

WALLS, PARTITIONS

Exterior Walls: Exterior wall construction for standard campus buildings shall consist of a structural steel frame with masonry infill. The standard masonry infill shall consist of nominal 8" CMU and nominal 4" face brick, incorporating cavity wall construction details. Additional insulation and/or interior finishes may be added based on design requirements.

Masonry Design: Masonry design and construction shall conform with all applicable code requirements, including the applicable standards adopted by the building codes. (Ref. ACI 530 Standards and Brick Institute of America technical notes.)

Flashings Design: Flashing shall be designed to assure that the flashing life is compatible with the masonry life. Flashings shall be designed and installed in accordance with the manufacturers' recommendations and the applicable sections of *Sheet Metal and Air Conditioner Contractors National Association (SMACNA) Architectural Sheet Metal Manual*, *Brick Institute of America (BIA) Technical Notes*, *Portland Cement Association (PCA) Concrete Masonry Manual*, and *Indiana Limestone Handbook*.

Flashing Materials: Rigid metal flashings with ¾" exposed drip are preferred. Stainless steel is the preferred metal. Copper, galvanized steel, and pre-finished steel are acceptable if budget restraints preclude the use of stainless steel. Because of the potential staining associated with the use of copper, its use must be approved by the UNL Manager of A&E Services. All metal flashings shall be designed to preclude electrolytic deterioration resulting from the contact of dissimilar metals. Laminated copper equal to AFCO* Copper Fabric (5 oz. per sq. ft. minimum) or H & B* C-Fab Flashing (5 oz. per sq. ft. minimum) may be used for concealed through-wall flashings that are not exposed. Concealed through-wall flashings, if used, must be specified to extend beyond the masonry face and shall not be cut flush with the masonry face until inspected and approved by NU. EPDM flashing may be used under metal parapet caps, providing it has continuous structural support. PVC flashings are prohibited. Cleaning Masonry: Acid and other harsh chemical cleaners are prohibited.

Cavity Wall Design: Cavity walls shall have CMU back-up walls, with 2" minimum clear cavity spaces. Specifications shall require the contractors to provide clean cavity spaces, back striking of mortar seepage and mortar net drainage system. An engineered galvanized metal stud wall with water resistant sheathing and building wrap system may be used instead of the CMU backup, if specifically approved by the NU. The use of brick veneer with steel studs requires an approved project variance. If a variance is approved to allow brick veneer, then the AE shall calculate the location of the dew point within the wall, and verify that the dew point falls within the cavity or brick veneer.

Brick Veneer/Shelf Angle: The installation of brick veneer facing over metal-stud backup, supported on shelf angles, should be detailed in accordance with UNL Standard Detail SD4-01. Important features of this detail include:

- (1) A stainless steel pan sitting between the first brick and the shelf angle in a dry joint.
- (2) Use screen weep vents to prevent insect penetration at the bottoms of walls and relief angles. Use rope weeps at lintels and other intermediate locations in the wall.

Lipped stretcher bricks resting on the shelf angle shall not be permitted. The use of flexible thru-wall flashing material has also been found to be unsatisfactory and should not be permitted.

EIFS: Exterior insulated finish systems (e.g. "Drivit" and other imitation stucco systems) are not allowed.

R-Value: All exterior envelope assemblies shall comply with the requirements of ASHRAE 90.1 and the Nebraska Energy Code. The decision to follow the prescriptive method or the energy model method of compliance shall be consistent with other sections of these *Standards*. However, regardless of which method is chosen for ASHRAE compliance, and what other energy

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performance criteria are achieved in other assemblies and systems, the minimum R value for any exterior wall assembly shall be 13. Every building should be evaluated and carefully optimized.

Vapor Barrier/Insulation: Consistent with the requirements of ASHRAE 90.1, a vapor barrier shall be provided on the interior side of insulated walls. Quality installation of the vapor barrier and the insulation are critical to their performance. Therefore, design documents addressing their installation shall be very detailed.

