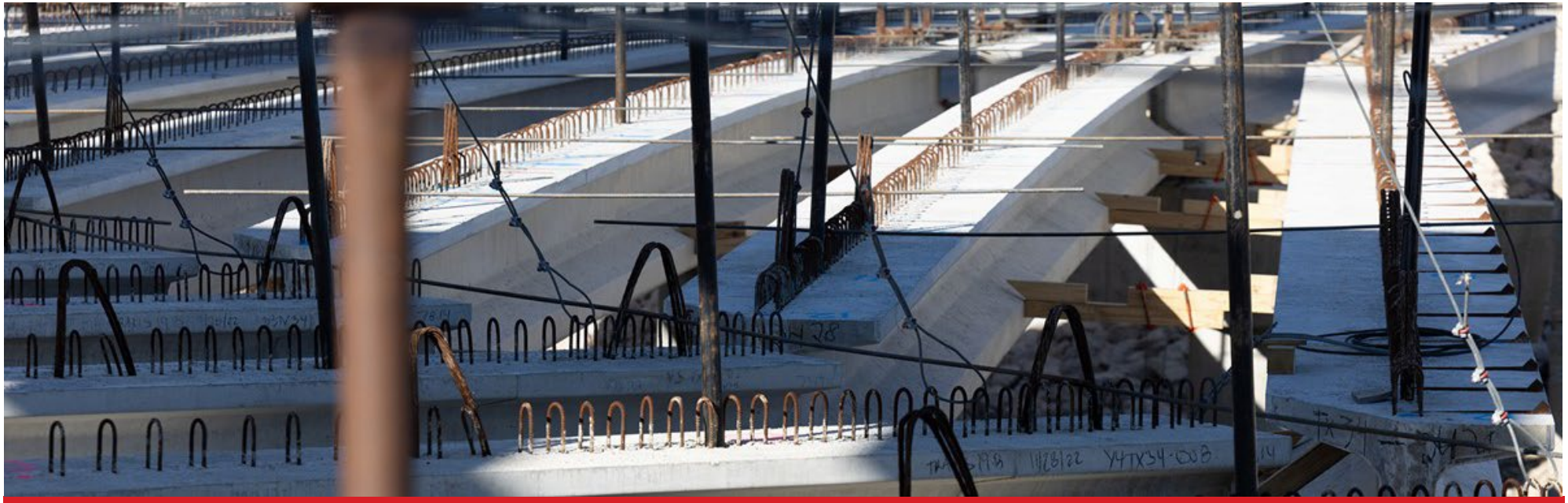

# Guide Schedule of Sampling and Testing for Design-Build Projects by the Independent Quality Firm (IQF)

August 2, 2024



Texas Department of Transportation

# Using the *DB Guide Schedule*

The Independent Quality Firm (IQF) will perform materials sampling at locations and timing defined in this *Guide Schedule of Sampling and Testing for Design-Build Projects by the IQF* (hereafter referred to as the *DB Guide Schedule*). This minimum testing frequency must be met with random independent or random split samples as defined in the *Quality Assurance Program for CDA / Design-Build Projects* (*DB QAP*), Section 3.2, "Sampling and Testing." During the startup of new categories of work and when there are any concerns regarding the quality of materials, the IQF will conduct sampling and testing at a higher frequency.

The IQF will determine random sample locations using ASTM D3665. While the testing of random independent or random split samples is required to meet the requirements of this *DB Guide Schedule*, the IQF will perform additional (fixed) tests when the quality of material is questionable at a location other than the randomly selected location. These fixed tests will constitute an acceptance test, and a failing result must be addressed in a similar manner to a failing random test. Fixed tests will not count toward meeting minimum IQF testing frequencies. The IQF will meet this *DB Guide Schedule* sampling and testing frequency for all materials (permanent and temporary) for each Specification item, grade, supplier, material, and test method combination established by TxDOT in its sole discretion. TxDOT will establish these combinations in a manner to differentiate materials that are required to meet various Specifications, produced and/or stored in separate physical locations, or as otherwise determined by TxDOT, in its sole discretion, for appropriate material acceptance purposes.

Research of sampling and testing rates listed for project tests in this *DB Guide Schedule* show that the risk of either rejecting "good" material or accepting "bad" material ranges from 20% to 40%. To reduce this risk, the sampling rate will be increased during initial production. A four-fold increase in testing frequency will generally reduce risk to approximately 5%. The intent of increasing testing at the start of production is to ensure that the DB Contractor's processes are in control and to establish acceptability requirements early.

