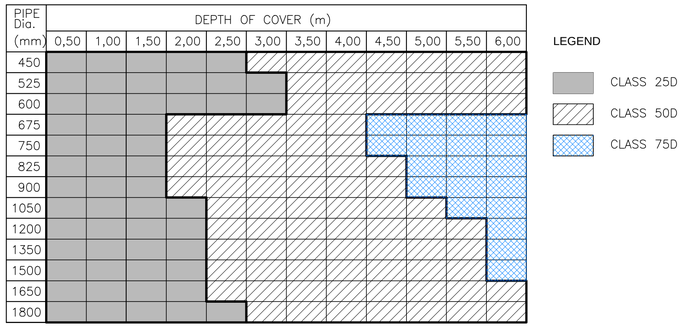
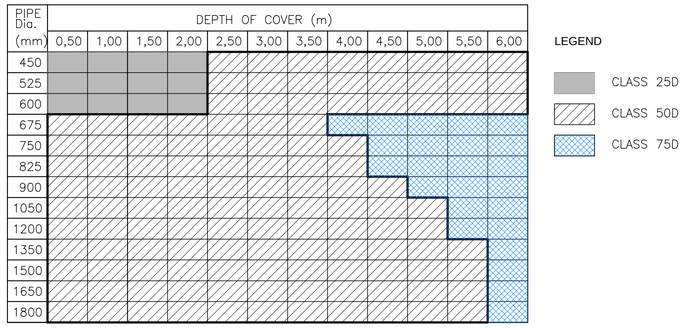
* SOIL TYPE 2: SLIGHTLY COHESIVE (SAND AND GRAVEL)
NO TRAFFIC LOAD.

CLASS A BEDDING (UNREINFORCED)



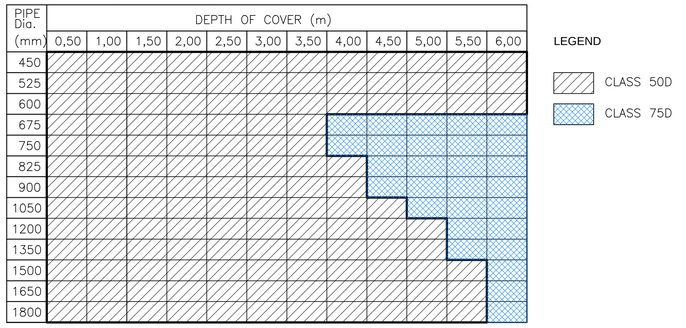
* SOIL TYPE 2: SLIGHTLY COHESIVE (SAND AND GRAVEL)
TRAFFIC LOAD: NB24 (MUNICIPAL ROADS AND STREETS, DISTRICT ROADS)

CLASS A BEDDING (UNREINFORCED)



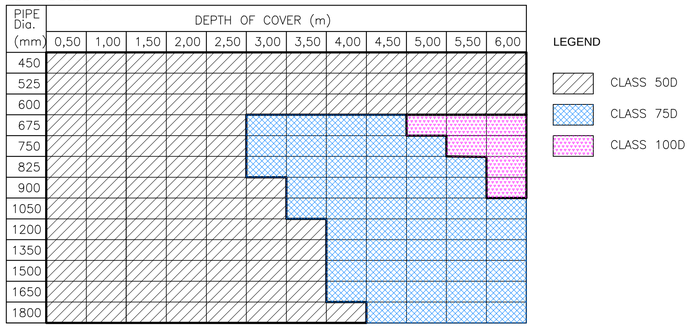
* SOIL TYPE 2: SLIGHTLY COHESIVE (SAND AND GRAVEL)
TRAFFIC LOAD: NB36 (NATIONAL HIGHWAYS AND ROADS, REGIONAL ROADS)

CLASS A BEDDING (UNREINFORCED)



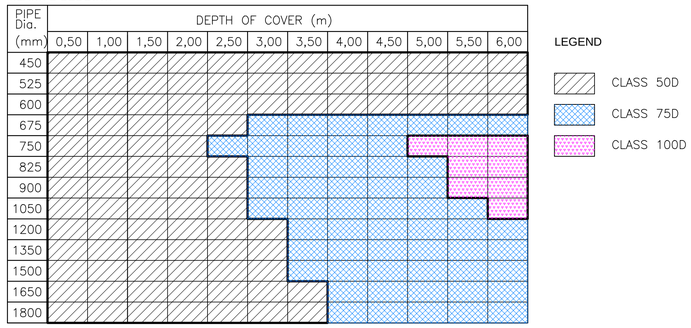
* SOIL TYPE 2: SLIGHTLY COHESIVE (SAND AND GRAVEL)
NO TRAFFIC LOAD.

CLASS B BEDDING



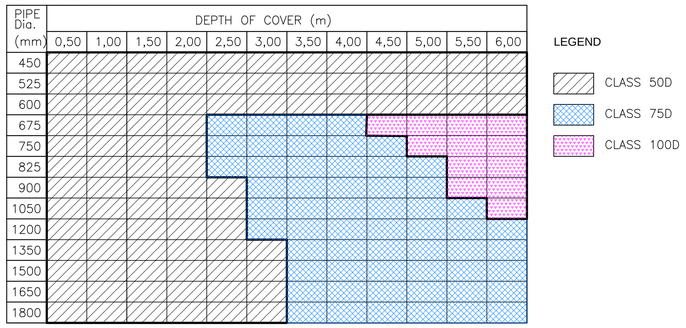
* SOIL TYPE 2: SLIGHTLY COHESIVE (SAND AND GRAVEL)
TRAFFIC LOAD: NB24 (MUNICIPAL ROADS AND STREETS, DISTRICT ROADS)

