



VAG

KLAMFLEX

PRODUCT MANUAL

PIPE FITTINGS MANUFACTURER FOR WORLDWIDE DISTRIBUTION



AMONGST THE LEADING MANUFACTURERS OF PIPE FITTINGS GLOBALLY



Product Features

Hot rolled asymmetric steel T section free from weld providing integral strength. The offset T profile facilitates a perfect seal on the gasket and straight-line bolt travel.

Profile rolled steel sleeve allows angular deflection of the pipe ends due to a thinner mid-section, the rolled sleeve ends match the gasket profile exactly

Nontoxic EPDM WRAS approved rubber seal with self-centring lip on Dedicated Products

"D" and Square cup low carbon steel bolts which are also available in 316 SS

Nontoxic WRAS approved fusion bonded epoxy coatings

Added Product Features

- Ranger Couplings may join pipes with the same or different pipe outside diameters
- Ranger Flange Adaptors are multi drilled and may accommodate most flange drillings
- Ranger gaskets allow for thermal expansion and contraction of up to 5mm per gasket
- Couplings and Flange Adaptors for GRP and HDPE pipes may be supplied with Double or Full Sleeves respectively
- Harness Couplings to prevent pipe separation may be manufactured
- Fixed Centre Register may be supplied with Couplings 300 mm and below and Fixed or Removable Centre Registers may be supplied with Couplings 350mm and above
- Products may be manufactured to accommodate pressures higher than 16 bar
- Products may be manufactured to accommodate metric and imperial dimensions
- Products may be coated with Red Oxide, Fusion Bonded Epoxy and Galvanized when required, alternative coatings to customer specifications are available on request
- Our fittings are available in WRAS approved RAL 9005 Black, RAL 5015 and 5005 Blue

The product manual covers KLAMFLEX'S standard range of products as tabulated below

DN50 to DN900	–	PN 40
DN50 to DN1600	–	PN25
DN50 to DN 2000	–	PN16
DN50 to DN3000	–	PN10

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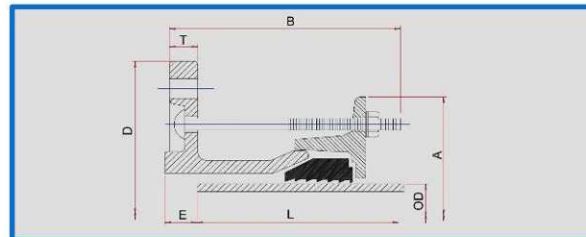
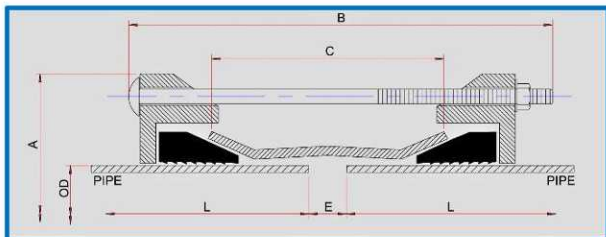
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KLAMFLEX is an ISO 9001:2015 listed company, stringent raw material quality control, quality inspection at all phases of production and hydrostatic test facilities bare testimony to your emphasis on Quality Products.

KLAMFLEX products are manufactured in accordance with AWWA C219-11 in our factory site which includes the following:

- Modern shot blasting facilities
- Modern fusion bonded epoxy plants for spray and fluidized bed application
- State of the art PLC controlled sleeve rolling line
- Customised follower rolling machines
- Latest plasma cutting equipment for fabricated specials

RANGER COUPLINGS, FLANGE ADAPTORS & END CAPS



Ranger Range Coupling and Flange Adaptor DN50 - DN600		Nominal Bore (mm)	Pipe OD (mm) (OD)	End Ring Diameter (A)	Sleeve Length (Coupling) (C)	Flange Thickness (Adaptor) (T)	Coupling/Flange Adaptor Length (B)		Setting Gap (E)	Min. Pipe Prep. Length (L)	Bolting		Approx. Mass(kg) Ranger	
C	FA						C	FA			C	FA	C	FA
Coupling	Adaptor	50	59-72	160	100	10	185	130	19	100	2-M12x175	2-M12x120	3	3
Coupling	Adaptor	65	72-85	170	100	10	185	130	19	100	2-M12x175	2-M12x120	3	4
Coupling	Adaptor	80	88-103	191	100	10	185	135	19	100	4-M12x175	4-M12x120	4	5
Coupling	Adaptor	100	109-129	220	100	10	185	135	19	100	4-M12x175	4-M12x120	5	5
Coupling	Adaptor	125	138-153	239	100	14	185	135	19	100	4-M12x175	4-M12x120	5	7
Coupling	Adaptor	150	150-170	260	130		185		19	100	4-M12x175		7	
Coupling	Adaptor	150	159-182	283	130	14	185	135	19	100	4-M12x175	4-M12x120	7	8
Coupling	Adaptor	175	192-210	315	130	18	210	135	19	100	4-M12x200	4-M12x120	9	9
Coupling	Adaptor	200	218-235	330	130	18	230	135	19	100	4-M12x220	4-M12x120	10	10
Coupling	Adaptor	225	230-247	340	130		230		19	100	4-M12x220		17	
Coupling	Adaptor	225	242-262	355	130	18	230	135	19	100	6-M12x220	4-M12x120	13	12
Coupling	Adaptor	250	250-267	265	130	18	230	140	19	100	6-M12x220	4-M12x120	18	14
Coupling	Adaptor	250	272-289	412	130	18	230	140	19	100	6-M12x220	4-M12x120	16	16
Coupling	Adaptor	300	315-332	450	130	18	230	145	19	100	6-M12x220	4-M12x120	24	22
Coupling	Adaptor	300	322-340	455	130	18	210	170	19	100	6-M12x200	4-M12x140	20	19
Coupling	Adaptor	300	340-360	470	130		230		19	100	6-M12x220		17	
Coupling	Adaptor	350	351-378	495	150	23	230	150	19	150	8-M12x220	8-M12x140	17	29
Coupling	Adaptor	350	374-391	510	150	23	260	150	19	150	8-M12x250	8-M12x140	28	25
Coupling	Adaptor	400	390-410	530	150	23	270	170	19	150	8-M12x260	8-M12x160	18	
Coupling	Adaptor	400	417-437	565	150	23	270	170	19	150	8-M12x260	8-M12x160	26	29
Coupling	Adaptor	400	425-442	555	150	23		170	19	150		8-M12x160		32
Coupling	Adaptor	450	454-460	580	150		270		19	150	8-M12x260		35	
Coupling	Adaptor	450	476-493	625	150		270		19	150	8-M12x260		40	
Coupling	Adaptor	450	480-500	623	150	23	270	150	19	150	10-M12x260	8-M12x160	33	33
Coupling	Adaptor	500	500-508	610	150		270		19	150	10-M12x260		51	
Coupling	Adaptor	500	526-546	660	150	23	270	150	19	150	10-M12x260	10-M12x160	35	41
Coupling	Adaptor	600	608-636	730	150	23	270	170	19	150	10-M12x260	10-M12x160	62	
	Adaptor	600	630-650	780		23		170	19	150		10-M12x160		51

