

MEArin 100

Drainage System

Installation Instructions



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Drainage Solutions for your Home

SUMMARY

These installation instructions are applicable to most installations. System designers must determine whether site conditions have special requirements regarding channel installation.

1. DRAINAGE SYSTEM DESIGN

The drainage system selected must be suitable for your application and for the location where installation is to take place.

2. PREPARATION

Read all information for your type of installation before starting project. Collect tools and supplies needed to do the job. See list of suggested tools and supplies in the detailed installation instructions (Page 3).

3. EXCAVATION

Excavate trenches to a width and depth sufficient to ensure that there is room for the minimum required thickness of concrete to be placed under and alongside the channels. Remember that the pavement surface next to the channels must be laid so that it is 1/8 in. (3 mm) above the top of the channel.

4. CHANNEL LAYOUT

Lay out channel system parts in the planned sequence alongside the excavated trench according to the installation plan. Ensure that channels are placed in the proper position and in the proper direction.

5. KNOCKOUT REMOVAL

Determine which end will be the discharge end and remove knockout from end outlet.

6. INSTALLATION AND BRACING

Begin installing channels at the downstream discharge end of the drainage system. Install and brace channels so that channels will remain in place without sagging prior to pouring concrete and that channels will not float out of position during or after pouring concrete. Channels must also be braced against any side loading that would prevent easy installation of grates after the concrete sets up. It is recommended that grates be wrapped in plastic and set in the channel during concrete pour.

7. POURING CONCRETE

Do not bump or jar channels out of alignment during the pouring of concrete. Pour concrete slowly enough to ensure that channels do not float out of alignment. Do not pour concrete directly against channels. Pour the same amount of concrete on both sides of channels to avoid pushing channels out of alignment. The pavement surface next to the channels must be laid so that it is 1/8 in. (3 mm) above the top of the channels.

8. CLEANUP

Clean any spilled concrete from grates, channels and outlet points. Once concrete firms up, insert and secure grates to channels using the optional locking devices.

DETAILED INSTALLATION INSTRUCTIONS

1. DRAINAGE SYSTEM DESIGN

The drainage system selected must be suitable for your application and for the location where installation is to take place. The carrying capacity of the subsoil and the strength of the trench floor must be considered. Consideration should also be given to the use of expansion joints in both longitudinal and transverse directions to minimize horizontal forces that would distort the channel system.

2. PREPARATION

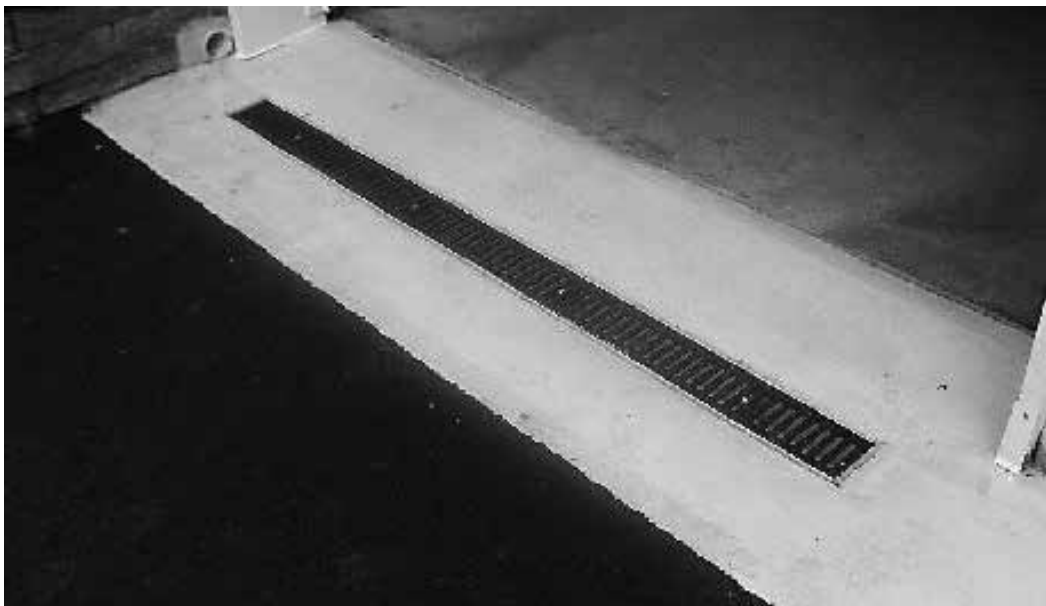
Read all information for your type of installation before starting project.

