

# F.19 Landscaping

- The designer is referred to **Appendix F.4.3** [water.phila.gov/development/stormwater-plan-review/manual/appendices/f-design-guidance-checklists/f-4-disconnected-impervious-cover/](http://water.phila.gov/development/stormwater-plan-review/manual/appendices/f-design-guidance-checklists/f-4-disconnected-impervious-cover/) for design requirements of Tree Disconnection Credits
- The designer is referred to **Appendix F.7** [water.phila.gov/development/stormwater-plan-review/manual/appendices/f-design-guidance-checklists/f-7-bioinfiltration-bioretention/](http://water.phila.gov/development/stormwater-plan-review/manual/appendices/f-design-guidance-checklists/f-7-bioinfiltration-bioretention/) for design requirements of Bioinfiltration/Bioretention basins.
- The designer is referred to **Appendix F.9** [water.phila.gov/development/stormwater-plan-review/manual/appendices/f-design-guidance-checklists/f-9-green-roofs/](http://water.phila.gov/development/stormwater-plan-review/manual/appendices/f-design-guidance-checklists/f-9-green-roofs/) for design requirements of Green Roofs.
- The designer is referred to **Appendix F.13** [water.phila.gov/development/stormwater-plan-review/manual/appendices/f-design-guidance-checklists/f-13-ponds-and-wet-basins/](http://water.phila.gov/development/stormwater-plan-review/manual/appendices/f-design-guidance-checklists/f-13-ponds-and-wet-basins/) for design requirements of Ponds and Wet Basins.

## F.19.1 Landscaping Material Standards

1. Verify that stone designed for stormwater storage is specified on the plans as being uniformly graded, crushed, clean-washed stone and that it is noted that PWD defines “clean-washed” as having less than 0.5% wash loss, by mass, when tested per the AASHTO T-11 wash loss test. AASHTO No. 3 and No. 57 stone can meet this specification. [Section 4.13.4, 1]
2. Verify that sand, if proposed, is specified on the plans to be AASHTO M-6 or ASTM C-33 sand and to have a grain size of 0.02 inches to 0.04 inches. [Section 4.13.4, 2]
3. Verify that the planting soil medium is specified on the plans as meeting the following specifications:
  - a. Planting soil should be a fertile, natural soil, free from large stones, roots, sticks, clods, plants, peat, sod, pockets of coarse sand, pavement and building debris, glass, noxious weeds including invasive species, infestations of undesirable organisms and disease causing pathogens, and other extraneous materials harmful to plant growth. [Section 4.13.4, 3a]
  - b. The texture of planting soil should conform to the classification within the United States Department of Agriculture triangle for Sandy Loam or Loamy Sand. Planting soil should be a mixture of sand, silt, and clay particles as required to meet the classification. Ranges of particle size distribution, as determined by pipette method in compliance with ASTM F-1632, are as follows: [Section 4.13.4, 3b]
    - i. Sand (0.05 to 2.0 mm): 50 – 85%
    - ii. Silt (0.002 to 0.05 mm): 40% maximum
    - iii. Clay (less than 0.002 mm): 10% maximum
    - iv. Gravel (2.0 to 12.7 mm): 15% maximum
  - c. Planting soil should be screened and free of stones larger than a half-inch (12.7 millimeters) in any dimension. No more than 10% of the soil volume should be composed of soil peds greater than one inch. [Section 4.13.4, 3c]

- d. Clods, or natural clumps of soils, greater than three inches in any dimension should be absent from the planting soil. Small clods ranging from one to three inches and peds, natural soil clumps under one inch in any dimension, may be present but should not make up more than 10% of the soil by volume. [Section 4.13.4, 3d]
  - e. The pH of the planting soil should have a range of 5.8 to 7.1. [Section 4.13.4, 3e]
  - f. Soluble salts should be less than 2.0 mmhos/cm (dS/m), typically as measured by 1:2 soil-water ratio basic soil salinity testing. Sodic soils (Exchangeable Sodium Percentage greater than 15 and/or Sodium Adsorption Ratio greater than 13) are not acceptable for use regardless of amendment. [Section 4.13.4, 3f]
  - g. Organic content of planting soil should have a range of 3% to 15%, by weight, as determined by loss on ignition (ASTM D2974). To adjust organic content, planting soil may be amended, prior to placing and final grading, with the addition of organic compost. [Section 4.13.4, 3g]
4. Verify that mulch, if proposed, is specified to be free of weeds and consist of aged, double-shredded hardwood bark mulch or leaf mulch that has been shredded sufficiently to limit risk of matting, which can limit surface infiltration rates. For hydroseeding, paper mulch may be used. Approved mulching materials include organic materials such as compost, bark mulch, leaves, as well as small river gravel, pumice, or other inert materials. Grass clippings should not be used as mulch. [Section 4.13.4, 4]
5. Verify that geotextile is specified on the plans to consist of polypropylene fibers and to meet the following specifications (AASHTO Class 1 or Class 2 geotextile is recommended): [Section 4.13.4, 5]
- a. Grab Tensile Strength (ASTM-D4632):  $\geq 120$  lbs
  - b. Mullen Burst Strength (ASTM-D3786):  $\geq 225$  psi
  - c. Flow Rate (ASTM-D4491):  $\geq 95$  gal/min/ft<sup>2</sup>
  - d. UV Resistance after 500 hrs (ASTM-D4355):  $\geq 70\%$
  - e. Heat-set or heat-calendared fabrics are not permitted
6. Verify that native grass/wildflower seed mix, if proposed as an alternative to groundcover planting, is free of weed seeds. [Section 4.13.4, 8]
7. Verify that the proposed plantings are indicated on the plans and are non-invasive. Refer to Appendix I for plant lists. [Section 4.13.4, 9]