1 SCOPE

Installation instructions provide general information useful for parkway installation in both ‘grass surround’ and ‘sidewalk’ locations. This guide cannot anticipate all situations that could develop in the field. Rather, it presents information applicable to common installation conditions.

1.1 Installation Location

Location alone should not dictate product selection. Oldcastle Infrastructure divides their product offerings into performance classification based on Design Load, the maximum load that may repeatedly be applied safely.

1.1.2 Medium Duty Duralite™ ‘Incidental/ Non-deliberate Light Vehicular Loading’ category includes HDPE and polyolefin bodies with polymer concrete covers and rings (for some sizes). This product range can be installed in sidewalks or in grass surround (between curb and sidewalk).

1.1.3 Heavy Duty Duralite™ ‘Incidental/ Non-deliberate Medium and Heavy Vehicular Loading’ category is limited to all polymer concrete assemblies of body and cover. These products, while intended for installation in non-traffic areas of sidewalks and other asphalt or concrete surround are also installed in grass surround where governing organizations mandate. It is recommended that when installed in grass or soil surround a three to four-inch (3” – 4”) thick concrete collar may be poured around the enclosure.

1.2 Cover Selection

1.2.1 It is entirely appropriate and responsible to specify the use of a cover surface exhibiting a coefficient of friction greater than 0.5 whenever a vault and cover assembly are installed in a designated “walkway”. The following coefficient of frictions have been determined using ASTM C-1028 and are typical for Carson brand material and texture patterns:

1.2.2 Installation of product in a sidewalk (alone) does not specify a mandatory loading requirement. It is reasonable to assume there will be foot traffic.

1.2.3 HDPE covers receive a "vertical load rating" of "pedestrian traffic" per Oldcastle Infrastructure product specifications. The rating does not address coefficient of friction requirements that may be proper for installation in a dedicated walkway.

2 PROCEDURE

2.1 Site Preparation

2.1.1 Ensure that national - local electrical and building codes, OSHA and Company safety work rules are observed and provisions made for street flags, barricades and cones.

2.1.2 Secure permits as required by city and Company.

2.2 Excavation

2.2.1 Plan excavation approximately twelve to sixteen inches (12” – 16”) longer and wider than the actual dimensions of the vault to be installed. Similarly, excavate six to eight inches (6” – 8”) deeper than the overall dimensions of the vault with cover in place.

CAUTION: Vault size is generally defined by the approximate cover dimensions. The vault actual measurements will differ. Refer to the Oldcastle Infrastructure customer format drawing or measure the vault overall maximum dimensions for computing the excavation hole size.

NOTE: The dimensions above for determining the size of excavation provide sufficient volume for accommodating the maximum recommended select backfill. The volume of the excavation would be reduced if a lesser volume of backfill material were chosen.

2.2.2 Installation can be in a ‘grass surround’ or in a ‘concrete surround’ (sidewalk) as required. The installation procedure is similar. Differences exist primarily in backfill material.

2.2.3 If installation is to be within a sidewalk, it is generally more practical to use a masonry saw and remove the entire sidewalk width to facilitate soil removal.

2.2.4 Excavate hole to appropriate dimension with mechanical excavator or hand dig as appropriate. Confirm the excavation floor is level.

2.3 Installation

2.3.1 While it is a common practice to install Pedestrian Rated vaults in grass surround without select backfill, Oldcastle Infrastructure recommends the use of a minimum two to three-inches (2” – 4”) crushed rock to prevent subsidence over time. Subsidence is a familiar example of neglecting this step.

2.3.2 Vaults designed to withstand incidental/ non-deliberate traffic must be installed on a crushed rock base. A minimum thickness for light traffic (Duralite™ ‘Medium Duty’ classification) should be a minimum of four inches (4”). A thicker base of six to eight inches (6” – 8”) is required for vaults designed for medium and heavy incidental traffic (Synertech/H-Series brands ‘Heavy Duty’ classification) or where shallow ground water is common.

NOTE: Base material shall be crushed rock ¾” and smaller, angular stone, not ‘river rock or round stone’. Desired compaction and equivalent resistance to lateral loading will not be achieved with round stone. The rock should be free of soil and organic material.

ALTERNATE: A ‘dry lean mix’ may be prepared for backfill using Portland cement and crushed rock in a ratio of 1:10. This higher strength alternative is useful where severe surcharge loading (lateral live load) is anticipated and the more flexible HDPE body is chosen.