The IQF can use results from TxDOT's Material Producer List (MPL). For materials listed on the MPL, the IQF will be required to perform job control tests as defined by the TxDOT *DB Guide Schedule*. Materials that are not monitored or not preapproved by TxDOT under the MPL are subject to IQF and Owner Verification Firm (OVF) sampling and testing as part of the acceptance program, except as noted in the remarks of this document. Materials not listed on the MPL require the Materials and Tests Division's (MTD's) testing and approval before these materials are used on the project. Non-preapproved materials must be sampled and tested in accordance with the applicable Departmental Material Specifications (DMSs), applicable material quality program, and Specifications. The IQF will audit and verify that materials delivered to the project site are in conformance with approved materials submittals. The IQF and TxDOT's designee will use approved laboratories from the MPL when applicable. Testing to be performed by MTD as noted in this document will be at the DB Contractor's expense. Testing charges will be based on rates in effect at the time MTD testing services are performed. TxDOT's *Inspection & Testing Rates* are published at https://ftp.txdot.gov/pub/txdot/mtd/inspection_testing.pdf.

When using materials or processes that are listed on the TxDOT MPL, the DB Contractor will furnish additional samples of materials to be incorporated into the work at TxDOT's request. Manufacturer's warranties, guarantees, instruction sheets, parts lists, and other materials that are furnished with articles or materials incorporated into the work will be made available to TxDOT upon request.

Other testing required by the Specifications but not shown in the *DB Guide Schedule* should be performed at a frequency required by the applicable DMS and applicable material quality program, and as necessary to provide adequate confidence that materials meet Specifications.

Note: The referee laboratory will be TxDOT MTD's central laboratory or MTD's designed independent third-party testing laboratory qualified in accordance with the *DB QAP*, Section 4, and approved in advance by MTD to serve as the referee laboratory for the project.

This is a guide for minimum sampling and testing.
Testing frequency may need to be increased for high material variability or when test results approach specification limits.

| TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING (D)** | **REMARKS** |
| EMBANKMENT (CUTS & FILLS) | Liquid Limit **(A)** | Tex-104-E | During stockpiling operations, from completed stockpile, or project site **(B)** | Materials with PI ≤15: 10,000 CY | For Type A embankment or when required by the plans. Determine a new liquid limit and plasticity index for each different material or notable change in material.<br>Sample in accordance with Tex-100-E. |
| | Plasticity Index **(A)** | Tex-106-E | | Materials with PI >15: 5,000 CY | |
| | Gradation | Tex-110-E | | Each 10,000 CY | When shown on plans.<br>Sample in accordance with Tex-100-E. |
| | Moisture/Density | Tex-114-E | | As directed by the IQF | Not required for ordinary compaction. Ordinary compaction shall not be used on main lanes.<br>Determine a new optimum moisture and maximum density for each different material or notable change in material.<br>Sample in accordance with Tex-100-E. |
| | In-Place Density **(A)** | Tex-115-E, Part I | As designated by the IQF | Fill: each 5,000 CY Min 1 per lift | Not required for ordinary compaction. Ordinary compaction shall not be used on main lanes.<br>Determine a new optimum moisture and maximum density according to Tex-114-E for each different material or notable change in material.<br>Correct the moisture contents measured by nuclear density gauge in Tex-115-E with the moisture contents determined in accordance with Tex-103-E, as necessary for control, for each different material or notable change in material, and adjust the density accordingly. |
| | | | | Cut: each 6,000 LF | |
| | Moisture Content (Roadway) **(A)** | Tex-115-E, Part I | As designated by the IQF | Fill: each 5,000 CY Min 1 per lift<br>Cut: each 6,000 LF | Not required for ordinary compaction. Ordinary compaction shall not be used on main lanes.<br>Correct the moisture contents measured by nuclear density gauge in Tex-115-E with the moisture contents determined in accordance with Tex-103-E, as necessary for control, for each different material or notable change in material, and adjust the density accordingly. |

| TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING (D)** | **REMARKS** |
| RETAINING WALL (NON-SELECT BACKFILL) | As shown above for EMBANKMENT (CUTS & FILLS) | | | | Sample in accordance with Tex-100-E. |
| RETAINING WALL (SELECT BACKFILL) | Plasticity Index **(A)** | Tex-106-E | During stockpiling operations, from completed stockpile, or project site **(B)** | Each 5,000 CY | Required only for Type CS backfill.<br>Test the fraction of material finer than the No. 200 sieve. Sample in accordance with Tex-100-E. |
| | Gradation | Tex-110-E | During stockpiling operations, from completed stockpile, or project site **(B)** | Each 5,000 CY | Required only for drainage aggregate.<br>Sample in accordance with Tex-100-E. |
| | | Tex-401-A | | | Required for select backfill.<br>Sample in accordance with Tex-100-E. |
| | Resistivity **(A)** | Tex-129-E | During stockpiling operations, from completed stockpile, or project site **(B)** | Each 5,000 CY | For material with resistivity between 1,500 ohm-cm and 3,000 ohm-cm, determine chloride and sulfate content, as specified in Item 423.<br>Sample in accordance with Tex-100-E. |
| | pH **(A)** | Tex-128-E | During stockpiling operations, from completed stockpile, or project site **(B)** | Each 5,000 CY | Sample in accordance with Tex-100-E. |

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| | | | PROJECT TESTS | | |
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| RETAINING WALL (SELECT BACKFILL) (continued) | Soundness | Tex-411-A | During stockpiling operations, or from completed stockpile | 1 per source | Test when backfill sources appear to contain particles such as shale; caliche; or other soft, poor-durability particles.<br>Micro-Deval test may be used instead of the soundness test when the Micro-Deval test results are not >20%.<br>Sample in accordance with Tex-100-E and submit to MTD for testing before use. |
| | Micro-Deval Abrasion | Tex-461-A | During stockpiling operations, or from completed stockpile | 1 per source | Test when backfill sources appear to contain particles such as shale; caliche; or other soft, poor-durability particles.<br>Micro-Deval test results may be used instead of soundness when test results are not >20%. When percent loss from Micro-Deval test is >20%, the magnesium soundness test covers aggregate verification.<br>Sample in accordance with Tex-100-E. |
| | In-Place Density **(A)** | Tex-115-E, Part I | As designated by the IQF | 1 per backfill lift, per wall | Not required for rock backfill.<br>For walls greater than 500 ft. in length, perform 1 test per lift for every 500 ft. in length. **(D)**<br>Correct the moisture contents measured by nuclear density gauge in Tex-115-E with the moisture contents determined in accordance with Tex-103-E for each different material or notable change in material, and adjust the density accordingly. |

| TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING (D)** | **REMARKS** |
| UNTREATED SUBGRADE | Uniformity: Dynamic Cone Penetration (DCP) **(A)** | ASTM D6951 | As designated by the IQF | 1 per 250-LF section (when using proof rolling)<br>1 per 250 LF or 1,000-LF section (when using IC data) **(D)** | When using proof rolling: Perform 1 test for every 250-LF section after proof rolling is complete in accordance with Item 216 and after unstable and rutted (>0.5 in.) areas are corrected.<br>When using proof mapping IC data: Perform 1 test for every 250-LF section of roadbed for those locations classified as "red-mapped," or as directed by the IQF. Perform 1 test for every 1,000-LF section of roadbed for non-"red-mapped" locations.<br>Perform testing on the final subgrade layer after curing per Specification requirements. |
| UNTREATED BASE COURSES | Liquid Limit **(A)** | Tex-104-E | During stockpiling operations, from completed stockpile, or windrow **(B)** | Each 5,000 CY | Sample in accordance with Tex-100-E. |
| | Plasticity Index **(A)** | Tex-106-E | During stockpiling operations, from completed stockpile, or windrow **(B)** | Each 5,000 CY | Sample in accordance with Tex-100-E. |
| | Crushed Face Count **(A)** | Tex-460-A, Part I | During stockpiling operations, or from completed stockpile | Each 20,000 CY | Required for Type C crushed gravel only. |

