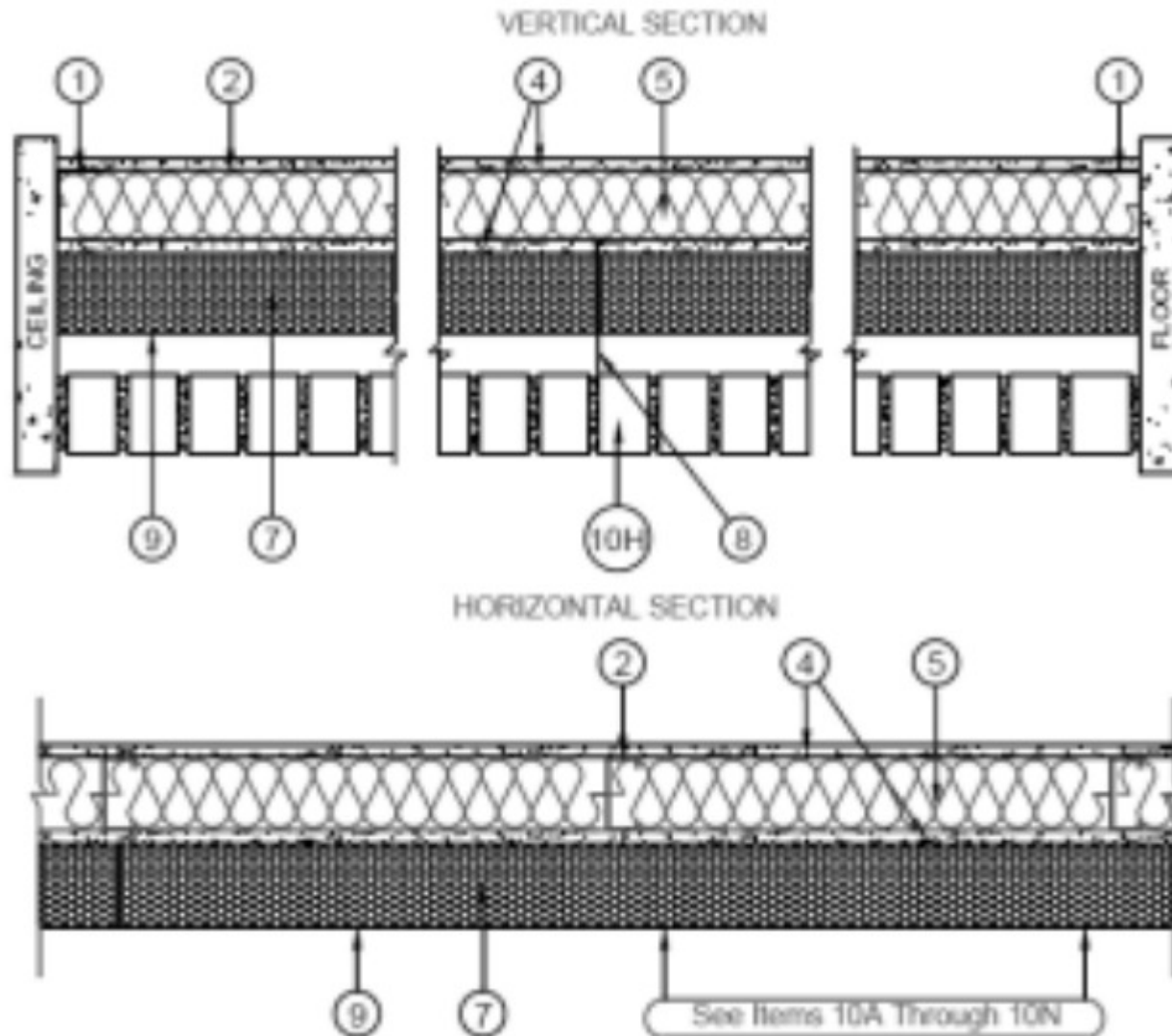
[See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada Design Criteria and Allowable Variances](#)

