

FY 2020/2021 QC Category No. 11
STATEWIDE INSPECTION GUIDELIST
Mechanically Stabilized Earth (MSE) Walls

1. Review Mechanically Stabilized Earth (MSE) Wall Inspector's Handbook. [Good Practice]

MATERIALS

2. Confirm receipt of Certificate of Compliance for all materials including fill, panels, soil reinforcement, filter fabric, etc. Ensure all components (panels, reinforcement) are handled, stored, and shipped in a manner that prevents chipping, cracks, fractures, and excessive bending stresses. Ensure panels are supported during storage in such a way as to prevent bending on the attachment devices. Ensure geosynthetics are covered and protected from sunlight prior to placement and is properly stored to prevent damage. [Specs. 548-2, 548-5, 548-7]
3. Ensure all piles within the reinforced fill (soil volume) are wrapped with two independent layers of 6 mil plastic with lubricating oil between the layers. [Spec 459, Index 6020, Note 10]

SELECT BACKFILL

4. Ensure MSE wall select backfill material is tested at the source, and signed and sealed certification report is submitted to the Department prior to placement [Spec. 548-2]
5. Ensure MSE wall select backfill material is tested per type at point of placement, and reported to the Department electronic database (MAC).
6. Check that water used for soil compaction is in compliance with section 923 (No salt or brackish water). [Spec. 548-8]
7. Ensure the thick lift option for MSE Wall select backfill, if approved by the Engineer based on successful test wall results, is not compacted at no more than 10-inch lifts, otherwise, lifts shall not exceed 6 inches compacted. [Spec 548-8]
8. Prohibit excavations in close proximity in front of the wall once the wall construction has started without the designer's approval. Also, excavations in front of the wall should not be allowed without protection to the wall (i.e. sheet piles, etc.). [Good Practice]
9. Inspect the select backfill for proper placement and test the compaction of the fill in accordance with plans and specifications. [Spec. 548-9]

FOUNDATION

10. Confirm foundation has been prepared and compacted properly and that a leveling pad is provided per Contract Documents. [Spec. 548-8]

PANELS

11. Inspect precast panels for acceptance [Spec. 548-4].

12. Ensure that no panels with bent connector tabs are used. Review the installation of the panels including tolerances in accordance with contract documents. [Spec. 548-6]

13. Corner panels shall be used at all corners. If corner panels are not indicated on the plans, contact the Wall Design Engineer immediately. Verify vertical and horizontal alignment of the panels at regular intervals. The vertical alignment of the panels below the panels being installed may be affected by the compaction of the soil behind the panels being installed. Measure the overall plumbness regularly. [Spec. 548-8]

14. Wooden wedges should be removed as soon as the panel above the wedged panel is completely erected and backfilled. [Spec. 548-8].

SOIL REINFORCEMENT

15. Inspect soil reinforcement for compliance with design drawings and shop drawings (i.e. size, length, and type of material). [Spec. 548-2]

16. Inspect the proper placement of soil reinforcement. [Spec. 548-8]

17. Soil reinforcement should not be skewed more than 15 degrees from normal. If reinforcement needs to be skewed more than 15 degrees, notify the Wall Design Engineer. [Indexes 6020-6130]

18. Soil reinforcement near the top of the wall shall be parallel to the lifts of fill, unless a slight bending (within 15 degrees) is indicated in the shop drawings to accommodate a structure. Soil reinforcement shall not extend into subgrade that may require mechanical mixing. [Indexes 6020-6130]

19. Soil reinforcement shall not be cut unless shown in the contract documents or approved by the Engineer. [Index 6020]

JOINTS

20. Review that the filter fabric and the joint materials are acceptable. Ensure that MSE walls supporting bridge abutments on spread footings and MSE walls in which coarse aggregate reinforced backfill is used, geotextile fabric type D-2 is used in accordance with the specifications. When attaching filter fabric to the back of the panels, the adhesive shall be applied to the panel not the filter fabric. [Spec. 548-2]

COPING

21. Coping - If precast coping is used, ensure top panels have dowels that will extend into the cast-in-place Buildup concrete. [Indexes 6100 to 6130]. Ensure the placement of one-half inch minimum preformed expansion material between wall panels and cast-in-place concrete. [Spec. 548-2, Indexes 6100-6200].

FLOWABLE FILL

22. Ensure any metallic components of the wall is not in partial contact with the flowable fill. Metallic components must be completely encapsulated by the flowable fill. Use these guidelines above for both temporary and permanent walls. [Spec. 548-8]

23. At the end of each day's operation, the contractor shall shape the last level of backfill to permit runoff of rainwater away from the wall face or provide a positive means of controlling run off away from the wall such as temporary pipe, etc. [Spec. 548-6.5]