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| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING (D)** | **REMARKS** |
| UNTREATED BASE COURSES (continued) | Gradation **(A)** | Tex-110-E | During stockpiling operations, from completed stockpile, or windrow **(B)** | Each 5,000 CY | Sample in accordance with Tex-100-E. |
| | Moisture/Density | Tex-113-E | From completed stockpile at the source **(C)** | Each 20,000 CY | Ordinary compaction is not allowed.<br>Sample in accordance with Tex-100-E. |
| | Wet Ball Mill **(A)** | Tex-116-E | From completed stockpile at the source **(C)** | Each 20,000 CY | Required for Grades 1–2 and 5, and as shown on the plans for Grade 4.<br>Sample in accordance with Tex-100-E. |
| | Strength **(A)** | Tex-117-E | From completed stockpile at the source **(C)** | Each 20,000 CY | Required for Grade 1–Grade 2 and Grade 5, and as shown on the plans for Grade 4. When base material is from a source where the District has a record of satisfactory triaxial results, the frequency of testing may be reduced to 1 per 30,000 CY.<br>If any 1 test falls below the minimum value required, the frequency of testing will return to the original frequency of 20,000 CY.<br>Sample in accordance with Tex-100-E. |
| | In-Place Density **(A)** | Tex-115-E, Part I | As designated by the IQF | Each 3,000 CY Min 1 per lift **(D)** | Ordinary compaction is not allowed.<br>Correct the moisture contents measured by nuclear density gauge in Tex-115-E with the moisture contents determined in accordance with Tex-103-E, as necessary for control, for each different material or notable change in material, and adjust the density accordingly. |

| TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES | | | | | | |
|---|---|---|---|---|---|---|
| | | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING (D)** | **REMARKS** |
| UNTREATED BASE COURSES (continued) | | Moisture Content (Roadway) **(A)** | Tex-115-E, Part I | As designated by the IQF | Each 3,000 CY Min 1 per lift **(D)** | Ordinary compaction is not allowed.<br>Correct the moisture contents measured by nuclear density gauge in Tex-115-E with the moisture contents determined in accordance with Tex-103-E, as necessary for control, for each different material or notable change in material, and adjust the density accordingly. |
| | | Thickness **(A)** | Tex-140-E | As designated by the IQF | Each 3,000 CY Min 1 per lift **(D)** | |
| | | Ride Quality **(A)** | Tex-1001-S Surface Test Type B | Final riding surface of all travel lanes | Each travel lane | This section applies to the final travel lanes that receive a 1- or 2-course surface treatment for the final surface, unless otherwise shown on the plans. |
| TREATED SUBGRADE AND BASE COURSES | SUBGRADE BEFORE TREATMENT | Organic Content | Tex-148-E | As designated by the IQF | Min 1 per source, or more frequently as needed | Required for existing subgrade material and material imported from a borrow source. Soil survey and geologic maps may be used to determine sampling locations.<br>Higher testing frequency shall be performed when changes in the material are observed.<br>Sample in accordance with Tex-100-E. |
| | | Sulfate Content | Tex-145-E, Part II | As designated by the IQF | 1 per 500-LF section or 5,000 CY | Required for existing subgrade material and material imported from a borrow source. Soil survey and geologic maps may be used to determine sampling locations.<br>Sample in accordance with Tex-100-E. |
| | NEW BASE MATERIAL | Liquid Limit **(A)** | Tex-104-E | During stockpiling operations, from completed stockpile, or windrow **(B)** | Each 5,000 CY | When central mix site or plant is used, windrow sampling may be waived.<br>Sample in accordance with Tex-100-E. |

| TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES | | | | | | |
|---|---|---|---|---|---|---|
| | | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING (D)** | **REMARKS** |
| TREATED SUBGRADE AND BASE COURSES (continued) | NEW BASE MATERIAL (continued) | Plasticity Index **(A)** | Tex-106-E | During stockpiling operations, from completed stockpile, or windrow **(B)** | Each 5,000 CY | Sample in accordance with Tex-100-E. |
| | | Gradation **(A)** | Tex-110-E | During stockpiling operations, from completed stockpile, or windrow **(B)** | Each 5,000 CY | Sample in accordance with Tex-100-E. |
| | | Wet Ball Mill **(A)** | Tex-116-E | From completed stockpile at the source **(C)** | Each 20,000 CY | Required for Grade 1–Grade 2 and Grade 5, and as shown on the plans for Grade 4.<br>Sample in accordance with Tex-100-E. |
| | | Strength **(A)** | Tex-117-E | From completed stockpile at the source **(C)** | Each 20,000 CY | Required for Grade 1–Grade 2 and Grade 5, and as shown on the plans for Grade 4.<br>When base material is from a source where the District has a record of satisfactory triaxial results, the frequency of testing may be reduced to 1 per 30,000 CY. If any 1 test falls below the minimum value required, the frequency of testing will return to the original frequency of 20,000 CY. |
| | LIME | Compliance with DMS-6350 | Tex-600-J | During delivery to project | Commercial lime slurry: Each 200 ton of lime per source | Sample in accordance with Tex-600-J.<br>Verify the source is listed on the current MPL for commercial lime slurry. Only materials appearing on the MPL will be accepted.<br>Verify the sources for dry quicklime are listed on the MPL. If not on the MPL, sample the material at a rate of 1 per source and submit to MTD for testing before use. |

| TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES | | | | | | |
|---|---|---|---|---|---|---|
| | | | | PROJECT TESTS | | |
| MATERIAL OR PRODUCT | | TEST FOR | TEST NUMBER | LOCATION OR TIME OF SAMPLING | FREQUENCY OF SAMPLING (D) | REMARKS |
| TREATED SUBGRADE AND BASE COURSES (continued) | CEMENT | Compliance with DMS-4600 | | Railroad car, truck, or cement bins | | Verify the source is listed on the current MPL for cement. If not, sample in accordance with DMS-4600 and submit to MTD for testing before use. |
| | UNCOMPACTED MIXTURE | Pulverization Gradation | Tex-101-E, Part III | Roadway, after pulverization and mixing | As necessary for control | At the beginning of the project, 1 test must be made for each 4,500 CY or 6,000 ton until the IQF is satisfied that acceptable pulverization results are being obtained.<br>Sample in accordance with Tex-100-E. |
| | | Moisture/Density Curve and Strength | Tex-120-E, Part I and Part II, or Tex-121-E, Part I and Part II | From roadway windrow after treatment | Each 20,000 CY (or higher frequency as directed by TxDOT—see remarks) | Ordinary compaction is not allowed.<br>Determine a new moisture/density curve for each different or notable change in material.<br>Perform Tex-120-E, Part I and Part II, for cement-treated material, and Tex-121-E, Part I and Part II, for lime to verify M/D curve and UCS requirements.<br>For cement-treated base (CTB): A higher sampling and testing frequency of 1 test per day of production will be at TxDOT's sole discretion for CTB layers that are part of the pavement section.<br>Sample in accordance with Tex-100-E. |
| | | Moisture/Density Curve and Strength | Tex-120-E, Part I and Part II, or Tex-121-E, Part I and Part II | From roadway before treatment | As necessary for control | Perform Tex-120-E, Part I and Part II, for cement-treated material, and Tex-121-E, Part I and Part II, for lime-treated material.<br>Perform a new moisture/density curve for each different and notable change in material and at the direction of the IQF.<br>Sample in accordance with Tex-100-E. |

| TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES | | | | | | |
|---|---|---|---|---|---|---|
| | | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING (D)** | **REMARKS** |
| TREATED SUBGRADE AND BASE COURSES (continued) | COMPACTED MIXTURE | In-Place Density **(A)** | Tex-115-E, Part I | As designated by the IQF | Each 3,000 CY Min 1 per lift **(D)** | Ordinary compaction is not allowed.<br>Determine the appropriate moisture/density curve for each different material or notable change in material.<br>Correct the moisture contents measured by nuclear density gauge in Tex-115-E with the moisture contents determined in accordance with Tex-103-E, as necessary for control, for each different material or notable change in material, and adjust the density accordingly.<br>Stabilizers and materials such as RAP, gypsum, and iron ore tend to bias the counts for nuclear density gauges. |
| | | Mositure Content (Roadway) **(A)** | Tex-115-E, Part I | As designated by the IQF | Each 3,000 CY Min 1 per lift **(D)** | Ordinary compaction is not allowed.<br>Correct the moisture contents measured by nuclear density gauge in Tex-115-E with the moisture contents determined in accordance with Tex-103-E, as necessary for control, for each different material or notable change in material, and adjust the density accordingly. |
| | | Thickness **(A)** | Tex-140-E | As designated by the IQF | Each 3,000 CY Min 1 per lift **(D)** | |

| TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES | | | | | | |
|---|---|---|---|---|---|---|
| | | | | PROJECT TESTS | | |
| MATERIAL OR PRODUCT | | TEST FOR | TEST NUMBER | LOCATION OR TIME OF SAMPLING | FREQUENCY OF SAMPLING (D) | REMARKS |
| TREATED SUBGRADE AND BASE COURSES (continued) | COMPACTED MIXTURE (continued) | Uniformity: Dynamic Cone Penetration (DCP) (Treated Subgrade Layer Only) **(A)** | ASTM D6951 | As designated by the IQF | 1 per 250-LF section (when using proof rolling)<br>1 per 250 LF or 1,000-LF section (when using IC equipment) **(D)** | When using proof rolling: Perform 1 test for every 250-LF section after proof rolling is complete in accordance with Item 216 and unstable and rutted (>0.5 in.) areas are corrected.<br>When using proof mapping IC data: Perform 1 test for every 250-LF section of roadbed for those locations classified as "red-mapped," or as directed by the IQF. Red-mapped areas are locations not achieving at least 25% of the intelligent compaction measured value (ICMV). Perform 1 test for every 1,000-LF section of roadbed for non-"red-mapped" locations.<br>Perform testing on the final treated subgrade layer after curing per Specification requirements. |
| UNTREATED BASE COURSES | RECLAIMED ASPHALT PAVEMENT (RAP), CRUSHED CONCRETE, AND RECYCLED MATERIALS | Sulfate Content **(A)** | Tex-145-E, Part II | During stockpiling operations, from completed stockpile, or windrow **(B)** | Each 5,000 CY | Required only for DB-Contractor furnished recycled material, including crushed concrete.<br>Not required for RAP.<br>Sample in accordance with Tex-100-E. |
| | | Deleterious Material **(A)** | Tex-413-A | | Each 5,000 CY | Required only for DB-Contractor furnished recycled material, including crushed concrete.<br>Sample in accordance with Tex-100-E. |
| | | Decantation **(A)** | Tex-406-A | | Each 5,000 CY | Required only for DB-Contractor furnished RAP.<br>Sample in accordance with Tex-100-E. |

This is a guide for minimum sampling and testing.
Testing frequency may need to be increased for high material variability or when test results approach specification limits.

| TABLE I – EMBANKMENTS, SUBGRADES, BACKFILL, AND BASE COURSES | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| MATERIAL OR PRODUCT | TEST FOR | TEST NUMBER | LOCATION OR TIME OF SAMPLING | FREQUENCY OF SAMPLING (D) | REMARKS |

| TABLE I – FOOTNOTES | |
|---|---|
| **A** | When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Engineering Judgment Log. |
| **B** | The IQF will select any of these locations or any combinations thereof with the provision that the initial sample will be obtained from the completed stockpile at the source, and the following samples will be taken at the project site (from the windrow for treated and untreated bases and embankments). |
| **C** | The IQF will sample from the completed stockpile at the source and test before placement. |
| **D** | Each test performed that is based on a quantity of material (or section length) is considered "or fraction thereof" for calculating number of tests. |

| TABLE IA – ASPHALT-TREATED BASE (Plant-Mixed) | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING (B)** | **REMARKS** |
| AGGREGATE | Liquid Limit **(A)** | Tex-104-E | During stockpiling operations, from completed stockpile, or before mixing | Each 5,000 CY | Sample in accordance with Tex-100-E. |
| | Plasticity Index **(A)** | Tex-106-E | During stockpiling operations, from completed stockpile, or before mixing | Each 5,000 CY | Sample in accordance with Tex-100-E. |
| | Wet Ball Mill **(A)** | Tex-116-E | During stockpiling operations, from completed stockpile, or before mixing | 1 per source | Sample in accordance with Tex-100-E. |
| RECLAIMED ASPHALT PAVEMENT (RAP) AND RECYCLED AGGREGATE | Decantation | Tex-406-A, Part I | During stockpiling operations, from completed stockpile, or before mixing | Each 10,000 CY | Sample in accordance with Tex-100-E. |
| LIME | Compliance with DMS-6350 | Tex-600-J | During delivery to the project | Commercial lime slurry: Each 200 ton of lime per source **(B)** | Sample in accordance with Tex-600-J and submit to MTD for testing before use.<br>On projects requiring <50 ton per source, material from MTD-approved sources may be accepted on the basis of producer's certification without sampling.<br>Verify the sources for hydrated lime and quick lime are listed on the MPL. If not on the MPL, sample the material at a rate of 1 per source and submit to MTD for testing before use. |
| ASPHALT BINDER | Compliance with Item 300 | | Sampling port nearest the storage tank. Take project samples when designated by the IQF. | 1 per grade, per source | Test a minimum of 1 sample taken from the project. Sample binder in accordance with Tex-500-C, Part II.<br>Verify that the binder is from a preapproved source when it arrives at the project, and that the lab number on the shipping ticket is within the valid dates shown in the MTD QM test report. |

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Testing frequency may need to be increased for high material variability or when test results approach specification limits.

