

NOTES

- 1) "O" RING GROOVES ARE REQUIRED ONLY ON INTEGRAL FLANGES WITH NOMINAL DIA. OF 600 AND OVER FOR TEST PRESSURES 5000kPa TO 8500 kPa.
- 2) RAISED FACES ARE REQUIRED ON ALL FLANGES RATED FOR TEST PRESSURES 5000 TO 8500kPa.
- 3) SPOT FACING IS NOT REQUIRED IF THE BACKSIDE OF THE FLANGE IS MACHINED.
- 4) SPOT FACING SHALL NOT REDUCE THE FLANGE THICKNESS TO LESS THAN THE SPECIFIED THICKNESS.
- 5) MATERIAL: INTEGRAL TYPE FLANGES.
CI – CAST IRON BS 1452 GR 220 (MIN)
DI – DUCTILE IRON BS 2789 GR 420/12 (MIN)
CS – CAST STEEL BS 3100 GR A2 (MIN)
MATERIAL: PLATE FLANGES.
CS – CARBON STEEL BS 4360 GR 43A(MIN)
- 6) FOR INSULATING GASKET MATERIAL SPECIFICATION SEE TABLE 1
- 7) ALL DIMENSIONS ARE IN mm.
- 8) LOOSE FLANGES SHALL BE OF CAST STEEL.
- 9) REFER TO DRG A9548 REV2 FOR INSULATING FLANGES
- 10) INSULATING FLANGES SHALL BE SPECIFIED WHEN REQUIRED.

THIS DRAWING
SUPERSEDES
DRAWING A8312
AND A11791 REV 2

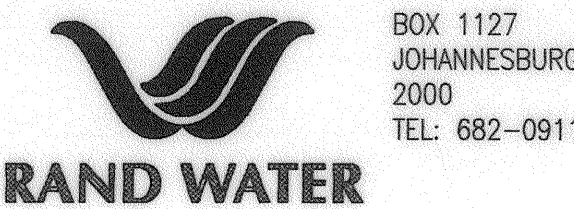
REVISION 3 CHECKED BY

NAME	DESIGNATION	SIGNATURE	DATE
M. SKELE	Gen MGR	<i>[Signature]</i>	13/05/2015
T. Thutha	SPT	<i>[Signature]</i>	13/05/2015
S. Katsky	SCT	<i>[Signature]</i>	13/05/2015
V. Masekela	APLE	<i>[Signature]</i>	14/05/2015
C. Moswau	SMIE	<i>[Signature]</i>	19/05/2015

REVISIONS

No	DATE	CHECKED	APPROVED	DESCRIPTION
1	8/5/99	HDM	VS	NOM.BORE 750 ADDED
2	1/11/04	HDM	VS	NOM.BORE 250 ADDED
3	12/5/15			GASKET SPECIFICATION

