

TECHNICAL BULLETIN — Insulation Systems

Bulletin Number: ST08-0001

Date: 2.21.08

Distribution: External



JM SPIDER® Custom Spray Insulation for Low Density Wall Applications

When used in conjunction with a Low Density Nozzle (LDN), Johns Manville's Spider® Custom Insulation can be consistently installed in walls at 1.0 pcf density. This ability makes low density Spider Insulation an offering that contractors can promote with confidence.

The key to success with Low Density JM Spider is using the LDN per the attached application instructions.

If you are interested in adding Low Density JM Spider to your JM Spider Insulation offering, contact JM Customer Advocacy at 1 (800) 644-4013 to order a Low Density Nozzle (JM Part No. LDN, #3130143). To schedule low density application training contact your Johns Manville Market Development Manager.

Application Instructions for the JM Spider® LOW Density Nozzle (LDN)

IMPORTANT! The LDN is designed for use in vertical wall applications at a typical low density of 1.0 pcf. Before getting started check to make sure the basic settings for **Wall Spray** are set as follows:

- JM Spider fiber flow rate of 5 lbs. in 15 seconds or 20 lbs. per minute

Material flow collection bag



Weight measurement using fish scale



- Blower air pressure at 1.2 to 1.5 PSI at the end of 150' of hose

Orifice pressure gauge



Adjust air pressure at the blow machine



- Set JM Spider adhesive pump pressure at 700 to 900 PSI for 650025 spray tips and confirm the adhesive flow rate of 0.7 to 0.9 lbs. in 30 seconds

Adhesive pump pressure adjustment



Pressure gauge located on the adhesive cart



Adhesive weight collection bag



Weight measurement using fish scale



Note: During the adhesive weight test check your spray tips for proper atomization and fan pattern.

Also make sure your blower hose length is a minimum of 150' long with the last 25' of hose being 3" diameter whip hose to fit the LDN spray nozzle.

Note: The blow wool insulation machine needs to be of sufficient size to contain at least 3 bags of JM Spider fiber with additional room for the recycle hood and recycled materials.

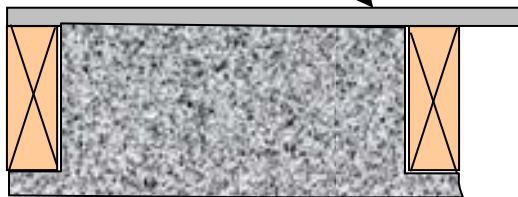
Application/Spraying Guidelines

When compared to the HDN nozzle the first thing you will notice with the LOW density nozzle (LDN) is a reduced speed of the material as it exits the end of the nozzle; the material will also appear to be fluffy. In order to minimize the fly-off and minimize the scrub-off you will need to move the nozzle back and forth starting at the bottom of the cavity and working up just inside the studs. The tendency will be to overfill the cavity. When first getting started try under filling the cavity.

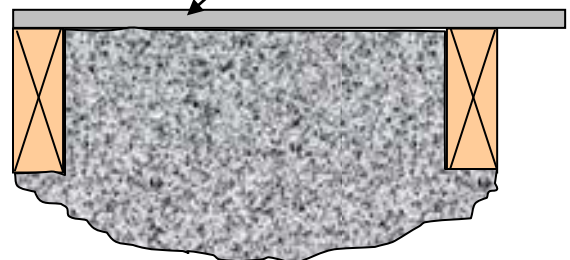


Recommended spray tip size, 650025 or green band.

Top view of the stud wall cavity



A correct fill will minimize the amount of scrub-off and reduce the recycle content and the adhesive consumption.



Overfilling will increase the amount off recycle content and slow down the output of the blow machine. This will also increase the adhesive consumption.