2.3.3 Set vault into excavation on top of backfill material and adjust height to grade. Tamp base material to level with a mechanical tamper or hand tamper. It is generally desirable to install vault level. When a vault must be installed on a hill, a retaining wall provision shall be made.

2.3.4 The cover of the enclosure shall not be lower than nor more than two-inches (2”) higher than the grade as specified by the Owner/ Operator. Soil in the immediate vicinity shall be tamped and sloped away from the enclosure.

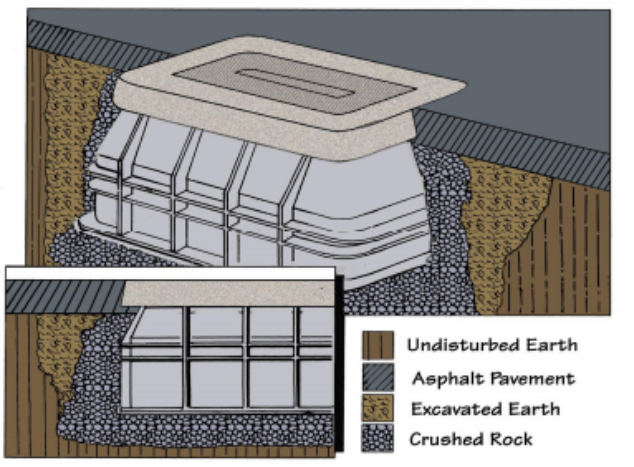
2.3.5 Center the vault in the excavation parallel with sidewalk or curb. Mark the vault for duct/ pipe entry locations. The HDPE vault may be cut with a hole saw and drill motor. Provide

adequate clearance for ovality in ducts. Small clearance between duct and vault may be sealed with expanding polyurethane foam.

2.3.6 Backfill material can vary based on product and installation location. It is customary and acceptable in landscape installations where vehicles are prevented from traffic on or around a Pedestrian Rated vault to use the spoils removed during excavation for backfill. Remove stones three-inches (3”) and larger.

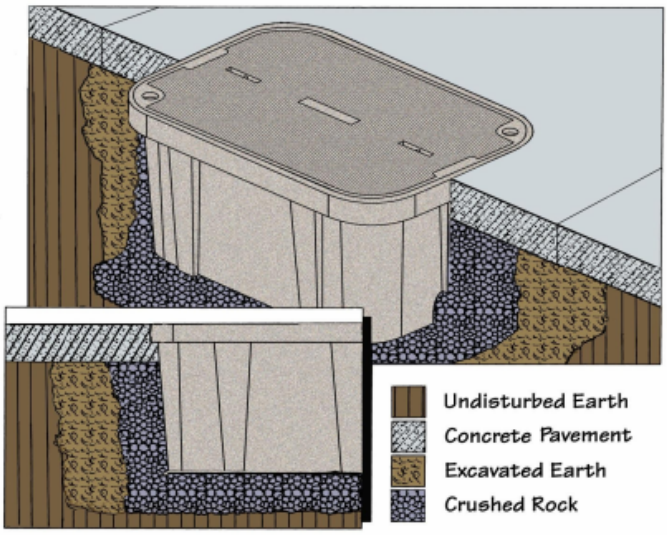
2.3.7 For all product categories, begin the backfilling operation by adding soil, crushed rock or dry lean mix in eight-inch (8”) lifts or layers.

2.3.8 Oldcastle Infrastructure recommends not using a mechanical tamper with a HDPE vault body, it may be desirable to use internal bracing during the backfill and tamping operation to prevent excessive deflection the sidewalls.



Medium Duty Product (Fibrelyte/Carson Hybrid and Heavy Wall brands)
Concrete or Asphalt Surround (shown)

Note compacted crushed rock surround. Dry mix could be added to crushed rock under "Ring" to improve vertical load bearing capacity.



Heavy Duty Product (Synertech/H-Series brands)
Concrete or Asphalt Surround (shown)

Note compacted crushed rock surround and concrete under vault collar. Not shown but also applicable for this type enclosure is a '*greenbelt*' installation. Many DOT's require a four-inch (4") concrete ring poured around vault collar.

NOTE: The cover should be installed and bolted into the vault body prior to backfilling. This prevents debris from entering the vault or its' cover fasteners and ensures cover fit on completion of installation.