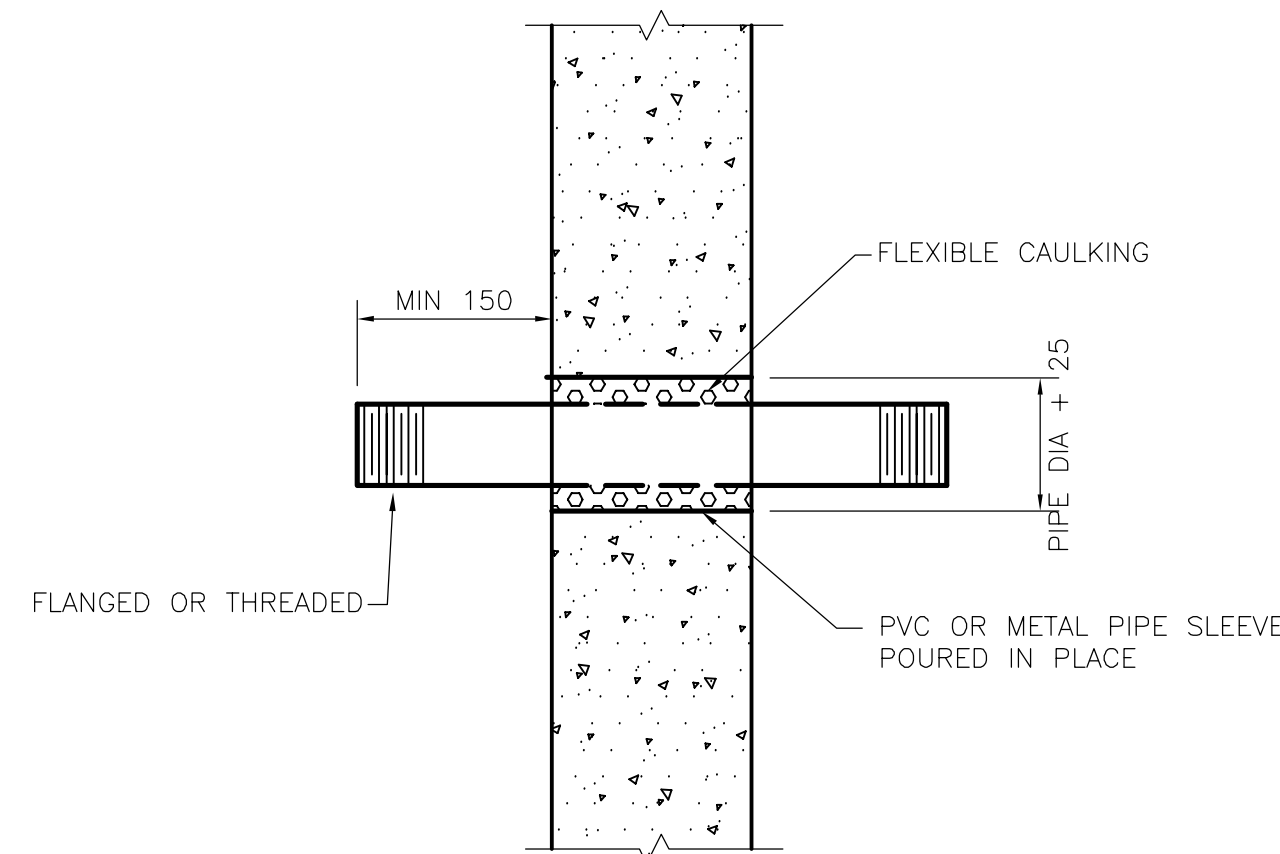


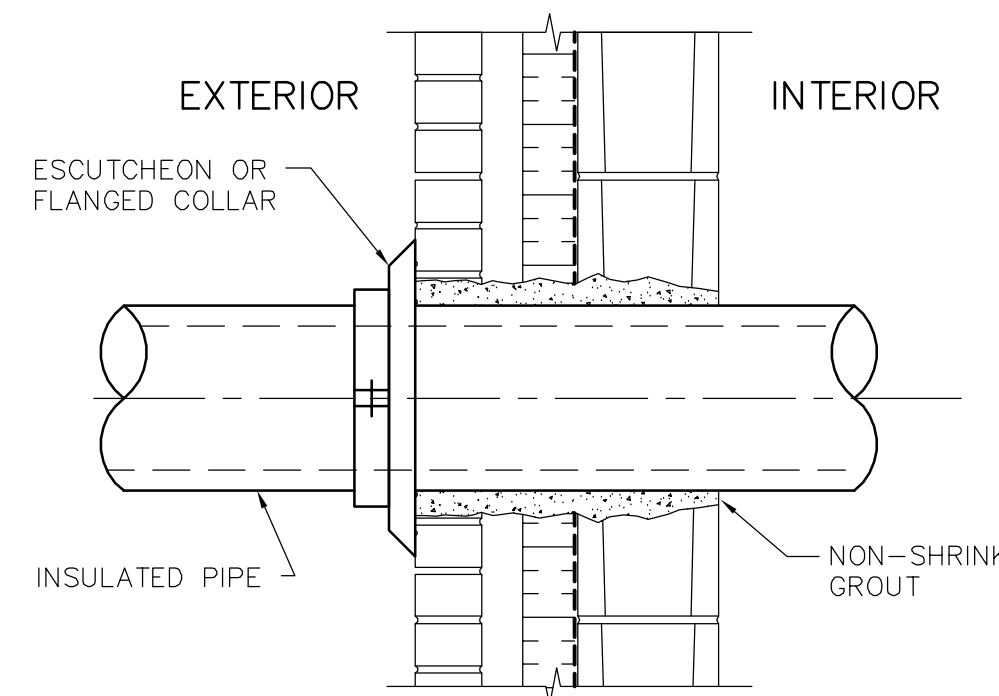
- APPLICATION NOTES**
1. CONCRETE WALL
 2. STEEL OR STAINLESS STEEL PIPE.
 3. CONDITION
 - a) WET TO DRY
 - b) WET TO WET
 - c) INTERIOR TO EXTERIOR
 4. NO TRANSVERSE MOVEMENT ALLOWED
 5. LIQUID SIDE MUST PASS LEAKAGE TEST TO WHICH STRUCTURE IS SUBJECTED.
 6. SAME DETAIL FOR VERTICAL OR HORIZONTAL WALL.
 7. PIPE MAY BE CAST IN PLACE WITHIN THE FORMWORK, WITH APPROVAL FROM THE ENGINEER.

