To be completed by Manufacturer

**Bridge Prequalified Products Listing (BPPL)**

**Mechanically Stabilized Earth Wall (MSE Wall) Systems**

**Checklist and Commentary :**

References for MoDOT MSE Wall Contract Requirements and Guidelines:

*Standard Specifications Sec 720*

*Bridge Standard Drawings: MSE Wall – MSEW*

*Engineering Policy Guide Articles 720 and 751.24*

**Manufacturer of MSE Wall System:** Click here to enter text.

**Date of Submittal:** Click here to enter a date.

**For prequalification of a proprietary mechanically stabilized earth wall system, the manufacturer or supplier shall submit a "Request for Qualification" to the department (E-mail** [**bppl@modot.mo.gov**](mailto:bppl@modot.mo.gov)**) which shall satisfactorily address the following items or explain why an item is not applicable. Please acknowledge review of an item by checkmark and give commentary that can either expand on the item details or explain its inapplicability.**

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| --- | --- | --- | --- |
| **Name of MSE Wall System, contact information and address:**  Click here to enter text. | | **For MoDOT**  **office use only**  **Needs**  **Approve More**  **Info\*** | |
|  | 1. Briefly describe system and system theory. Include description of components and any special features of system.  Comments: Click here to enter text. |  |  |
|  | 2.Indicate category of prequalification requested.   * Large Block Wall Systems * Small Block Wall Systems   Comments: Click here to enter text. |  |  |
|  | 3. Provide facing component type, dimensions, material properties and method of production.  Comments: Click here to enter text. |  |  |
|  | 4. Provide description and material properties of geogrid or soil reinforcement.  Comments: Click here to enter text. |  |  |
|  | 5. Provide list of all geogrid, or soil reinforcement tested as part of wall system.  Note: Verification shall include certification of test results. Untested reinforcement will not be permitted.  Comments: Click here to enter text. |  |  |
|  | 6. Provide where the system was developed and year it was developed/commercialized/ patented.  Comments: Click here to enter text. |  |  |
|  | 7. Provide internal quality control information (i.e. staff, department head qualifications, test facilities, and equipment). Describe the organizational structure, specifically engineering and construction support staff, for the manufacturer/supplier of the systems/ components.  Comments: Click here to enter text. |  |  |
|  | 8. Provide sample material and construction control specifications showing material type, quality, and certifications for system components.  Comments: Click here to enter text. |  |  |
|  | 9. Small block walls shall undergo tests to determine pullout resistance and strength of block/reinforcement facing connections in accordance with NCMA SRWU-1 or as modified in Appendix A of FHWA Publication No. FHWA SA-96-071. Small block walls shall undergo tests to determine inter-unit shear capacity in accordance with NCMA SRWU-2. If different testing is performed, then indicate how the test is equal to the testing indicated above.  Comments: Click here to enter text. |  |  |
|  | 10. Provide a well-documented manual describing construction in detail with a step-by-step construction sequence and placement procedure. Manual should include illustrations where necessary.  Comments: Click here to enter text. |  |  |
|  | 11. Provide company policy on technical assistance during review of design and construction stages. Provide qualifications of technical representatives.  Comments: Click here to enter text. |  |  |
|  | 12. Provide limitations and disadvantages including specific instances, if any, where the system should not be used.  Comments: Click here to enter text. |  |  |
|  | 13. Provide practical applications with descriptions, photos and a typical set of plans.  Comments: Click here to enter text. |  |  |
|  | 14. Provide list of users including names, addresses, email address and phone numbers of contacts and the dates when the systems were installed. Provide list of any DOTs which have approved the wall system or components. Give any height restrictions imposed by DOTs for your product. Provide list of any projects that have been completed in the last three to ten years and list any of those projects that have shown any distress or maintenance issues. Provide the maximum wall height (limit) based on your design criteria and maximum wall height built (when and where).  Comments: Click here to enter text. |  |  |
|  | 15. Provide typical unit costs supported by data from actual projects.  Comments: Click here to enter text. |  |  |
|  | 16. Provide details of wall elements including reinforcing steel and clearances to reinforcing steel. Provide details of connection between wall elements and soil reinforcement for a straight wall section and a corner section. Indicate the allowable range of wall batter. (MoDOT’s Large Block Wall Systems are required to be vertical walls. Each unit of a Large Block Wall System shall have an engineered mechanical anchorage as the primary method of support without relying on shear friction between wall units. This requirement is intended to address concerns with the difficulty of future panel replacements/repairs.) Provide cross section details for meeting seismic requirements in accordance with AASHTO Specifications. Provide the number of bearing pads and bearing size requirements at horizontal joints, including corner joints, based on panel size and wall height.  Comments: Click here to enter text. |  |  |
|  | 17. Provide design calculations for typical applications in conformance with latest AASHTO Specifications (Standard Specifications for Highway Bridges, 17th Ed., and AASHTO LRFD Bridge Design Specifications) for nonseismic and seismic load combinations. Include calculations for the analysis of the elements and connections including loads and factors of safety used in the design (Standard Specifications for Highway Bridges, 17th Ed.). Include calculations for the analysis of the elements and connections including factored loads, nominal bearing resistance, and resistance factors used in the design (AASHTO LRFD Bridge Design Specifications). Describe any unique design criteria, assumptions, or special considerations used in the design calculations. If computer analysis is included, then computer input/output must be supported by detailed hand calculations indicating analysis and detailed equations used to support the output.  Comments: Click here to enter text. |  |  |
|  | 18. Provide typical details showing how the top surface can be sloped to meet a given grade for the top of the wall. If the top surface must be stepped to accommodate the grade, indicate the minimum step and the typical step that can be used with the proposed system.  Comments: Click here to enter text. |  |  |
|  | 19. Provide details of coping and the method of attachment for both horizontal and sloping surfaces. In some cases, coping is specified at the top of large block (panel) walls for aesthetic reasons. This may be precast or cast in place.  Comments: Click here to enter text. |  |  |
|  | 20. Small block walls are required to have top cap units for aesthetic reasons. These may be precast or cast in place. Provide details of the top cap unit and the resin anchor system which permanently attaches the units (see Bridge Standard Drawing: MSE Walls – MSEW  http://www.modot.org/business/standard\_drawings2/mse\_wall\_new\_title\_block.htm). A resin anchor system is required for small block walls.  Comments: Click here to enter text. |  |  |
|  | 21. Provide details of how the gutter can be used on a grade without interfering with the soil reinforcement (see Engineering Policy Guide). In most cases a pre-cast gutter will be used behind the wall for drainage.  Comments: Click here to enter text. |  |  |
|  | 22. Provide a copy of latest shop drawings showing all required details, wall system cross section with concrete leveling pad and drain pipes, general notes, notes and block notes.  Comments: Click here to enter text. |  |  |

