

Flanged Column Foundations

This is a short review of typical foundation details for flanged columns.
For Flange Base Details and Bolt Specification refer to the flange details.

Typical foundation details are provided for guidance only and the soil conditions should be checked by the client before use with a qualified engineer.

CU Lighting will only accept responsibility for foundations that have been specially designed for a site and in order to do so we will require a site investigation to have been completed to provide the information we specify.

Special designs are not provided free of charge.

Method of using this review:

- 1) Select relevant column from tables
- 2) Look up Max OTM (Overturning Moment) for the Column to be used
- 3) The typical foundation dimensions can now be found from the table on below.

Trenches for cables should be at least 1000mm deep and as narrow as possible. The cable should be laid on and surrounded by sand with a surround thickness of at least 150mm.

Protection tiles should be placed on top of the sand fill. The trench may then be back filled with excavated material with an "Electrical Warning" tape laid at mid depth.

Standard CU Bolt Sizes	Projection above Ground(mm)
M16 x 450mm J-bolt	80
M24 x 550mm J-bolt	90
M27 x 850mm Stud	170

Flange Loads

These moments are calculated in accordance with the loadings which are imposed under BS EN 40 for standard lighting applications.

CU Column Reference	Maximum OTM (kNm)	Bolt Size (mm)
Stepped		
FF2503001	4	M16
FF2504001	4	M16
FF2305701	3	M16
FF2505001	4	M16
FF2505B01/B03/B05/B07	3	M16
FF2506001	4	M16
FF2506B01/B03/B05/B07	4	M16
FF2605A03	8	M24
FF2606A03	9	M24
FF2608A01	9	M24
FF2608A02	10	M24
FF2608A03	11	M24
FF2608A04	11	M24
FF2608A05	13	M24
FF2608A06	15	M24
FF2610A01	11	M24
FF2610A02	11	M24
FF2610A03	13	M24
FF2610A04	15	M24
FF2710001	19	M24
FF2710002	22	M24
FF2712001	19	M24
FF2712002	22	M24
FF2712003	22	M24

CU Column Reference	Maximum OTM (kNm)	Bolt Size (mm)
Mid Hinged		
5103714 - 3.5m L/WT	4	M16
5103712 - 4.0m L/WT	4	M16
5103710 - 4.7m L/WT	4	M16
5103709 - 5.7m L/WT	4	M16
MAN47HF - 4.7m Manchester	4	M16
MAN57HF - 5.7m Manchester	4	M16
SMH35FHV - 3.5m H/WT	4	M16
SMH40FHV - 4.0m H/WT	4	M16
SMH47FHV - 4.7m H/WT	4	M16
SMH57FHV - 5.7m H/WT	4	M16
LMH08FD - 8m L/WT	16	M24
LMH10FD - 10m L/WT	18	M24
LMH12FD - 12m L/WT	23	M24
HMH10FD - 10m H/WT	50	M24
HMH12FD - 12m H/WT	55	M24
HMH14FD - 14m H/WT	61	M27
HMH15NFD - 15m H/WT	66	M27
HMH16FD - 16m H/WT	69	M27
HMH18FD - 18m H/WT	70	M27

CU Column Reference	Maximum OTM (kNm)	Bolt Size (mm)
Apollo		
NAP05FH - 5m APOLLO	7	M16
NAP06FH - 6m APOLLO	7	M16
International		
NIN08FH - 8m International	19	M24
NIN10FH - 10m International	20	M24
NIN12FH - 12m International	24	M24
Base Hinged		
5104012 - 12m L/WT	44	M27
5104014 - 14m L/WT	44	M27
5104004 - 16m L/WT	44	M27
Floodpoles		
1014SDF - 10m SFP	24	M24
1214SDF - 12m SFP	28	M24
1414SDF - 14m SFP	30	M24
1614SDF - 16m SFP	32	M27
1814SDF - 18m SFP	43	M27
2014SDF - 20m SFP	56	M27
Eco Poles		
5102313 - 7m Eco Pole	15.5	M24

CU Column Reference	Maximum OTM (kNm)	Bolt Size (mm)
Tubular Tapered		
TC2303061	4	M16
TC2303075	4	M16
TC2304061	4	M16
TC2304075	4	M16
TC2305061	4	M16
TC2305001	4	M16
TC2505005	5	M16
TC2505009	5	M16
TC2506075	6	M16
TH508009	7	M24
TH508075	9	M24
TH610013	12	M24
TH610075	12	M24
TH612001	16	M24
TH612075	14	M24
TH712007	19	M24

Square Width (mm x mm)	Depth (mm)	Overturning Moment (kNm)
850	625	3
950	625	4
1050	675	5
1100	700	6
1150	725	8
1250	775	10
1350	825	15
1500	900	20
1700	1000	30
1800	1050	40
1900	1100	50
2000	1250	75

Notes:

- 1) Foundations should be constructed using Grade C25 concrete
- 2) A minimum curing period of 14 days should be allowed
- 3) Special precautions must be taken where aggressive ground conditions exist
- 4) Do not forget cable entry ducts which should exit in the centre of the foundation
- 5) The foundation bolts assembly must be fixed in the correct position, see instructions
- 6) The specified projection of bolts above the foundation must be observed.

Rooted Column Foundations

Foundations for rooted columns may be:

Prepared (for bigger columns with large overturning moment) where a socket is prepared into which the column is erected and held in position while concrete poured to fill the gap.