STD 101 TYPE 1 WALL PENETRATION

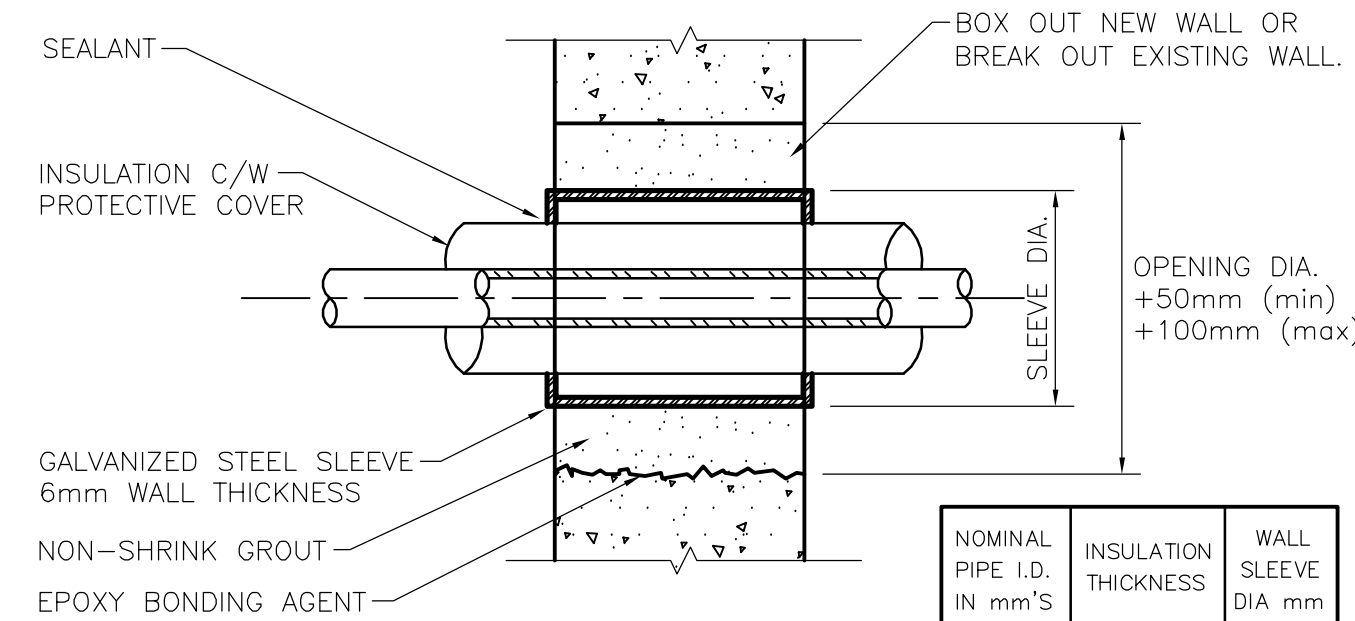


- APPLICATION NOTES**
1. CONCRETE WALL
 2. STEEL, DUCTILE IRON, PVC OR FRP PIPE; LESS THAN 75mm NOMINAL I.D.
 3. CONDITION
 - a) DRY TO DRY
 4. ALLOW TRANSVERSE MOVEMENT