### **Design No. V454**

November 23, 2020

### **Bearing and Non-Bearing Wall Rating - 1 Hr (See Item 5B)**

**\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



1. **Steel Floor and Ceiling Tracks** — Top and bottom tracks of wall assemblies shall consist of steel members, min No. 20 MSG (0.0329 in., min bare metal thickness) steel or min No. 20 GSG (0.036 in. thick) galv steel or No. 20 MSG (0.033 in. thick) primed steel, that provide a sound structural connection between steel studs, and to adjacent assemblies such as a floor, ceiling, and/or other walls. Attached to floor and ceiling assemblies with steel fasteners spaced not greater than 24 in. O.C.

2. **Steel Studs** — Corrosion protected steel studs, min No. 20 MSG (0.0329 in., min bare metal thickness) steel or min 3- 1/2 in. wide, min No. 20 GSG (0.036 in. thick) galv steel or No. 20 MSG (0.033 in. thick) primed steel, cold formed, shall be designed in accordance with the current edition of the Specification for the Design of Cold-Formed Steel Structural Members by the American Iron and Steel Institute. All design details enhancing the structural integrity of the wall assembly, including the axial design load of the studs, shall be as specified by the steel stud designer and/or producer, and shall meet the requirements of all applicable local code agencies. The max stud spacing of

wall assemblies shall not exceed 24 in. OC. Studs attached to floor and ceiling tracks with 1/2 in. long Type S-12 steel screws on both sides of studs or by welded or bolted connections designed in accordance with the AISI specifications.

3. **Lateral Support Members** — (Not Shown) — Where required for lateral support of studs, support may be provided by means of steel straps, channels or other similar means as specified in the design of a particular steel stud wall system.

4. **Gypsum Board\*** — **Any 5/8 in. thick UL Classified Gypsum Board that is eligible for use in Design Nos. L501, G512 or U305.** Nom 5/8 in. thick, 4 ft wide. Gypsum board applied vertically with joints centered over studs. Fastened to both sides of the steel studs with 1 in. long Type S self-drilling, self-tapping steel screws spaced 8 in. OC along the edges and 12 in. OC in the field of the board.

**CABOT MANUFACTURING ULC** ([View Classification](#)) — CKNX.R25370

**AMERICAN GYPSUM CO** ([View Classification](#)) — CKNX.R14196

**BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO** ([View Classification](#)) — CKNX.R19374

**CERTAINTED GYPSUM INC** ([View Classification](#)) — CKNX.R3660

**CGC INC** ([View Classification](#)) — CKNX.R19751

**CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C** ([View Classification](#)) — CKNX.R18482

**GEORGIA-PACIFIC GYPSUM L L C** ([View Classification](#)) — CKNX.R2717

**GEORGIA-PACIFIC GYPSUM L L C** ([View Classification](#)) — CKNX.R6937

**LOADMASTER SYSTEMS INC** ([View Classification](#)) — CKNX.R11809

**NATIONAL GYPSUM CO** ([View Classification](#)) — CKNX.R3501

**PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM** ([View Classification](#)) — CKNX.R7094

**PANEL REY S A** ([View Classification](#)) — CKNX.R21796

**SIAM GYPSUM INDUSTRY (SARABURI) CO LTD** ([View Classification](#)) — CKNX.R19262

**THAI GYPSUM PRODUCTS PCL** ([View Classification](#)) — CKNX.R27517

**UNITED STATES GYPSUM CO** ([View Classification](#)) — CKNX.R1319

**USG MEXICO S A DE C V** ([View Classification](#)) — CKNX.R16089

4A. **Gypsum Board\*** — As an alternate to Item 4 - For use with Item 5D) — 5/8 in. thick, 4 ft wide. Gypsum board applied vertically with joints centered over studs. Fastened to both sides of the steel studs with 1 in. long Type S self-drilling, self-tapping steel screws spaced 7 in. OC in the field and along the edges of the board.

