Chapter 7

Drains and cleanouts

Topics

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Note: Altro floor covering must be mechanically fastened to all drain outlets and cleanouts to ensure a permanent watertight installation as outlined in this section. Clamping style drains must be used.
7.1 Existing rectangular or square drains and floor sinks

Altro gulley edge/angle or Visedge may be used. See 3.2 Gulley angles and edges on page 14, 3.3 Visedge VR vinyl securing strip on page 16 and 3.4 Visedge DS vinyl securing strip on page 17.

7.2 Using gulley angle and gulley edge with safety flooring

Cutting the concrete

Saw cutting and gulley edge and angle are not to be used in wood subfloors.

1. Using a small hand held electric grinder, tuck point grinder, circular saw or other appropriate saw equipped with a diamond saw blade (wet type preferred), cut a 1” deep x 3/32nd” wide saw cut in the concrete substrate to receive the gulley angle/edge. Two (2) passes may be necessary to achieve the correct width of groove unless the saw blade is 3/32nd” wide. Note: The use of wet type saw blade would, if used correctly, reduce the amount of airborne dust created while cutting concrete. Dry cutting can be done if a dust recovery cutting system is utilized. In some instances using two blades side by side on the angle grinder to achieve the required width of the saw cut may be necessary to do this in one pass. The use of a wet sponge held beside the blade guard along with the use of a HEPA vacuum system must be used. “Follow all applicable local, state, and federal regulations and laws pertaining to saw cutting, grinding, and patching work of concrete; all work is to comply with OSHA 3902 Respirable Crystalline Silica Standard.”

2. If the area to be saw cut is in a doorway or abutting a wall, the saw/grinder will be unable to cut all the way to the door casing or wall. In this case a series of 1” deep holes may be drilled in the concrete substrate using a 3/32nd” masonry drill bit and then chiseled out to allow gulley angle/edge to seat flush with the subfloor. You may also cut back the leg of the angle/edge to be inserted within 1” of the ends.

3. If the area to be saw cut is at floor drains or trenches, the cut must be directly up against the drain or trench.

4. On all types of cuts, it’s helpful to use some form of straight edge or guide to create a straight saw cut allowing for a professional fit and finish.

5. All water and concrete silt must be removed/vacuumed from the saw cut. The area in and around the saw cut must be allowed to dry completely before gluing can take place.

Gluing process

6. Using masking tape, outline the outside of perimeters of where the Gulley edge/angle will be installed, this will aid with the cleanup of excess adhesive after installing the gulley edge.

7. Apply Altro QuickFix 3042 on the floor and in the saw cut.

8. Place the gulley angle/edge into the saw cut making certain that the strip is completely embedded into the adhesive.

9. Using a small scraper or putty knife, remove excess adhesive. If adhesive is on the surface of the gulley edge, remove using a small amount of Isopropyl alcohol on a clean white rag. Note: Do not allow adhesive to dry on the gulley edge. Once dry, the 2-part adhesive cannot be removed.

10. It may also be necessary to weight down the gulley edge until the adhesive has a chance to set-up. This will ensure that the strip is fully seated and without voids.

11. Always allow the gulley edge to set up in the adhesive prior to cutting and fitting the Altro safety flooring to the newly installed strip. The flooring material should be scribe fit to ensure a neat net fit seam for heat welding.

Welding process

12. Heat-welding the new flooring to the edging must not be attempted until adhesive has cured (typically 24 hours on AltroFix 30 and four to six hours on the AltroFix 31).

13. Groove gulley edge and flooring as if it were a seam in the flooring material, gulley edges are made of vinyl and weld just like the flooring material. Note: When hand grooving, always use a straight edge as a guide to achieve a straight groove.

14. Clean all dirt and debris from grooved seam and weld as you would the Altro flooring material. If applicable, always weld mitered corners with a black rod. Note: Traditionally a black rod is used to weld the flooring to the gulley edge. However, a rod color that matches the flooring material can also be used.

15. Once the welding rod is allowed to cool (typically 30 minutes) trim with a sharp trimming knife using a trim plate for the initial cut followed by the trimming spatula for the final flush cut.

16. Touch-up can be done using a hot tip repair tool or bullet tip repair tool.
Note: gulley edge must be fully adhered both inside the saw cut groove and onto the substrate. All joints, flooring to gulley edge as well as corners of the gulley edge must be welded. Failure to do so may allow water to encroach compromising the integrity of the flooring and gulley edge.
7.3 Visedge VR

A water resistant joint between Altro high performance floor covering and other surfaces, such as ceramic tiles, is achieved by using the Visedge VR vinyl edge securing strip, or gully edge strip.

The flooring is heat welded to either strip, preventing water from seeping into the subfloor and protecting the tile edge.

Installation

Visedge needs to be countersunk, or leveling compound needs to be used, to accommodate the thickness of the edging. Use the predrilled holes to secure the strip to the subfloor. Use the appropriate screws and anchors for the installation. In addition, use Altro QuickFix 3042 under the edge to keep water from traveling back under the flooring.

For more information on the Visedge, see System accessories on page 13.
7.4 New round drains, cleanouts, trenches and floor sinks

For Altro flooring to be successfully installed in wet areas (i.e. kitchens, showers, bathrooms, etc) all penetrations must be finished properly to prevent moisture from leaking under the floor. This is done by mechanically fastening the flooring in place with surface membrane clamping plumbing fixtures. These fixtures clamp and seal the flooring edge to prevent moisture from penetrating underneath the flooring.

The list on the following pages will aid in the design and specification of mechanical and plumbing fixtures that can obtain an installation with the least potential of leakage possible. Remember to keep penetrations to a minimum, the fewer the penetrations the fewer points of potential problem in the installation.

