

Testing & Commissioning

The Contractor must complete IR & continuity tests on all circuits prior to requesting permission to energise. This includes testing of earth mat where installed.

The Contractor must perform controlled energisation of all circuits ensuring that all settings are implemented as required. In addition to installation test certificate, testing of O-PEN device must be carried out and certificate provided.

Ducting Requirements

Supply Cable Duct:

Continuous twin wall duct to be installed, for the entirety of the cable run underground. Each charger shall have an independent 75mm duct. **Cables are brought up from the independent duct to the charger pedestal.**

The duct is to be laid at a minimum depth of 450mm, except on roadways where a minimum depth of 600mm is required.

Ducting size and layout are dependent on cable calculations (considering voltage drop and grouping factors).

The duct must enter the foundation at the dimensions shown in the 'Concrete Foundations' section.

Electrical warning tape must be laid above the ducting, when backfilling the trench.

Draw cord must be left inside the ducting, to allow to the cable to be pulled into position.

Draw pits must be installed on longer runs or where there is a change of direction to ensure cables can be installed without risk of damage.

Earth Cable Duct - Earth pit

Continuous twin wall duct (50mm diameter) to be installed, for the entirety of the cable run (from the concrete foundation to the earth pit) to cater for the 10mm earth cable.

The duct should protrude from the ground within the hole of the charger mounting bracket.

Foundation Requirements

Dimensions and General Arrangements

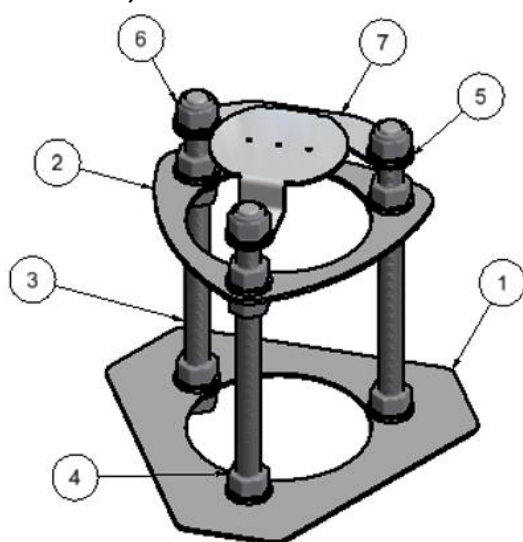
See the below diagrams, showing the default concrete foundation dimensions and arrangement of street furniture. Take note of the placement of bollards and ground mounts for the pedestal of the CP4K units. Should this **not be possible** you must contact RAW Operations to discuss the change.

Concrete Foundations – Minimum Requirements

- Grade C30 concrete must be used for the foundation
- Ensure that the top surface of the foundation is flush to any paving and sits level with surrounding area. Nothing should be protruding.

Mounting Kits

Before pouring the concrete foundation, the Contractor must ensure that it has the 'Pedestal Mounting Kit' (provided to the Contractor by RAW) ready on site. You must order this with sufficient lead time before site construction. This will need to be set into the concrete foundation and is shipped separately. **Please contact RAW if you have not received this.** *Note this is not required for Make Ready units.*

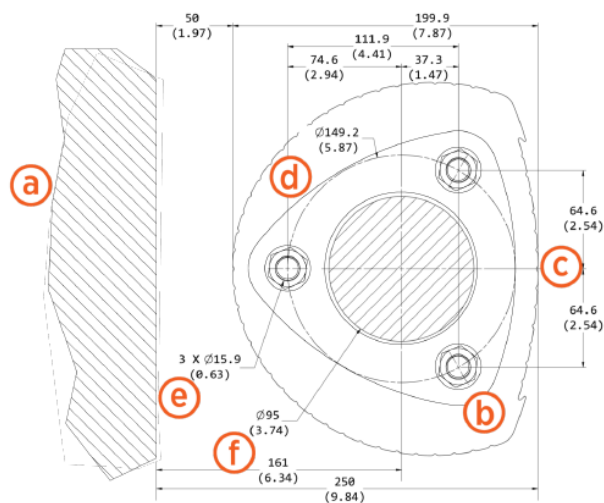


Parts List		
ITEM	QTY	PART NUMBER
1	1	EPM-4Y 1-1 Bottom Plate
2	1	EPM-4Y 1-2 Top Plate
3	3	M16 studding 245mm lg
4	12	M16 nut
5	15	M16 washer
6	3	M16 nyloc
7	1	EPX-2G 1-1 Glanding Plt

