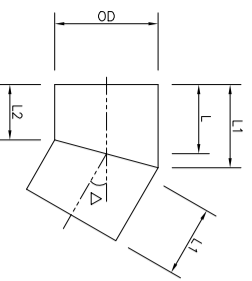


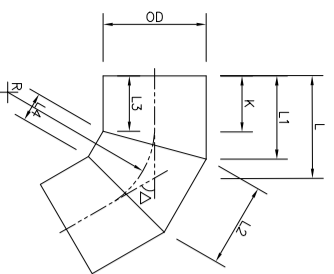
NOTE:  
1. ALL DIMENSIONS ARE IN MILLIMETRE AND LEVELS ARE IN METRE UNLESS OTHERWISE STATED.



$$L1 = L + \left( \frac{OD}{2} \tan \frac{\Delta}{2} \right)$$

$$L2 = L + \left( \frac{OD}{2} \tan \frac{\Delta}{2} \right)$$

TYPE 1  
GUSSETED BEND  
UP TO 30°



$$K = L - R \tan \frac{\Delta}{2}$$

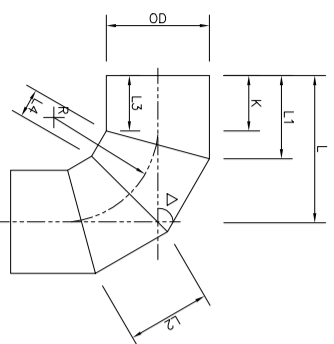
$$L1 = K + \left( R + \frac{OD}{2} \right) \tan \frac{\Delta}{4}$$

$$L2 = (2R + OD) \tan \frac{\Delta}{4}$$

$$L3 = K + \left( R + \frac{OD}{2} \right) \tan \frac{\Delta}{4}$$

$$L4 = (2R + OD) \tan \frac{\Delta}{4}$$

TYPE 2  
GUSSETED BEND  
31° TO 50°



$$K = L - R \tan \frac{\Delta}{2}$$

$$L1 = K + \left( R + \frac{OD}{2} \right) \tan \frac{\Delta}{6}$$

$$L2 = (2R + OD) \tan \frac{\Delta}{6}$$

$$L3 = K + \left( R + \frac{OD}{2} \right) \tan \frac{\Delta}{6}$$

$$L4 = (2R + OD) \tan \frac{\Delta}{6}$$

TYPE 3  
GUSSETED BEND  
61° TO 90°

PLAIN ENDED BEND

PLAIN ENDED GUSSETED BEND

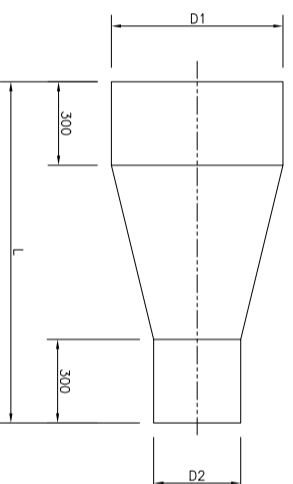
DIAMETER	ND (mm)	OD (mm)	PLATE THK (mm)	TYPE 1		TYPE 2		TYPE 3		
				UP TO 30° (mm)	31° TO 45° (mm)	46° TO 60° (mm)	61° TO 90° (mm)			
100	114.3		3.6	175	150	200	150	250	150	300
150	168.3		3.6	225	225	300	225	300	225	400
200	219.1		4.0	300	300	350	300	400	300	550
250	273		4.0	375	375	450	375	500	375	650
300	323.9		4.0	375	450	450	450	500	450	700
350	355.6		4.5	450	525	550	525	600	525	800
400	406.4		4.5	450	600	600	600	600	600	850
450	457		5.0	450	675	600	450	600	450	850
500	506		5.0	450	750	600	500	600	500	850
600	610		6.3	550	900	750	600	750	600	1000

CONCENTRIC TAPER

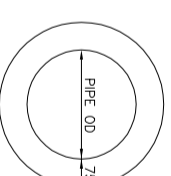
NOMINAL DIA (mm)	OD (mm)		L (mm)
	D1 (mm)	D2 (mm)	
150 x 100	168.3	114.3	900
200 x 100	219.1	114.3	1200
200 x 150	219.1	168.3	900
250 x 150	273	168.3	1200
250 x 200	273	219.1	900
300 x 150	323.9	168.3	1500
300 x 200	323.9	219.1	1200
300 x 250	323.9	273	900
350 x 200	355.6	219.1	1500
350 x 250	355.6	273	1200
350 x 300	355.6	323.9	900
400 x 200	406.4	219.1	1500

CONCENTRIC TAPER (CONT'D)

NOMINAL DIA (mm)	OD (mm)		L (mm)
	D1 (mm)	D2 (mm)	
400 x 250	406.4	273	1500
400 x 300	406.4	323.9	1200
400 x 350	406.4	355.6	900
450 x 300	457	323.9	1500
450 x 350	457	355.6	1200
450 x 400	457	406.4	900
500 x 350	508	355.6	1500
500 x 400	508	406.4	1200
500 x 450	508	457	900
600 x 400	610	406.4	1500
600 x 450	610	457	1500
600 x 500	610	506	1200



PLAIN ENDED CONCENTRIC TAPER



PLAN

PUDDLER FLANGE DETAIL  
(THICKNESS = 15)

REV.	REVISION BY	DESCRIPTION	DATE



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PROJECT :

DRAWING TITLE :

DETAILS AND SCHEDULE OF M.S PIPES SPECIALS

DRAWN BY : MAZZ	DESIGNED : W/C
CHECKED : MFB	APPROVED : T.C
SCALE : NOT TO SCALE	DATE : DECEMBER 2013
DRAWING NO : SAJSTD/PPS/03	