MAX WORKING PRESSURE: 16 BAR

SETTING GAP: 14 - 19 mm

TOLERANCE ON ANGULAR DEFLECTION: 3 DEGREES

EXPANSION & CONTRACTION RANGE: 0-5mm

RECOMMENDED BOLT TORQUE: 60 - 80 Nm

FOR COUPLINGS OF 25 & 40 BAR WORKING PRESSURE PLEASE REFER TO DEDICATED FLANGE ADAPTORS AND COUPLINGS

RANGER STEP COUPLINGS



Ranger Step Coupling DN50 - DN250	Nominal Bore (mm)	Pipe OD (mm)	Approx. Mass(kg) Ranger
	50/65	59-72/72-85	3
	80/100	88-103/109-128	5
	100/125	109-128/138-153	6
	125/150	138-153/ 159-182	7
	150/175	159-182/192-210	8
	175/200	192-210/218-235	13
	200/200+	218-235/230-247	17
	250/250+	250-267/272-289	23

MAX WORKING PRESSURE: 16 BAR

SETTING GAP: 19 mm

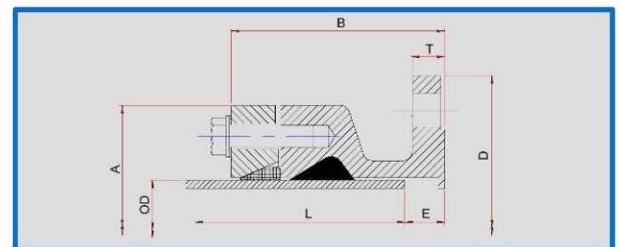
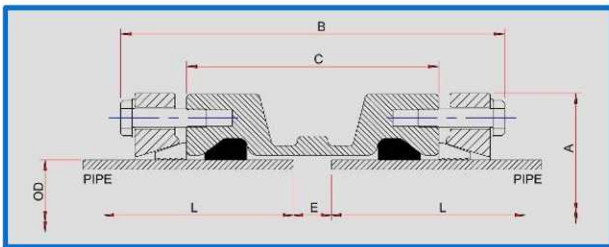
TOLERANCE ON ANGULAR DEFLECTION: 6 DEGREES

EXPANSION & CONTRACTION RANGE: 0-10mm

RECOMMENDED BOLT TORQUE: 60 - 80 Nm

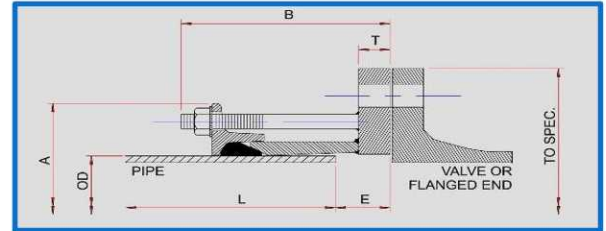
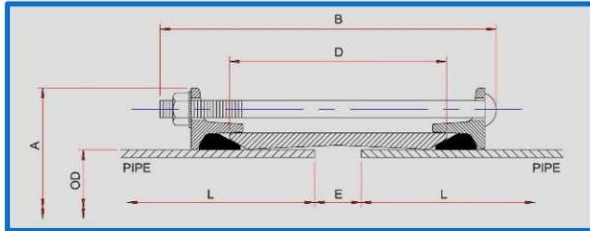
FOR COUPLINGS OF 25 & 40 BAR WORKING PRESSURE PLEASE REFER TO DEDICATED STEP COUPLINGS

GRIPPER COUPLINGS & FLANGE ADAPTORS



Gripper Coupling & Adaptors DN50 - DN300 PN 16		Nominal Bore (mm)	Pipe OD (mm)	End Ring Diameter	Coupling/Adaptor Length		Sleeve Length (Coupling) (C)	Flange Thickness (Adaptor) (T)	Setting Gap (E)	Min. Pipe Prep. Length (L)	Bolting		Approx. Mass(kg) Ranger	
C	FA			(A)	C	FA					C	FA	C	FA
Coupling	Adaptor	50	63	130	180	100	95	18	19	100	8-M10x40	2-M10x35	3	4
	Adaptor	65	75	142	N/A	100	N/A	18	19	100	N/A	2-M10x35	N/A	4
Coupling	Adaptor	80	90	160	200	100	95	18	19	100	8-M10x40	4-M10x35	5	5
Coupling	Adaptor	100	110	180	200	100	95	18	19	100	8-M10x40	4-M10x35	7	6
	Adaptor	100	125	195	N/A	105	N/A	18	19	100	N/A	4-M10x35	N/A	6
Coupling	Adaptor	150	160	235	230	120	95	18	19	100	8-M10x40	4-M10x35	10	13
	Adaptor	150	180	255	N/A	120	N/A	18	19	100	N/A	4-M10x35	N/A	13
Coupling	Adaptor	200	200	275	270	135	100	18	19	100	8-M10x40	4-M12x40	18	16
	Adaptor	200	225	300	N/A	135	130	18	19	100	N/A	4-M12x40	N/A	18
Coupling	Adaptor	250	250	325	330	160	130	22	19	100	12-M10x40	6-M12x40	32	25
	Adaptor	250	280	360	N/A	160	N/A	22	19	100	N/A	6-M12x40	N/A	28
Coupling	Adaptor	300	315	395	395	195	130	24	19	100	12-M10x40	6-M12x50	48	38

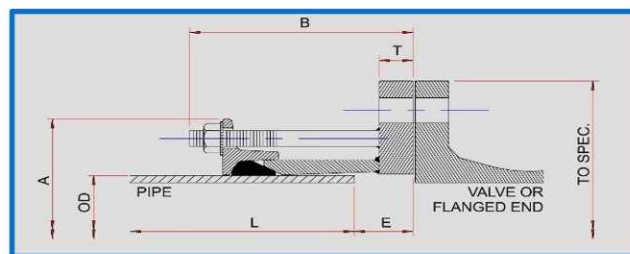
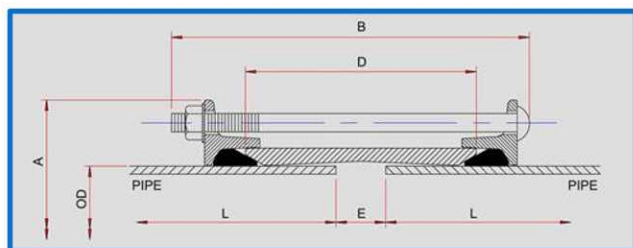
DEDICATED COUPLINGS & FLANGE ADAPTORS FOR STEEL PIPES