FIGURE 6: PEDESTAL MOUNTING KIT PARTS

The Contractor shall fit the mounting kit in accordance with the following instructions:

- Trench and excavate an opening to accommodate the wiring conduit and the concrete mounting pad. Run conduit to each station as needed.
- Build the form and lay rebar for the foundation. The concrete block must measure at least 600mm on all sides. The conduit stub-up needs to measure between 152mm and 590mm above the concrete surface.
- Align the Pedestal Mounting Kit over the conduit stub-ups with the two bolts facing forwards and the third bolt to the rear. Slide the kit over the conduit stub-ups until the top surface of the template is level with the top surface of the concrete when poured. The surface of the concrete must align with the bottom of the upper template.
- Ensure the conduits are plumb. Before pouring concrete, tie the mounting kit to rebar to hold it in place. The mounting kit and conduit must be secured in place to prevent them from rising or floating out of position while the concrete is curing.
- Use a spirit level and ensure level from front to back and side to side. Ensure correct alignment and that the top 60 mm of the bolts remain exposed, as shown in Fig 9. The CP6000 pedestal mounted charging station can now be installed onto the foundation.



Pedestal Mount without Cable Management Kit Template Dimensions

- a. Wall
- b. Pedestal footprint
- c. Front
- d. Bolt circle
- e. Bolt or anchor
- f. Conduit stub-up within this area

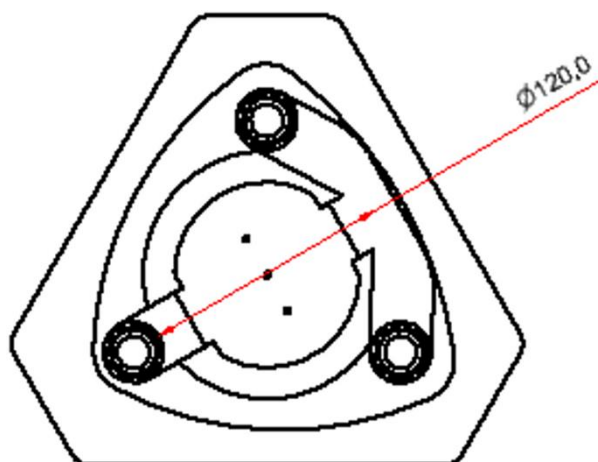
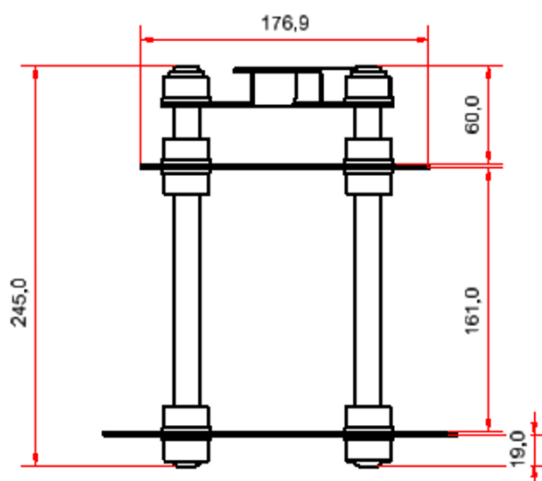
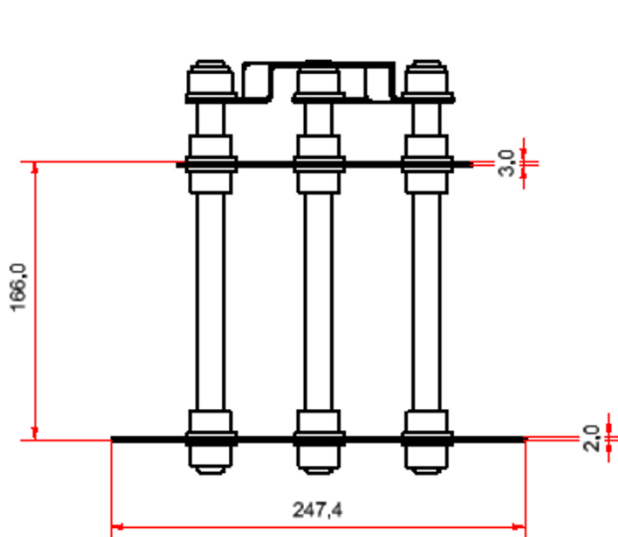