\* “Needs More Info” refers to insufficient information supplied, details are not in accordance with MoDOT MSE Wall Details or

Guidelines and should be revised in order to approve, or details should be rejected.

We would like your company to review our criteria, Bridge Standard Drawing (MSE walls – MSEW) and construction specifications related to MSE Walls and determine if any modifications/additions need to be made to your design and standard details to meet MoDOT requirements.

For Engineering Policy Guide, see link

<http://epg.modot.org/index.php?title=751.24_LFD_Retaining_Walls>

<http://epg.modot.org/index.php?title=Category:720_Mechanically_Stabilized_Earth_Wall_Systems>

For Bridge Standard Drawing see: MSE Walls – MSEW <http://www.modot.org/business/standard_drawings2/mse_wall_new_title_block.htm>

For gutter detail, see attached files:

[Type A and B Gutter](http://www.modot.org/business/standards_and_specs/documents/60900.pdf)          [Modified Type A and B Gutter](http://www.modot.org/business/standards_and_specs/documents/60711.pdf)

For construction specifications, see link

<https://www.modot.org/missouri-standard-specifications-highway-construction>

After a system is approved, any changes to the product must be re-submitted for re-approval in order to remain on the Bridge Prequalified Products List and before it is allowed for use on a MoDOT project. **This product may be removed from MoDOT’s Bridge Prequalified Products List for any of the following reasons**:

1. Failure to submit MSE Wall engineering updates in the form of computations and details;
2. Failure to meet MoDOT requirements or American Association of State Highway and Transportation Officials (AASHTO) code updates;
3. Any change in company ownership, address, contact information or name of product;
4. The system expires or the product is no longer produced;
5. Any modification or alteration of the product including, but not limited to, design, construction, material or process (including any specific note, any details requirements or block notes on manufacturer’s design plans/shop drawings as agreed upon during preapproval process) without MoDOT approval;
6. Poor product performance or safety issues as determined by MoDOT’s Structural Development and Support Engineer or Assistant State Bridge Engineer;
7. Failure to submit a *Certification of No Changes* due annually by January 31st.
8. When ownership changes, approval letter is no longer valid for previous owner. New owner shall confirm that there is no change in the product or procedure, and shall complete and submit a new checklist.

In the event that the Department determines this product should be removed from the prequalified products list, MoDOT will provide notice explaining the preliminary determination, as well as instructions for initiating an administrative review of the preliminary determination. Such notice will be provided to the owner of record at address on file with MoDOT via United States Postal Service Certified Mail and product will be removed from Bridge Prequalified Products List after 30 calendar days from the date of removal letter unless appealed by the MSE Wall system owner. If MSE Wall system owner decides to appeal within 30 calendar days from date of removal letter, then product will be put on hold status (no longer allowed to bid on any MoDOT project) in MoDOT’s Bridge Prequalified Products List until issues are resolved and meets the MoDOT requirements.

**After review by the department, the manufacturer will be notified in writing of commentary to be addressed before approval, approval of the system, or rejection of the system. Once all commentary has been addressed, the manufacturer must resubmit those modifications for approval of the system.**

The owner of MSE Wall system must certify the accuracy of the information provided and an acknowledgement of the annual recertification requirement and removal criteria.

Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Print Name and Title \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of the MSE Wall system: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| For MoDOT office use only | | | |
| Date of Receipt: Click here to enter a date. | | Date of Return Comments: Click here to enter a date. | |
| No Exceptions Taken | Incomplete Submittal | | Revisions Advised |