



MFR Bridge Structural Field Grouting Sampling Procedure

This document provides procedures for making and curing cylinder specimens from representative samples of fresh grout being placed on Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) bridges in the field.

Samples shall be taken during the field grouting processes for all MFLNRO (including BCTS) bridges incorporating field grouted structural connections. These include:

- precast concrete deck panels on steel or concrete girders, and
 - precast concrete slab girders with grouted shear key details.
1. Sampling of the grout shall occur at various times through the field grouting process, at roughly even intervals as the field grouting process progresses.
 2. The samples shall be taken using the MFLNRO supplied 50mm diameter X 100mm high plastic cylindrical molds.
 3. A minimum of 3 samples of each type of grout being used shall be taken using these procedures or as directed by the responsible Ministry Bridge Engineer.
 4. Where Target Traffic Patch is used, a minimum of 3 samples of each of the coarse and fine grout shall be taken. Coarse Traffic Patch grout is used in the shear connections on slab bridges and in shear stud connection pockets in precast deck panels; fine Traffic Patch grout is used in composite bridge deck panel joint bridge structures.
 5. Sampling procedure:
 - a. A sample of representative, fully mixed grout that is ready for placing shall be taken.
 - b. Fill a cylindrical mold approximately halfway with grout.
 - c. Tap the sides of the mold while rotating it to initially consolidate the material into the bottom of the mold.
 - d. Using a blunt non absorbent rod, approximately 15mm in diameter and 250mm in length (such as a spike head), uniformly over the cross section, rod the grout to the bottom of the mold 15 times to fully consolidate the material into the mold and eliminate voids.
 - e. Slightly overfill the mold with the second layer of grout, tapping the side of the mold while rotating it to consolidate the material into the mold and then rod 15 times, evenly distributing over the cross section, and approximately 13mm into the bottom layer, to fully consolidate the material into the mold and eliminate voids.
 - f. Strike off the top surface of the mold with a flat edge trowel, or other suitable straightedge, to remove excess grout and create a flat even surface.
 - g. Cover the mold with a damp cloth or paper towel and set the sample aside on site in a safe, flat location where the mold will not be disturbed for a minimum of 12 hours or overnight. The location should be representative of the conditions of the placed grout, such as on the deck of the grouted surface or on the inside flange of a steel girder. Longer field curing times prior to moving of the samples shall be at the discretion of the Ministry Bridge Engineer.
 - h. Ensure that a supplied, self adhesive, label is completed and placed on each grout sample.
 6. Grout samples shall be provided to the Ministry Bridge Engineer or provided to the individual identified in contract documents or specifications.