
DMS-4515

Multiple-Piece Tie Bars for Concrete Pavement

Effective Date: **June 2023**



1. DESCRIPTION

This Specification governs the **pre-qualification procedure, quality assurance, material requirements, and required documentation for** multiple-piece tie bars (MPTB) for concrete pavement.

2. MATERIAL PRODUCER LIST

The Materials and Tests Division (MTD) maintains the Material Producer List (MPL) of all materials conforming to the requirements of this Specification. Materials appearing on the MPL, entitled "[Multiple-Piece Tie Bar](#)," require project sampling and testing in accordance with **Section 5.1.**, "Project Sampling and Testing," before use.

3. BIDDERS' AND SUPPLIERS' REQUIREMENTS

The Department will only purchase or allow on projects those products listed by producer and product code or designation shown on the MPL.

Use of pre-qualified product does not relieve the Contractor of the responsibility to provide product that meets this Specification. The Department may inspect or test material at any time and reject any material that does not meet the specifications.

4. PRE-QUALIFICATION PROCEDURE

The Department will pre-qualify each specific combination of bar size, model, shape, dimensions, material composition, and manufacturing process independently of any other MPTB that the producer manufactures.

- 4.1. **Pre-Qualification Request.** Submit a **written** request **on company letterhead** for evaluation under DMS-4515 to DMS_Prequal@txdot.gov.

Include the following information in the request:

- company name;
- physical and mailing addresses;
- contact person, phone number, and email address; and
- product information such as bar size, up-threading, or any other distinguishing characteristics.

- 4.2. **Pre-Qualification Sample.** Submit 10 fully assembled **straight** specimens and one unassembled specimen for each specific combination of bar size, model, shape, dimensions, material composition, and manufacturing process to the Texas Department of Transportation, **Materials and Tests Division, Laboratory Building, 6230 E Stassney Ln., Austin, TX 78744.**

Include the following with each sample:

- completed [Form 1818](#) (a.k.a. Form D-9-USA-1), "Material Statement," with the proper attachments in accordance with Item 6, "Control of Materials," of the Department's *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*;

- written assembly instructions that the producer will provide to each Department project, including a list of required tools, any preparation that is needed, and torque ranges for proper assembly; and
- mill test reports for each size and grade of reinforcing steel used for the connecting bars.

Submit all materials for pre-qualification at no cost to the Department.

4.3. **Evaluation.** The Department will test assembled specimens in accordance with [Tex-712-I](#). If the producer submits test reports and there is any variance between the results of the producer and results of the Department, the Department's tests will govern. MTD will evaluate the results of all testing and will notify prospective producers after completion of material evaluation.

4.3.1. **Qualification.** If all 10 of the pre-qualification specimens meet the requirements of this Specification, MTD will add the product to the MPL.

Report changes, alterations, and revisions to the **source**, shape, dimensions, material composition, or manufacturing process of any material to MTD. Significant changes reported by the producer, as determined by MTD, may require a re-evaluation of performance. The Department reserves the right to conduct whatever tests it deems necessary to identify a pre-qualified material and determine if there is a change in the composition, manufacturing process, or quality that may affect its durability or performance. In case of variance, the Department's tests will govern.

4.3.2. **Failure.** Producers not qualified under this Specification may not furnish materials for use on Department projects.

Producers failing to qualify may submit a request for re-evaluation after **12 mo.** has elapsed from the date of the original request. MTD may modify this time limit at its discretion. In the request for re-evaluation, document the cause **for failing to meet the requirements of this Specification** and corrective action taken.

The Department normally bears the costs of sampling and testing; however, the producer will bear the costs associated with materials failing to conform to the requirements of this Specification **and any re-evaluation testing**. MTD will assess this cost at the time of testing and amounts due will be billed to the producer.

5. QUALITY ASSURANCE

The Department will sample and test MPTB for quality assurance from every Department project in which they are used. The Department also reserves the right to conduct periodic testing of all pre-qualified products and sizes.

5.1. **Project Sampling and Testing.** Project sampling of MPTB is required for every Department concrete pavement project in which MPTB are used.

