

Functional, Sustainable and Accessible:

A Specifier's Guide to Recycled
Polymer Surface Water Drain Solutions



INTRODUCTION

Surface water drainage solutions are an important aspect of any construction project. They have numerous applications within domestic, multi-residential and certain commercial contexts that create a better functioning, safer space for all occupants. Inadequate surface water drainage can cause a multitude of issues depending on the application. For example, it can cause flooding in lawns or gardens. A lack of threshold drainage can lead to water from outside entering houses, or an underperforming pool edge drain can leave excess water on the ground, which can pose a slip hazard. In order to avoid these issues and make the best choices for their projects, it is important that specifiers are fully aware of the options in the market along with their benefits and limitations. Specifiers must carefully balance the requirements for drainage solutions that are fit for purpose while complementing the wider visuals of the design.

Traditional drainage solutions often come in the form of pipe grates which may be difficult to conceal and can cause accessibility issues in cases where a drainage grate may be placed in a thoroughfare. In the case of pipe drains, a four-way gradient is commonly required in order to adequately channel the water to the pipe. This can be time consuming and expensive to create, and difficult to get right. Poor grading is one of the main causes of ponding surface water,¹ which can in turn lead to flooded spaces or slip hazards in the affected areas.

Modern seamless slot drains can strike an ideal balance between functionality and aesthetic. By concealing drainage trenches underneath tiles or pavers, they do not break with the overall aesthetic of the design and still provide excellent surface water removal. But not all seamless drains are created equal. Many are made from stainless steel or other metals, making them heavy, prone to rust, and expensive. Where possible, specifiers should opt for an Australian-manufactured, recycled polymer product when specifying seamless drainage solutions.

This whitepaper will provide a detailed overview of recycled polymer seamless slot drains and how they can provide specifiers with a sustainable, accessible, cost-effective solution that performs well and does not compromise the wider visual aesthetic of the design.





WHAT ARE SEAMLESS SLOT DRAINS?

Seamless slot drains are a semi-concealed linear drain type that sits under the surface of tiles and pavers to capture low rainfall and surface water. They utilise a thin gap - generally no more than 20 mm - through which water is channeled to a grate and trench below. Seamless drains are commonly used along the edges of spaces - for example where the floor meets the wall in a shower, or along the edge of a deck, pool, or flower bed in an outdoor environment. While not suitable as commercial drainage, they provide excellent surface water drainage in outdoor areas at cafes and restaurants, used as threshold drains to prevent surface water from coming inside the business or even across paths in applications where drainage is a concern.

Whereas common threshold drainage solutions sit flush with the surrounding surface, they still utilise a visible grate which can stick out amongst a wider design. Seamless solutions make the drain effectively invisible and allow specifiers to create an unbroken effect with their tile or paver selection.

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CONSIDERATIONS FOR SPECIFIERS

Choice of Material

Common integrated drainage solutions are made from stainless or galvanised steel. These may be good options for exposed drainage, particularly where aesthetics are of high importance, but for slot drains where tile is installed over the top, polymer is a less maintenance-intensive material. Galvanised steel can be prone to rust or corrosion when exposed to excessive moisture, or the acidic or alkali conditions that may occur in some soils. Stainless steel can also be subject to pitting corrosion in high chloride environments.² It is heavier which can make installation more time consuming and cumbersome, particularly when installing multiple lengths of drain. Both galvanised steel and stainless can also be expensive options when compared with other alternatives such as polymer. Therefore, specifiers should consider a durable, UV stabilised plastic polymer where possible.

Slot drains constructed from plastic polymer are light yet hardy, do not rust³ and have a lifespan in excess of 50 years,⁴ even in nutrient-rich soil or with frequent exposure to salt water. An added advantage of opting for a polymer seamless drainage solution is that they can be fabricated entirely from recycled plastics, contributing to sustainability outcomes and reducing wastage at a global level. Wherever possible specifiers should choose a recycled polymer drainage solution to get the highest possible performance with minimal environmental impact.

Accessibility

It is still common to see drains with open grates as a means of corralling water and funnelling it towards the drain. These designs are outdated and can create an environment that is inaccessible and unsafe for people with restricted mobility. In line with *AS1428.1:2009 - Design for access and mobility - General requirements for access*, all new buildings should feature 'continuous accessible paths of travel' for people with disabilities.⁵ A continuous accessible path of travel is one that is clear of obstructions that may cause impediment to the free movement of a person with a disability. With a drainage gap of only 20mm required and heel inserts available for full compliance with AS 1428, a recycled polymer seamless drainage solution enables clear and safe access for people of all mobility levels. For specific instances where a 20mm edge can be problematic, for example in

public thoroughfares or places where there is regular foot traffic, heel inserts can be utilised to provide full safety and peace of mind.

