



# OKA RC U-SHAPE DRAINS



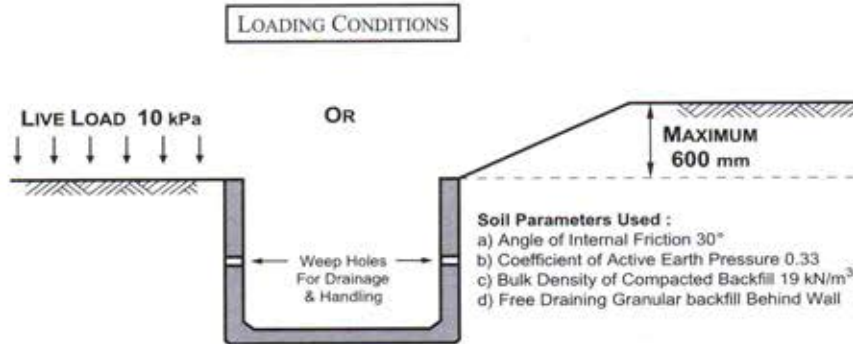
**U-DRAINS WITHOUT**  
DRY WEATHER FLOW (DWF) CHANNEL



**U-DRAINS WITH**  
DRY WEATHER FLOW (DWF) CHANNEL

## DESIGN AND SPECIFICATIONS

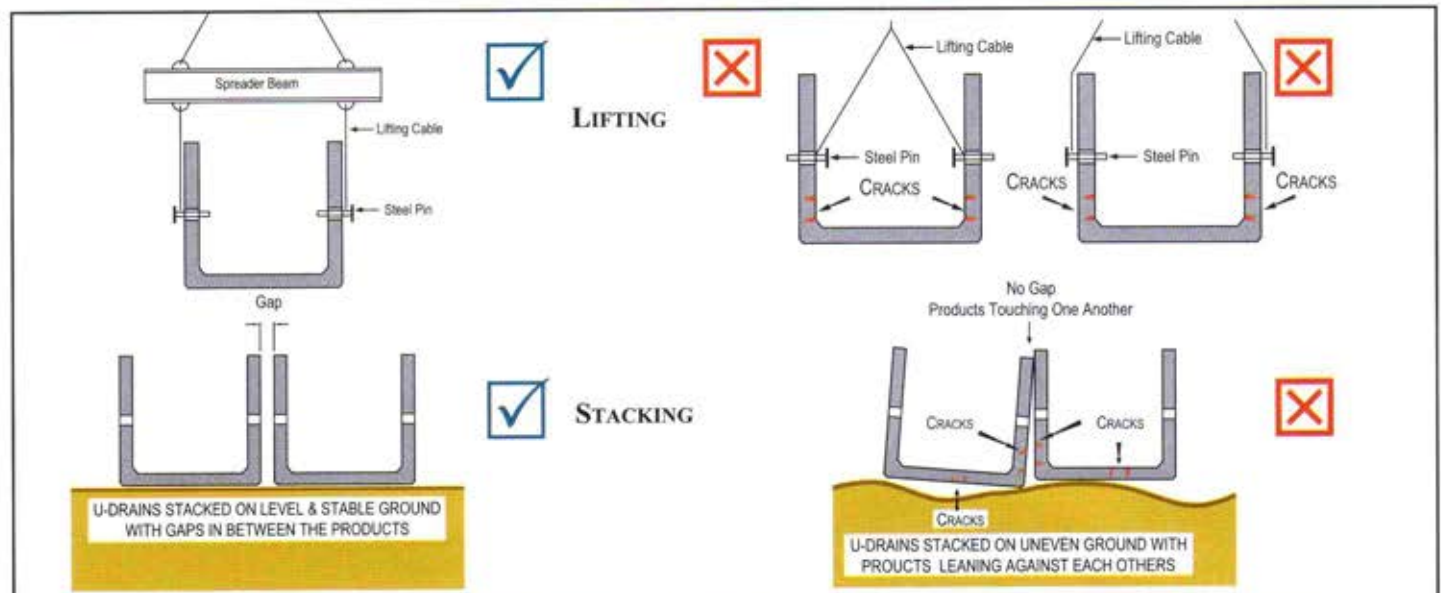
1. Structural design in accordance with requirements of BS 8110 : 1997
2. Concrete characteristic strength :  $30\text{N/mm}^2 - 40\text{N/mm}^2$
3. Concrete cover : Standard Size U-Drains – 25 mm ; Super Size U-Drains – 30 mm
4. Loading criteria are shown below :