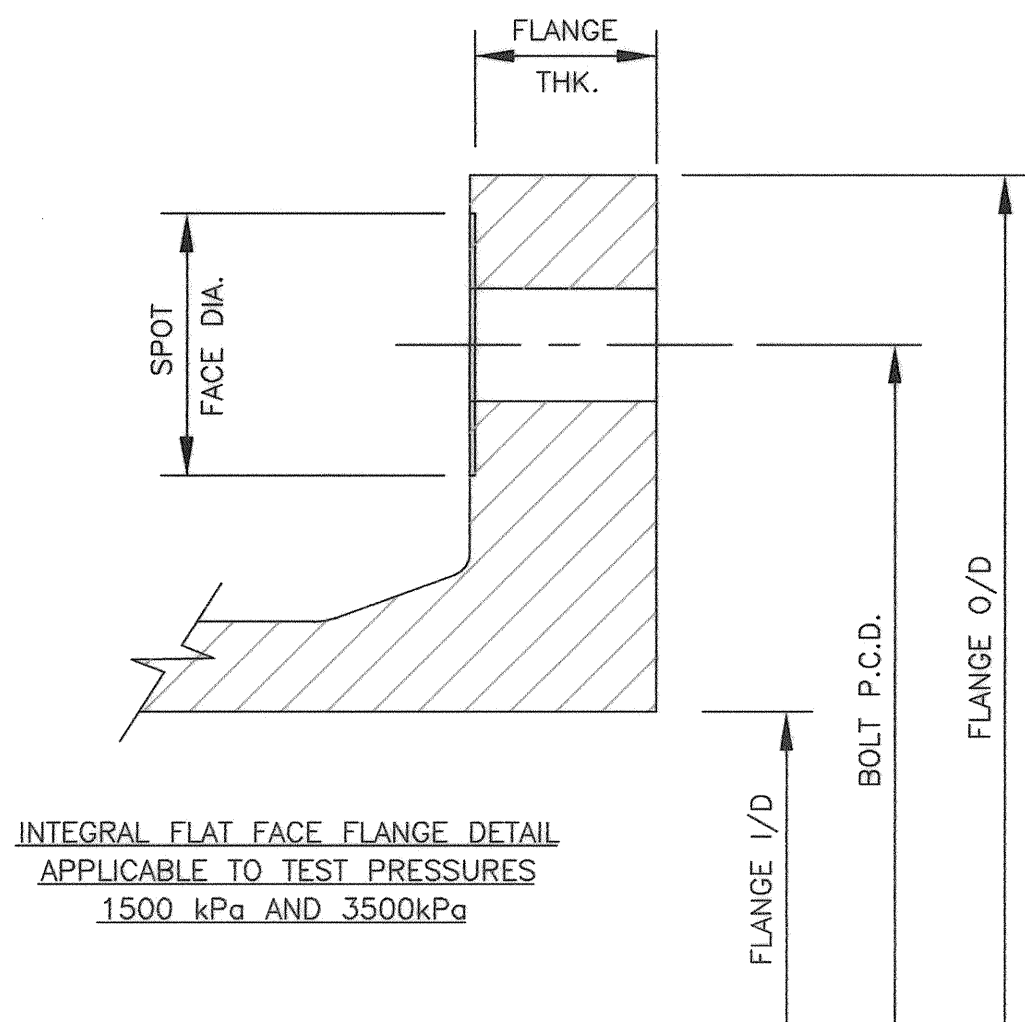
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	REFERENCE DRAWINGS