**AMERICAN GYPSUM CO** — Types AGX-1

**BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO** — Type DBX-1

**CABOT MANUFACTURING ULC** — "5/8 Type X"

**CERTAINTED GYPSUM INC** — Type X

**CGC INC** — Type SCX

**PANEL REY S A** — Type PRX

**SIAM GYPSUM INDUSTRY (SARABURI) CO LTD** — Type EX-1

**THAI GYPSUM PRODUCTS PCL** — Type X

**UNITED STATES GYPSUM CO** — Type SCX

**USG MEXICO S A DE C V** — Type SCX

4B. **Gypsum Board\*** — (As an alternate to Item 4. For use with Item 5E) — Any 5/8 in. thick, 4 ft. wide, Gypsum Board listed in Item 4 above. Applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Gypsum panels secured to studs with 1-5/8 in. long Type S coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field.

5. **Batts and Blankets\*** — (Optional) — Any glass fiber or mineral wool batt material bearing the UL Classification Marking as to Fire Resistance, of a thickness to completely fill stud cavity.

See **Batts and Blankets\*** (BZJZ) category for names of Classified companies.

5A. **Foamed Plastic\*** — As an alternate to Item 5 — Optional — Finished spray polyurethane foam plastic formed from Voracor CE 3019 or Dow 3019 Isocyanate Component (Part A) and Voracor CY 3049 STYROFOAM™ RS 2060 Polyol, or STYROFOAM™ CM 2060 Polyol Resin Component (Part B) maximum thickness of 1-1/2 in., spray-applied in the steel cavity against the gypsum board on the exterior side of the wall.

**THE DOW CHEMICAL CO** — Types Voracor CE 3019 or Dow 3019 Isocyanate Component (Part A) and Voracor CY 3049 STYROFOAM™ RS 2060 Polyol, or STYROFOAM™ CM 2060 Polyol Resin Component (Part B).

5B. **Foamed Plastic\*** — As an alternate to Item 5 - Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity.

**BASF CORP** — Enertite® NM, Enertite® G, Spraytite® 178, Comfort Foam® 178, Spraytite® 81206, Walltite® 200, Walltite® US, Walltite® US-N, Spraytite® 158, Comfort Foam® 158, and Spraytite® 81205

a. **For Use in Bearing Walls** — Enertite® NM, Enertite® G, Spraytite® 178, Comfort Foam® 178, Spraytite® 81206, Walltite® 200, Walltite® US and Walltite® US-N

b. **For Use in Non-Bearing Walls** — Enertite® NM, Enertite® G, Spraytite® 178, Comfort Foam® 178, Spraytite® 81206, Walltite® 200, Walltite® US, Walltite® US-N, Spraytite® 158, Comfort Foam® 158, and Spraytite® 81205

5C. **Foamed Plastic\*** — As an alternate to Item 5 — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity.

**NCFI POLYURETHANES** — NCFI 11-016, NCFI 11-017

5D. **Foamed Plastic\*** — (Optional, As an alternate to Item 5 - For use with Item 4A) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity.

**GACO WESTERN L L C** — Types GacoEZSpray F4500, GacoProFill FR6500R, Gaco 052N, GacoOnePass F1850, GacoOnePass Low GWP F1880, and Gaco WallFoam 183M

5E. **Foamed Plastic\*** — (Optional, As an alternate to Item 5 - For use with Item 4B) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity.

**CARLISLE SPRAY FOAM INSULATION** — SealTite Pro Closed Cell (CC), SealTite Pro Open Cell (OC), SealTite Pro OCX, SealTite Pro No Trim, and SealTite Pro One Zero.

6. **Vapor Barrier** — (Optional, not shown) — 4 mil min polyethylene installed between steel studs and gypsum wallboard.

7. **Foamed Plastic\*** — Max 4-1/2 in. thick rigid polystyrene insulation attached through the gypsum board to the studs with Type S-12 wafer head steel screws spaced 12 in. OC. Length of screws to be such that they engage with studs minimum 1/2 in.