STEEL PIPE: ISO 2531:1991 BS 4772:1989

PRESSURE RATING 10/16 BAR		Nominal Bore (mm)	Pipe OD (mm)	Tolerance on Pipe OD for Prepared ends		End Ring OD (A)	Sleeve width (D)	Flange Thickness (Adaptor) (T)		Coupling/Adaptor Length (B)			Setting Gap (E)	Approx. Mass(kg)	
				MAX	MIN (mm)			FA		C	FA			C	FA
								10/16 Bar	25/40 Bar			10/16 Bar			
PRESSURE RATING 10/16 BAR DN50 - DN2400	PRESSURE RATING 25/40BAR DN50 - DN1000	50	60.3	0.8	0.8	134	83	10	14	178	100	104	14	2.2	3
		65	76.1	0.8	0.8	150	102	10	14	178	100	104	19	2.7	3
		80	88.9	0.8	0.8	158	102	10	14	178	100	104	19	3.3	4
		100	114.3	0.8	0.8	174	102	10	14	178	100	104	19	4.0	5
		125	139.7	1.6	0.8	220	102	14	18	178	104	108	19	6.1	7
		150	165.7	1.6	0.8	246	102	14	18	178	104	108	19	5.4	8
		150	168.3	1.6	0.8	246	102	14	18	178	104	108	19	5.4	8
		200	219.1	1.6	0.8	308	102	18	23	178	108	113	19	7.9	10
		225	244.5	1.6	0.8	338	102	18	23	178	108	113	19	10.6	14
		250	267	1.6	0.8	360	102	18	23/28	178	108	113	19	11.4	16
		250	273	1.6	0.8	364	102	18	23/28	178	108	113	19	10.6	15
		300	323.9	1.6	0.8	414	102	18	23/28	178	108	113	19	11.6	17
		350	355.6	1.6	1.6	458	178	23	28	262	163	168	38	28.0	34
		400	406.4	1.6	1.6	509	178	23	28	262	163	168	38	31.3	40
		450	457	1.6	1.6	559	178	23	28	262	163	168	38	35.5	46
		500	508	1.6	1.6	610	178	23	28/30	262	163	168	38	39.6	56
		550	559	1.6	1.6	661	178	SPECIAL	SPECIAL	262	SPECIAL	SPECIAL	38	42.9	TBA
		600	609.6	1.6	1.6	712	178	23	28/28	262	163	168	38	46.3	71
		650	660	1.6	1.6	762	178	SPECIAL	SPECIAL	262	SPECIAL	SPECIAL	38	49.4	TBA
		700	711.2	1.6	1.6	814	178	23	28/38	262	163	168	38	53.7	72
		750	762	1.6	1.6	864	178	SPECIAL	SPECIAL	262	SPECIAL	SPECIAL	38	58.0	TBA
		800	812.8	1.6	1.6	915	178	23	28/38	262	163	168	38	61.3	84
		850	864	1.6	1.6	966	178	SPECIAL	SPECIAL	262	SPECIAL	SPECIAL	38	65.4	TBA
		900	914.4	1.6	1.6	1017	178	23	28/38	262	163	168	38	68.6	90
		950	965	1.6	1.6	1067	178	SPECIAL	SPECIAL	262	SPECIAL	SPECIAL	38	72.9	TBA
		1000	1016	1.6	1.6	1118	178	28	38	262	168	SPECIAL	38	76.0	119
		1050	1067	1.6	1.6	1169	178	SPECIAL	SPECIAL	262	SPECIAL	SPECIAL	38	79.4	TBA
		1100	1118	1.6	1.6	1220	178	SPECIAL	SPECIAL	262	SPECIAL	SPECIAL	38	83.6	TBA
		1200	1219	1.6	1.6	1335	356	38	38/48	450	268	SPECIAL	38	121.8	198
		1200	1235	1.6	1.6	1351	356	38	38/48	450	268	SPECIAL	38	123.2	TBA
		1400	1420	1.6	3.0	1536	356	30/38	48/57	450	260/268	SPECIAL	38	140.4	276
		1400	1422	1.6	3.0	1538	356	SPECIAL	SPECIAL	450	SPECIAL	SPECIAL	38	140.7	TBA
		1500	1520	1.6	3.0	1636	356	50/60	SPECIAL	450	280/290	SPECIAL	38	150.2	439
		1600	1620	3.0	3.0	1736	356	60	SPECIAL	450	290	SPECIAL	38	160.0	494
		1600	1626	3.0	3.0	1742	356	60	SPECIAL	450	SPECIAL	SPECIAL	38	160.6	TBA
		1800	1820	3.0	3.0	1936	356	60	SPECIAL	450	290	SPECIAL	38	TBA	TBA
		1800	1829	3.0	3.0	1945	356	60	SPECIAL	450	SPECIAL	SPECIAL	38	TBA	TBA
		2000	2032	3.0	3.0	2146	356	60	SPECIAL	450	290	SPECIAL	38	TBA	TBA
		2200	2232	3.0	3.0	2346	356	70	SPECIAL	450	300	SPECIAL	38	TBA	TBA
		2400	2432	3.0	3.0	2546	356	80	SPECIAL	450	310	SPECIAL	38	TBA	TBA

DEDICATED COUPLINGS & FLANGE ADAPTORS FOR DUCTILE IRON PIPE



Ductile Iron Pipe ISO 2531 BS 4772

PRESSURE RATING 10/16 BAR		Nominal Bore (mm)	Pipe OD (mm)	Tolerance on Pipe OD for Prepared ends		End Ring OD (A)	Sleeve width (D)	Flange Thickness (Adaptor)		Coupling/Adaptor Length (B)			Setting Gap (E)	Approx. Mass(kg)	
				MAX (mm)	MIN (mm)			FA		C	FA			C	FA
								10/16 Bar	25/40 Bar		10/16 Bar	25/40 Bar			
PRESSURE RATING 10/16 BAR DN80 - DN2400	PRESSURE RATING 25/40BAR DN80 - DN1000	80	98	1.0	-3.0	158	102	10	14	178	100	104	19	3.6	4
		100	118	1.0	-3.0	200	102	10	14/18	178	100	104	19	4.4	5
		125	141	1.0	-3.0	220	102	14	18	178	104	104	19	6.1	7
		150	170	1.0	-3.0	260	102	14	18	178	104	108	19	6.0	8
		200	222	1.0	-3.5	308	102	18	23	178	108	113	19	7.9	10
		250	274	1.0	-3.5	364	102	18	23/28	178	108	113	19	10.6	15
		300	326	1.0	-3.5	414	102	18	23/28	178	108	113	19	11.7	17
		350	378	1.0	-3.5	480	178	23	28	262	163	168	38	29.4	34
		400	429	1.0	-4.0	531	178	23	28	262	163	168	38	33.7	40
		450	480	1.0	-4.0	582	178	23	28	262	163	168	38	37.0	46
		500	532	1.0	-4.0	634	178	23	28/30	262	163	168	38	41.3	56
		600	635	1.0	-4.5	737	178	23	28/38	262	163	168	38	47.9	71
	700	738	1.0	-4.5	840	178	23	28/38	262	163	168	38	56.4	72	
	800	842	1.0	-4.5	944	178	23	28/38	262	163	168	38	64.0	84	
	900	945	1.0	-5.0	1047	178	23	28/38	262	163	168	38	70.6	90	
	1000	1048	1.0	-5.0	1150	178	28	38	262	168	178	38	78.3	119	
	1100	1152	1.0	-6.0	1268	178	30	38	262	260	178	38	115.0		
	1200	1255	1.0	-6.0	1371	356	30/38	38/48	450	260/268	SPECIAL	SPECIAL	124.9	198	
	1400	1468	1.0	-6.0	1578	356	30/38	48/57	450	260/268	SPECIAL	38	144.2	276	
	1600	1668	1.0	-6.0	1784	356	60	SPECIAL	450	290	SPECIAL	38	164.3	494	
	1800	1875	1.0	-6.0	1989	356	60	SPECIAL	450	290	SPECIAL	38	TBA	TBA	
	2000	2082	1.0	-6.0	2196	356	60	SPECIAL	450	290	SPECIAL	38	TBA	TBA	
	2200	2288	1.0	-6.0	2402	356	70	SPECIAL	450	300	SPECIAL	38	TBA	TBA	
	2400	2495	1.0	-6.0	2609	356	80	SPECIAL	450	310	SPECIAL	38	TBA	TBA	