Unprepared (for smaller columns) where a hole is excavated in good undisturbed ground and filled with at least the minimum recommended concrete surround thickness after column erection. Always remember to provide the cable duct in the correct position with respect to the cable entry slot in the column, see [Rooted Column Foundation Instructions](#).

Method of using this review:

- 1) Select relevant column from tables
- 2) Find the Soil Type Factor G for the site conditions, see page 4 for guidance
- 3) The typical foundation dimensions can now be found from the table with the relevant Soil Type Factor G.

Trenches for cables should be at least 1000mm deep and as narrow as possible. The cable should be laid on and surrounded by sand with a surround thickness of at least 150mm.

Protection tiles should be placed on top of the sand fill. The trench may then be back filled with excavated material with an "Electrical Warning" tape laid at mid depth.

Note: Typical details are provided for guidance use only and should be checked before use, by a qualified engineer.

Root Details

Minimum Concrete Surround Thicknesses:

CU Column Ref	Maximum OTM	Root Depth	Root ϕ	Thickness of Concrete Surround for soil type factor 'G'		
				G = 230 (mm)	G = 390 (mm)	G = 630 (mm)
Stepped Columns						
FR2503001	4	800	140	150	50	50
FR2504001	4	800	140	150	50	50
FR2305701	3	800	114	150	50	50
FR2505001	4	800	140	150	50	50
FR2505B01/B03/B05/B07	3	800	140	150	50	0
FR2506001	4	1000	140	50	0	0
FR2506B01/B03/B05/B07	4	1000	168	50	0	0
FR2605A03	8	800	168	300	250	150
FR2606A03	9	1000	168	200	100	50
FR2608A01	9	1200	168	100	50	0
FR2608A02	10	1200	168	100	50	0
FR2608A03	11	1200	168	150	50	0
FR2608A04	11	1200	168	150	50	0
FR2608A05	13	1200	168	150	100	50
FR2608A06	15	1200	168	200	100	50
FR2610A01	11	1500	168	50	0	0
FR2610A02	11	1500	168	50	0	0
FR2610A03	13	1500	168	50	0	0
FR2610A04	15	1500	168	50	0	0
FR2710001	19	1500	194	100	50	0
FR2710002	22	1500	194	100	50	0
FR2712001	19	1700	194	50	0	0
FR2712002	22	1700	194	50	0	0
FR2712003	22	1700	194	50	0	0
Tapered						
TT2303061	4	800	114	150	100	50
TT2303075	4	800	114	150	100	50
TT2304061	4	800	114	150	100	50
TT2304075	4	800	114	150	100	50
TT2305061	4	800	114	150	100	50
TT2305001	4	800	114	150	100	50
TT2505005	5	800	140	250	150	50
TT2505009	5	800	140	250	150	50
TT2506075	6	1000	140	150	50	0
TT508009	7	1200	140	50	0	0
TT508075	9	1200	140	100	50	0
TT610013	12	1500	168	50	0	0

CU Column Ref	Maximum OTM	Root Depth	Root ø	Thickness of Concrete Surround for soil type factor 'G'		
Tapered (continued...)						
TT610075	12	1500	168	50	0	0
TT612001	16	1700	168	50	0	0
TT612075	14	1700	168	50	0	0
TT712007	14	1700	194	100	50	0
Mid Hinged						
5103713 - 3.5m L/WT	4	800	178	150	50	50
5103711 - 4.0m L/WT	4	800	178	150	100	50
5103705 - 4.7m L/WT	4	800	178	150	100	50
5103708 - 5.7m L/WT	4	1000	178	50	0	0
MAN47HR - 4.7m MANCHESTER	4	800	178	150	100	50
MAN57HR - 5.7m MANCHESTER	4	1000	178	50	0	0
SMH35RHV - 3.5m H/WT	4	800	178	150	50	0
SMH40RHV - 4.0m H/WT	4	800	178	150	50	0
SMH47RHV - 4.7m H/WT	4	800	178	150	50	0
SMH57RHV - 5.7m H/WT	4	1000	178	50	0	0
LMH08RD - 8m L/WT	16	1200	226	200	100	50
LMH10RD - 10m L/WT	18	1500	231	100	0	0
LMH12RD - 12m L/WT	23	1700	235	100	0	0
HMH10RD - 10m H/WT	50	1500	370	350	150	50
HMH12RD - 12m H/WT	55	1700	370	200	100	0
HMH14RD - 14m H/WT	61	2000	370	100	0	0
HMH15NRD - 15m H/WT	66	2000	380	150	0	0
HMH16RD - 16m H/WT	69	2000	370	150	50	0
HMH18RD - 18m H/WT	70	2000	365	150	50	0
Apollo						
NAP05RH - 5m APOLLO	7	800	190	300	200	100
NAP06RH - 6m APOLLO	7	800	190	300	200	100
International						
NIN08RH - 8m INTERNATIONAL	19	1200	235	250	100	50
NIN10RH - 10m INTERNATIONAL	20	1500	245	100	50	0
NIN12RH - 12m INTERNATIONAL	24	1700	270	50	0	0
Floodpoles						
1014SDR - 10m SFP	22	1500	271	100	0	0
1214SDR - 12m SFP	28	1700	300			
1414SDR - 14m SFP	30	2000	326	50	0	0
1514SDR - 15m SFP	31	2000	342	50	0	0
1614SDR - 16m SFP	32	2000	356	50	0	0
1814SDR - 18m SFP	43	2000	386	0	0	0
2014SDR - 20m SFP	56	2000	0	0	0	0