



# Florida Method of Test for Sampling of Post-Tensioned Tendon Grout

Designation: FM 5-618

## 1. SCOPE

- 1.1. Method covers the procedures for obtaining a proper sample and sample preparation of Post Tensioned (PT) tendon grout.
- 1.2. Use **FM 5-553** to obtain sulfate level from sample.

## 2. SAMPLES

- 2.1. Grout Sampling: Every effort should be made to obtain a grout sample that is representative of the bulk material. Obtain as much representative material as possible, not to exceed 100 g. Use clean tools and avoid contamination when gathering samples. The collected sample should be placed in plastic or plastic lined bags.
  - 2.1.1. Bagged Material: Sample from high port vent from the inclined tube test and allow to cure for 14 days.
  - 2.1.2. In-Service Tendon: Sample from a previously surveyed area of the PT tendon or obtain grout from a high point on the duct system. If new construction, allow 14 days curing time before testing.
- 2.2. Transporting Samples: Maintain samples in a cool dark area after sampling and during transport to test facility.
- 2.3. Storing Samples: Store samples at room temperature prior to analysis.



### 3. SAMPLE PREPARATION FOR SULFATE CONTENT DETERMINATION

- 3.1. If necessary, crush the sample to approximately 3/4" size using jaw crusher or other suitable device. Spread the sample in a thin layer on a clean tray and dry under ambient conditions until a constant mass is achieved, or dry in an oven at no higher than 140°F (60°C) for 24 hours or until a constant mass is achieved. Pulverize sample with mechanical pulverizer or another suitable device until it passes through a No.100 Mesh (150 um) sieve. Split the sample per **AASHTO R 76** to obtain  $25 \pm 1$  g.
- 3.2. Weigh  $5 \pm 0.1$  g of the dried powder and transfer it into a clean 250 mL beaker. Add 200 mL of deionized water to obtain 1:40 leaching volume; stir and cover with a watch glass.
- 3.3. Place the beaker on a hot plate set to  $135 \pm 5^\circ\text{F}$  ( $57 \pm 3^\circ\text{C}$ ) or in a hot water bath set to  $135 \pm 5^\circ\text{F}$  ( $57 \pm 3^\circ\text{C}$ ). Remove the sample after 18-24 hours.
- 3.4. Set up a 500 mL filter flask. Place a funnel on top of the flask. Fold and place a No. 42 filter paper in the funnel and connect the filter flask to a vacuum source.
- 3.5. Use deionized water in a wash bottle for all rinsing. Rinse any residue left on the stirring rod and on the underside of the watch glass into the filter funnel. Decant as much solution as possible through the filter and then rinse any residue from the beaker into the filter funnel.
- 3.6. Transfer the obtained solution to a 250 mL volumetric flask and add deionized water to bring to volume.

### 4. TESTING OF SAMPLES

- 4.1. Use **FM 5-553** to obtain sulfate level from sample.
- 4.2. Comply with **Sections 2, 3 and 6** of **FM 5-553**.