PRO-CAST

Solid Foundations,
Strong Futures.

PRECAST CONCRETE SOLUTIONS

BOX CULVERTS

MS
SIRIM



INTRODUCTION

Box Culverts are available in both standard sizes (for nominal widths between 600mm and 1800mm) and super sizes (for nominal widths between 2100mm and 3600mm) in lengths of 1000mm.

Box Culvert are also available to design supersize with norminal width above 3600mm and Giant Size Uni Box Culvert type according to customers requirement.

Box Culvers are available both with and without Dry Weather Flow (DWF) sections.

Box Culverts are designed for easy handling and installing by using rigorous quality manufacturing processess.

DESIGN CONSIDERATIONS

Design Loading requirements for Box Culverts is in accordance with:

i. BS 5400: Part 2: 1978 modified by (II)
ii. Departmental Standard BD 31/87 - Buried Concrete Box Type Structual issued
by Department of Transport (UK) - Highway and Traffic.
iii. JKR LTAL (Long Term Axle Load) and SV (Special Vehicle) requirements.

Reinforced concrete design in accordance with BS 5400: Part 4:1984.
Concrete characteristics strength at 28 days, fcu=30MPa-40MPa

Concrete cover to reinforcement for:
- Standard Size Box Culverts = 25mm
- Super-Size Box Culverts = 30mm

Soil Parameters used in the design:
- Coefficient of the earth lateral pressure at rest= 0.5
- Bulk density of the soil = 19kN/m^3

Standard Size and Super-Size Box Culverts are designed to cater for backfill superimposed dead load not exceeding 2m depth (inclusive of pavement) plus 45 units of HB vehicle primary live loads.

Standards Size Box Culverts also comply with proof test load of 112.5kN over an area of 320mm x 320mm placed at any position on the Culvert lid.

Testing procedure is in accordance to AS 1597: part 1:1974

Hydrostatic pressures are eliminated by the provision of 50mm diamater weepholes placed along the centerline of the invert wa

DIMENSION OF SUPER SIZE BOX CULVERTS & BOX CULVERTS WITH DRY WEATHER FLOW

STANDARD LENGTHS : 1000 MM

NOMINAL SIZE BC | STANDARD SIZE

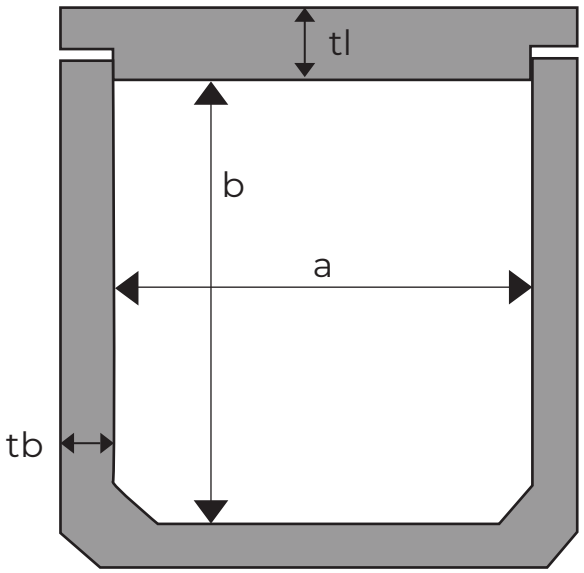
a	b	tb	e	d	tl
300	300	60	50	200	110
450	300	60	50	200	110
450	450	60	50	200	110
600	300	65	65	375	125
600	450	65	65	375	125
600	600	65	65	375	125
750	450	65	65	375	140
750	600	65	65	375	140
750	750	65	65	375	140
900	450	75	75	450	140
900	600	75	75	450	140
900	750	75	75	450	140
900	900	75	75	450	140
1200	600	80	175	900	140
1200	750	80	175	900	140
1200	900	80	175	900	140
1200	1050	80	175	900	140
1200	1200	80	175	900	140
1500	750	100	225	1075	160
1500	900	100	225	1075	160
1500	1050	100	225	1075	160
1500	1200	100	225	1075	160
1500	1350	100	225	1075	160
1500	1500	100	225	1075	160
1800	900	115	225	1075	180
1800	1050	115	225	1075	180
1800	1200	115	225	1075	180
1800	1350	115	225	1075	180
1800	1500	115	225	1075	180
1800	1650	115	225	1075	180
1800	1800	115	225	1075	180

NOMINAL SIZE BC | SUPERSIZE

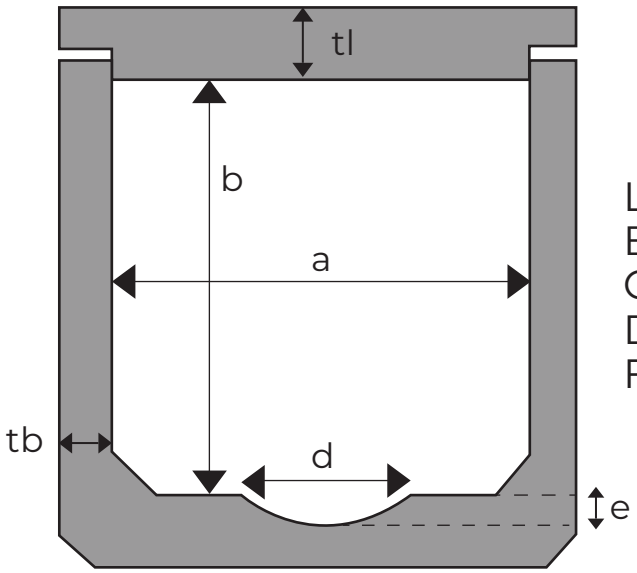
a	b	tb	e	d	tl
2100	1200	150	225	1075	215
2100	1500	150	225	1075	215
2100	1800	150	225	1075	215
2100	2100	150	225	1075	215
2400	1200	150	225	1075	215
2400	1500	150	225	1075	215
2400	1800	150	225	1075	215
2400	2100	150	225	1075	215
2400	2400	150	225	1075	215
2700	1500	180	225	1075	215
2700	1800	180	225	1075	215
2700	2100	180	225	1075	215
2700	2400	180	225	1075	215
2700	2700	180	225	1075	215
3000	1500	180	225	1075	215
3000	1800	180	225	1075	215
3000	2100	180	225	1075	215
3000	2400	180	225	1075	215
3000	2700	180	225	1075	215
3000	3000	180	225	1075	215
3300	1500	200	225	1075	255
3300	1800	200	225	1075	255
3300	2100	200	225	1075	255
3300	2400	200	225	1075	255
3300	2700	200	225	1075	255
3300	3000	200	225	1075	255
3300	3300	200	225	1075	255
3600	1800	200	225	1075	255
3600	2100	200	225	1075	255
3600	2400	200	225	1075	255
3600	2700	200	225	1075	255
3600	3000	200	225	1075	255
3600	3300	200	225	1075	255
3600	3600	200	225	1075	255

DETAIL

BOX CULVERT WITH DRY WEATHER FLOW



LARGE SIZE
BOX CULVERT
WITHOUT DRY
WEATHER FLOW



LARGE SIZE
BOX CULVERT
COMPLETE WITH
DRY WEATHER
FLOW



PRO-CAST

Professional Precast Sdn Bhd

+6 016-330 8365 03-2276 5255

www.pro-cast.co lvanseah@pro-cast.co

12-3A, Level 12, Menara MBMR.
No 1, Jalan Syed Putra, 58000 Kuala Lumpur.