DEDICATED COUPLINGS FOR U-PVC PIPE



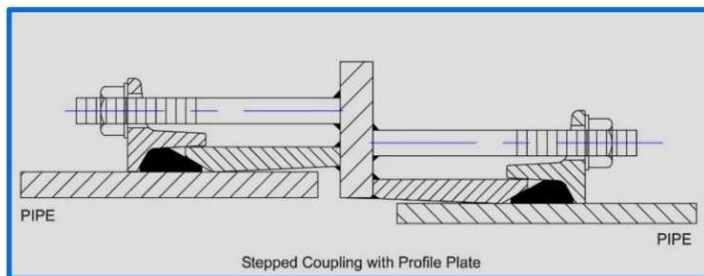
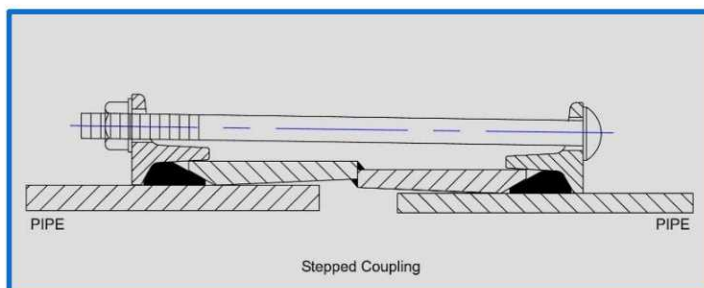
uPVC Pipes: SABS 966:1976 ISO 161:1978

Nominal Bore (mm)	Pipe OD (mm)	Tolerance on Pipe OD for Prepared ends		Minimum Pipe End Prepared Length (mm)	OD of End Ring (mm)	Coupling Length (B) (mm)	Sleeve Width (mm)	Approx. Mass (kg)	Setting Gap (E) (mm)
		MAX (mm)	MIN (mm)						
100	110	1.0	-1.0	100	163	178	102	4.2	19
140	140	1.0	-1.0	100	220	178	102	6.1	19
160	160	1.0	-1.0	100	242	178	102	5.9	19
175	177.8	1.0	-1.0	100	267	178	102	7.5	19
180	180	1.0	-1.0	100	267	178	102	9.6	19
200	200	1.0	-1.0	100	289	178	102	10.0	19
225	225	1.0	-1.0	100	318	178	102	10.4	19
250	250	1.0	-1.0	100	343	178	102	10.9	19
280	280	1.0	-1.0	100	373	178	102	11.1	19
315	315	1.0	-1.0	100	408	178	102	11.9	19
400	400	1.0	-1.0	150	502	262	178	31.0	38
500	500	1.0	-1.0	150	602	262	178	39.2	38
600	630	1.0	-1.0	150	732	262	178	47	38

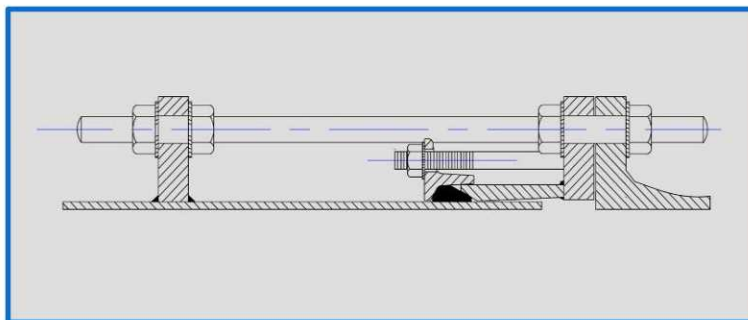
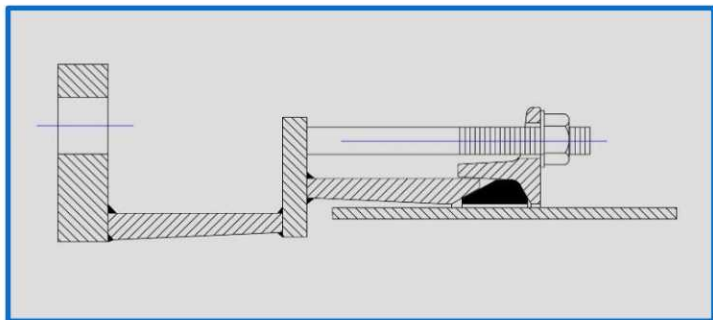
DEDICTED STEP COUPLINGS & STEP FLANGE ADAPTOR



STEPPED COUPLING AND STEPPED COUPLING WITH PROFILE PLATE



STEPPED FLANGE ADAPTOR WITH PROFILE PLATE AND RESTRAINED FLANGE ADAPTOR

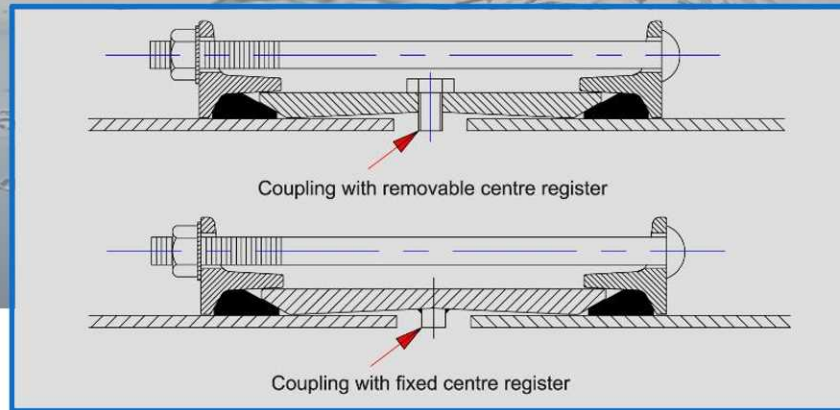


KLAMFLEX Stepped Flange Adaptor may be manufactured where pipe DN is larger (as indicated above) or smaller than flange nominal bore.

KLAMFLEX Restrained Flange adaptor may be manufactured where end pull out is of concern.

OPTIONAL EXTRAS

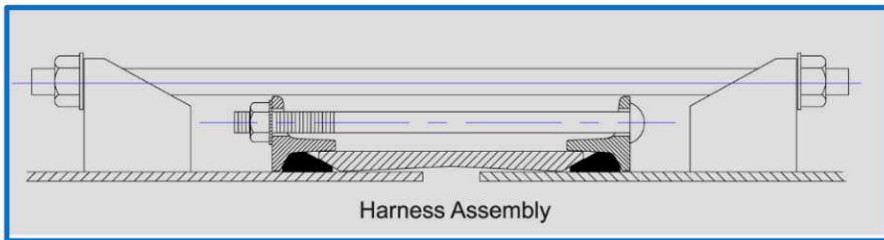
CENTRE REGISTER



The centre sleeve may be supplied with or without internal centre register studs. The registers provide a locating stop in the centre of the coupling which facilitates the laying of long pipe runs. Centre registers also prevent the possibility of the coupling creeping in a position where there is continual axial movement.