Ease of cleaning

Whilst the fundamental task of drainage is to efficiently remove surface water, there is frequently debris such as leaves, sand, or even food scraps that are collected by the drain. This means that specifying a drainage solution that can be easily cleaned without the need for specific tools or professional assistance is imperative. While the trench is concealed by tiles or pavers, modern seamless drainage solutions still allow easy cleaning through means of an access pit. The access pit sits at the end of the trench and acts as a collection point for debris, separating it from the water which continues to the main drainage system. Access pits are accessed by simply lifting the lid, which can also be covered with a tile or paver in keeping with the wider visual effect.

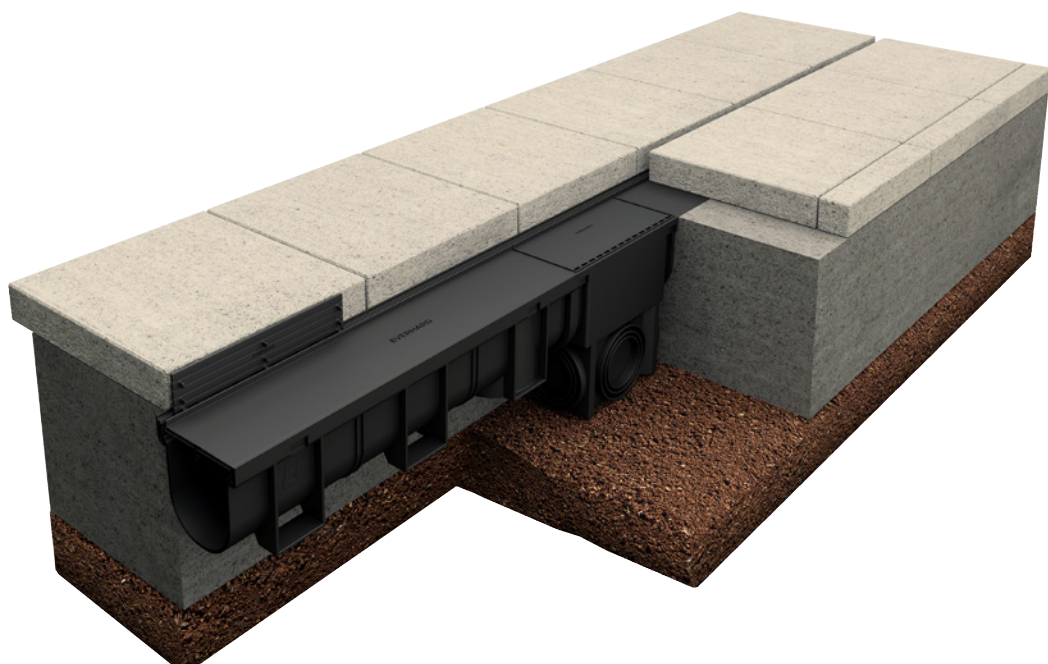
Ease of installation

In addition to their lightweight build, modern polymer seamless drainage solutions employ a modular design which makes them easy to install. Channel and grate pieces, corner pieces and access pits can all be purchased individually and then simply clicked together in the required shape, forming a watertight seal in the process. Trenches and grates frequently come in standardised lengths, however these can be easily cut to size on site without the need for specialised or heavy duty cutting implements. Installation should always be completed by a qualified professional with the required knowledge and technical ability in creating adequate surface gradients that will allow the drain to function properly. If specifiers have any concerns in this area, they should speak to their suppliers.

Sustainability

In order to achieve the best possible sustainability outcomes, specifiers should opt for Australian-made, recycled polymer products wherever possible. By selecting products that are 100% recycled, specifiers can contribute to the circular economy, increase reuse, and reduce the excessive production of plastic domestically. Specifiers should speak with suppliers about their supply chains and waste management plans where appropriate.

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EVERHARD INDUSTRIES

For over 94 years, Everhard Industries has provided the best in sustainable water management solutions for the Australian architecture and design industries. From beginnings making concrete laundry tubs to the present as a manufacturer of technically-minded surface water drainage, stormwater drainage and wastewater systems, Everhard has stayed at the forefront of innovation.

Everhard's EasyDRAIN™ Edge seamless drainage system is a 100% recycled polymer integrated drainage solution. It sits underneath tiles and pavers to provide a high-performance surface water drain that does not interrupt the visual aesthetic of a space. The recycled polymer construct makes EasyDRAIN™ Edge environmentally friendly, durable and long-lasting, and incredibly easy to install. Everhard products are widely accessible and available from major plumbing retailers across the country.

Everhard Industries polymer products are 100% recycled and manufactured in Australia, and the company prides itself on being a dedicated contributor to the domestic economy whilst undertaking a number of sustainability and community-focused initiatives as a means of giving back. In addition, through its products Everhard recycles more than 1.5 million kilograms of polymer each year, proving its commitment to the circular economy of waste management, minimisation and reuse within Australia.

everhard.com.au

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