Collect tools and supplies needed to do the job. The following may be useful for your installation:

Shovel	Screwdriver & pliers	Steel rebar stakes (5/8" dia. or less)
Level	Caulk gun and caulk sealant*	gloves
Square	Knife	3" or 4" Schedule 40 PVC pipe
Chalkline	Large hammer	3" Hole saw (if using bottom outlet)

***Selection of Caulks, Grouts, and Sealants:** Adhesives, caulking compounds, grouting and sealants used on the drainage system must be compatible with all chemicals that will flow through the system. Openings and joints may be filled with one of several materials. Silicone or polyurethane caulk should be used when a flexible joint is needed. A two-component epoxy grout should be used when a rigid joint is needed. A fast setting cement type grouting compound may be used where high durability is not needed.

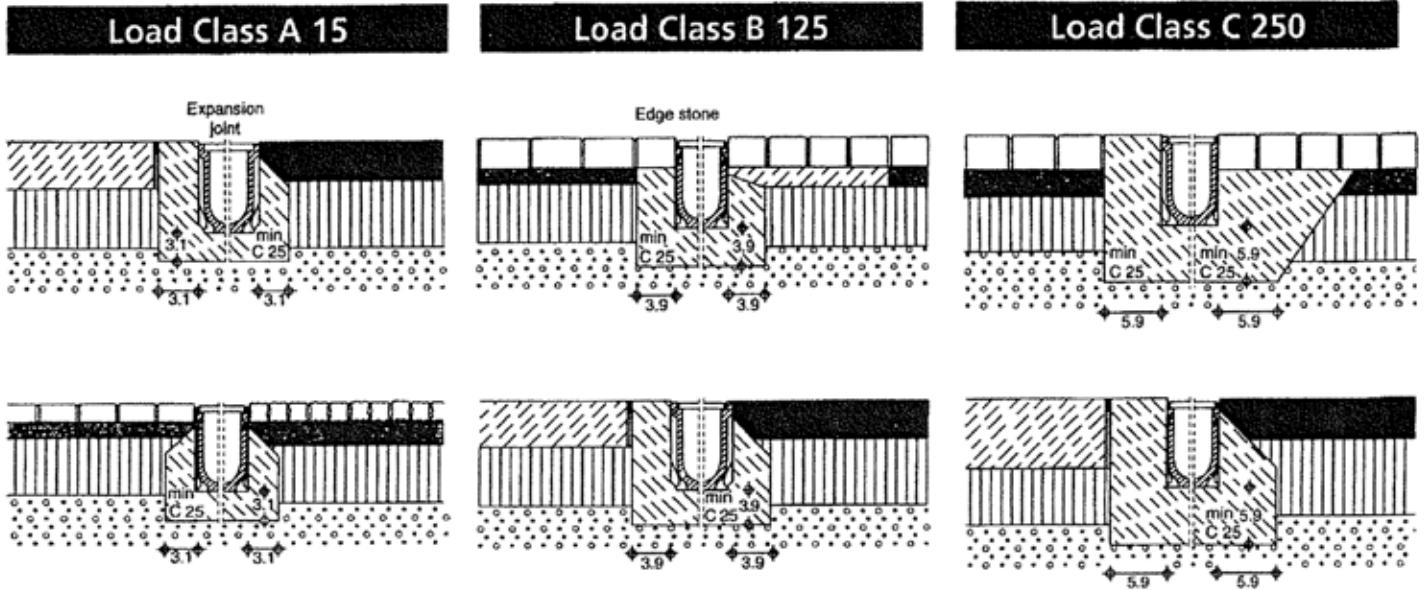
Be sure you have the correct pipe and couplers to mate up your drainage pipe to the drain outlet of your drainage system. You may want to take the end outlet or bottom outlet to your local hardware store and be sure you have all the proper fittings before you begin setting the drainage system in the trench.



3. EXCAVATION

Excavate trenches to a width and depth sufficient to ensure that there is room for the minimum required thickness of concrete to be placed under and alongside the channels. Bedding concrete should be as thick as the adjoining slab thickness. Excavations must ensure a minimum thickness of bedding concrete as shown in the chart below. Remember that the pavement surface next to the channels must be laid so that it is 1/8 in. (3 mm) above the top of the channels.

