



GRP Pole Planting Instructions

This document is intended to assist as a guideline for planting buried and surface-mount GRP poles for mounting height (MH) up to 12m.

1. Excavation of hole

Holes for the purpose of planting GRP poles can be excavated by hand or by making use of ground-moving equipment like a TLB. For buried poles an auger can also be used.

1.1. Surface-mount GRP poles

Surface-mount GRP poles should be mounted on a bolt-cage in a concrete foundation. GRP poles are available in either of the following options:

- Fixed base plate
- Hinged base plate
- Winched base plate

Below is a table indicating the requirements of the foundation for these options, as well as the limitations. Please note the different dimensions depending on the typical head weight and wind surface area.

	Typical Head Weight and Wind Surface Area		2 * LEDLUME-MAXI's Head weight: 13kg each Windage area: 0.045m ² each		4 * LEDLUME-MAXI's Head weight: 13kg each Windage area: 0.045m ² each	
	Base plate Code	MH	D (m)	L&B (m)	D (m)	L&B (m)
Fixed base plate Drawing PDP-003-011	F1	≤5m	0.8	0.6	0.800	0.7
	F2	≤10m	1.0	0.9	1.000	1.0
	F3	≤14m	1.2	1.0	1.200	1.1
Hinged base plate Drawing PDP-003-021	H1	≤5m	0.8	0.6	0.800	0.7
	H2	≤9m	1.0	0.8	1.000	0.9
Winched base plate Drawing PDP-003-031	W1	≤9m	1.0	0.8	1.000	0.9
	W2	≤12m	1.1	0.9	1.100	1.0
	W3	≤14m	1.2	1.0	1.200	1.1

Table 1
Excavation dimensions for surface-mount GRP poles

Design is based on:

- 500 Pa was applied to the Poles with Shape Factor of 0,70 (in terms of SANS 1749)
- A minimum bearing pressure of 100kPa, which, according to SABS 0225, table 7 is the allowable safe bearing pressure for poor soil conditions, i.e. soft clay, poorly compacted sand and clays containing large amount of silt and organic matters.
- The foundations have a safety factor against overturning of 2 and more.
- D (m) is the Depth or Thickness, L&B (m) is the plan Length and Breadth of the Base required.
- Quality of concrete: Class 20/20 mass concrete mixed by volume of 1:2:4 cement/sand/stone
- Please note: These are recommendations and BEKA Schröder accepts no responsibilities for errors or omissions.

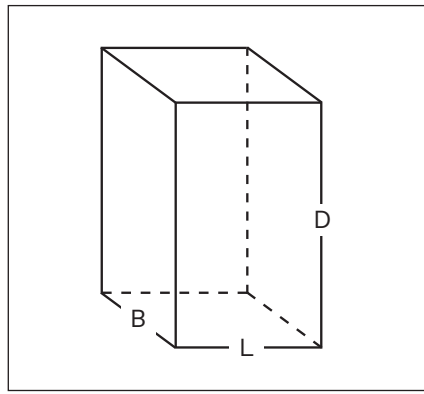


Figure 1

Dimensions of foundation-hole for surface-mount poles

1.2. Buried GRP poles

Surface-mount poles comes in different lengths and the planting depth of the pole depends on the length and mounting height of the luminaire. Details pertaining to the excavation needed can be seen in the table below:

Typical Head Weight and Wind Surface Area	2 * LEDLUME-MAXI's			
	Head weight: 13kg each Windage area: 0.045m ² each			
Pole Height (HT) (m)	MH (m)	D (m)	L&B (m)	H (m)
2.6	2.0	0.6	0.75	0.6
3.1	2.5	0.6	0.75	0.6
3.6	3.0	0.6	0.75	0.6
4.1	3.5	0.6	0.75	0.6
4.6	4.0	0.6	0.75	0.6
5.2	4.5	0.7	0.75	0.6
5.7	5.0	0.7	0.75	0.6
6.3	5.5	0.8	0.75	0.6
6.9	6.0	0.9	0.75	0.6
7.4	6.5	0.9	0.75	0.6
8.0	7.0	1.0	0.9	0.6
8.6	7.5	1.1	0.9	0.6
9.2	8.0	1.2	0.9	0.6
9.8	8.5	1.3	0.9	0.6
10.4	9.0	1.4	0.9	0.6
11.0	9.5	1.5	0.9	0.6
11.6	10.0	1.6	0.9	0.6
13.4	11.5	1.9	0.9	0.6
14.0	12.0	2.0	0.9	0.6