CAUTION: In many cases a drain body will have weep holes incorporated into them for the use with a mid-slab moisture membrane. These are frequently used under ceramic tile so that if any moisture penetrates the ceramic tile or grout it can then escape down the drain by exiting the slab via the weep holes and into the drain. When installed the Altro floor is a surface applied membrane and a mid-slab membrane, more specifically one that uses a drain body with weep holes, is not necessary. We ask that if the drain body specified has these weep holes that they be sealed so as not to allow moisture from inside the drain itself leaking back up and out the weep holes and potentially creating a floor failure. These weep holes can be closed off with a small amount of sealant applied into the weep hole.

Disclaimer: The following list of surface membrane clamping fixtures are ones that have the ability to firmly clamp the finished flooring down and into the fixture at its surface to prevent moisture from penetrating and entering under the flooring. However, please be advised that this list is constantly changing and with many of the fixture manufacturers constantly updating and designing new surface membrane clamping items.
MIFAB - F1100 - FC

Floor drain with surface membrane clamp

7” (175) or 9” (230)

floor covering
vandal resistant
stainless steel screws
"fc" nickel bronze strainer
surface membrane clamp

Sample of an approved Surface Clamping Membrane Style Drain

Recommended round drains

Commonly used in kitchens, showers, bathrooms, hydrotherapy, and other areas where there is a slope and pitch to the drain so as to allow water to not puddle and instead run to and down the drain. These fixtures must be of a surface membrane clamping type so as to prevent water penetration.

- Josam 30900-9AD
- Josam 30000-AD
- Josam 30200-AD
- Intersan 303077X
- Mifab F1100-C-FC
- Wade 1100-FC
- Jay R. Smith 2050/2051
- Zurn Z400H
- Zurn Z415H
- Blücher BFD-510
- Blücher BFD-530
- Blücher BSR-700
- Blücher BSR-800
- Watts FD-100-FC
- Watts FD-200-FC
- Watts

Recommended round cleanouts

Round Cleanouts are found where cleanout access of the plumbing drainage system is required, these fixtures also need to be of a surface membrane clamping type.

- Mifab C1100-RFC
- Wade 8000-FC
- Watts CO-200-RFC7
- Josam 55000-CFC
- Blücher BCO-220
Trench Drains are used in commercial kitchens and in most cases require special construction, these trench drains must always be of a surface membrane clamping type. Companies such as Blucher and Josam will make custom surface membrane clamping type trench drains if provided adequate lead time; these fixtures need to be solid and free from movement and flexing when made and installed in wider sizes and longer lengths.

- Josam 46200
- Blücher BTV6
- Blücher BWS-200

Blücher BTV6

Trench drain with surface membrane clamp

Sample of an approved trench drain

Floor Sinks are used primarily in kitchens and laboratories and they can be either porcelain or stainless steel. Floor sinks are commonly misunderstood and both used and installed incorrectly (for particulars of the use of mechanical/plumbing fixtures and their application please consult the current edition of the Uniform Mechanical Code). While porcelain floor sinks are seen in many kitchens and are frequently specified and used, these porcelain fixtures do not come in a surface membrane clamping type that Altro recommends. If a porcelain floor sink is specified and used then Altro’s gulley angle/edge is required to be fit and installed around the floor sink. This requires saw cutting into the concrete and flooring, then fitting to the gulley angle/edge and heat-welded to it (the application of gulley angle/edge cannot be used on wood subfloors). It is Altro’s first choice and recommended preference that, whenever possible, floor sinks be of a surface membrane clamping type.

- Josam 45130
- Jay R. Smith SQ-9-3775
- Zurn Z1755
7.5 Modifying an existing drain or cleanout

- Remove the drain strainer or cleanout cover plate.
- With a quality moisture tolerant and resistant patching compound, finish the subfloor flush with the drain perimeter.

NOTE: If drain body is higher than the concrete surface, it must be either ground-off or chipped out and lowered. If the drain body is lower than the concrete surface, you must slightly grind the concrete surface to allow for a slight slope-to-drain profile. Follow all applicable local, state, and federal regulations and laws pertaining to saw cutting, grinding, and patching work of concrete; all work is to comply with OSHA 3902 Respirable Crystalline Silica Standard.
- Using a small hand held electric grinder and/or bench grinder to slightly remove the square shoulder on the inside edge of the drain body to create a smoother edge into the drain into the drain. (See Diagram A.)
- Similarly, remove the square shoulder from the perimeter of the backside of the drain cover plate creating a 45-degree slope to match the drain body. (See Diagram B.)
- Replace the cover plate screws for the purpose of land marking the screw holes and preventing the adhesive from filling the holes during the gluing process.

Gluing and cutting process

- Apply adhesive (AltroFix 30 two-part polyurethane or Altro QuickFix 3042 adhesive) on the floor, around, and onto the sloped perimeter of the drain
- Place the Altro floor covering over the drain, and fit cut only to the inside diameter of the drain plate screws.

Note: Cutting to the outside of the screws will cause the material to be short of the drain plate once it is re-installed.
- Cut small windows in the Altro floor covering at the drain plate screws only.
- After all final fitting is completed, warm material with a hot air blower and secure the drain plate cover in place. This process pinches the Altro floor covering between the drain body and the drain plate cover. (See Diagram C, completed drain.)
Note: In most cases, it will be necessary to weigh down the drain area to allow the adhesive to set-up.

Caution: Failure to weigh down the drain area during this process may cause a bubble or a pucker in the Altro floor covering, to which there is no remedy.

Approval from the General Contractor/owner must also be obtained before commencing with this procedure.

Altro floor covering must be mechanically fastened to all drain outlets and cleanouts to ensure a permanent watertight installation as outlined in this section.