STD 103 TYPE 3 WALL PENETRATION

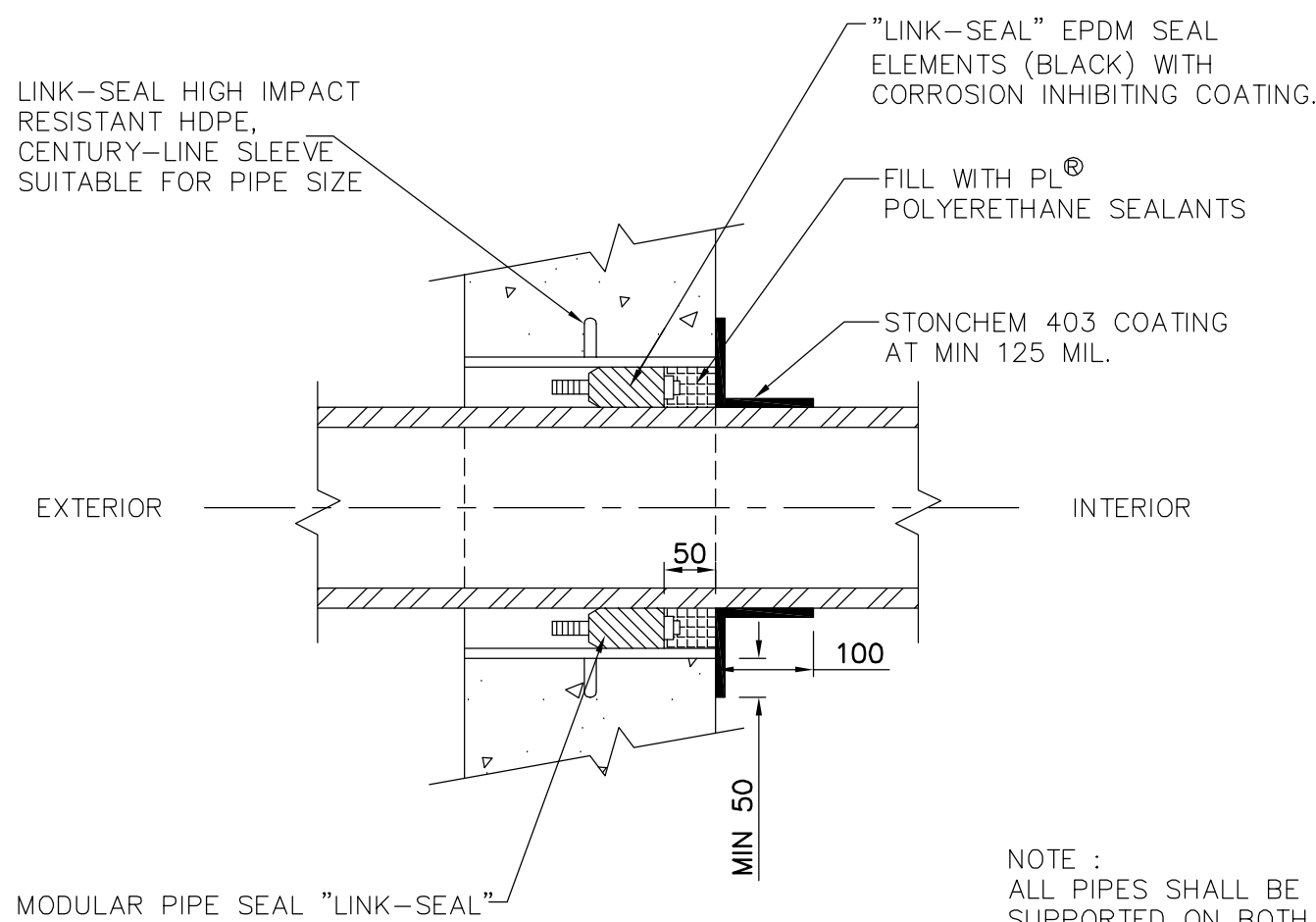


STD 104A WALL PENETRATION



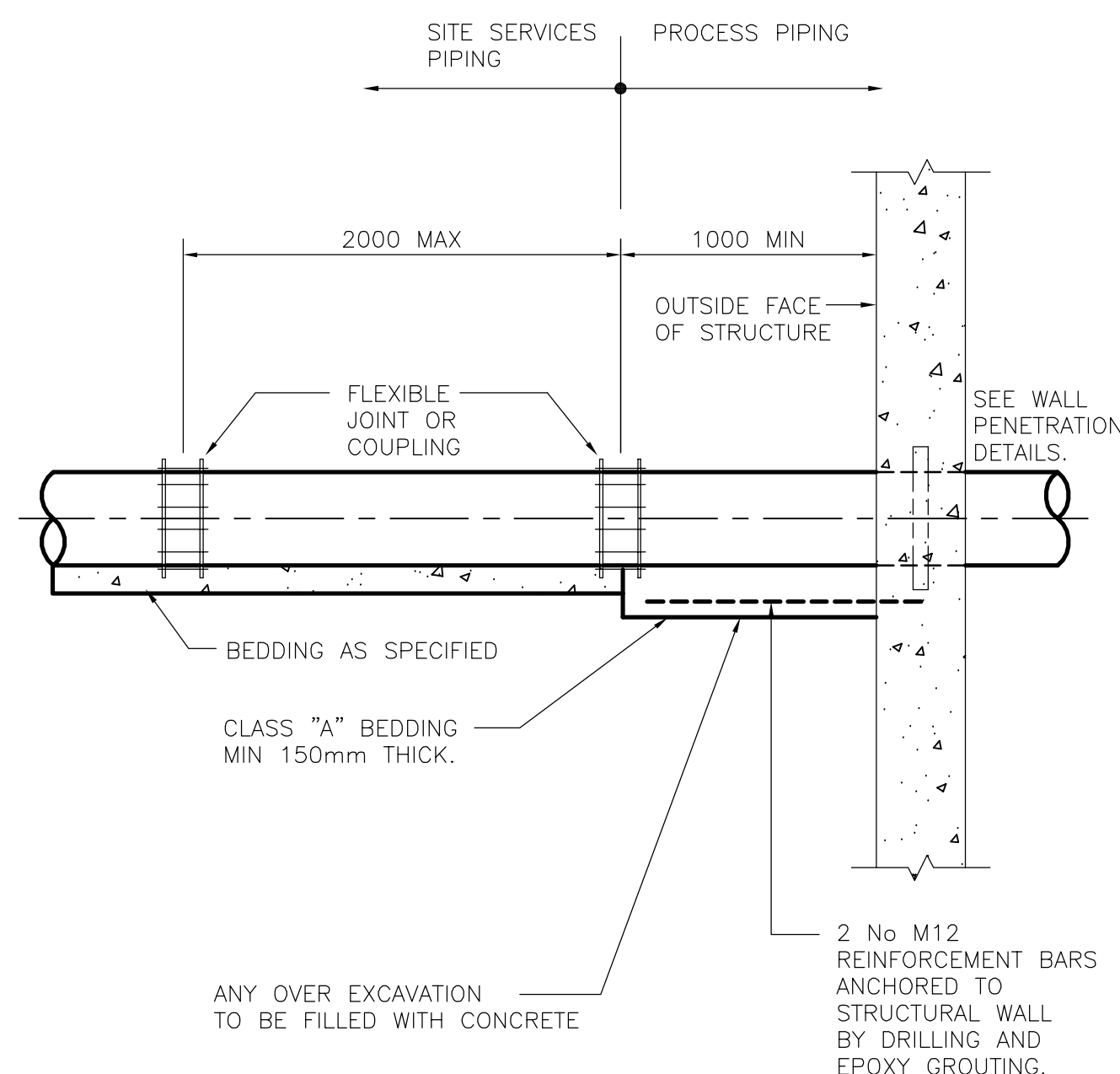
- APPLICATION NOTES**
1. CONCRETE OR MASONRY WALLS, NEW OR EXISTING.
 2. INSULATED PIPE
 3. CONDITION
 - a) DRY TO DRY