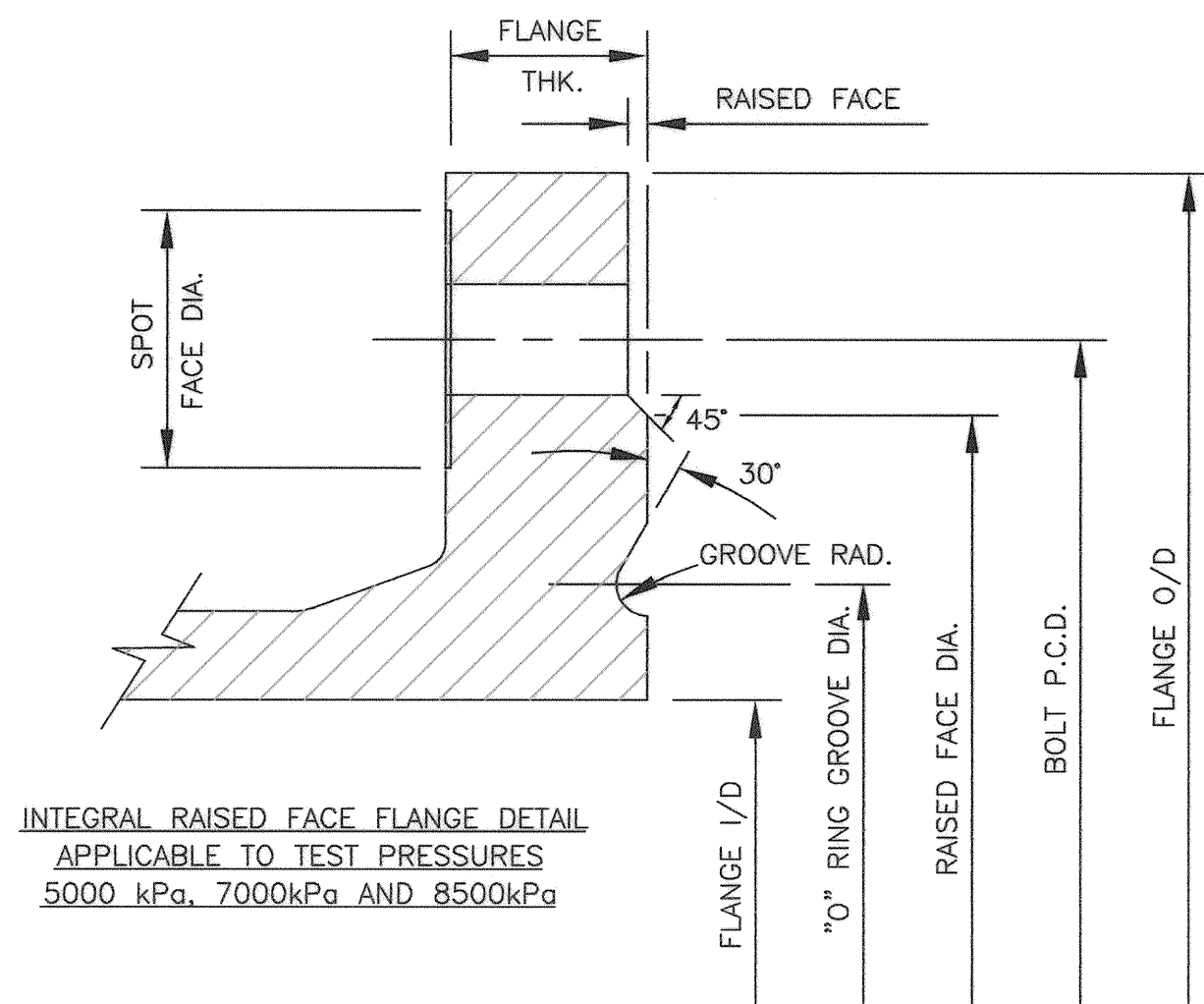
JOB No	—	CHECKED	<i>[Signature]</i>
CONTRACT No	—	SECTION HEAD	
SCHEME	—	APPROVED	<i>[Signature]</i> Pr. Eng
DRAWN BY	LMALINDI	CAPACITY	M. A. M.
DATE	12/5/2015	DATE	30 MAY 2015

