



- NOTE:**
1. ALL DIMENSIONS IN MILLIMETRES.
 2. REINFORCEMENT AS PER STRUCTURAL DESIGN WITH 65 MINIMUM COVER.
 3. INSIDE SURFACE OF SEWER MANHOLE AND UNDERSIDE OF ROOF TO HAVE EPOXY COATING, PVC LINING OR P.E. LINING **AS PER HOROWHENUA COUNCIL ENGINEER REQUIREMENTS.**
 4. WALL THICKNESS TO SUIT DN, MANUFACTURING AND INSTALLATION METHODS, APPLIED LOADS, AND DURABILITY DESIGN REQUIREMENTS, BUT TO BE 150 MIN OR 225 MIN IN AGGRESSIVE SOILS, HIGH WATER TABLE, AND SALINE ENVIRONMENTS.
 5. ALL CAST IN SITU BENCHING AND HAUNCHING TO BE 30 MPa CONCRETE AT A BATTER OF 1V:2.5H.
 6. **ALL MANHOLES DEEPER THAN 900 TO BENCHING SHALL BE FITTED WITH 20 Ø STEP IRONS.**
 7. **ALL LATERALS SHALL ENTER WHERE PRACTICAL AT SAME SOFFIT LEVEL AS MAIN INCOMING PIPE.**
 8. **DOUBLE FLEXIBLE JOINTS, TWO WITHIN 750 OF ANY MANHOLES, TO BE INSTALLED WITH SN16 PVC PIPES (100mm AND 150mm). SIZE OF FLEXI VARIES WITH LARGER PIPES.**
 9. **ONE FLEXIBLE JOINT, ONE WITHIN 750 OF MANHOLES, TO BE INSTALLED WITH CONCRETE PIPES.**
 10. **STEPS TO BE ABOVE BENCHING WHERE POSSIBLE.**
 11. **ALL CONCRETE PIPES TO BE SAW CUT AND PIPE FACES COVERED WITH EPOXY RESIN / MORTAR.**
 12. **ANY SERVICES WITHIN NZTA ROAD CORRIDOR, MUST COMPLY WITH NZTA REQUIREMENTS.**
 13. **2m MAX DEPTH FOR 1050Ø MANHOLES.**

PIPE SIZE	MAXIMUM HORIZONTAL DEFLECTION AT CHAMBER	NOMINAL MANHOLE DIAMETER (SEE NOTE 5)	Ø 'C'
DN 375 - 450	45°	DN 1200	O.D. + 300
DN 500	45°	DN 1500, 1800	O.D. + 300
DN 750	45°	DN 1800	O.D. + 300

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HDC AMENDMENTS TO NZS 4404:2010 SHOWN IN BOLD.



STANDARD DRAWINGS
MANHOLES
STORMWATER OR WASTEWATER (DN 375-750)

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