| TABLE IA – ASPHALT-TREATED BASE (Plant-Mixed) | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING (B)** | **REMARKS** |
| TACK COAT | Compliance with Item 300 | | Distributor | 1 per grade, per source | Test a minimum of 1 sample taken from the project. Sample tack coat in accordance with Tex-500-C, Part III.<br>Verify that the binder is from a preapproved source when it arrives at the project, and that the lab number on the shipping ticket is within the valid dates shown in the MTD QM test report. |
| MIX DESIGN VERIFICATION | Compliance with applicable Specification | Tex-204-F, Part IV | At source (if not approved) | Min 1 design per mix type and asphalt grade | Verify that aggregates, recycled asphalt pavement, mineral filler, asphalt binder, anti-stripping additives, and warm mix systems are on the MPL, where applicable, and that they meet project Specification requirements.<br>Project sampling and testing may be conducted on individual materials as necessary for control. |
| COMPLETE MIXTURE | Lab-Molded Density **(A)** | Tex-207-F, Part I and Part VI | Truck sample | 20,000 CY (25,000 ton) | Sample in accordance with Tex-222-F. |
| | Gradation **(A)** | Tex-200-F, Part I | Truck sample | 20,000 CY (25,000 ton) | Sample in accordance with Tex-222-F.<br>Determine the gradation of the aggregate from the complete mixture tested in accordance with Tex-236-F. |
| | Percent Asphalt **(A)** | Tex-236-F | Truck sample | Each 1,500 CY (2,000 ton) or days production | Determine correction factors for ignition oven using Tex-236-F once every 12 mo. or more frequently as needed.<br>Sample in accordance with Tex-222-F. |
| | Indirect Tensile Strength—Dry **(A)** | Tex-226-F | Truck sample | 1 per mix design | Sample in accordance with Tex-222-F. |
| | Moisture Content **(A)** | Tex-212-F, Part II | Truck sample | 1 per mix design | Sample in accordance with Tex-222-F. |
| | Moisture Susceptibility | Tex-530-C | As designated by the IQF | 1 per mix design | Sample in accordance with Tex-222-F. |

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| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING (B)** | **REMARKS** |
| ROADWAY | In-Place Air Voids **(A)** | Tex-207-F/Tex-227-F | Roadway cores, as designated by the IQF **(B)** | Each 3,000 CY Min 1 per lift | Ordinary compaction is not allowed. Sample in accordance with Tex-222-F. |
| | Ride Quality **(A)** | Tex-1001-S surface test Type A | On finished surface | As directed by IQF | When shown on the plans. |

| TABLE IA – FOOTNOTES | |
|---|---|
| **A** | When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Engineering Judgment Log. |
| **B** | Each test performed that is based on a quantity of material is considered "or fraction thereof" for calculating number of tests. |

| TABLE II – SEAL COAT | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING (B)** | **REMARKS** |
| AGGREGATE | Gradation **(A)** | Tex-200-F, Part I | Stockpile (at source or at point of delivery) | 1 per 1,000 CY, per source | Rate may be reduced to 1 each 2,000 CY if the IQF approves a DB Contractor quality control plan.<br>Sample in accordance with Tex-221-F. |
| | L.A. Abrasion **(A)** | Tex-410-A | Stockpile | 1 per source | Verify the published value of the source, as listed on the current BRSQC, meets the project Specifications. If not, sample 1 per 20,000 CY in accordance with Tex-221-F and submit to MTD for testing before use. |
| | Magnesium Soundness **(A)** | Tex-411-A | Stockpile | 1 per source | Verify the published value of the source, as listed on the current BRSQC, meets the project Specifications. If not, sample 1 per 20,000 CY in accordance with Tex-221-F and submit to MTD for testing before use. |
| | Surface Aggregate Classification **(A)** | Tex-612-J, Tex-411-A | Stockpile | 1 per source | Verify the published value of the source, as listed on the current BRSQC, meets the project Specifications. If not, sample 1 per 20,000 CY in accordance with Tex-221-F and submit to MTD for testing before use. |
| | Pressure Slake **(A)** | Tex-431-A | Stockpile | 1 per source | Required only for lightweight aggregate.<br>Verify the published value of the source, as listed on the current BRSQC, meets the project Specifications. If not, sample 1 per 20,000 CY in accordance with Tex-221-F and submit to MTD for testing before use. |
| | Freeze Thaw **(A)** | Tex-432-A | Stockpile | 1 per source | Required only for lightweight aggregate.<br>Verify the published value of the source, as listed on the current BRSQC, meets the project Specifications. If not, sample 1 per 20,000 CY in accordance with Tex-221-F and submit to MTD for testing before use. |
| | Unit Weight | Tex-404-A | Stockpile | 1 per source | Required only for lightweight aggregate.<br>Verify the published value of the source, as listed on the current BRSQC, meets the project Specifications. If not, sample 1 per 20,000 CY in accordance with Tex-221-F and submit to MTD for testing before use. |