STANDARDS
FLANGESSTANDARD FLANGE
DIMENSIONS

SCALE															
STATION			WKS								DOC. TYPE			S	
R	W		O	O	G							D	M	Z	A



INTEGRAL FLAT FACE FLANGE DETAIL
APPLICABLE TO TEST PRESSURES
1500 kPa AND 3500kPa



INTEGRAL RAISED FACE FLANGE DETAIL
APPLICABLE TO TEST PRESSURES
5000 kPa, 7000kPa AND 8500kPa

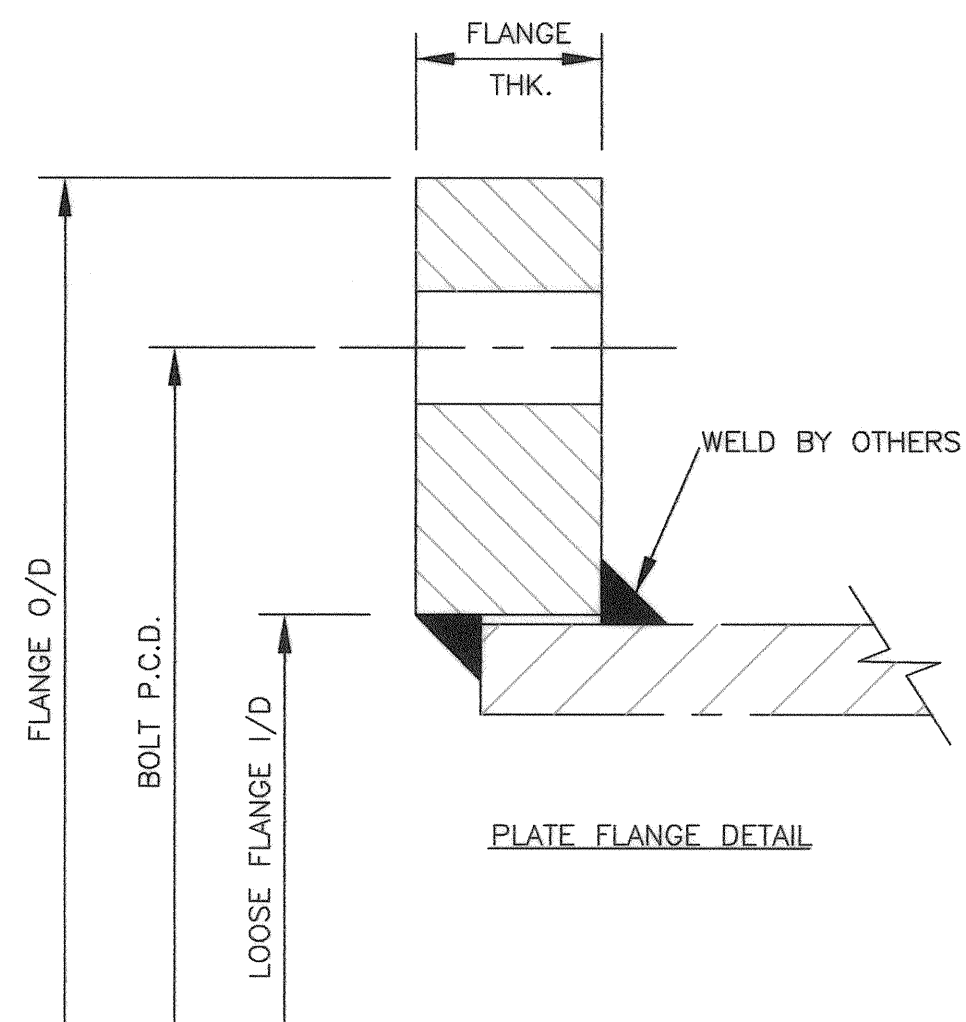


PLATE FLANGE DETAIL

TEST PRESSURE – 1500 kPa

NOM. BORE	FLG/OD	FLG THK C.I.	FLG THK D.I.	FLG THK C.S.	NO. OFF HOLES	HOLE DIA.	BOLT PCD	BOLT DIA.	SPOT DIA.	BORE OF LOOSE FLG.
25	115	16	16	16	4	14	85	12	24	35
50	165	20	19	18	4	18	125	16	32	62
80	200	22	20	20	8	18	160	16	32	92
100	220	24	20	20	8	18	180	16	32	117
150	285	26	22	22	8	22	240	20	40	171
200	340	26	24	24	8	22	295	20	40	222
250	395	28	26	26	12	22	350	20	40	275
300	445	28	26	26	12	22	400	20	40	327
400	565	32	26	26	16	26	515	24	48	409
450	615	32	28	28	20	26	565	24	48	460
500	670	34	28	28	20	26	620	24	48	512
600	780	36	30	28	20	33	725	30	60	615
700	895	40	33	30	24	33	840	30	60	718
750	965	42	34	32	24	33	900	30	60	770
800	1015	44	35	32	24	33	950	30	60	820
900	1115	46	38	34	28	33	1050	30	60	922
1000	1230	50	40	34	28	39	1160	36	72	1024
1200	1455	56	45	38	32	39	1380	36	72	1226
1400	1675	62	46	42	36	45	1590	42	84	1432
1500	1785	65	48	45	40	45	1700	42	84	1534
1600	1915	68	49	46	40	52	1820	48	96	1636
1800	2115	70	52	50	44	52	2020	48	96	1840
2000	2325	74	55	54	48	52	2230	48	96	2040
2200	2550	80	65	58	52	62	2440	56	112	2240
2400	2760	82	70	62	56	62	2650	56	112	2440
2500	2860	85	72	64	60	62	2750	56	112	2540
3000	3405	100	85	75	68	62	3290	56	112	3040