Air Retarder: An air retarder (i.e. "building wrap") shall be installed in conjunction with each exterior wall. When insulation and a vapor barrier are installed, an air retarder shall be installed in addition to them.

Special Construction: Special exterior wall construction shall be employed as appropriate in conjunction with a winter interior design relative humidity greater than 35% and/or a summer interior design space temperature less than 65 degrees F. Improved thermal resistance and/or an improved or additional vapor barrier are typically required in such cases.

Partition Walls: In keeping with our goal of institutional quality, masonry partition wall construction is preferred over stud type partition wall construction. In offices or other areas of lighter use, metal stud and gypsum partitions may be considered. Prior to choosing such systems, consider the limitations on flexibility inherent in these systems. CMU partitions offer ultimate flexibility in mounting shelving, cabinets and other equipment. To try to achieve a similar level of flexibility with stud construction, a layer of plywood should be installed beneath the gypsum. All studs shall be a minimum of 20 ga at 16" O. C. Any gypsum shall be a minimum of 5/8" thick unless used in a multi-layer application. All partitions shall extend to the underside of the deck above to provide stability and sound isolation. Wood studs are not allowed.

Fire Rated Partitions: All fire rated walls and partitions shall be labeled with their rating, with labels spaced so that each element is clearly identified in each room. All penetrations in fire-rated floors, walls, ceilings and partitions shall be protected per code with approved and listed assemblies; labels shall be placed adjacent to each penetrations identifying the listed assembly used.

Corridors / Public Areas: Corridor and other general public area walls shall be cmu construction or metal stud wall with high-impact abuse-resistant gypsum board having abuse resistant corner guards. If a higher level of finish is desired, the CMU may be plastered prior to painting. This requirement is IN ADDITION to requirements of the Life Safety Code. Corridor walls shall be extended to the structural ceiling. A guard constructed of highly durable material, such as 16 Gauge stainless steel or abuse resistant corner guard such as Structus Hydrotim shall be installed on each wall corner that is exposed to the flow of traffic.

Service Rooms/Areas: The requirements stated above for corridor partition walls also apply to service rooms/areas (e.g. custodial rooms, lamp rooms, recycling rooms, receiving areas, etc.)

Restrooms: All restroom, shower room and locker room walls shall be CMU construction or metal stud wall with moisture & mold-resistant Gypsum board with walls extended to the structural ceiling. All walls in these types of rooms shall be finished with ceramic tile to match the floor up to an elevation that is well above that of all fixtures, to facilitate cleaning. Base molding shall be ceramic cove to connect the floor and wall tile.

Equipment Rooms: Mechanical rooms subject to moisture shall be CMU or poured concrete wall construction. Other mechanical rooms, electrical equipment room walls elevator machine room and hoist way walls, shall be CMU or poured concrete construction or metal stud wall with abuse resistant gypsum board and sound batt insulation and shall be extended to the structural ceiling with a minimum STC 48 or better sound transmission class

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Folding Partition Walls: Folding partition walls shall be avoided. Even the highest quality folding partitions require a tremendous amount of maintenance and provide little acoustical separation.

Sound Transmission: Priority consideration shall be given to sound transmission in the design of partition walls. Not only service room, restroom and equipment room walls, but all partition walls where sound transmission is a concern shall be extended to the structural ceiling (e.g. at conference rooms, executive offices, etc.) Consideration shall be given to the installation of sound attenuating batts in stud type partition walls. Proper sealing of openings and perimeters of these walls is critical for good sound attenuation.

Fiberglass batts shall NOT be laid over the top of ceiling tile. These batts are frequently moved by mechanics who need to gain access to above-ceiling equipment and fixtures. They are seldom properly replaced, thus compromising the sound attenuation. In locations where stud partitions are used, it is permissible to provide gypsum board to the ceiling on only one side of the partition, to support the batts, and to assist with attenuation.