STD 104 TYPE 4 WALL PENETRATION

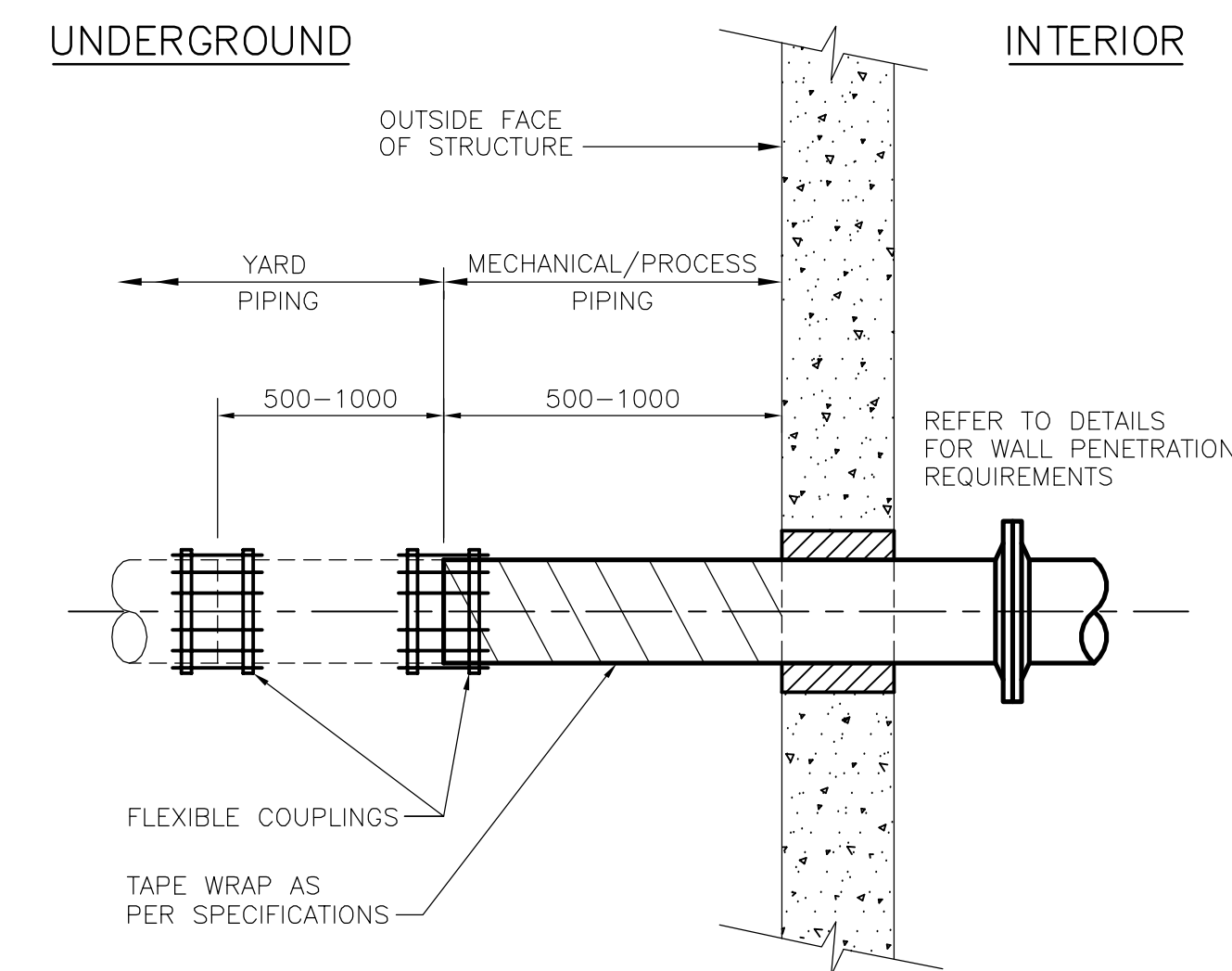


- APPLICATION NOTES**
1. CONCRETE WALL
 2. STEEL, STAINLESS STEEL, DUCTILE IRON, PVC OR FRP PIPE; NON-INSULATED.
 3. CONDITION
 - a) INTERIOR TO UNDERGROUND

STD 105A CHEMICAL RESISTANT PENETRATION