For other design considerations or specifications not shown here, please contact our Technical Department

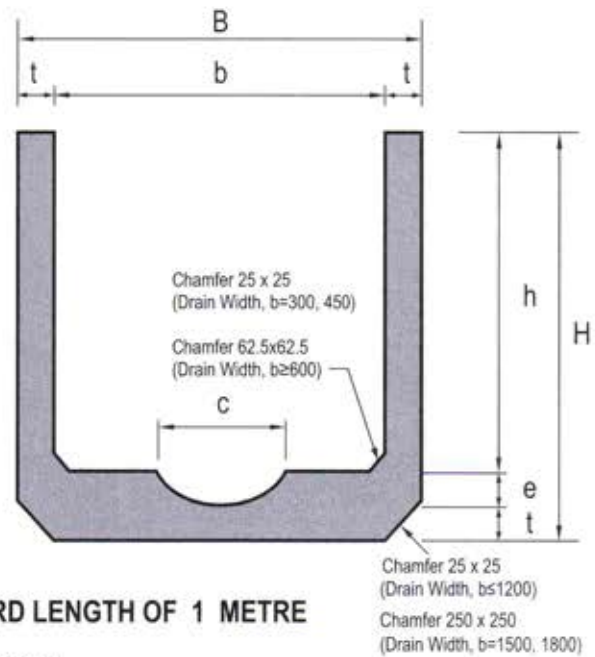
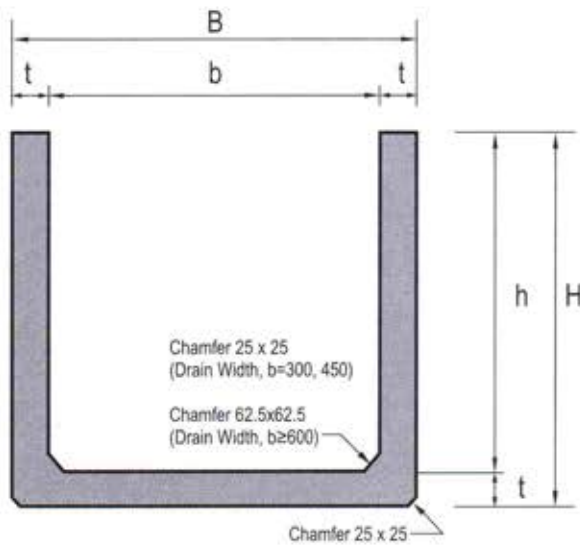
## HANDLING, STACKING, LAYING, JOINTING AND BACKFILLING

- **Handling :** A spreader beam to be used with steel pins and lifting cables to avoid cracking at junction of side wall and base slab.
- **Stacking :** U-drains are to be stacked on level and stable ground to avoid cracking of base slab.
- **Laying :** U-drains should be laid on prepared bedding to ensure uniform support under the full width and length of the U-drains.
- **Jointing :** Butt joints. Gaps normally to be filled up with cement-sand mortar.
- **Backfilling :** Backfilling with selected free draining backfill material. Avoid use of heavy vibratory equipment next to side walls.