Example Installations:






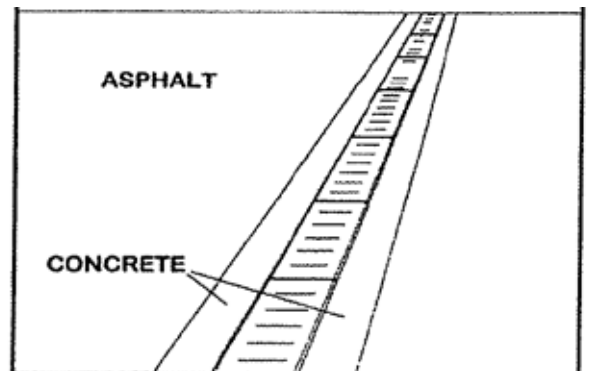
Installation in Asphalt Surfaces

When installing MEArin100 in asphalt surfaces, encase the channel system in concrete in the same manner as when installing a system in soil. This must be done since asphalt is a flexible pavement.

Installations in Existing Hard Surfaces

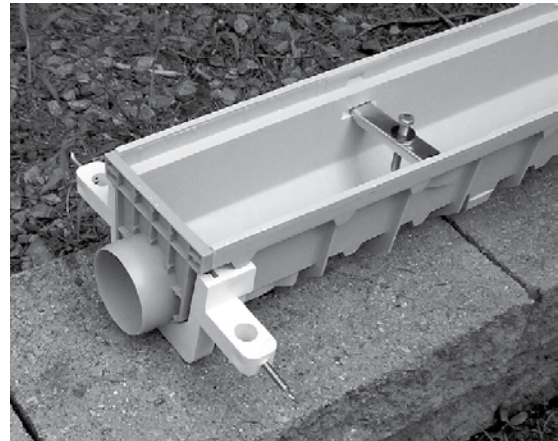
MEArin100 can be used to provide drainage in existing hard surfaces by saw cutting the existing surface with 2 cuts, 8 in. (20 cm) wider than the width of the channels (4 in. each side). The concrete is then removed and an excavation is made for the channel system. Install the channel system as described above and concrete into place.

CLASS	MINIMUM CONCRETE THICKNESS
A  PEDESTRIAN	3.1"
B  AUTOMOBILE	4"
C  DELIVERY TRUCK	6"



4. CHANNEL LAYOUT AND ASSEMBLY

Lay out the channel system parts alongside the excavated trench. If using a bottom outlet, ensure that channels are placed so the premarked bottom outlet circle is at the discharge end of your system. Turn channels upside down and place channels together. Slide bracket over ribs in channel to lock channels together. An installation bracket will also be used at each end of the system. If not using a bottom outlet, cut out hole with a knife in the end cap at discharge end. Run a small bead of caulk or silicone around each end of the channel and install end caps.



If you have purchased a Bottom Outlet / Inline Trap Set (MEA141400), determine which end will be the discharge end of your system. With the channel upside down, drill an opening in the premarked position on the channel using a 3" hole saw. Remove strainer and trap cup from bottom outlet and mount to bottom of channel. Fasten in place with provided screws. Flip over channel and insert trap cup into opening. Insert strainer into trap cup.

5. INSTALLATION AND BRACING

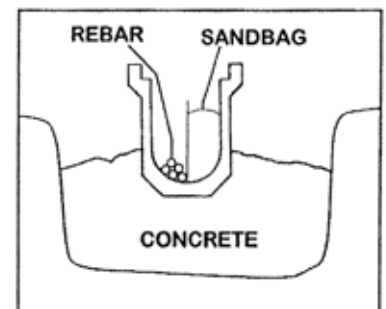
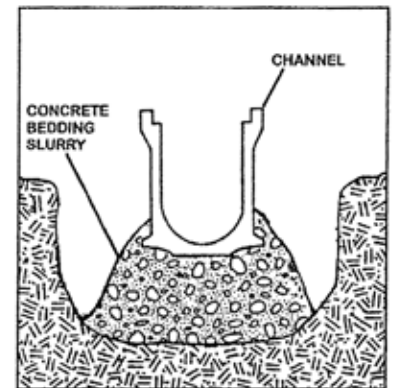
Lay assembled system upright in excavated area. Drive rebar through channel brackets into ground and adjust system height using thumbscrews to tighten at proper height. System should be installed level or at a slight pitch toward discharge end.

Channels must remain in place without sagging prior to pouring concrete and channels must not float out of position during or after pouring of concrete.

