CUBIS SYSTEMS
A CRH COMPANY

Cable Protection Systems

Installation Guide

V.1 2018

CABLEprotect MM RAILduct™

GR-WI-602

Introduction

This guide addresses the acceptable methods and details for the installation of CABLEprotect ducting & troughing systems.

The purpose is to serve as a guideline and the customer shall comply with all laws, regulations, codes and orders of any authority having jurisdiction over the customer and which relate to the customer's installation, maintenance and use of the products.

If the customer's installation or use of any products contravenes any such laws, regulations, codes or orders of such authorities, the customer shall be responsible for the violation therof and shall bear costs, expense and damage attributable to its failure to comply with the provisions of such laws, ordinances, rules, regulations, codes and orders.

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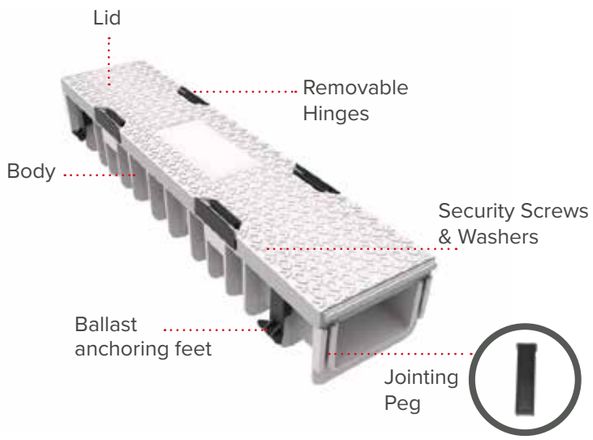
Cubis' MM Railduct units are available in two colours; Black & White. The white finish indicates the product is fire retardant, available for use in tunnels and environments where fire safety is imperative. The black is a standard MM Railduct unit.

Overview

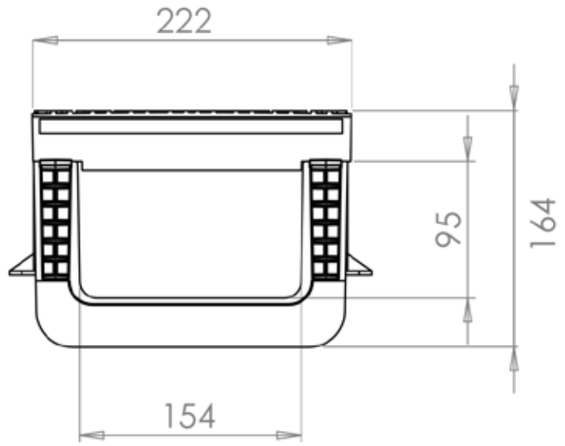
MM RAILduct™ has been designed to offer a number of cable routing solutions in varying locations and applications.

The following information provides guidance for the successful use of this lightweight versatile product.



Product Description

MM RAILduct™ is manufactured from Glass Reinforced Polyester (GRP).



Notes on Application

MM RAILduct™ may be installed in ballast or soil.

a. MM RAILduct™ may be buried in ballast up to the middle of the sidewall, between 80 and 140 mm above the base. As a minimum, the connecting feet for ballast anchoring must be covered.

b. MM RAILduct™ can be installed track side in existing ballast or installed outside the track in new ballast.

In either location, material shall be removed as required providing sufficient depth for base preparation.

c. Failure to observe the following steps may yield less than acceptable performance.

d. MM RAILduct™ can be installed on a gradient of up to 20° longitudinally by following the guidelines set out in this document.

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Health & Safety Notice

In areas where the public have access, the site should be properly signed and guarded in accordance with the State and Territory Regulators, Laws and Codes on Health and Safety.

Additionally, all other safety precautions required by legislation, the customer and as specified by the contract, the Local Authorities, other Landowners and the Police should be observed at all times.

Before excavation takes place, all necessary precautions to locate and protect existing buried services in the location of the ducting & troughing system should be taken.

Scan QR Code for the MM RAILduct™ Product Safety Data Sheet (MSDS).