Application/Spraying Guidelines Continued

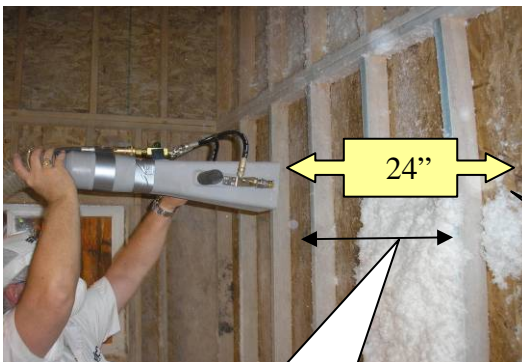
Adjust nozzle distance from the wall (approximately 24" for 16" on center studs) so that the edge of the spray pattern just touches the studs on either side of the wall cavity, filling the entire stud bay. If your R-Value is too high you can either lower your blow wool machine air pressure or increase your distance from the wall.

Always start at the bottom of the wall cavity and apply fiber in a smooth up and down motion, similar to painting. Fill the wall cavity in flat layers, starting with the bottom 1/3, then the middle, and finally the top 1/3, moving in to pack the very top of the wall cavity. This will provide a uniform density and reduce the possibility of material sagging at the top of the cavity.



Start at the bottom of the cavity and work up.

The LDN should be used in a flat (horizontal) application, or used with a slight (10 degree), downward angle to help stack the fiber in the wall cavity.



Adjust the nozzle distance in or out until the spray pattern just contacts the inside edges of the 16" OC studs

In order to achieve the maximum efficiency of the LDN the ideal working distance from the end of the nozzle to the sheathing is 24"

Application/Spraying Guidelines Continued

Finish the cavity at the top by spraying directly into the corner of the top plate to insure no gaps or sagging.



Try and adjust the thickness of the sprayed fiber to just barely fill the depth of the studs to minimize the amount of material that needs to be scrubbed and recycled. This will speed the application process as well as reduce additional adhesive use that would be needed to re-spray the recycled fiber.

Don't worry if you leave occasional surface voids or holes. When the slight overspray is scrubbed from the wall, you can "flash" the wall with a very thin layer of dry material to provide a smooth, even finish that is ready to cover.

Trouble Shooting Tips

If you are experiencing problems with the application or your density (R-Value) is too high, review the following:

- 1) Is your angle of spray correct? For best results, you will need to be spraying with the nozzle held in a flat (horizontal) position or at a slight (10 degree) down angle.
- 2) Is your air pressure too high? Remember, your air pressure with 150' of blowing hose, should be at 1.2 to 1.5 PSI, measured at the exit end of the hose. Too much air will blow the Spider fiber out of the wall cavity. Too little air pressure can also lead to material falling out of the cavity. This can also result in a lower R-Value due to the lower density.
- 3) What is your distance from the spray nozzle outlet to the wall? Usually 18" to 24" will adjust your spray pattern to just touch the edges of the wall studs of the cavity you are spraying.
- 4) Do you have adequate material flow? You need approximately 5 lbs in 15 seconds to maintain the correct flow rate. This will ensure that the proper mix of adhesive to material is achieved. Too much or too little fiber flow will hinder the correct application of JM Spider wall spray.
- 5) If your material coverage is too low or the density (R-Value) is too high do one or both of the following; Reduce your air pressure at the exit end of the spray hose or increase the distance from the exit end of the nozzle to the wall to a minimum distance of 24".
- 6) Is your adhesive pressure correct for the material flow rate? Usually 700 to 900 PSI for the 650025 (green band) spray tips will provide the desired fine atomized spray pattern. Too much adhesive can cause a heavy, over wetted JM Spider application that can result in fall out and wasted adhesive.
Too little adhesive will result in very dry, loose and non-packed fly-off that will not properly fill the wall cavity to the specified density. This can cause material to slip downward in the wall and create voids or "smiles" at the top of the wall, or cause material to fall out of the wall.

Note: It is very important to not only have the correct adhesive rate but also the correct fan pattern of the adhesive as it exits the spray tips. The spray pattern should be about 7 inches wide where the adhesive streams cross each other or slightly wider than the material pattern to ensure proper wetting of all the fibers. Damaged, worn or clogged tips will narrow the adhesive pattern and reduce the atomization. It is possible to have the correct adhesive rate but poor results if the stream width or atomization is not correct.

The proper combination of material flow, air pressure, adhesive pressure/atomization, application angle and distance are all critical to the correct application of the JM Spider LDN wall spray.