# STANDARD SIZE U-DRAINS

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OKA U-DRAINS COME IN STANDARD LENGTH OF 1 METRE

## STANDARD SIZE U-DRAINS – DIMENSIONS AND PRODUCT WEIGHT

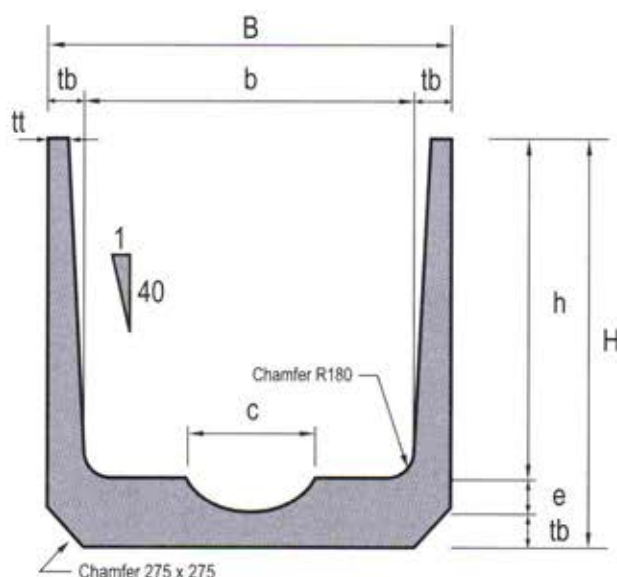
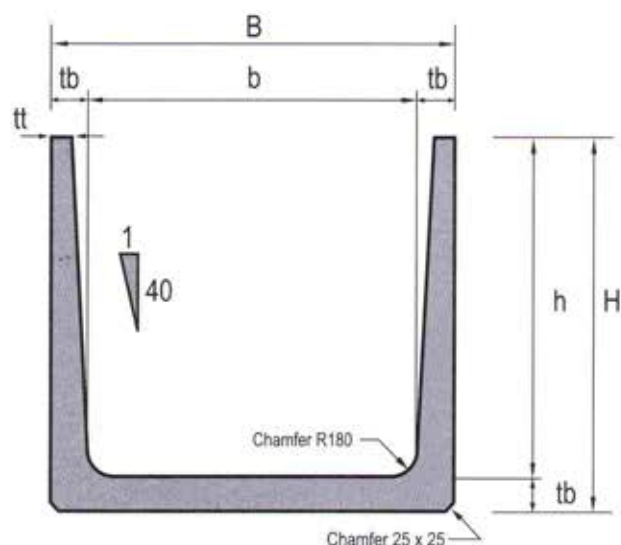
NOMINAL SIZE (mm)	b (mm)	h (mm)	t (mm)	B (mm)	WITHOUT DWF		WITH DWF			
					H (mm)	Approx Product Weight (ton)	H (mm)	c (mm)	e (mm)	Approx Product Weight (ton)
300 x 300	300	300	65	430	365	0.16	435	140	70	0.22
450 x 450	450	300	65	580	365	0.19	435	450	80	0.24
		450			515	0.24	595			0.29
600 x 600	600	300	65	730	365	0.22	445	450	80	0.30
		450			515	0.26	595			0.34
		600			665	0.33	745			0.39
750 x 750	750	450	80	910	530	0.36	610	450	80	0.47
		600			680	0.41	760			0.53
		750			830	0.47	910			0.59
900 x 900	900	450	80	1060	530	0.39	610	450	80	0.53
		600			680	0.44	760			0.59
		750			830	0.50	910			0.64
		900			980	0.56	1060			0.70
1200 x 1200	1200	600	80	1360	680	0.50	905	1070	225	0.83
		750			830	0.56	1055			0.89
		900			980	0.62	1205			0.95
		1050			1130	0.68	1355			1.01
		1200			1280	0.74	1505			1.07
1500 x 1500	1500	750	100	1700	850	0.79	1075	1070	225	1.17
		900			1000	0.87	1225			1.24
		1050			1150	0.94	1375			1.32
		1200			1300	1.01	1525			1.39
		1350			1450	1.09	1675			1.46
		1500			1600	1.16	1825			1.54
		1500			1600	1.16	1825			1.54
1800 x 1800	1800	900	115	2030	1015	1.09	1240	1070	225	1.65
		1050			1165	1.17	1390			1.73
		1200			1315	1.26	1540			1.82
		1350			1465	1.34	1690			1.90
		1500			1615	1.43	1840			1.99
		1650			1765	1.51	1990			2.07
		1800			1915	1.60	2140			2.16
		1800			1915	1.60	2140			2.16