CABLEprotect MM RAILduct™

Installation Guidelines

Bed Preparation

1. Ensure the final bed is even, firm, and stable providing a level surface on which to assemble the MM RAILduct™

   It is recommended that a crushed rock base be used if the existing soil is not suitable.

2. Erecting a grade line set to finish level of MM RAILduct™ may aid in facilitating a straight and level installation

Assembly of MM Railduct™

3. Place the MM RAILduct™ units into the trench. MM RAILduct™ is joined correctly when on a level surface (as shown in figure 1.1 P.g 9)

   Line up the two sections of MM RAILduct™, ensuring the peg holes line up on each section.

4 Once the sections are lined up correctly, place the connector peg into the hole

If required, use a rubber mallet to lightly drive the peg into the fitting, ensuring it is flat with surface (as shown in figure 1.2).

5 The MM RAILduct™ may be cut to length using a circular or reciprocating saw

6 Use a hole saw in a power drill to provide a fast and neat method for routing cable or conduit transitions

If installing duct entries through the sidewall or base, a maximum of two entries (maximum diameter 63mm) are allowed per MM RAILduct™ section.

Entries shall be 200mm from either end and 50mm below the top of the MM RAILduct™. If any further additions are required, please contact Cubis Systems.

7 Once MM RAILduct™ is in place, complete assembly by installing lids see figure 1.3

Ensure the “Cubis” writing on the lid lines up with the body (same direction) as this allows for the interlocking mechanism to activate

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(Figure 1.1)

(Figure 1.2)

(Figure 1.4)

Notes

Lids must be securely in place on MM RAILduct™ prior to reinstatement of crushed rock.

Failure to install lids prior to trench restoration may result in excessive deflection of MM RAILduct™ sidewalls.

8 MM RAILduct™ is fitted with interlocking lids. A provision is made in the interlocking lids for deterring vandalism

Bolt holes are positioned along the outer edge of the lid top for securing to the channel. To activate the locking mechanism the lids slide into the locked position.

9 Once the hinge latch is secured, ensure the security bolt holes are lined up by sliding lids into locking position

The security bolts may now be installed, if required, restricting unauthorized entry into the channel see figure 1.4.

MM Railduct™ Transitions

10 MM RAILduct™ is designed to accommodate a 3° (degree) bend between two joined sections

This is typically sufficient to permit MM RAILduct™ to run parallel with the natural curve of the track without any modification.

Larger pits from Cubis' STAKKAbox™ modular range are useful for accommodating slack loop storage for fibre optic cable or splice closures. Cubis Systems, provides a full range of width, length,and depth combinations.

11 If required, bends and ‘T’ pieces can be supplied as shown. See figure 1.1.

Please contact Cubis Systems for more information.

Trench Restoration

12 Begin backfilling once the lids are installed on the total span length between vaults or cabinets. It is recommended that crushed rock be used for backfill