STD 107 SUPPORTED UNDERGROUND PIPE CONNECTION TO STRUCTURE



STD 108 UNDERGROUND PIPE CONNECTION TO STRUCTURE

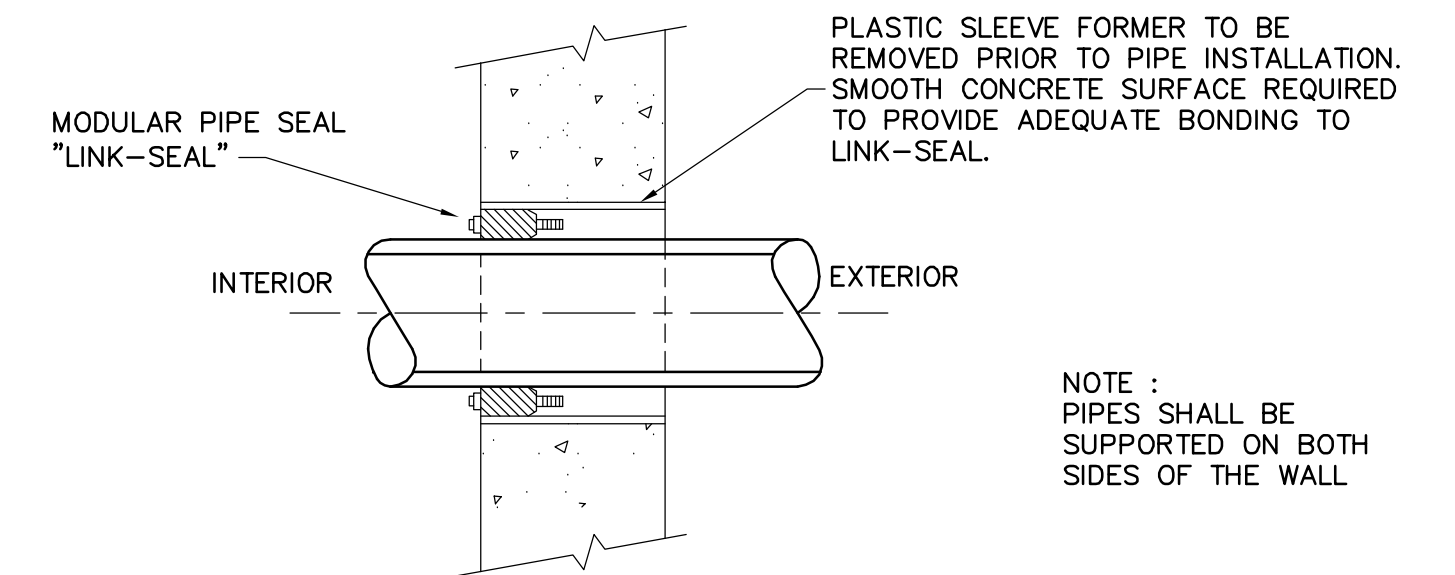


TABLE OF "LINK-SEAL" SERIES FOR STEEL PIPE (FOR OTHER SIZES SEE SUPPLIER'S TABLES)