\* NON STANDARD SIZES AND NON STANDARD LOADING CONDITIONS CAN BE MANUFACTURED UPON REQUEST

IN VIEW OF CONTINUAL IMPROVEMENT OKA RESERVES THE RIGHT TO ALTER SPECIFICATIONS WITHOUT PRIOR NOTICE

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OKA U-DRAINS COME IN STANDARD LENGTH OF 1 METRE

## SUPER SIZE U-DRAINS – DIMENSIONS AND PRODUCT WEIGHT

NOMINAL SIZE (mm)		b (mm)	h (mm)	tb (mm)	tt (mm)	B (mm)	WITHOUT DWF		WITH DWF			
							H (mm)	Approx Product Weight (ton)	H (mm)	c (mm)	e (mm)	Approx Product Weight (ton)
2100	x	1050	1050	180	158	2495	1230	2.01	1455	1070	225	2.80
		1200	1200		155		1380	2.13	1605			2.91
		1350	1350		151		1530	2.24	1755			3.02
		1500	1500		147		1680	2.35	1905			3.13
		1650	1650		145		1830	2.46	2055			3.24
		1800	1800		140		1980	2.56	2205			3.34
		1950	1950		136		2130	2.66	2355			3.45
		2100	2100		132		2280	2.76	2505			3.54
2400	x	1200	1200	180	155	2800	1380	2.26	1605	1070	225	3.22
		1350	1350		151		1530	2.37	1755			3.33
		1500	1500		147		1680	2.48	1905			3.44
		1650	1650		143		1830	2.59	2055			3.54
		1800	1800		140		1980	2.69	2205			3.65
		1950	1950		136		2130	2.80	2355			3.75
		2100	2100		132		2280	2.89	2505			3.85
		2250	2250		128		2430	2.99	2655			3.94
2700	x	2400	2400		125		2580	3.08	2805	1070	225	4.04
		1350	1350	180	151	3105	1530	2.51	1755			3.63
		1500	1500		147		1680	2.62	1905			3.74
		1650	1650		143		1830	2.72	2055			3.85
		1800	1800		140		1980	2.83	2205			3.95
		1950	1950		136		2130	2.93	2355			4.05
		2100	2100		132		2280	3.03	2505			4.15
		2250	2250		128		2430	3.12	2655			4.25
		2400	2400		125		2580	3.22	2805			4.34
		2550	2550		121		2730	3.31	2955			4.43
		2700	2700		117		2880	3.39	3105			4.52

\* NON STANDARD SIZES AND NON STANDARD LOADING CONDITIONS CAN BE MANUFACTURED UPON REQUEST

# SUPER SIZE U-DRAINS

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NOMINAL SIZE		b	h	tb	tt	B	WITHOUT DWF		WITH DWF			
							H	Approx Product Weight (ton)	H	c	e	Approx Product Weight (ton)
(mm)		(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)	(mm)	
3000	x	3050	1500	180	147	3410	1680	2.75	1905	1070	225	4.04
			1650		143		1830	2.86	2055			4.15
			1800		140		1980	2.96	2205			4.25
			1950		136		2130	3.06	2355			4.35
			2100		132		2280	3.16	2505			4.45
			2250		128		2430	3.26	2655			4.55
			2400		125		2580	3.35	2805			4.64
			2550		121		2730	3.44	2955			4.73
			2700		117		2880	3.53	3105			4.82
			2850		113		3030	3.61	3255			4.90
			3000		110		3180	3.70	3405			4.98
3300	x	3355	1650	180	143	3715	1830	2.99	2055	1070	225	4.45
			1800		140		1980	3.10	2205			4.56
			1950		136		2130	3.20	2355			4.66
			2100		132		2280	3.30	2505			4.75
			2250		128		2430	3.39	2655			4.85
			2400		125		2580	3.49	2805			4.94
			2550		121		2730	3.58	2955			5.03
			2700		117		2880	3.66	3105			5.12
			2850		113		3030	3.75	3255			5.21
			3000		110		3180	3.83	3405			5.29
			3150		106		3330	3.91	3555			5.37
			3300		102		3480	3.99	3705			5.44
3600	x	3660	1800	180	140	4020	1980	3.23	2205	1070	225	4.86
			1950		136		2130	3.33	2355			4.96
			2100		132		2280	3.43	2505			5.06
			2250		128		2430	3.53	2655			5.15
			2400		125		2580	3.62	2805			5.25
			2550		121		2730	3.71	2955			5.34
			2700		117		2880	3.80	3105			5.42
			2850		113		3030	3.88	3255			5.51
			3000		110		3180	3.96	3405			5.59
			3150		106		3330	4.04	3555			5.67
			3300		102		3480	4.12	3705			5.75
			3450		98		3630	4.19	3855			5.82
			3600		95		3780	4.26	4005			5.89

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**OKA CONCRETE INDUSTRIES SDN. BHD.** (67634-M)