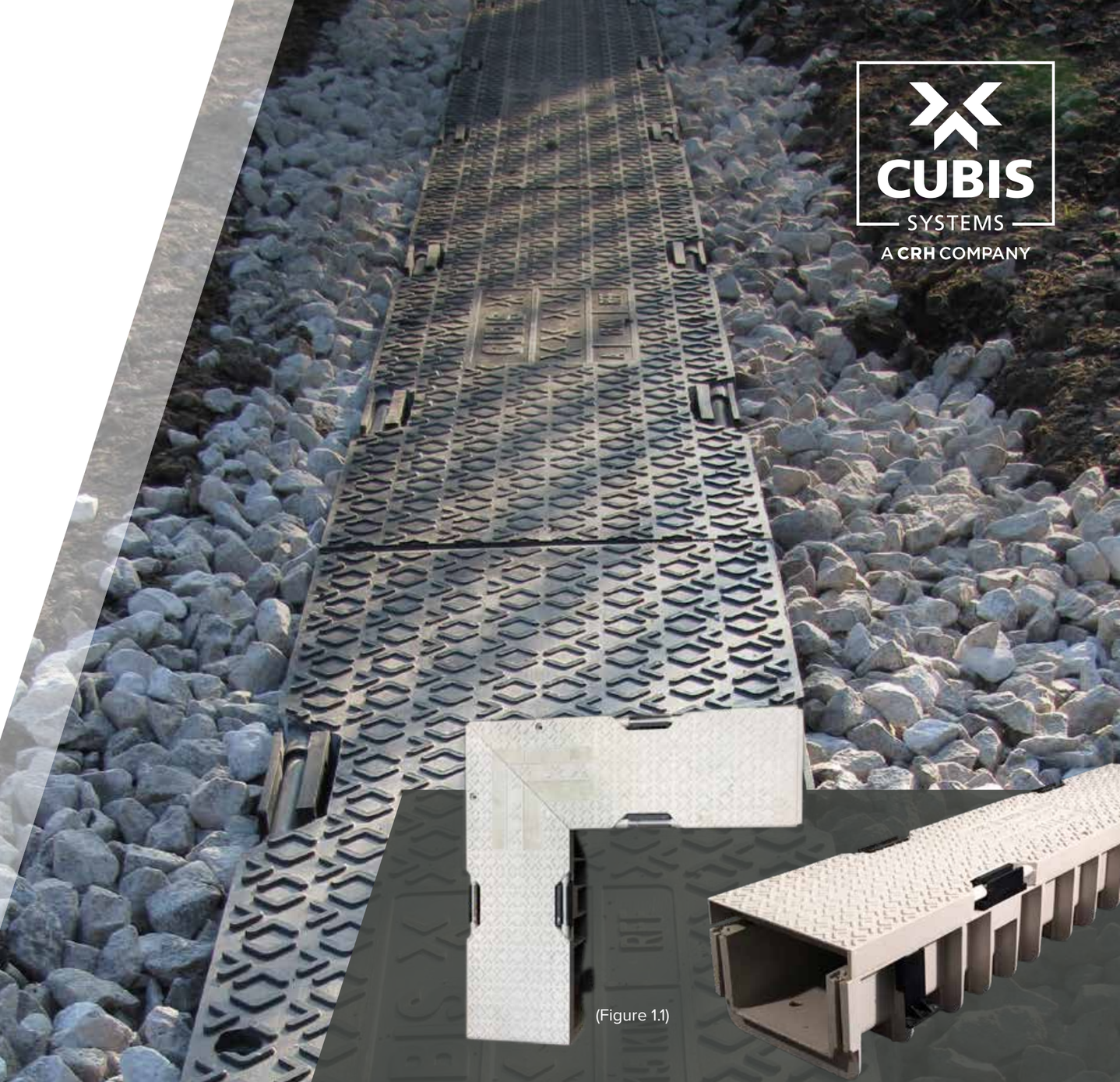
13 Return or add ballast in layers of approximately 50 mm, compacting between layers. It is desirable to work on both sides of MM RAILduct™ simultaneously

Ballast must be clean and free of frozen or organic material

14 Failure to compact backfill material in layers may result in subsidence and unwanted movement of MM RAILduct™

15 During construction or periods when heavy vehicular traffic is anticipated, provision must be made to protect the MM RAILduct™ sidewalls from vehicular traffic

MM RAILduct™ should be installed no less than 1.5m from vehicular traffic area.



(Figure 1.1)

Caution

Backfill material must be free of rocks unable to pass through a 63mm sieve as well as broken concrete, brick and metal objects that could damage the MM RAILduct™ product.

Use of “river rock”, “washed stone/ aggregate”, or “pea gravel” as a backfill material will result in unacceptable performance. Avoid the use of such rounded material.

Cable Installation

16 MM RAILduct™ is fitted with interlocking lids

To gain access to the cable trough, first disengage the security bolts if installed. The lid may be opened from either side.

17 When access is required for changing or adding cables, open as many as four lids at a time

Close covers once cable placing activity is complete and prior to opening additional covers. This procedure will ensure the lid-hinge alignment is maintained.

18 The inside surface of the MM RAILduct™ is smooth and free of any protrusions, reducing the potential of cable damage during installation

Additionally, the floor has drainage holes preventing water/ frost build-up.

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