TEST PRESSURE – 3500 kPa

NOM. BORE	FLG/OD	FLG THK C.I.	FLG THK D.I.	FLG THK C.S.	NO. OFF HOLES	HOLE DIA.	BOLT PCD	BOLT DIA.	SPOT DIA.	BORE OF LOOSE FLG.
25	115	18	18	18	4	14	85	12	24	35
50	165	22	20	20	4	18	125	16	32	62
80	200	26	24	24	8	18	160	16	32	92
100	235	28	24	24	8	22	190	20	40	117
150	300	34	28	28	8	26	250	24	48	171
200	330	34	30	30	12	26	310	24	48	222
250	360	37	34	34	12	33	370	30	60	275
300	485	40	34	34	16	33	430	30	60	327
400	620	48	40	40	16	39	550	36	72	409
450	670	50	42	42	20	39	600	36	72	460
500	730	52	44	44	20	39	660	36	72	512
600	845	56	46	46	20	39	770	36	72	615
700	960	60	47	46	24	45	875	42	84	718
750	1020	62	49	48	24	45	935	42	90	770
800	1085	64	51	50	24	52	990	48	96	820
900	1185	66	56	54	28	52	1090	48	96	922
1000	1320	67	60	58	28	62	1210	56	112	1024
1200	1530	80	70	70	32	62	1420	56	112	1226
1400	1755	86	76	76	36	62	1640	56	112	1432
1500	1865	88	80	80	36	62	1750	56	112	1534
1600	1975	90	84	84	40	62	1860	56	112	1636
1800	2195	100	90	90	44	70	2070	64	128	1840
2000	2425	105	96	96	48	70	2300	64	128	2040

TABLE DIAMETRAL TOLERANCES

RANGE	FLANGE O/D		NOM. BORE AND LOOSE FLANGE BORE	P.C.D. AND "O" RING GROOVE DIA.	* ECCENTRICITY
	OVER	INCL.			
0 300	+1 -1	+2 -2	+2 -0	+1 -1	1
300 1200	+2 -2	+3 -3	+3 -0	+1.5 -1.5	2
1200	+3 -3	+4 -4	+4 -0	+2 -2	4

*MAX. ALLOWABLE ECCENTRICITY OF FLANGE O/D, P.C.D. AND GROOVE DIA. IN RELATION TO NOM. BORE.

THICKNESS (ALL UNITS ARE IN mm)

FLANGE THICKNESS	TOLERANCE
≤ 10	+2.5 -0
> 10 ≤ 20	+3.5 -0
> 20 ≤ 30	+4.5 -0
> 30 ≤ 50	+6.5 -0
> 50 ≤ 70	+8.5 -0
> 70	+10.5 -0

TABLE FOR SURFACE FINISH OF FLANGE FACES

MANUFACTURING PROCESS	Ra*
TURNING	μm 3.2 TO 12.5
OTHER MACHINING PROCESSES	3.2 TO 6.3
CAST SURFACE	3.2 TO 25

*Ra IS DEFINED IN BS1134.