CLASS B BEDDING



* SOIL TYPE 2: SLIGHTLY COHESIVE (SAND AND GRAVEL)
TRAFFIC LOAD: NB36 (NATIONAL HIGHWAYS AND ROADS, REGIONAL ROADS)

CLASS B BEDDING



* For cohesive materials, the earth loading can be determined from the following:

DESIGN CRITERIA

1. BEDDING FACTORS

1.1 CLASS A: 2,6 (UNREINFORCED)
1.2 CLASS B: 2,0
1.3 CLASS C: 1.5
1.4 CLASS D: 1,1

2. LOAD COEFFICIENT Cd FOR SOIL GROUP 3: COHESIVE MATERIAL

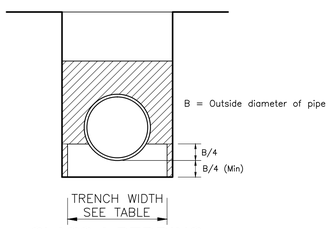
H/Bd	0,50	1,00	1,50	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50	6,00
Cd	0,46	0,83	1,14	1,40	1,62	1,79	1,94	2,06	2,16	2,24	2,31	2,37

3. PIPE LOADING DUE TO FILL

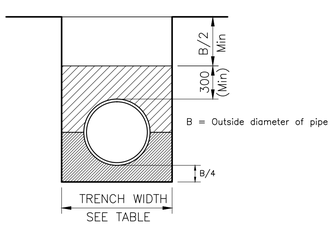
$W = Cd*GM*Bd^2$, where
W = Load/metre (kN/m)
Cd = Load coefficient
GM = Soil density (kN/m^3)
Bd = Trench width

4. PIPE CLASS REQUIRED

= Load/(Pipe Dia * Bedding factor)



CLASS A BEDDING



CLASS B BEDDING

AUTHORISED TRENCH WIDTHS

PIPE Dia.	TRENCH WIDTH
450	850
525	925
600	1000
675	1575
750	1650
825	1725
900	1800
1050	1950
1200	2100
1350	2250
1500	2400
1650	2550
1800	2700

1. GENERAL
1.1 THE DESIGN CHARTS ARE BASED ON THE REQUIREMENTS OF SABS 0102–1987: PART I AND PART II.
1.2 A UNIT WEIGHT OF FILL MATERIAL OF 20 kN/m^2 WAS USED.
1.3 THE SOIL TYPE AND PROPERTIES REFER TO TABLE 2 IN SABS 0102:PART I–1987.
1.4 THE TRENCH WIDTHS USED ARE IN ACCORDANCE WITH THE REQUIREMENTS IN PARAGRAPH 04.01 OF SECTION 201:GENERAL OF THE 'STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, 3rd EDITION, 2005.

ROADS AND STORMWATER
For Internal Approval
RECEIVED
SIGN WHEN APPLICABLE
DIRECTOR: INFRASTRUCTURE PROVISION — SIGNATURE — DATE
DIRECTOR: INFRASTRUCTURE CONSTRUCTION (PROJECT) MANAGEMENT — SIGNATURE — DATE
DIRECTOR: INFRASTRUCTUREASSET MANAGEMENT — SIGNATURE — DATE
DIRECTOR: TRANSPORT INFRASTRUCTURE PLANNING — SIGNATURE — DATE
DIRECTOR: INTELLIGENT TRANSPORT SYSTEN AND TRAFFIC ENGINEERING ENGINEERING — SIGNATURE — DATE
DIRECTOR: INFRASTRUCTURE MAINTENANCE MANAGEMENT (IMM) — SIGNATURE — DATE

0 10 20 40 60 80m
SCALE 1:1000

NOTES AND SPECIFICATIONS

AMENDMENTS

NR.	DATE	APPROVED	DESCRIPTION	PAR.

DESIGNED: P.A. ODENDAAL Pr.Eng. — SIGNATURE — DATE
DRAWN: S. AUDIE
DESIGN CHECKED BY: L.G. JOHANNES Pr. Eng. — SIGNATURE — DATE
INFRASTRUCTURE TECHNICAL INFORMATION MANAGEMENT: D.J. CHALMERS — SIGNATURE — DATE

PROJECT STATUS

○ CONCEPT DRAWING ○ TENDER DRAWING ○ APPROVED FOR CONSTRUCTION DRAWING ○ AS BUILT DRAWING

PROJECT ENGINEER (CONSULTANT)
INITIALS AND SURNAME — SIGNATURE AND Pr. No. — DATE
INSPECTOR OF WORKS (CITY OF TSHWANE):
INITIALS AND SURNAME — SIGNATURE AND Pr. No. — DATE

CONSULTANT DETAIL

CITY OF TSHWANE
ROADS AND TRANSPORT DEPARTMENT

Mr P. I. Letlonkane
STRATEGIC EXECUTIVE DIRECTOR
P.O. BOX 1409
PRETORIA
0001

Ms. L. V. Kegakilwe-Piki
EXECUTIVE DIRECTOR
P.O. BOX 1409
PRETORIA
0001

DRAWING APPROVED BY EXECUTIVE DIRECTOR
Ms. L. V. Kegakilwe-Piki
SIGNATURE: DATE:

LOCATION OF PROJECT:

TYPICAL STANDARD DETAILS

DESCRIPTION OF PROJECT

PIPE DESIGN TABLE:
CLASS SELECTION FOR RIGID BURIED PIPES IN TRENCH CONDITIONS

CONTRACT No. :
PROJECT No. :
DATE : MAY 2013
SCALE : AS SHOWN
ORIGINAL PAPER SIZE: A1
DRAWING NO. PLN003
SHEET NO: 1 OF 1
REVISION 0