

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

SUPPLEMENTAL SPECIFICATION

Section 812—Backfill Materials

Delete Section 812 and substitute the following:

812.1 General Description

This section includes the requirements for four types of material used as backfill: foundation backfill, Types I and II, imperfect trench backfill, Type III, and mechanically stabilized wall backfill.

812.1.01 Related References

A. Standard Specifications

[Section 810—Roadway Materials](#)

B. Referenced Documents

AASHTO T 27

[GDT 4](#)

[GDT 6](#)

[GDT 7](#)

[GDT 67](#)

[SOP 1](#)

812.2 Materials

812.2.01 Foundation Backfill, Type I

A. Requirements

1. Use natural or artificial mixtures of materials consisting of hard, durable particles of sand or stone, mixed with silt, clay and/or humus material for Type I backfill.

2. Have the final blend of material meet the requirements of Class I or II soils in [Subsection 810.2.01](#).

B. Fabrication

General Provisions 101 through 150.

C. Acceptance

Test as follows:

| Test | Method |
|-----------------|---|
| Soil gradation | GDT 4 |
| Volume change | GDT 6 |
| Maximum density | GDT 7 or GDT 67 |

D. Materials Warranty

General Provisions 101 through 150.

812.2.02 Foundation Backfill, Type II

A. Requirements

1. Type

Use material that meets the requirements of [Section 800](#), Class A or B aggregate, and [SOP 1](#). Crushed concrete may be used provided it meets the requirements of [Section 800](#) that are applicable to Group 2 Aggregates.

Do not use backfill aggregate containing soil or decomposed rock.

2. Gradation

Use material that meets the following gradation requirements:

| Sieve Size | % Passing by Weight |
|--------------------|---------------------|
| 1-1/2 in (37.5 mm) | 100 |
| 1 in (25 mm) | 80-100 |
| No. 8 (2.36 mm) | 0-5 |

B. Fabrication

General Provisions 101 through 150.

C. Acceptance

Test as follows:

| Test | Method |
|------|--------|
|------|--------|

| | |
|----------------|-------------|
| Sieve analysis | AASHTO T 27 |
|----------------|-------------|

D. Materials Warranty

General Provisions 101 through 150.

812.2.03 Imperfect Trench Backfill, Type III

A. Requirements

1. Type

Use material made from either of the following for Type III backfill:

- A natural soil with a density of less than 95 lb/ft³ (1520 kg/m³) when tested with [GDT 7](#)
- An artificial mixture of soil and organic material, such as hay, leaves, or straw

B. Fabrication

General Provisions 101 through 150.

C. Acceptance

The laboratory will:

Test the soil density with [GDT 7](#).

1. Review the mixture and the percentages of each material, and approve a mixture suitable for the Project.

D. Materials Warranty

General Provisions 101 through 150.

812.2.04 Mechanically Stabilized Embankment Backfill

A. Requirements

Use material comprised of crushed stone, natural sand, or a blend of crushed stone and natural sand free of soils, organic or any other deleterious substances that meet the following additional requirements:

1. Crushed Stone

Use a material manufactured from Class A or B stone that is free of soil overburden has a soundness loss of not more than 15 percent, and conforms to the requirements of [SOP 1](#).

2. Natural Sand

Use material that consists of strong, hard, durable particles, is non-plastic, and has a durability index of at least 70.

3. Gradation

| Sieve Size | % Passing by Weight |
|---------------|---------------------|
| 4 in (100 mm) | 100 |
| 2 in (50 mm) | 80 -100 |
| No. 10 (2 mm) | 20 - 90* |

| | |
|--------------------------------|--------|
| No 200 (75 µm) | 0 - 12 |
| * Natural Sand may be 20 - 100 | |

4. Chemical

Ensure the material meets the following chemical requirements:

| Test Method | Requirement |
|---|---------------|
| pH | 6.0 – 9.5 |
| Resistivity | >3000 ohms/cm |
| Chlorides | <100 ppm |
| Sulfates | <200 ppm |
| Note: These chemical requirements are not applicable to MSE walls stabilized with an approved extensible reinforcement. | |

5. Maximum Dry Density

Use backfill material with a maximum dry density equal to or greater than the design unit weight shown on the plans. If no maximum dry density of the backfill material is shown, use a weight of 125 lb/ft³ (2000 kg/m³).

B. Fabrication

General Provisions 101 through 150.

C. Acceptance

Test the material as follows:

| Test Method | Requirement |
|--|--|
| Percent Wear | AASHTO T96 ("A" Grading) |
| Sieve Analysis | AASHTO T 27 |
| Material Passing No. 200 (75 µm) Sieve | AASHTO T 11 |
| Durability Index | GDT 75 |
| Maximum Dry Density | GDT 7 or GDT 24a , GDT 24b |
| Soundness (Magnesium Sulfate) | AASHTO T 104 |

D. Materials Warranty

General Provisions 101 through 150.

