

WET AND WILD..... HOW WET CMU CAN SCREW UP YOUR AIR BARRIER PROJECT AND HOW TO MINIMIZE THIS PROBLEM!

Late fall and during all winter, concerns and problems arise with air barrier applications on CMU (Concrete Masonry Unit). I know because I get the phone calls. Generally speaking, the fluid applied water-based vapor permeable air barriers go on OK but take a long time to cure or set. Additionally, I've observed a myriad of job site problems with self-adhered vapor impermeable sheets, flashings and tapes. The vapor impermeable materials were applied properly but exhibited blistering and lack of adhesion within days. When investigated there was always liquid water on the adhered side of these sheets.

Observations of quite a few jobs leads me to state that, in this investigation, the vast majority of "problem" jobs had the following in common:

1. New construction projects with
2. The top of the CMU wide open with nothing to prevent rain entry
3. Unheated and wide-open interiors of the building
4. Located adjacent, within 30 miles, to a coastal condition with dew and fog.

OK, let's deal with what will lead to an excellent new construction air barrier installation and long-term performance:

1. If the Architect/Specifier has specified a dry water repellent in the CMU, it is already causing a potential problem with the adhesion of a water-based air barrier or primer. This issue has been written about previously in an article in Coatings Pro Magazine July 2018 "Legacy Specifications, Wall and Air Barrier Performance". The Air Barrier installer absolutely needs to make the Architect/Specifier aware of this prior to bid.
2. If the project is wide open with doors, bay doors and windows not finished or openings not protected from water entry, then a tremendous amount of water can enter the CMU causing some of the problems referenced above. The top of the walls and window openings should be treated in such a way as to prevent water from running in to these open areas.
3. One of my friends and great technical writer in Austin, TX, Mr. Dave Watts, RA, has the following statement in his specifications:

Section 04 20 00, 3.18 PROTECTION OF FINISHED WORK, 3.18.e "Protect tops of masonry with waterproof coverings secured in place without damaging masonry. Provide coverings where masonry is exposed to weather when work is not in progress."

4. If the construction site is not conditioned then it is up to the General Contractor to provide some type of interior heating to prevent the build-up of moisture in the CMU wall.
5. "Hand Damp", a widely used term that is non-quantifiable and can lead to problems as it is never indicative of how internally wet the CMU may be. Real world is that I know of a multi-generation family business that was put out of business as the air barrier placed on the "hand damp" CMU never cured out as the interior of the CMU contained a ton of moisture. Yes, they were being pushed hard by the GC, who was already behind schedule and they acquiesced.

Perceptual statements were made to me that today's CMU is too "open" or "porous" compared to what was made a few years ago. Upon research, I have found no information to confirm or disprove these statements. I've checked project specifications that were 20 years apart and all specify CMU to the ASTM C90, Standard Specification for Load-Bearing Concrete Masonry Units.

As of the writing of this article there are no CMU manufacturers that are members of ABAA. It is this author's opinion that perhaps it is time for the ABAA (Air Barrier Association of America) to research these concerns and to either lay this concern to rest or have a proactive technical approach to answer the preceding perception(s).

Roy F. Schaufele, FCSI, CCPR, FABAA, LEED Green Assoc.

Certified Air Barrier Specialist (#007007)
ABAA Executive Committee & Regional Advocate for Texas

**@ Division 7 Solutions, Inc.
210-859-3749 • roys@division7.com**