FIGURE 7: PEDESTAL MOUNT TEMPLATE DIMENSIONS

FIGURE 8: PEDESTAL MOUNTING KIT DETAILS

The following should be visible for the installation to occur:

- a) Concrete mounting template
- b) Three bolts set into concrete
- c) Two nuts and three washers on each bolt
- d) Template front
- e) Each bolt extending 60 mm (2 1/3 in) to 100 mm (4 in) above the concrete surface
- f) Conduit stub-up measuring 152 mm (6 in) to 590 mm (2 ft)
- g) g. Approximately 1.5 m (5 ft) of service wiring

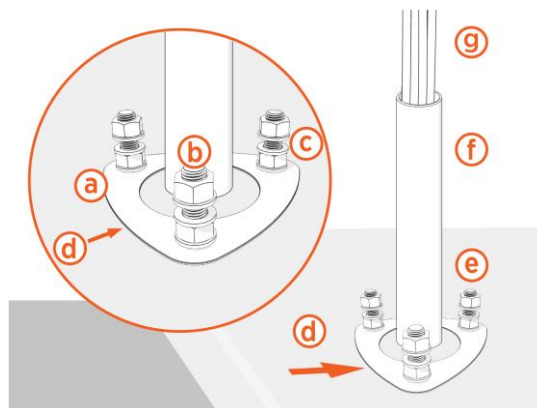
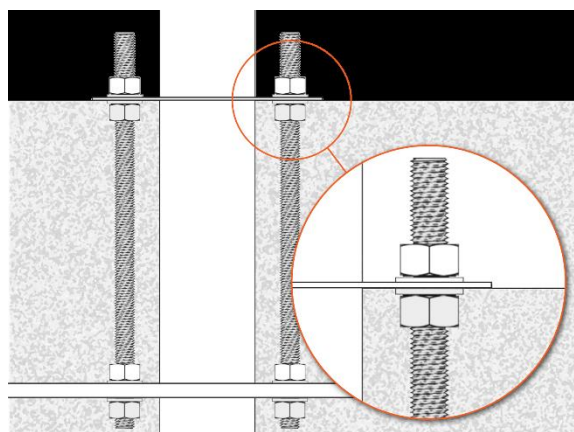


FIGURE 9: SITE PREPARATION HANDOVER

FIGURE 10: CONCRETE ALIGNMENT WITH UPPER TEMPLATE



Service Pits

Depending on the length or route of the cable run (underground), service pits may be required to be installed. This is true for the below situations:

- Any bends or corners in the route, service pit must be installed at these points
- Longer distance runs, service pits must also be installed every 25m – 30m.

The service pits must be a minimum of 600mm x 600mm square.

Vehicle Protection

Equipment installed in public areas and car park sites shall be protected against mechanical damage (impact of medium severity AG2). Protection of the equipment shall be afforded by one or more of the following:

- The position or location shall be selected to avoid damage by any reasonably foreseeable impact

- Local or general mechanical protection shall be provided
- Equipment shall be installed that complies with a minimum degree of protection against external mechanical impact of IK07 in accordance with BS EN 62262.

Two recommended options are protective barriers and wheel stops – see details below.

Note: no protection is required for make-ready units

Protection Barriers

Protection barriers are not provided by RAW Charging unless specified.

2no stainless steel posts are to be set directly into the concrete pad (see dimensions above, in the 'Concrete Foundations' section), to prevent cars from driving in to the EVCP.

Semi Dome Top Posts in Grade 304 stainless steel, with length 1200mm, diameter 114mm and a brushed finish to a 1K standard. 3-6mm Wall thickness.



FIGURE 5: STAINLESS STEEL PROTECTION POSTS

Make-Ready units will have bolted bollards or wheel stops.