**ATLAS MOLDED PRODUCTS, A DIVISION OF ATLAS ROOFING CORPORATION** — Type ThermalStar

**OWENS CORNING SCIENCE AND TECHNOLOGY, LLC** — Foamular Extruded Polystyrene

**THE DOW CHEMICAL CO** — Type STYROFOAM.

**BASF CORP STYRENIC FOAMS DIV** — Neopor "F" Series

7A. **Foamed Plastic\*** — (As an alternate to Item 7) — Max 4 in. thick rigid polyisocyanurate insulation attached through the gypsum board to the studs with min 4-1/2 in. long Type S-12 wafer head steel screws spaced 12 in. OC.

**DUPONT DE NEMOURS, INC.** — Type Thermax Sheathing, Thermax Light Duty Insulation, Thermax Heavy Duty Insulation, Thermax Metal Building Board, Thermax White Finish Insulation, Thermax ci Exterior Insulation, Thermax XARMOR ci Exterior Insulation, Thermax IH Insulation, Thermax Plus Liner Panel, Thermax Heavy Duty Plus (HDP), TUFF-R™ ci Insulation, Thermax Butler Stylwall Insulation Board and Thermax Morton Heavy Duty Insulation Board

7B. **Foamed Plastic\*** — (As an alternate to Item 7) — Max 4 in. thick rigid polyisocyanurate insulation attached through the gypsum board to the studs with min 4-1/2 in. long Type S-12 wafer head steel screws spaced 12 in. OC.

**ATLAS ROOFING CORP** — "EnergyShield Pro Wall Insulation", "EnergyShield Pro 2 Wall Insulation", EnergyShield CGF Pro and EnergyShield Ply Pro

**CARLISLE COATINGS & WATERPROOFING INC** — Type R2+ SHEATHE

**FIRESTONE BUILDING PRODUCTS CO L L C** — "Enverge™ CI Foil Exterior Wall Insulation" and "Enverge™ CI Glass Exterior Wall Insulation"

**HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC** — Type "Xci-Class A", "Xci 286", "Xci Foil (Class A)", "Xci CG", "Xci Foil", "Xci CG NH", "Xci Foil NH"

**RMAX, A BUSINESS UNIT OF SIKA CORPORATION** — Types "TSX-8500", "ECOMAXci FR", "TSX-8510", "ECOMAX xi FR White", "ECOMAXci", "ECOMAXci FR Air Barrier", "Thermasheath-XP", "Thermasheath", "Durasheath", "Thermasheath-3", "Durasheath-3".

**JOHNS MANVILLE** — Type "AP Foil-Faced Foam Sheathing"

7C. **Construction Tape or Sealant** — (Optional, Not Shown) — Min 2 in. wide plastic tape placed over joints of foamed plastic on exterior surface of wall or sealant placed within the joints of the foamed plastic.

7D. **Foamed Plastic\*** — (As an alternate to Item 7) — Spray applied, foamed plastic insulation spray applied between Item 4 (Gypsum Board) and Item 10 (Exterior Facings), having a 1 in. min air space.

**BASF CORP** — SPRAYTITE® 178 Series; SPRAYTIE® 81206 Series; WALLTITE® 200, WALLTITE® US Series; WALLTITE® US-N Series

7E. **Building Units\*** — (As an alternate to Item 7) — Max 4 in. thick rigid polyisocyanurate composite insulation attached through the gypsum board to the studs with min 4-1/2 in. long Type S-12 wafer head steel screws spaced 12 in. OC.

**HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC** — Type "Xci NB" and "Xci Ply

**LAMINATORS INC** — Type "Omega ci"

**RMAX, A BUSINESS UNIT OF SIKA CORPORATION** — "Thermasheath-SI", "ECOBASEci", "ThermaBase-CI", "ECOMAXci FR Ply", "ECOMAXci Ply".

7F. **Foamed Plastic\*** — (As an alternate to Item 7) — Spray applied, foamed plastic insulation spray applied between Item 4 (Gypsum Board) and Item 10 (Exterior Facings), having a 1 in. min air space.

