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33 42 36

STORMWATER TRENCH DRAINS

* + - 1. Section 33 41 00 – Storm Utility Drainage Piping.
      2. Section 33 44 00 - Storm Utility Water Drains
    1. REFERENCE STANDARDS
       1. The European Committee for Standardization (CEN):
          1. EN 1433 – Drainage channels for vehicular and pedestrian areas. Classification, design and testing requirements, marking and evaluation of conformity.
  1. PRODUCTS
     1. MANUFACTURERS
        1. Manufacturer: Filcoten NDS, Inc., 851 North Harvard Avenue, Lindsay, California 93247. Toll Free 800-726-1994. Phone 559-562-9888. Toll Free Fax 800-726-1998. Fax 559-562-4488. Website [www.ndspro.com](http://www.ndspro.com). Email nds@ndspro.com.
        2. Single Source: Provide materials from single manufacturer.
     2. DRAINAGE CHANNEL SYSTEM
        1. **Drainage Channel System: “FILCOTEN pro 100 4””.**
           1. 4” Precast concrete drainage channels with concreted galvanized steel edges.
           2. Channel Body Material: Fiber-reinforced concrete composite.

Fiber Content: Minimum 0.4 percent by volume.

* + - * 1. Load Class: A15kN to E600kN.
        2. Tested: EN 1433.
        3. Certified: CE.
        4. Length per Section: 1,000 mm.
        5. Width:

Overall: 138 mm.

Nominal: 100 mm.

* + - * 1. Overall Height: 142 to 245 mm.
        2. Wall Thickness: 19 mm.
        3. Weight per Section without Grating:

Galvanized Steel Edges: 18.3 to 29.9 kg.

Specifier Notes: Specify without or with internal slope.

* + - * 1. Internal Slope: [Without slope] [0.5 percent].

Specifier Notes: Specify with or without bottom outlet.

* + - * 1. Bottom Outlet: [With] [Without].
        2. Cross Bars: None in channel cross section.
        3. Sealant Joints: Male side of channel body.
        4. Integrated Anchoring Ribs: For mechanical fixing in concrete casing.
        5. Surface:

Exterior: Rough for good adhesion to concrete casing.

Interior: Smooth for maximum discharge rate.

* + - * 1. Mineral-Based Material: 100 percent.
        2. Recyclable: 100 percent.
        3. Accessories:

Specifier Notes: Specify required accessories. Delete accessories not required.

Sump:

Material: Precast fiber-reinforced composite concrete with concreted edge matching channels.

Specifier Notes: Silt bucket and odor trap are optional. Delete if not required.

Silt Bucket: Plastic.

Odor Trap: Plastic.

Front and End Plates: DN100 [galvanized steel] [stainless steel], [with] [without] outlet.

No Hub Bottom Outlets: DN100 galvanized steel.

Rebar Supports: Galvanized steel.

Step Connector Plates: Galvanized steel.

Anti-vandalism Locking Device: Stainless steel.

* + - 1. **Drainage Channel System: “FILCOTEN pro 200” 8”.**
         1. 8” Precast concrete drainage channels with concreted galvanized steel edges.
         2. Channel Body Material: Fiber-reinforced concrete composite.

Fiber Content: Minimum 0.4 percent by volume.

* + - * 1. Load Class: A15kN to E600kN.
        2. Tested: EN 1433.
        3. Certified: CE.
        4. Length per Section: 1,000 mm.
        5. Width:

Overall: 238 mm.

Nominal: 200 mm.

* + - * 1. Overall Height: 265 to 365 mm.
        2. Wall Thickness: 19 mm.
        3. Weight per Section without Grating:

Galvanized Steel Edges: 44.0 to 62.7 kg.

Specifier Notes: Specify without or with internal slope.

* + - * 1. Internal Slope: [Without slope] [0.5 percent].

Specifier Notes: Specify with or without bottom outlet.

* + - * 1. Bottom Outlet: [With] [Without].
        2. Cross Bars: None in channel cross section.
        3. Sealant Joints: Male side of channel body.
        4. Integrated Anchoring Ribs: For mechanical fixing in concrete casing.
        5. Surface:

Exterior: Rough for good adhesion to concrete casing.

Interior: Smooth for maximum discharge rate.

* + - * 1. Mineral-Based Material: 100 percent.
        2. Recyclable: 100 percent.
        3. Accessories:

Specifier Notes: Specify required accessories. Delete accessories not required.

Sump:

Material: Precast fiber-reinforced composite concrete with concreted edge matching channels.

Specifier Notes: Silt bucket and odor trap are optional. Delete if not required.

Silt Bucket: Plastic.

Odor Trap: Plastic.

Front and End Plates: DN200 [galvanized steel] [stainless steel], [with] [without] outlet.

No Hub Bottom Outlets: DN200 galvanized steel.

Pipe Connectors: DN200 PVC.

Step Connector Plates: Galvanized steel.

Anti-vandalism Locking Device: Stainless steel.

* + - 1. **Drainage Channel System: “FILCOTEN pro 300” 12”.**
         1. 12” Precast concrete drainage channels with concreted galvanized steel edges.
         2. Channel Body Material: Fiber-reinforced concrete composite.

Fiber Content: Minimum 0.4 percent by volume.

* + - * 1. Load Class: A15kN to E600kN.
        2. Tested: EN 1433.
        3. Certified: CE.
        4. Length per Section: 1,000 mm.
        5. Width:

Overall: 360 mm.

Nominal: 300 mm.

* + - * 1. Overall Height: 360 to 460 mm.
        2. Wall Thickness: 19 mm.
        3. Weight per Section without Grating:

Galvanized Steel Edges: 74.3 to 107.7 kg.