Channels may be supported by using:

- channel install brackets with rebar driven through bracket holes and thumbscrew tightened to proper height.
- concrete blocks placed under channel joints
- 2 x 4 boards placed across opening to suspend channels from above
- the concrete bedding slurry method (see drawing this page)

Concrete Slurry Bracing Method



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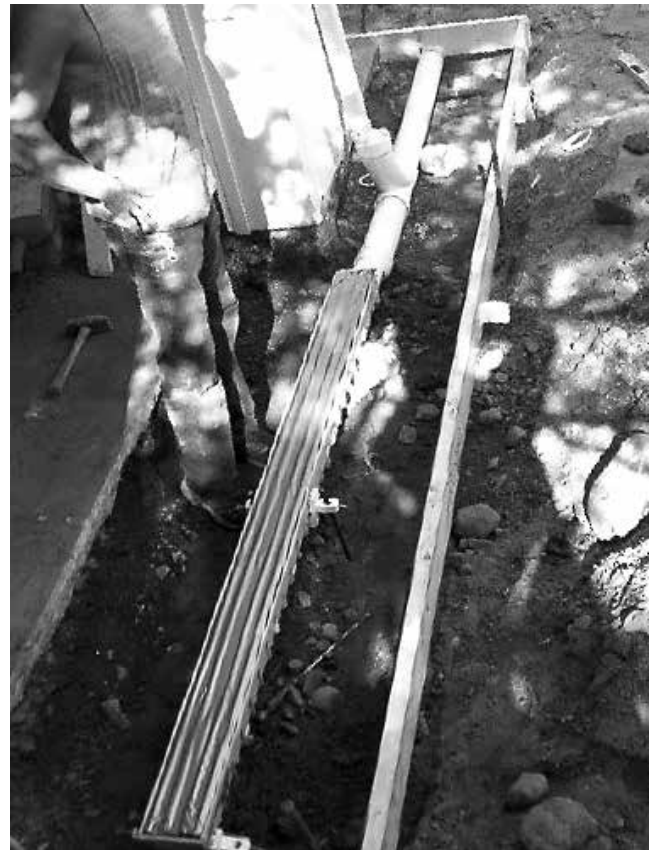
Channel floating can be prevented by placing reinforcing bars or bags of sand inside channels. Channel alignment can be maintained by placing grates (or plywood strips) in the channel across the channel seams. If grates are placed in channels, they should be wrapped in plastic or otherwise protected from concrete spillage. Grates should be shimmed snugly in the channel to prevent channel from being compressed against grates and to ensure ease of final placement after concrete has set. Do not lock grates in place until after final placement.



Finish securing system in place. Install plastic wrapped grates or spacer in channel.

Connect discharge outlet to your discharge pipe. End outlet will mate to a 3" Schedule 40 pipe coupler. Bottom outlet will mate to a 3" PVC pipe, a 3" PVC coupler, or a 4" drain pipe. You may wish to use caulk or sealant around the joint for a better fit and to hold it in place during pour.

Finish framing your pour area (if required in your instance).



6. POURING CONCRETE

Pour concrete slowly and pour the same amount of concrete on both sides of the channels to ensure that channels do not float and are not pushed out of alignment.

Continue pour while continually checking that channel remains in place.



Grade the concrete surface which is next to the channels so that it is 1/8 in. (3 mm) above the top of the channels. If any other flooring (tile, stones, etc.) are to be added, consider its thickness with grading the concrete.

A finished slope of 1/8 in. per foot (10 mm per meter) for at least 2 feet (0.6 meters) is recommended. This will provide positive drainage flow into the channel drainage system.

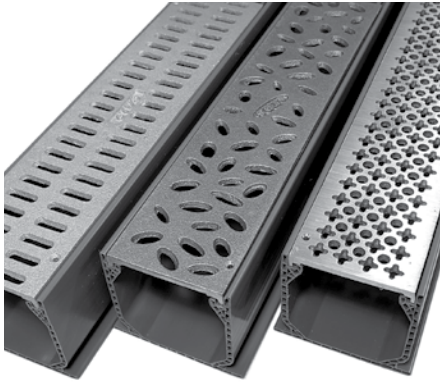


7. CLEANUP

Clean any spilled concrete from grates, channels and outlet points. Clean out all debris in the system and make sure all outlet pipes are open. Insert and secure grates to channels using the grate hold-down devices.

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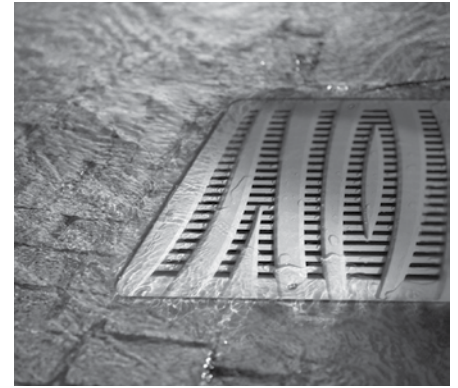
Mini Channel kits with a wide assortment of decorative grate patterns. Material options include plastic, cast iron, bronze and aluminum grates.



Catch basin kits with your choice of plastic slotted or decorative, or cast iron slotted or decorative grates. Choose from 9x9, 12x12, 18x18 or 24x24 inch.



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