



Installation Over Plywood or OSB

PREPARATION: All surfaces to be covered must be structurally sound, dry, clean and free of dust, oil, grease, curing compounds, sealers, waxes, paints, loose or scaly materials, vinyl floorcovering or other non-porous surfaces, or any other foreign matter. Check for any protruding nails, screws or other objects and level off with the surface or remove. In addition to the substrate condition, check the RPM mats to ensure the mats are free of oils, dust or any other foreign matter that could hinder adhesion. During the installation of the RPM mats, DO NOT use a ground level halogen lamp as a light source! The heat generated from this form of lighting at close range far exceeds the temperature the electric heat wire produces. Avoid exposing RPM mats to extreme hot weather/temperatures or prolonged direct sun exposure. Any of these types of exposure could cause the mats to warp. Use only electric floor heat wire rated for under floorcovering application, DO NOT use wire rated for use as concrete slab heat (embedded into the middle of a concrete slab, usually attached to rebar).

RPM INSTALLATION: Do a quick layout of RPM mats in the area to be installed. This will give a layout for cuts prior to applying the adhesive on the substrate. Use a utility knife or scissors to cut the RPM mats. If using a utility knife only a light score and snap is required. Apply Roberts 2001 Felt Back Sheet Vinyl Adhesive or equivalent Felt Back Sheet Vinyl Adhesive to substrate using a 1/8" x 1/8" V-Notch trowel. Apply an even coat over the section the RPM mats will be installed. Keep a bucket of water and a sponge nearby to periodically clean the trowel of excess build up of adhesive. This will keep the notches on the trowel clean and the adhesive spread rate even throughout the installation. Install several mats prior to stapling. This will allow for the re-adjustment of the mats if necessary to ensure the studs on the RPM mats are in the desired position. Be sure to butt the sheets together, do not overlap them. Next, using the Porter Cable Model # US58 Pneumatic Upholstery Stapler (or equivalent) and 3/8" x 1/2" Galvanized Upholstery Staples, or a 1/4" Narrow Crown Stapler with depth control and 1/4" x 1/2" to 3/4" Galvanized Crown Staples, staple the RPM every 4" to 6" in the field of the mats, along the perimeter of the mats every 4", and the corners as well. Spacing of the staples is dependent upon a couple of factors. The first, is the condition of the substrate. The poorer the substrate condition, the more staples will be needed. The second, is how soon after the installation of the RPM mats will the electric heat wire be installed. If the electric heat wire is going to be installed before the glue sets (approx. 24 hrs) the spacing of the staples will need to be closer (approx. 4"). This will keep the RPM mats in place when applying tension to the studs on the RPM mats during the installation of the heat wire. **WAIT 24 HOURS BEFORE APPLYING THE CEMENT MORTAR INTO THE RPM MAT**, this will allow the vinyl adhesive to set. The reason for waiting is if the mortar is applied prior to the drying of the adhesive the shrinkage/curing of the mortar could cause the RPM Mats to pull out of the adhesive.

HEAT WIRE INSTALLATION: Remove the spool of wire from the box. With an ohm tester, do a continuity test on the wire prior to installation. Follow the manufacturer's recommendations for testing the wire. Determine the start point of the wire in the floor. Begin by taking the splice connection of the heat wire (in most cases the heat shrink section between the cold lead and the heat wire) and lay it between the studs of the RPM mat. Next, using hot glue attach this section to the RPM mat. Make sure the cold lead lays flat in between the studs so it does not rise above the surface of the mat (on the RPM-330 you may need to chisel a section down into the substrate to get the cold lead section below the surface of the RPM-330 mats). Next, begin uncoiling the wire from the spool and lay it between the studs of the RPM mats. When an area is reached where the direction of the wire needs to change, wrap the wire around the stud and use an RPM grommet to hold the wire down (grommets may not be necessary depending on the brand of heat wire used, check with your distributor). The stud spacing on the RPM mats is configured to space the wire at 2", 2.5", 3" or any spacing desired. Follow the manufacturer's recommendation for minimum and maximum spacing requirements. Refer to the "RPM Mat Wire Spacing Chart" to see how the wire needs to be laid to achieve the various spacing. If multiple wires are to be installed, be sure to leave sections of the RPM mats clear of heat wire to make it available for other heat wires. When the end of the wire is reached, hot glue the end splice to the RPM mat. Do not zigzag the end splice between the studs, hot glue the end splice straight with no bends.

MORTAR INSTALLATION: Check the RPM mats to ensure the surface is free of oils, dust or any other foreign matter that could hinder adhesion. Begin by using a CMX approved bonding agent. Follow the manufacturer's recommendation for use. The fastest and easiest way to apply the bonding agent is to use a sprayer. Spray over the entire surface of the RPM mats. Be sure to apply the bonding agent to all sides of the studs on the RPM mats. Wipe down any excessive or puddle areas of the bonding agent. Follow the manufacturer's recommendation for tack time for the bonding agent. Once the bonding agent has tacked up, begin installing a cementitious floor leveler and use the surface of the RPM mats to screed the floor leveler smooth. Allow the leveling product ample time to dry before setting tile to the surface. **DO NOT TURN ON THE ELECTRIC HEAT WIRE FOR 28 DAYS AFTER COMPLETION.** This could accelerate the cure time of the leveling product, thinset or tile grout, which could cause them to lose some of their adhesive qualities or get shrinkage cracks in the grout.

MATERIAL COVERAGE: (Note: all coverage is approximate)

- * Roberts 2001 Sheet Good Adhesive: 60 s/f per gal
- * Porter Cable US12G Staples: 600 s/f per box
- * RPM Mats: 1 sheet = 6.11 s/f
- * RPM Grommets: Approx 100 s/f per bag depending on qty of wire turns
- * Bonding Agent: See Manufacturer's Coverage
- * Cementitious Leveler: RPM-330 = 2.13 lbs per s/f / RPM-500 = 3.4 lbs per s/f