STEEL PIPE SIZE	WALL SLEEVE I.D. mm	LINK-SEAL LINKS/SEAL	MODEL NO.	STEEL PIPE SIZE	WALL SLEEVE I.D. mm	LINK-SEAL LINKS/SEAL	MODEL NO.
13	21.3	52.5	4 LS-200-C	250	273.1	10	LS-425-C
20	26.7	62.7	5 LS-275-C	300	323.9	12	LS-425-C
25	33.4	62.7	5 LS-200-C	350	355.6	13	LS-400-C
32	42.2	77.9	7 LS-275-C	400	406.4	15	LS-400-C
38	48.3	90.1	5 LS-300-C	450	457.2	16	LS-500-C
50	60.3	102.3	6 LS-300-C	500	508.0	18	LS-400-C
75	89.0	128.2	8 LS-300-C	600	609.6	21	LS-500-C
100	114.3	154.1	10 LS-300-C	750	762.0	26	LS-500-C
125	141.3	202.7	6 LS-425-C	900	914.4	30	LS-500-C
150	168.3	254.5	7 LS-400-C	1050	1066.8	36	LS-500-C
200	219.1	304.8	12 LS-475-C	1200	1219.2	41	LS-500-C

- APPLICATION NOTES**
1. CONCRETE WALL
 2. STEEL, STAINLESS STEEL, DUCTILE IRON, PVC OR FRP PIPE; NON-INSULATED.
 3. CONDITION
 - a) DRY TO DRY
 - b) INTERIOR TO UNDERGROUND

NOTES:-
FOR PIPE DIAMETERS >200mm REFER TO MANUFACTURER FOR SPECIFIC DETAILS.
ALL LINK SEAL FITTINGS TO BE STAINLESS STEEL

