



Technical Bulletin

5.2.1.2
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Installation of Thermal
Barrier –

Drywall / Gypsum Board



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Installation of Drywall

Start and Finish

Arxx™ form installers typically start at a corner and work around the building in one direction. Drywall installers should proceed in the same manner. Note that in some corners all the black plastic webs or studs line up vertically, this is a corner where the drywall should start. It is likely that in a 4' zone near the opposite corner in this wall, the plastic studs do not line up from course to course, but skip a course. In this area, a density stud finder will help locate the studs beneath the dry wall. Additionally, the use of a drywall adhesive can reduce the frustration of missed studs. Preference is normally to run the sheets horizontally rather than vertically.

The plastic studs are 8" on centre. Do not attempt to butt two sheets directly over a stud; it works best if butt joints are centred between studs. In general, as **Arxx** walls are flatter and have a full backing of foam between studs, there is significantly less expansion, contraction and condensation as compared to wood stud and CMU walls. These factors contribute to an easy drywall installation, with fewer long term problems such as nail (screw) pops, tape delamination, and corner bead cracking.

Outside Corners

The nearest stud to an outside corner is 8" to 12" away. However, a recent addition to the **Arxx** corner forms has provided for a 4"x3" fastening surface located at the top of each corner form and buried approximately 1/2" below the surface of the foam. The location of this fastening surface can be determined by locating the embossed groove on the surface of the foam.

There are three alternate practices of attaching drywall at the corner:

- 1 1/2" x 1 1/2" metal flange corner as a backer behind the gypsum board
- EPS compatible drywall adhesive
- 1x3 furring strip recessed into the foam.

Screws

Course thread drywall screws have slightly greater pull out strength than fine thread drywall screws. The fine thread drywall screw has a sharper tip that requires less force to get the screw started in the plastic, but this screw will strip the plastic more readily than the course thread. Either screw will indent the drywall surface prior to stripping out the plastic and provide ample holding power. Screw choice is per the drywall installer's preference.

Arxx has conducted engineered pull-out and shear testing on drywall screws into the webs. The results confirm that the capacity of the **Arxx** web meet or exceed those of wood studs. (These reports are available upon request.) Drywall screws tested were #6x1 5/8" and #6x1 1/4".

Plaster

Blue board is a thinner gypsum wallboard material used beneath a finish coat of plaster. Blue board is installed using the same methods and fasteners as drywall detailed above.

To Drywall or Not To Drywall

Living spaces, potential living spaces, and in some cases crawl spaces that serve as an air plenum, all require a **thermal barrier** covering the **Arxx** foam.

All North American codes address this minimum 15-minute thermal (fire) barrier requirement on the interior face of a foam plastic insulated walls. The thermal barrier must be installed to remain in place on the wall for 15 minutes. Drywall is presented as the most inexpensive application but there are other alternatives to achieve the 15 minute protection requirement –

- 1/2" gypsum wallboard is rated at 15 minutes
- 5/8" gypsum wallboard is rated 30 minutes
- 1/2" lath and plaster
- 5/8" plywood has a 15-minute rating

If a wall is to receive a thin wood veneered paneling, it should have 1/2" minimum drywall or 5/8" plywood beneath it for a thermal barrier.

Heavy Objects

Extremely heavy objects such as large framed mirrors and kitchen cabinets should not be hung directly from screws penetrating the drywall anchored into the plastic studs. Though some carpenters ignore the above statement, and use extra screws, a better way is to use the same thickness plywood in lieu of dry wall in those areas covered by the object. In this way, screws as close as 4" on centre can anchor the plywood to many Arxx webs, thus spreading the load, and supplying unlimited fastening locations for the cabinet or fixture.

Planning ahead and installing sheet metal back-up on the face of the forms, behind the drywall finish, allows for fastening attachment anywhere within the area of the sheet metal.

There are specific products on the market for installation behind the drywall to offer support for wall fixtures.

Another method, and one often used for towel holders, curtain rods and other fixtures, is to cut the foam back to the face of concrete and fill the space back up with wood and anchor the wood back to the concrete with a drilled in expansion bolt or concrete screw.

Other Details

Contractors take advantage of, and highlight the deeper window wells in an Arxx wall by installing radiused corners and returning drywall into the windows, and often installing higher grade windowsills, such as marble.

Tips!

ORIENTATION

Preference is normally to run drywall sheets horizontally rather than vertically.

CODE REQUIREMENTS

Living spaces, potential living spaces and in some cases crawl spaces that serves as the air plenum, all require a thermal barrier covering the Arxx foam.

QUALITY SUBSTRATE

The attachment of drywall to the Arxx Wallsystem eliminates 'screw popping' call backs, as with wood stud installations.