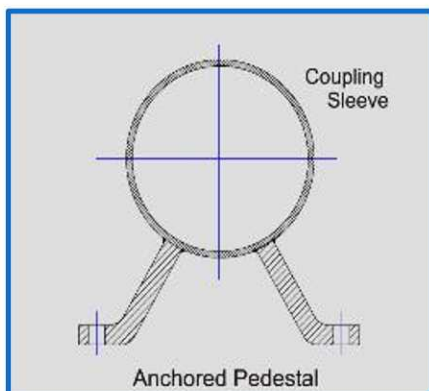
KLAMFLEX supplies two different types of centre registers: A – ≤ 300 NB welded $\frac{1}{4}$ inch type, B – ≥ 350 NB removable $\frac{1}{2}$ inch screw type, used where the coupling may be moved along the pipe to allow the pipe to be inspected, used where there is no need to remove couplings.

HARNESS AND PEDESTALS



One method of preventing pipe separation is to use a harness assembly, consisting of lugs for welding pipes and restraining rods. Cast iron may sometimes be harnessed with the use of additional flanges which are cast onto the pipe ends.

ANCHORED COUPLING



With brackets welded to the centre sleeve, couplings may be bolted directly to the support structure. Brackets are designed to withstand the thrust produced by maximum angularity and will support a 10m long pipeline full of water up to DN1500.

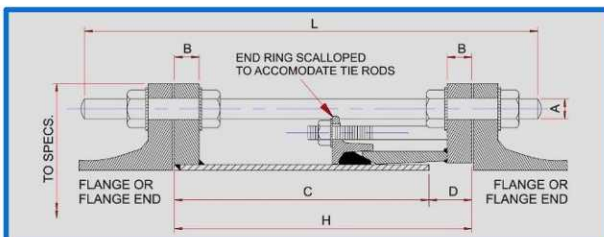
We recommend the use of locating centre registers with anchored couplings to help resist against pipe movement on steep slopes. Special considerations should be given to anchorage



DISMANTLING JOINT



FOR DIAMETERS AND PRESSURE RATINGS NOT LISTED IN THE PRODUCT MANUAL, PLEASE CONTACT KLAMFLEX



TIE ROD LENGTHS ARE CALCULATED BASED ON STEEL FLANGE THICKNESSES. QUANTITY OF TIE RODS MAY VARY DEPENDING ON GRADE OF TIE ROD MATERIAL

Flange Details

Flange to Flange Details

Tie Rod Details

Nominal Bore (mm)	Flange PN Rating PN	Spigot Pipe OD	Spigot Pipe Wall Thick	Spigot Length Including Flange (C)	Adaptor Spigot Flange Thickness BAR RATING 10/16/25/40 (B)	Min Length of Joint (H)	Nominal Length (D)	MAX Lenth of Joint (H)	Tie Rods	Tie Rod Size & length	Approx. Mass(kg)
50	10/16/25/40	60	4.5	165	10/10/14/14	165	185	205	4	M16x300	9
65	10/16/25/40	76	4.5	165	10/10/14/14	165	185	205	4	M16x300	10
80	10/16/25/40	89	4.5	165	10/10/14/14	165	185	205	4	M16x300	12
100	10/16	114	4.5	165	12	165	185	205	4	M16x300	13
100	25/40	114	4.5	165	18	165	185	205	4	M20x320	14
125	10/16	140	4.5	165	14	165	185	205	4	M16x300	16
125	25/40	140	4.5	175	18	175	195	215	4	M24X350	18
150	10/16	168	4.5	165	14	165	185	205	4	M20x320	23
150	25/40	168	4.2	175	18	175	195	215	4	M24X350	28
200	10/16	219	4.5	165	18	165	185	205	4	M20x320	32
200	25	219	4.5	175	23	175	195	215	4	M24X350	37
200	40	219	4.5	185	23	185	205	225	4	M27X370	41
200	4000/3	219	4.5	185	23	185	205	225	4	M24X350	40
250	10	273	4.5	175	18	175	195	215	4	M20x320	34
250	16	273	4.5	175	18	175	195	215	4	M24X350	38
250	25	273	4.5	185	23	185	205	225	4	M27X370	45
250	2500/3	273	4.5	185	23	185	205	225	4	M24X350	45
250	40	273	4.5	185	28	195	215	235	4	M30X420	49
300	10	324	4.5	175	18	175	195	215	4	M20x320	43
300	16	324	4.5	175	18	175	195	215	4	M24X350	44
300	25	324	4.5	185	23	185	205	225	4	M27X370	50
300	2500/3	324	4.5	185	23	185	205	225	4	M24X350	50
300	40	324	6	250	28	250	275	300	4	M30X500	60
350	10	356	4.5	250	23	250	275	300	4	M20X420	49
350	16	356	4.5	250	23	250	275	300	4	M24X450	71
350	25	356	4.5	250	28	250	275	300	4	M30X500	79
350	2500/3	356	4.5	250	28	250	275	300	4	M30X500	79
350	40	356	6	275	36	275	300	335	4	M33X520	86
350	4000/3	356	6	275	36	275	300	335	4	M30X520	86