TEST PRESSURE – 5000 kPa

NOM. BORE	FLG/OD	FLG THK C.S.	NO. OFF HOLES	HOLE DIA.	BOLT PCD	BOLT DIA.	SPOT DIA.	R.F. DIA.	RAISED FACE	O RING GROOVE DIA.	GROOVE RAD.	GROOVE DEPTH	O RING DIA.	BORE OF LOOSE FLG.
25	115	18	4	14	85	12	24	66	3	N/A	N/A	N/A	N/A	35
50	165	20	4	18	125	16	32	102	3	N/A	N/A	N/A	N/A	62
80	200	24	8	18	160	16	32	137	3	N/A	N/A	N/A	N/A	92
100	235	24	8	22	190	20	40	163	3	N/A	N/A	N/A	N/A	117
150	300	28	8	26	250	24	48	218	3	N/A	N/A	N/A	N/A	171
200	375	34	12	33	320	30	60	282	3	N/A	N/A	N/A	N/A	222
250	450	38	12	33	385	30	60	345	3	N/A	N/A	N/A	N/A	275
300	515	42	16	33	450	30	60	410	4	N/A	N/A	N/A	N/A	327
400	680	50	16	39	585	36	72	539	4	N/A	N/A	N/A	N/A	409
450	685	50	20	39	610	36	72	564	4	N/A	N/A	N/A	N/A	460
500	755	52	20	45	670	42	84	618	4	N/A	N/A	N/A	N/A	512
600	890	60	20	52	795	48	96	735	5	655	3.5	5	7	615
700	995	64	24	52	900	48	96	840	5	757	3.5	5	7	718
750	1080	68	24	52	970	48	96	910	5	810	3.5	5	7	770
800	1140	72	24	62	1030	56	112	961	5	862	3.5	5	7	820
900	1250	76	28	62	1140	56	112	1071	5	967	3.5	5	7	922
1000	1360	80	28	62	1250	56	112	1181	5	1068	4	6	8	1024
1200	1575	88	32	62	1460	56	112	1391	5	1268	4	6	8	1226
1400	1795	98	36	62	1680	56	112	1611	5	1468	4	6	8	1432
1500	1925	104	36	70	1800	64	128	1723	5	1568	4	6	8	1534
1600	2025	108	40	70	1900	64	128	1823	5	1668	4	6	8	1636
1800	2240	115	48	70	2110	64	128	2033	5	1868	4	6	8	1840
2000	2425	120	48	70	2300	64	128	2223	5	2068	4	6	8	2040

TABLE FOR TOLERANCES ON FLANGE

TEST PRESSURE – 7000 AND 8500 kPa

NOM. BORE	FLG/OD	FLG THK C.S.	NO. OFF HOLES	HOLE DIA.	BOLT PCD	BOLT DIA.	SPOT DIA.	R.F. DIA.	RAISED FACE	O RING GROOVE DIA.	GROOVE RAD.	GROOVE DEPTH	O RING DIA.	BORE OF LOOSE FLG.
25	140	24	4	18	100	16	32	77	3	N/A	N/A	N/A	N/A	35
50	180	26	4	22	135	20	40	108	3	N/A	N/A	N/A	N/A	62
80	215	28	8	22	170	20	40	143	3	N/A	N/A	N/A	N/A	92
100	250	30	8	26	200	24	48	169	3	N/A	N/A	N/A	N/A	117
150	345	36	8	33	280	30	60	242	3	N/A	N/A	N/A	N/A	171
200	415	42	12	39	345	36	72	301	3	N/A	N/A	N/A	N/A	222
250	470	48	12	39	400	36	72	345	3	N/A	N/A	N/A	N/A	275
300	530	52	16	39	460	36	72	414	4	N/A	N/A	N/A	N/A	327
400	670	60	16	45	585	42	84	533	4	N/A	N/A	N/A	N/A	409
450	735	65	20	45	645	42	84	593	4	N/A	N/A	N/A	N/A	460
500	800	68	20	52	705	48	96	646	4	N/A	N/A	N/A	N/A	512
600	930	76	20	62	820	56	112	749	5	655	3.5	5	7	615
700	1045	84	24	62	935	56	112	864	5	757	3.5	5	7	718
750	1100	88	24	62	990	56	112	920	5	800	3.5	5	7	770
800	1165	92	24	62	1050	56	112	979	5	862	3.5	5	7	820
900	1285	98	28	62	1170	56	112	1099	5	967	3.5	5	7	922
1000	1415	108	28	70	1290	64	128	1211	5	1068	4	6	8	1024
1200	1665	126	32	78	1530	72	144	1443	5	1268	4	6	8	1226
1400	1900	130	40	78	1740	72	144	1649	5	1468	4	6	8	1432
1500	1990	135	40	78	1820	72	144	1732	5	1568	4	5	8	1534
1600	2100	140	40	78	1930	72	144	1842	5	1668	4	6	8	1636
1800	2300	145	44	78	2130	72	144	2042	5	1868	4	6	8	1840
2000	2500	150	48	78	2330	72	144	2242	5	2068	4	6	8	2040