**NCFI POLYURETHANES** — NCFI 11-016, NCFI 11-017

8. **Wall Anchor Ties** — Wall anchors attached to steel studs with self-drilling, self-tapping steel screws, of sufficient length to penetrate steel studs a min. of 1/2 in. spaced max 24 in. OC. For use with Item 10H.

9. **Vapor Retarder, Water Barrier or Water Resistive Barrier** — (Optional) — As required.

10. **Exterior Facings** — One of the following exterior facings is to be installed in accordance with the manufacturer's installation instructions.

10A. **Aluminum Siding** — (Not Shown) — 0.019 in. min thick painted aluminum meeting AAMA 1402. Fastened over Foamed Plastic (Item 7 or 7A) to steel studs.

10B. **Steel Siding** — Min No. 17 GSG gauge painted steel. Fastened over Foamed Plastic (Item 7 or 7A) to steel studs.

10C. **Vinyl Siding** — (Not Shown) — 0.035 in. min thick vinyl, UL Classified exterior plastic siding (Molded Plastic). Fastened over Foamed Plastic (Item 7 or 7A) to steel studs.

10D. **Wood Siding** — (Not Shown) — 0.313 in. min thick lumber, plywood or OSB wood based siding. Fastened over Foamed Plastic (Item 7 or 7A) to steel studs. As an option, the Wood Siding may be placed between the Foamed Plastic and Fiber-Cement Siding (Item 10F), Stucco (Item 10J) or One-Coat Stucco (Item 10K).

10E. **Hard board Siding** — (Not Shown) — 0.250 in. min thick hard board exterior siding. Fastened over Foamed Plastic (Item 7 or 7A) to steel studs.

10F. **Fiber-Cement Siding** — (Not Shown) — 0.250 in. min thick fiber-cement based siding. Fastened over Foamed Plastic (Item 7 or 7A) to steel studs.

10G. **Stone** — (Not Shown) — 2.0 in. min (natural stone) or 1.5 in (cast artificial) thick stone. Fastened over Foamed Plastic (Item 7 or 7A) to steel studs.

10H. **Brick Veneer** — Any 4 in. wide brick. Min 1 in. airspace provided between veneer and Foamed Plastic (Item 7 or 7A). Fastened over Foamed Plastic (Item 7 or 7A) to steel studs with Wall Anchor Ties (Item 8).

10I. **Concrete Masonry Veneer** — (Not Shown) — 2.0 in. min thick concrete masonry units. Fastened over Foamed Plastic (Item 7 or 7A) to steel studs with metal ties.

- 10J. **Stucco** — (Not Shown) — Portland cement type, 0.750 in. min thickness. Metal lath or mesh base fastened over Foamed Plastic (Item 7 or 7A) to steel studs.
- 10K. **One-Coat Stucco** — (Not Shown) — 0.375 in. min thickness. Wire fabric lath fastened over Foamed Plastic (Item 7 or 7A) to steel studs.
- 10L. **Exterior Insulation and Finish System (EIFS)** — (Not Shown) — Base coat with reinforcing mesh applied over Foamed Plastic (Item 7 or 7A) followed by finish coat.
- 10M. **Metal Panel** — (Not Shown) — 0.039 in. min. thick metal panel or metal-composite-metal (MCM) panel. Fastened over Foamed Plastic (Item 7 or 7A) to steel studs.
- 10N. **Wall and Partition Facing and Accessories** — (Not Shown) Installed in accordance with the manufacturers installation instructions. Min. 0.25 in. (6 mm) thick panel fastened to the exterior surface.  
**KEENE BUILDING PRODUCTS CO INC** — Types Driwall Rainscreen 020, Driwall Rainscreen 10 and CAV-AIR-ATOR
11. **Joint Tape and Compound** — Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screw heads. Paper tape, 2 in. wide, embedded in first layer of compound over all joints.

**\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

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