DISMANTLING JOINT



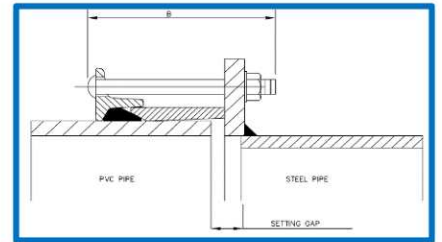
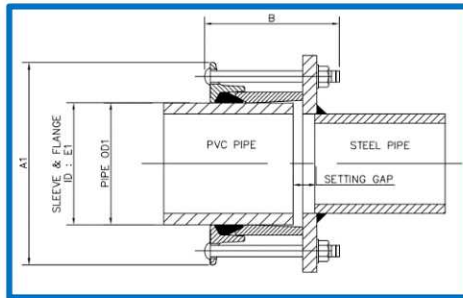
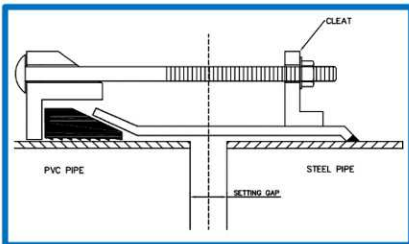
Flange Details					Flange to Flange Details				Tie Rod Details		
Nominal Bore (mm)	Flange PN Rating PN	Spigot Pipe OD	Spigot Pipe Wall Thick	Spigot Length Including Flange (C)	Adaptor Spigot Flange Thickness BAR RATING 10/16/25/40 (B)	Min Length of Joint (H)	Nominal Length (D)	MAX Lenth of Joint (H)	Tie Rods	Tie Rod Size & length	Approx. Mass(kg)
400	10	406	4.5	250	23	250	275	300	4	M24X450	86
400	16	406	4.5	250	23	250	275	300	4	M27X470	88
400	1600/3	406	4.5	250	23	250	275	300	4	M24X450	88
400	25	406	4.5	265	31	265	290	315	4	M33X520	96
400	2500/3	406	4.5	265	28	265	290	315	4	M30X520	96
400	40	406	6	290	28	290	320	350	4	M36X600	107
400	4000/3	406	6	290	28	290	320	350	4	M36X600	107
450	10	457	4.5	250	23	250	275	300	4	M24X450	95
450	16	457	4.5	250	23	250	275	300	4	M27X470	99
450	1600/3	457	4.5	250	23	250	275	300	4	M24X450	99
450	25	457	4.5	275	28	275	300	325	5	M33X520	111
450	2500/3	457	4.5	275	28	275	300	325	5	M30X520	111
450	40	457	6	300	28	300	330	360	5	M36X620	120
450	4000/3	457	6	300	28	300	330	360	5	M36X600	120
500	10	508	4.5	250	23	250	275	300	4	M24X450	111
500	16	508	4.5	250	23	250	275	300	4	M30X520	131
500	25	508	6	280	28	280	305	330	5	M33X520	143
500	2500/3	508	6	280	28	280	305	330	5	M30X520	143
500	40	508	8	325	30	325	350	380	5	M39X650	154
500	4000/3	508	8	325	30	325	350	380	5	M36X640	154
600	10	610	4.5	250	23	250	275	300	4	M27X470	135
600	1000/3	610	4.5	250	23	250	275	300	4	M24X450	135
600	16	610	4.5	250	23	250	275	300	4	M33X520	175
600	1600/3	610	4.5	250	23	250	275	300	4	M30X520	175
600	25	610	6	300	28	300	325	350	5	M36X550	205
600	40	610	10	350	38	350	375	410	5	M45X730	248
600	4000/3	610	10	350	38	350	375	410	4	M42X730	249
700	10	711	6	250	23	250	275	300	4	M27X470	168
700	1000/3	711	6	250	23	250	275	300	4	M24X450	184
700	16	711	6	250	23	250	275	300	4	M33X520	184
700	1600/3	711	6	250	23	250	275	300	4	M30X500	210
700	25	711	8	320	28	320	345	370	6	M39X650	210
700	40	711	10	350	38	350	375	410	6	M45X750	260
800	10	813	6	250	23	250	275	300	6	M30X500	203
800	16	813	6	250	23	250	275	300	6	M36X550	222
800	25	813	6	330	28	330	355	380	6	M45X700	243
800	2500/3	813	6	330	28	330	355	380	6	M45X700	243
800	40	813	12	350	38	350	375	410	6	M52X850	296
900	10	914	6	250	23	250	275	300	7	M30X500	225
900	16	914	6	250	23	250	275	300	7	M36X550	245
900	25	914	10	340	28	340	365	400	7	M45X730	298
900	2500/3	914	10	340	28	340	365	400	7	M42X730	299
900	40	914	16	350	38	350	375	410	7	M52X820	342
900	4000/3	914	16	340	38	340	380	410	7	M52X815	342

DISMANTLING JOINT



Flange Details					Flange to Flange Details				Tie Rod Details		
Nominal Bore (mm)	Flange PN Rating PN	Spigot Pipe OD	Spigot Pipe Wall Thick	Spigot Length Including Flange (C)	Adaptor Spigot Flange Thickness BAR RATING 10/16/25/40 (B)	Min Length of Joint (H)	Nominal Length (D)	MAX Lenth of Joint (H)	Tie Rods	Tie Rod Size & length	Approx. Mass(kg)
1000	10	1016	6	260	28	260	290	320	7	M33X550	298
1000	1000/3	1016	6	260	28	260	290	320	7	M30X550	298
1000	16	1016	6	260	28	260	290	320	7	M39X610	331
1000	1600/3	1016	6	260	28	260	290	320	7	M36X600	331
1000	25	1016	10	350	38	350	380	410	7	M52X780	376
1000	40	1016	16	350	38	350	380	410	8	M52X810	485
1200	10	1220	8	280	30	280	310	340	8	M36X610	496
1200	16	1220	8	280	38	280	310	340	8	M45X680	559
1200	1600/3	1220	8	280	38	280	310	340	8	M42x680	560
1200	25	1220	12	390	38	390	420	450	8	M52X850	635
1200	40	1220	20	390	48	390	420	450	10	M56X930	810
1400	10	1420	8	310	30	310	340	370	9	M39X670	610
1400	16	1420	10	310	38	310	340	370	9	M45X730	665
1400	25	1420	12	450	48	450	480	510	9	M56X1000	710
1400	40	1420	20	450	57	450	480	510	14	M56X1000	1050
1500	10	1549	10	350	50	350	380	410	8	M45X750	1250
1500	16	1549	10	350	60	350	380	410	8	M52X850	1320
1500	25	1549	12	450	60	450	480	510	9	M56X1000	1370
1600	10	1620	10	350	50	350	380	410	10	M45X750	1250
1600	16	1620	10	350	60	350	380	410	10	M52X850	1320
1600	25	1620	16	450	60	450	480	510	10	M56X1000	1520
1800	10	1820	10	350	60	350	380	410	11	M45X750	1300
1800	16	1820	12	350	60	350	380	410	11	M52X850	1300
1800	25	1820	20	450	60	450	480	510	11	M64X1000	1550
2000	10	2020	12	350	60	350	380	410	12	M45X800	1490
2000	16	2020	12	350	60	350	380	410	12	M56X1000	1490
2100	10	2134	12	360	60	360	400	440	13	M52X850	TBA
2100	16	2134	12	360	80	360	400	440	13	M56X1000	TBA
2200	10	2230	12	380	60	380	410	430	13	M52X850	TBA
2200	16	2230	16	380	80	380	410	440	13	M56X1000	TBA
2400	10	2430	12	400	100	400	430	460	14	M52X1050	TBA
2400	16	2430	16	400	100	400	430	460	16	M56X1050	TBA
2500	10	2532	16	400	100	400	430	460	20	M52X1050	TBA
2500	16	2532	16	400	100	400	430	460	20	M56X1050	TBA
2600	10	2640	16	400	100	400	430	460	20	M52X1200	TBA
2600	16	2640	16	400	100	400	430	460	20	M56X1200	TBA
2800	10	2840	16	450	120	450	480	510	20	M52X1200	TBA
2800	16	2840	16	450	120	450	480	510	20	M56X1200	TBA
3000	10	3040	16	500	120	500	530	560	20	M56X1200	TBA
3000	16	3040	16	500	120	500	530	560	20	M56X1200	TBA

SPECIAL ENDED FITTINGS



Ranger Couplings

NB Size	PVC OD	Centre Sleeve ID	Standard ID	Flared Sleeve ID
59-72	63	75	76.3	79.3
72-85	75	88	76.3	79.3
88-103	75-90	105	88.9	93
109-128	110-125	128	114-139.7	117-143
138-153	140	156	139.7	143
159-182	160-180	186	165	169
192-210	200	214	219	223
218-235	225	239	219	223
242-262	250	266	273	277
250-267	250	271	273	277
272-289	280	293	273	277
315-332	315	337	324	329
322-340		345	356	361
351-378	355	383	356	361
374-391		396	406	411
417-437		442	457	462
425-442		447	457	462
480-500	500	505	508	512
526-546		551	610	615
630-650	630	655	669	675

