Residential/Light Traffic Drywell Requirements

AUTHORIZATION:
City of Milwaukie Municipal Code Section 13.12.060(B) authorizes the use of drywells for the disposal of runoff water from roof rain drains and parking areas. The City may require percolation tests as proof that soil conditions are suitable for drywells.

INSTALLATION:
The installation of drywells shall meet or exceed the requirements of Chapter 11 of the Oregon Plumbing Specialty Code (OPSC) as authorized by ORS 447.020(2), April 1, 2000. Installation shall further be in accordance with City of Milwaukie standard drawing 613B for residential drywells and shall meet all specifications and requirements stated in this outline.

SIZES:
Drywells are intended to handle a known capacity of water based on the area in square feet being drained. The OPSC, Chapter 11, Section 1107, requires that reinforced concrete rings have a minimum inside diameter of twenty-eight (28) inches and a minimum depth of five (5) feet. Sizes larger than the minimum are determined by calculations for a specific drainage area. Larger sizes of rings for specific areas to be drained are shown on the attached drywell size chart.

MATERIALS:
Drywells within the city of Milwaukie shall be reinforced concrete rings, constructed to the dimensions and specifications shown on standard drawing 613B. All other materials shall meet the sizes and specifications shown on drawing 613B. The City may require certification by an independent testing laboratory as proof that all drywell materials meet the stated specifications.

PERMITS:
Property owners may install drywells on their own property if they do all of their own work. All contractors must provide proof that they are licensed by the State of Oregon and that they have a City of Milwaukie or Metro business license and a certificate of liability insurance. Any person seeking to install a drywell within the city of Milwaukie must first obtain a permit from the Building Department and pay all fees pertaining to such permit. Installation of a drywell without a permit is a violation of City Ordinance and may result in fines, additional fees, and the added expense for removal and disposal of unacceptable materials from the site.

INSPECTIONS:
Inspection and final approval of drywell installation and materials shall be by personnel of the City of Milwaukie Building Department. To avoid delays, requests for inspection must be made before 7:30 a.m. of the day inspection is desired. Call 503-786-7575.

Two inspections are required: (1) when excavation is complete, before placing drywell rings or any other materials, and (2) when filter fabric and drywell rings are in place, prior to placing drain rock.
PLAN

ROUND OR SQUARE ACCESS HOLE IN CENTER OF LID

24" MINIMUM NATIVE BACKFILL

CONCRETE BASE

DETAIL "A"

WEEP HOLE

DETAIL "B"

GEOTEXTILE FABRIC - AMOCO NONWOVEN GEOTEXTILE NO. 4545, OR APPROVED EQUAL

VARIABLE

SECTION A-A

NOTES:
1. ALL PRECAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF ASTM C 478.
2. INVERT SHALL BE LEVEL AND SMOOTH.
3. EDGE OF DRYWELL RINGS MUST BE LOCATED A MINIMUM OF TEN (10) FEET FROM ANY BUILDING FOUNDATION AND A MINIMUM FIVE (5) FEET FROM ANY PROPERTY LINE.

3"-6" CLEAN ROUND RIVER DRAIN ROCK

12" MIN.

SEE DETAIL "A"

5 3/4"

SEE DETAIL "B"

12" MIN.

CITY OF MILWAUKIE, OREGON - PUBLIC WORKS DEPT.

Drywell - Residential

DRAWING NO.

613B

APPROVED

12/14

NEW DRAWING

12/14

AIR
**Drywell Sizes**

<table>
<thead>
<tr>
<th>DRAINAGE AREA  (square feet)</th>
<th>2.33' Diameter* (28 inches) Depth shown in feet</th>
<th>2.5' Diameter (30 inches) Depth shown in feet</th>
<th>3.0' Diameter (36 inches) Depth shown in feet</th>
<th>4.0' Diameter (48 inches) Depth shown in feet</th>
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The above chart indicates the depth of drywell required to serve a specified drainage area. Diameters shown are those generally available from suppliers.

\[
\text{DEPTH} = \frac{(A \times 0.04 \text{ feet})}{[(\frac{1}{2} \text{ diameter})^2 \times \pi]}
\]