5.1.1. **Project Sampling.** The Department will sample in accordance with [Tex-711-I](#).

5.1.2. **Project Testing.** The Department will test project samples in accordance with Article 6., "Material Requirements," of this Specification.

5.1.3. **Evaluation.** The Department will accept or reject stockpiles for a given Department project based on test results from properly sampled project specimens.

If more than one project specimen fails to meet the requirements of Article 6., "Material Requirements," the Department will conduct additional project sampling and testing. The Department will sample additional project samples in accordance with [Tex-711-I](#).

If any of the additional project specimens fail to meet the requirements of this Specification, the Department will reject the entire shipment of MPTB.

5.2. **Periodic Evaluation.** The Department reserves the right to conduct random sampling and testing of pre-qualified materials, including product of previously sampled and tested project lots, to verify performance and Specification compliance, to perform random audits of documentation, and to conduct unannounced visits to the producer's manufacturing facility. Department representatives may sample material from the manufacturing plant, machine shop, assembly location, the project site, and the warehouse. **The Department may also request samples for evaluation at any time from the producer.**

5.2.1. **Failure.** Failure of materials to comply with the requirements of this Specification, as a result of periodic evaluation, may be cause for removal of those materials from the MPL. In case of variance, the Department's tests will govern.

5.3. **Disqualification.** Any producer or product found to be in violation of this Specification is subject to removal from the MPL for that bar size.

Causes for disqualification and removal from the MPL may include, but are not limited to:

- falsification of documentation;
- producer fails to report changes, alterations, or revisions to the shape, dimensions, material composition, or manufacturing process to MTD;
- two consecutive project samples or random samples of the same bar size fail to meet the requirements of this Specification;
- material fails to meet the requirements of this Specification, as a result of periodic evaluation; or
- producer has unpaid charges for failing samples.

MTD will remove disqualified producers from the MPL and will not allow submission of material for re-qualification for **up to 12 mo. from the date of notification**, at the discretion of the Department.

5.4. **Re-Qualification.** Once the disqualification period established by MTD has elapsed, producers disqualified and removed from the MPL may begin the re-qualification process by submitting a request in accordance with Section 4.1., "Pre-Qualification Request," including additional documentation identifying the cause of the problem and corrective action taken. The re-qualification process will then follow all subsequent sections of Article 4., "Pre-Qualification Procedure."

The Department normally bears the costs of sampling and testing; however, the disqualified producer will bear the costs associated with re-qualification. MTD will assess this cost at the time of re-evaluation and amounts due will be billed to the producer.

6. MATERIAL REQUIREMENTS

6.1. **General Requirements.** All metal used in the final assembled MPTB must meet Buy America requirements. **Deformed steel bar reinforcement must meet the requirements of Item 440, "Reinforcement for Concrete."**

6.2. **Dimensions.** Provide MPTB **of the size and length stated in Table 1. Fabrication tolerance of the assembled length must be -0 in., +1 in.**

Table 1
MPTB Standard Dimensions

Bar Size	Assembled Length, in.
#4	33
#5	42
#6	50
#7	58

- 6.3. **Identification.** Affix a permanent label to the product by die stamping to identify the producer. Affix a label indicating the date of manufacture to each pallet shipped to a project.
- 6.4. **Tensile Strength.** Tensile strength testing will be in accordance with [Tex-712-I](#). Each specimen must develop at least 125.0% of the design yield strength of the deformed steel when tested in the assembled configuration.

7. SHIPPING

- 7.1. **Required Shipment Documentation.** Maintain copies of this documentation and make available to the Department upon request. Provide the following documentation with each shipment:
- completed [Form 1818](#) (a.k.a. Form D-9-USA-1), "Material Statement," with the proper attachments for the MPTB;
 - mill test report for the deformed steel bar reinforcement;
 - mill test report for the steel used to produce the coupler; and
 - written assembly and installation instructions provided by the manufacturer to Contractors for each type, model, bar size, and grade for which the coupler assembly is designed, including a list of required tools, bar preparation, and necessary torque ranges for proper assembly and installation.

8. ARCHIVED VERSIONS

Archived versions are available.