STD 105 TYPE 5 - SINGLE LINK-SEAL WALL PENETRATION

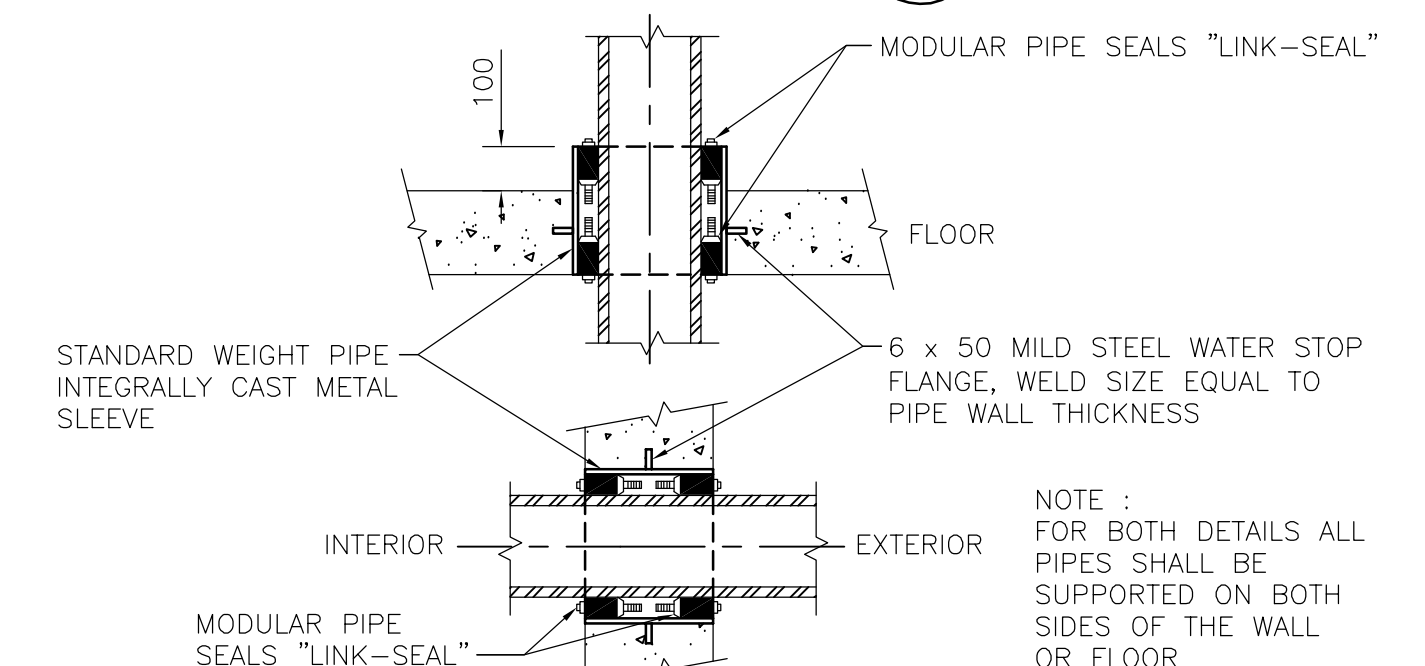


TABLE OF "LINK-SEAL" SERIES FOR STEEL PIPE - FOR OTHER SIZES SEE SUPPLIER'S TABLES

STEEL PIPE SIZE	WALL SLEEVE I.D. mm	LINK-SEAL LINKS/SEAL	MODEL NO.	STEEL PIPE SIZE	WALL SLEEVE I.D. mm	LINK-SEAL LINKS/SEAL	MODEL NO.
13	21.3	52.5	4 LS-200-C	250	273.1	10	LS-425-C
20	26.7	62.7	5 LS-275-C	300	323.9	12	LS-425-C
25	33.4	62.7	5 LS-200-C	350	355.6	13	LS-400-C
32	42.2	77.9	7 LS-275-C	400	406.4	15	LS-400-C
38	48.3	90.1	5 LS-300-C	450	457.2	16	LS-500-C
50	60.3	102.3	6 LS-300-C	500	508.0	18	LS-400-C
75	89.0	128.2	8 LS-300-C	600	609.6	21	LS-500-C
100	114.3	154.1	10 LS-300-C	750	762.0	26	LS-500-C
125	141.3	202.7	6 LS-425-C	900	914.4	30	LS-500-C
150	168.3	254.5	7 LS-400-C	1050	1066.8	36	LS-500-C
200	219.1	304.8	12 LS-475-C	1200	1219.2	41	LS-500-C

- APPLICATION NOTES**
1. CONCRETE WALL
 2. STEEL, STAINLESS STEEL, DUCTILE IRON, PVC OR FRP PIPE; NON-INSULATED.
 3. CONDITION
 - a) DRY TO DRY
 - b) INTERIOR TO UNDERGROUND

STD 109 TYPE 7 - DOUBLE LINK-SEAL WALL PENETRATION

<p>Certificate of Authorization Earth Tech Canada Inc. No. 730 Expiry: April 30, 2007</p>	B.M. ELEV.	<p>A Tyco International Ltd. Company</p>	ENGINEER'S SEAL	<p>THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT ENGINEERING DIVISION</p>	
	DESIGNED BY: LW		CHECKED BY: SB		ORIGINAL SIGNED BY: J.E. HUTCHISON
	DRAWN BY: SY		APPROVED BY: JEJ		2006/05/15
	SCALE: NONE		RELEASED FOR CONSTRUCTION BY: K. MARTENS		CONSULTANT DRAWING NO. P19.01
01 291-2006 ADDENDUM 3 06/07/12 LAE	DATE: 2006/01/16	DATE: 2006/05/15	NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY	CITY FILE NUMBER	
00 ISSUED FOR TENDER 06/05/15 SRP			PROCESS STANDARD DETAILS SHEET 1	SHEET OF	
NO. REVISIONS	DATE	DATE		CITY DRAWING NUMBER	