**NOTE:**

Preferred Maximum depth to diameter ratio is 6:1

Oregon P.S.C. requires minimum **inside** diameter of 28” and **min.** depth of 5.0 ft of **reinforced** concrete rings.
From the State of Oregon Plumbing Specialty Code (Effective April 1, 2000)

Section 1107.0 Dry Wells; Construction, Use and Limitations

1107.0 Dry Wells; Construction, Use and Limitations

1107.1 Construction. Where permitted by the Administrative Authority, dry wells may be used. The Administrative Authority may require soil percolation tests. When authorized, dry wells may be of reinforced concrete rings with an inside diameter of not less than twenty-eight (28) inches (0.7 m) with a minimum depth of five (5) feet (1.5 m), measured from the bottom to the top of the reinforced concrete cover and set on undisturbed soil. All dry wells shall be covered with at least two (2) feet (0.6 m) of compacted earth when measured from the top of the lid to the finished grade. When first approved by the Administrative Authority, dry wells may be constructed of brick or other approved material in of not less than four (4) inches (0.1 m) thickness. Brick or block may be assembled with or without openings, provided the openings on the outside of the dry well are not greater than three (3) inches (7.5 cm). This type of dry well shall have a brick arched top or an arched top of other approved materials.

1107.2 Location. No dry well shall be located closer than five (5) feet (1.5 m) of a property line nor closer than ten (10) feet (3 m) to any building unless approved by the Administrative Authority. Each drainage connection to a dry well shall be made at the top center of the lid by the use of an approved ninety (90) degree waste fitting. Support of piping shall be as required by Chapter 3 of this Code. Special permission may be granted to enter the side of the dry well when grade and structural conditions make top entrance impractical.

1107.3 Backfill. The particle size of the backfill surrounding a dry well shall be of sufficient size to prevent its incursion into the interior of the dry well. The backfill shall form a continuous layer around the dry well not less than six (6) inches (150 mm) in thickness and shall extend to the full height of the dry well.

Exception: When the dry well is installed in sandy-type soil an approved filter material shall be placed around the exterior of the liner to prevent infiltration of sand. The backfill shall be of native soil properly compacted.

1107.4 Abandonment. When required by the Administrative Authority, every drywell which has been abandoned or has been otherwise discontinued from further use shall be completely filled with earth, sand, gravel, concrete, or other approved material.
Drywell Materials Specifications & Suppliers

Specifications

Geotextile Filter Fabric

The following geotextile filter fabrics are approved "equals" for use in drywells within the city of Milwaukie. Fabrics manufactured by other suppliers, which meet or exceed the quoted specifications, are also acceptable if the City receives verifiable written specifications prior to installation.

<table>
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<tr>
<th></th>
<th>LINQ GTF 125EX</th>
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All three of the above fabrics meet ODOT requirements for Type I drainage geotextile.

Suppliers:

The following are lists of local suppliers who carry some or all of the required materials for drywells. These lists are provided as information only, and do not constitute recommendations.

Geotextile Filter Fabric

Note: Some suppliers will cut fabric to size, while others sell only full rolls. Ask before you buy!

ACF West Inc.
Geosynthetic Products
8951 SE 76th Dr.
Portland OR 97206
ph) 503-771-5115 fax) 503-771-1161
1-800-878-5115

ADS Advanced Drainage Systems Inc
3695 Truman St
Washougal WA 98671
ph) 1-360-835-8522 fax) 1-360-835-3822
1-800-733-8523

CSI Geosynthetics
3500 SE Columbia Way
Bldg 44 Suite 100
Vancouver WA 98661
ph) 1-360-699-1426 fax) 1-360-699-1344
1-800-426-7976

Familiar Northwest Inc
Clackamas Showroom
14600 SE 82nd Dr
Clackamas OR 97015
ph) 503-655-1911

Fowler HD Co Inc
15632 SE 102nd
Clackamas OR 97015
ph) 503-656-3900

Oregon Culvert Co
Tualatin Sherwood Rd
ph) 503-692-0410

United Pipe & Supply Co Inc
7600 SE Johnson Creek Blvd
Portland OR 97206
ph) 503-788-8813 fax) 503-788-9747
1-800-933-8813

Drywell Rings

Johnson Cement Products
6500 SE Johnson Creek Blvd
Portland OR 97206
ph) 503-774-2351

Others may be available

Drain Rock
Many suppliers—listed in yellow pages under "Rock"