Specifier Notes: Specify without or with internal slope.

* + - * 1. Internal Slope: [Without slope] [0.5 percent].

Specifier Notes: Specify with or without bottom outlet.

* + - * 1. Bottom Outlet: [With] [Without].
        2. Cross Bars: None in channel cross section.
        3. Sealant Joints: Male side of channel body.
        4. Integrated Anchoring Ribs: For mechanical fixing in concrete casing.
        5. Surface:

Exterior: Rough for good adhesion to concrete casing.

Interior: Smooth for maximum discharge rate.

* + - * 1. Mineral-Based Material: 100 percent.
        2. Recyclable: 100 percent.
        3. Accessories:

Specifier Notes: Specify required accessories. Delete accessories not required.

Sump:

Material: Precast fiber-reinforced composite concrete with concreted edge matching channels.

Specifier Notes: Silt bucket and odor trap are optional. Delete if not required.

Silt Bucket: Galvanized steel.

Odor Trap: Plastic.

Front and End Plates: DN200 [galvanized steel] [stainless steel], [with] [without] outlet.

No Hub Bottom Outlets: DN200 galvanized steel.

End Caps for Catch Basins: Connection cut-outs, galvanized steel.

Catch basin extension unit.

Pipe Connectors: DN200 PVC.

Step Connector Plates: Galvanized steel.

* + 1. GRATINGS

Specifier Notes: Specify required gratings. Delete gratings not required.

1. Grating for NW100: Reinforced slotted grating, galvanized, class A 15 kN.
2. Grating for NW100: Reinforced slotted grating, galvanized, class C 250 kN.
3. Grating for NW100: ADA Mesh grating, galvanized, class B 125 kN.
4. Grating for NW100: ADA Mesh grating, galvanized, class C 250 kN.
5. Grating for NW100: ADA HEELPROOF Perforated grating, galvanized, class A 15 kN.
6. Grating for NW100: ADA HEELPROOF Perforated grating, galvanized, class C 250 kN.
7. Grating for NW100: Ductile iron slotted grating, class E 600 kN.
8. Grating for NW100: ADA Ductile iron longitudinal grating, class D 400 kN.
9. Grating for NW100: ADA HEELPROOF Ductile iron longitudinal grating, class C 250 kN.
10. Grating for NW100: HEELPROOF Ductile iron grating KIARO class D 400 kN.
11. Grating for NW100: HEELPROOF Ductile iron grating VIA class D 400 kN.
12. Grating for NW100: HEELPROOF Ductile iron decorative grating VILLE, class E 600 kN.
13. Grating for NW100: ADA HEELPROOF COMBee grating, polyamide, class B 125 kN.
14. Grating for NW100: ADA HEELPROOF COMBee grating, polyamide, class C 250 kN.
15. Grating for NW200: ADA Mesh grating, galvanized, class B 125 kN.
16. Grating for NW200: ADA Mesh grating, galvanized, class C 250 kN.
17. Grating for NW200: ADA Mesh grating, galvanized, class D 400 kN.
18. Grating for NW200: ADA HEELPROOF Perforated grating, galvanized, class C 250 kN.
19. Grating for NW200: Ductile iron slotted grating, class E 600 kN.
20. Grating for NW200: ADA Ductile iron longitudinal grating, class D 400 kN.
21. Grating for NW200: HEELPROOF Ductile iron grating KIARO, class D 400 kN.
22. Grating for NW200: HEELPROOF Ductile iron grating VIA, class D 400 kN.
23. Grating for NW200: HEELPROOF Ductile iron decorative grating VILLE class E 600 kN.
24. Grating for NW300: ADA Mesh grating, galvanized, class C 250 kN.
25. Grating for NW300: Ductile iron longitudinal grating, class E 600 kN.
26. Grating for NW300: HEELPROOF Ductile iron grating KIARO, class D 400 kN.
27. Grating for NW300: HEELPROOF Ductile iron grating VIA, class D 400 kN.
28. Grating for NW300: HEELPROOF Ductile iron grating VILLE, class E 600 kN.
    1. EXECUTION
       1. EXAMINATION
          1. Examine areas to receive drainage channel system.
          2. Notify Architect of conditions that would adversely affect installation or subsequent use.
          3. Do not begin installation until unacceptable conditions are corrected.
       2. INSTALLATION
          1. Install drainage channel system in accordance with manufacturer’s instructions at locations indicated on the Drawings.
          2. Excavate trenches to ensure proper thickness of concrete beneath and on both sides of channels are maintained and are in accordance with specified load rating.
          3. Install drainage channel system to elevations and slopes indicated on the Drawings.
          4. Ensure directional flow arrows located on channels are pointing in direction of flow, toward catch basins and evacuation outlets.
          5. Install catch basins at elevations indicated on the Drawings.
          6. Apply silicon sealant to make joints watertight.
          7. Install temporary blank grate inserts to keep concrete, sediment, and debris out of channel drains during installation of drainage channel system.
          8. Concrete:
             1. Place concrete beneath and on both sides of drainage channel system in accordance with specified load rating and as indicated on the Drawings.
             2. Minimum Concrete Compressive Strength: 4,000 psi at 28 days.
             3. Concrete: Specified in Section 03 30 00.
          9. Recess Top of Drainage Channel System:
             1. Pedestrian Applications: 1/8 inch below concrete finish grade.
             2. Traffic-Bearing Applications: 1/4 inch below concrete finish grade.
          10. Allow concrete to cure to specified compressive strength.
          11. Ensure sediment and debris does not collect in drainage channel system.
          12. Install channel grates in accordance with manufacturer’s instructions to meet load rating.

END OF SECTION