Table 2

Excavation dimensions for buried GRP poles

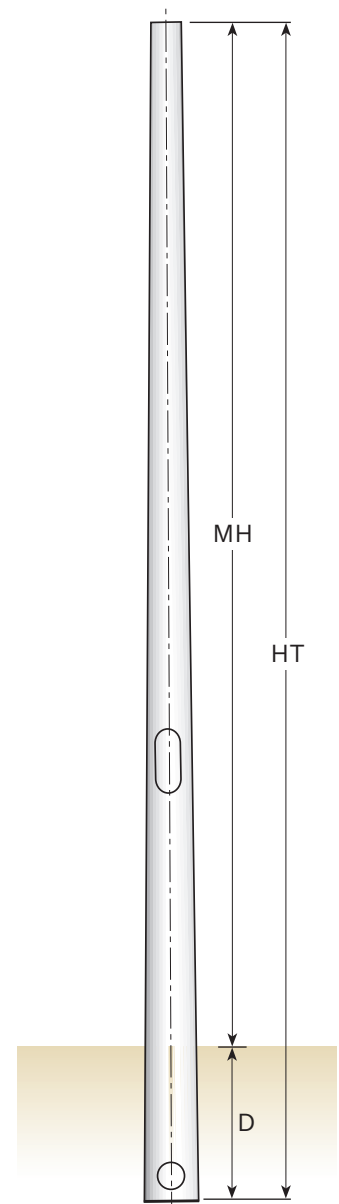


Figure 2

Dimensions of buried poles

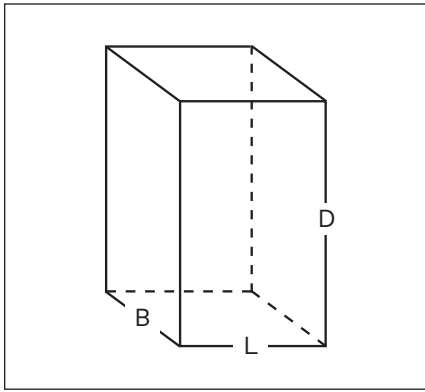


Figure 3
Dimensions of excavated hole for buried poles

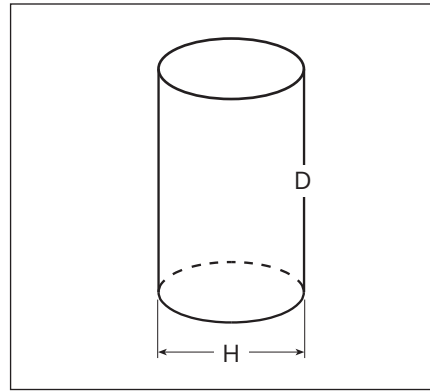


Figure 4
Dimensions of drilled hole for buried poles using an auger

2. Backfilling of buried poles

The backfilling mix should have a composition of soilcrete 1:10.

Backfilling the pole hole should be done in layers of 250mm and compacted with a hand-rammer. The soil should be compacted evenly around the pole, and care should be taken that the pole does not lean to one side during compacting.

Continue the backfill and compacting process until the hole is filled.

If a stepped hole was used the same applies, and the entire hole must be filled and compacted.

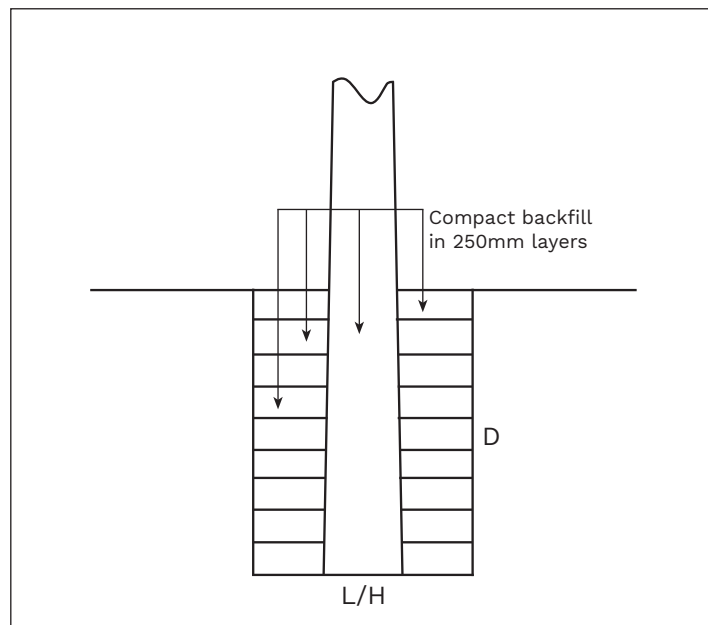


Figure 5
Backfilling and compacting the hole

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