Dedicated Couplings

NB Size	PVC OD	Centre Sleeve ID	Standard ID	Flared Sleeve ID
40	40	43	48.3	51
50	50	53	60.3	63
63	63	66	76.3	79
75	75	78	76.3	79
90	90	93	88.9	91
110	110	113	114	117
125	125	129	139.7	144
140	140	144	165.1	169
160	160	164	165.1	169
180	180	184	219	223
200	200	204	219	223
225	225	229	273	281
250	250	254	273	281
280	280	284	324	328
315	315	319	324	328
355	355	360	356	361
400	400	405	406	411
450	450	455	457	461
500	500	505	508	512
560	560	565	559	564
630	630	635	610	615

NOMINAL SETTING GAP FULL SLEEVE: 19 mm
NOMINAL SETTING GAP HALF SLEEVE: 10 mm

REPAIR CLAMPS

JUNIOR COUPLINGS



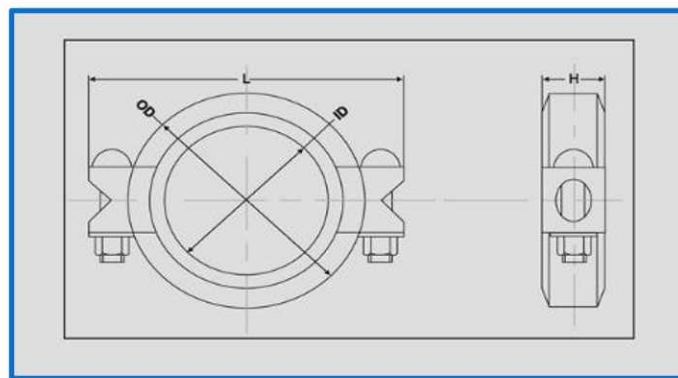
Repair Clamps

DN	PN	Sleeve Width (mm)	Bolt Sizes	No. bolts
48-63	16	150	M12 x 140	2
69-84	16	150	M12 x 140	2
89-104	16	150	M12 x 140	2
110-125	16	150	M12 x 140	2
140-155	16	200	M12 x 140	2
160-175	16	200	M12 x 140	2
177-192	16	200	M12 x 140	2
196-211	16	200	M12 x 140	2
219-234	16	200	M12 x 140	2
239-254	16	300	M12 x 140	4
262-277	16	300	M12 x 140	4
284-299	16	300	M12 x 140	4
304-319	16	300	M12 x 140	4
324-340	16	400	M12 x 140	4
345-360	16	400	M12 x 140	4
365-380	16	400	M12 x 140	4

Junior Fittings

Junior Fittings	Description	Size Range
	Junior Straight Coupling	15 - 50 mm
	Junior Straight Coupling with integral gripper rings	15 - 50 mm
	Male/Female Junior Coupling	15 - 50 mm
	Male/Female Junior Coupling with integral gripper rings	15 - 50 mm
	Junior Tee Pieces	15 - 25 mm
	Junior Tee integral gripper rings	15 - 25 mm
	Junior Repair Clamps	15 - 50 mm
	Junior Repair Clamps with 15mm Tee Outlet	15 - 25 mm

SHOULDERED COUPLINGS

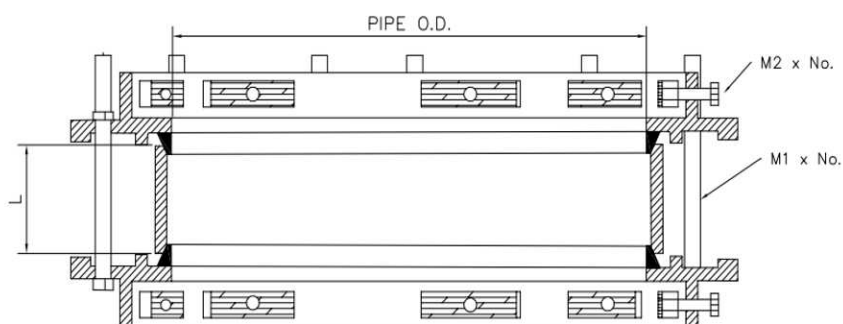
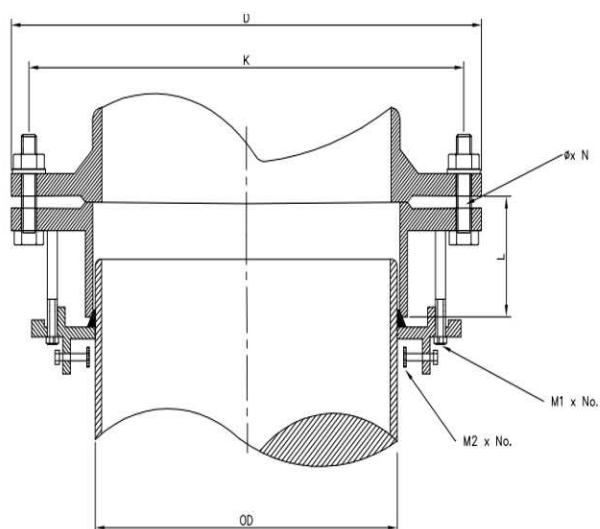


Product Specification

Sizes are available for the following pipe diameters:

Shouldered Coupling DN50 - DN300	DN (mm)	Pipe OD (mm)	Working Pressure BAR	Ring OD	Bolt size	L (mm)	H (mm)	ID (mm)	Approx. Mass(kg)
	50	60.3	4.0	97	M12x60	132	48	61.0	0.9
	80	88.9	4.0	127	M12x75	170	48	90.6	1.3
	100	114.3	3.5	156	M12x75	206	52	115.6	1.8
	150	165.1	3.5	212	M16x85	273	52	167.0	2.5
	200	219.1	3.0	280	M20x100	346	60	221.0	5.1
	250	273	2.5	342	M20x110	416	64	275.0	5.3
	300	323.9	2.5	396	M20x110	474	64	326.0	5.8

RESTRAINED COUPLINGS & FLANGE ADAPTORS



Product Specification

Sizes (mm) are available for the following pipe diameters: (PN16)

Restrained Fittings DN300 - DN1200	DN (mm)	Pipe OD (mm)	Outside Diameter (D)	PCD (K)	Sleeve Length (L)		Length Incl. Bolts (H)	Diameter x No. of Bolts	Bolt size M1 x No.		Bolt size M2 x No.		Notes	
		Ductile Iron			FA	C	FA	FA	FA	C	FA	C	FA	C
	300	326	455	410	140	118	200	28x12	M16x6	M12x6	M16x6	M16x6	Stepped	Straight
	350	378	520	470	100	118	170	28x16	M16x8	M12x8	M16x8	M16x8	Straight	Straight
	400	429	580	525	150	118	220	31x16	M16x8	M12x8	M16x8	M16x8	Stepped	Straight
	400	480	580	525	100	118	170	31x16	M16x8	M12x8	M16x8	M16x8	Straight	Straight
	450	532	640	585	100	118	170	31x20	M16x10	M12x10	M16x10	M16x10	Straight	Straight
	500	635	715	650	110	128	190	34x20	M16x10	M12x10	M16x10	M16x10	Straight	Straight
	600	738	840	770	110	128	190	37x20	M16x10	M12x10	M16x10	M16x10	Straight	Straight
	700	842	910	840	120	138	200	37x24	M16x12	M12x12	M16x12	M16x12	Straight	Straight
	800	945	1025	950	120	138	210	40x24	M16x12	M12x12	M16x12	M16x12	Straight	Straight
	900	1025	1125	1050	140	168	240	40x28	M16x14	M12x14	M16x14	M16x14	Straight	Straight
	1000	1048	1485	1170	140	168	240	43x28	M16x14	M12x14	M16x14	M16x14	Straight	Straight
	1200	1255	1685	1390	150	178	260	49x32	M16x16	M12x16	M16x16	M16x16	Straight	Straight

ALL DIMENSIONS ARE IN MILLIMETRES (mm)

TABLE 6

PIPE DN		mm	15	20	25	32	40	50	65	80	100	125	150	175	200	225	250	300	350	400	450	500	550	600	650	700	750	800	850	900	1000	1050	1100	1200	1300	1400	1500	1600	1800	2000	
		inches	0.5	0.75	1	1.25	1.5	2	2.5	3	4	5	6	7	8	9	10	12	14	16	18	20	22	24	26	28	30	32	34	36	40	42	44	48	52	56	64	72	80		
STEEL BS 1387		max	21.3	26.9	33.7	42.4	48.3	60.3	76.1	88.9	114.3	139.7	165.1																												
STEEL SABS 62 MEDIUM			21.7	27.2	34.2	42.9	48.8	60.8	76.6	89.5	114.9	140.6	166.1																												
STEEL SABS 719															219.1		273.1	323.9	355.6	406.4	457	508	559	610	660	711	762	813	864	914	1016	1067	1118	1219	1321	1422		1626	1829	2032	
STEEL ISO 4200 SER 1			21.3	26.9	33.7	42.4	48.3	60.3	76.1	88.9	114.3	139.7	168.3		219.1		273.0	323.9	355.6	406.4	457	508	610	711	813	914	1016	1067	1118	1219	1321	1422		1626	1829	2032		1626	1829	2032	
STEEL API 5 L			21.4	26.7	33.4	42.4	48.3	60.3	73.0	88.9	114.3	141.3	168.3		219.1		273.1	323.9	355.6	406.4	457.2	508	559	609.6	660.4	711.2	762	812.8	863.6	914.4	1016	1066.8	1117.6	1219.2	1320.8	1422.4		1625.6	1828.8	2032	
STEEL BS 3600/3601			21.4	26.8	33.6	42.3	48.3	60.4	76.1	88.9	114.3	139.7	168.3	193.7	219.1	244.5	273.0	323.9	355.6	406.4	457.0	508	559	610	660	711	762	813	864	914	1016	1219	1422		1626	1829	2032		1668	1875	2080
DUCTILE IRON ISO 2531 : BS 4772										98.0	118.0	144.0	170.0	222.0		274.0	326.0	378.0	429.0	480.0	532	635	738	842	945	1048						1255	1462		1637	1841	2045				
GRP (O.D. Can Vary by Manufacturer)		max								116	168			220.5		272.1	327	379	413	464	515	617	719	821	924	1025						1229	1433								
ASBESTOS CEMENT C.O.D. (South Africa)							69			96	122	150	177	232		286	345	426		507	587	667																			
ASBESTOS CEMENT C.I.D. (South Africa)	CL6																	378	430	483	535	638			744		850	956+	1062												
ASBESTOS CEMENT C.I.D. (South Africa)	CL12												168		222		274	328	382	436	488	543	651	760	868		976	1084													
ASBESTOS CEMENT C.I.D. (South Africa)	CL18												174		229		284	340	396	450	506	560	672	784	896		1008	1120													
ASBESTOS CEMENT C.I.D. (South Africa)	CL24												180		239		295	353	412	468	524	583	699	816	932																
ASBESTOS CEMENT C.I.D. (South Africa)	CL30												188		250		304	365	426	484	545	606	727																		
ASBESTOS CEMENT C.I.D. (South Africa)	CL36												196		262		318	378	440	503	566	629	755																		
ASBESTOS CEMENT METRIC BS 486	CL15												177		232	259	286	334	392	448	498	568	654	761		808	927	970													
ASBESTOS CEMENT METRIC BS 486	CL18								86	106	126				234		288	344	402	456	508	560	668	780		888		1000	1110		1214	1320	1430	1540	1650						
ASBESTOS CEMENT METRIC BS 486	CL20														232	259	286	345	405	463	515	586	672	780		830		952	996												
ASBESTOS CEMENT METRIC BS 486	CL25						69			96	122		177		240	268	295	356	419	478	532	605	598	691	703	801	807	852	912	977	1024	1121	1172	1277							
IMP CAST IRON ASBESTOS CEMENT	CL AB						55.9	69.1	82.3	95.5	121.9	149.9	177.3	204.7	232.2	259.1	286	333.8	378	439	492	545	613.7	650	720.3	755	826	860	964	1068	1143		1300.5								
IMP CAST IRON ASBESTOS CEMENT	CL CD						55.9	69.1	82.3	95.5	121.9	149.9	177.3	204.7	232.2	259.1	286	345.4	399.3	453.1	506.9	560.3	667	773.2		879.3		984.5	1090.2												

UPVC, MPVC, PE, HDP

THESE PIPES ARE QUOTED USING THE SAME DIMENSION FOR NOMINAL BORE AS PIPE OUTSIDE DIAMETER

16	20	25	32	40	50	63	75	90	110	125	140	160	180	200	225	250	280	315	355	400	450	500	560	630	710	800	900	1000	1200	1400	1600	1800	2000
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TO ASSIST US IN MAKING THE CORRECT PRODUCT SELECTION FOR YOU PLEASE PROVIDE AS MUCH OF THE FOLLOWING INFORMATION AS POSSIBLE

(I) PIPE OUTSIDE DIAMETER OR PIPE MATERIAL AND CLASS

(II) WORKING PRESSURE

(III) MATCHING FLANGE DRILLING FOR FLANGE ADAPTORS AND DISMANTLING JOINTS

(VI) AC PIPE SIZES ARE FOR REAMED ENDS

(IV) PRODUCT IN SYSTEM (WATER, SEWAGE, CHEMICALS, GAS, AIR, OIL ETC)

(V) FLUID / GAS TEMPERATURE IF AVAILABLE



NOTES

[illegible]

KLAMFLEX PRODUCT RANGE



Ranger Coupling



Ranger Stepped Coupling



Ranger Flange Adaptor



Ranger End Cap



Dedicated Coupling



Stepped Coupling



Dedicated Flange Adaptor



Stepped Flange Adaptor



Shoulder Coupling



Repair Clamp



Dismantling Joint



Special Ended Fitting



Gripper Coupling



Dedicated Coupling



Gripper Flange Adaptor



Restrained Flange Adaptor & Coupling

SABS
ISO 9001



WRAS
APPROVED
PRODUCT

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