| TABLE II – SEAL COAT | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING (B)** | **REMARKS** |
| AGGREGATE (continued) | 24-hr. Water Absorption **(A)** | Tex-433-A | Stockpile | 1 per source | Required only for lightweight aggregate.<br>Verify the published value of the source, as listed on the current BRSQC, meets the project Specifications. If not, sample 1 per 20,000 CY in accordance with Tex-221-F and submit to MTD for testing before use. |
| | Crushed Face Count | Tex-460-A, Part I | Stockpile | 1 per 20,000 CY | Only required for crushed gravel.<br>Sample in accordance with Tex-221-F. |
| | Deleterious Material **(A)** | Tex-217-F, Part I | Stockpile | 1 per 10,000 CY | Not required for lightweight aggregate.<br>Sample in accordance with Tex-221-F. |
| | Decantation **(A)** | Tex-406-A | Stockpile | 1 per 10,000 CY | Sample in accordance with Tex-221-F. |
| | Flakiness Index | Tex-224-F | Stockpile | 1 per source, or higher frequency as directed by the IQF | Sample in accordance with Tex-221-F. |
| PRECOATED AGGREGATE | Asphalt Content | Tex-210-F (236-F) | Stockpile | 1 per source, per type (frequency as directed by the IQF when a target value is specified) | Sample in accordance with Tex-221-F. |
| ASPHALT BINDER | Compliance with Item 300 | | Distributor<br>Tested and preapproved by MTD. Take project samples when designated by the IQF. | 1 per grade, per source | Store and test in accordance with Item 316.<br>Sample asphalt binder in accordance with Tex-500-C, Part III.<br>Verify that the binder is from MTD's preapproved source when it arrives at the project, and that the lab number on the shipping ticket is within the valid dates shown in the MTD QM test report.<br>Binder should arrive at the project preapproved. |

This is a guide for minimum sampling and testing.
Testing frequency may need to be increased for high material variability or when test results approach specification limits.

| TABLE II – SEAL COAT | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| MATERIAL OR PRODUCT | TEST FOR | TEST NUMBER | LOCATION OR TIME OF SAMPLING | FREQUENCY OF SAMPLING (B) | REMARKS |

| TABLE II – FOOTNOTES | |
|---|---|
| **A** | When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Engineering Judgment Log. |
| **B** | Each test performed that is based on a quantity of material is considered "or fraction thereof" for calculating number of tests. |

This is a guide for minimum sampling and testing.
Testing frequency may need to be increased for high material variability or when test results approach specification limits.

| TABLE III – HYDRAULIC CEMENT CONCRETE – STRUCTURAL (Classes: C, F, H, S, CO, K, LMC, or SS) | | | | | | |
|---|---|---|---|---|---|---|
| | | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING** | **REMARKS** |
| MINERAL AGGREGATE | COARSE AGGREGATE | Decantation | Tex-406-A, Part I | From stockpile at concrete plant | Each 20,000 CY of concrete (each source) | Sample in accordance with Tex-400-A.<br>Part I testing frequency shall be kept at each 20,000 CY regardless of whether Part III is performed. |
| | | | Tex-406-A, Part III | | Each 20,000 CY of concrete (each source) | Perform Tex-406-A, Part III, to increase the loss by decantation limit per the Specification.<br>Sample in accordance with Tex-400-A. |
| | | Sieve Analysis **(A)** | Tex-401-A | | Each 1,000 CY of concrete (each source) | Sample in accordance with Tex-400-A.<br>Test combined aggregate when used. |
| | | Deleterious Materials | Tex-413-A | | 1 per source and as necessary for control | Sample in accordance with Tex-400-A. |
| | | Los Angeles Abrasion **(A)** | Tex-410-A | | See remarks | Verify the value of the source, as listed on the current CRSQC, meets the project Specifications. If not, sample and submit to MTD for testing before use in accordance with Tex-499-A, 2 samples per source.<br>Sample in accordance with Tex-400-A. |
| | | 5-Cycle Magnesium Sulfate Soundness **(A)** | Tex-411-A | | See remarks | Verify the value of the source, as listed on the current CRSQC, meets the project Specifications. If not, sample and submit to MTD for testing before use in accordance with Tex-499-A, 2 samples per source.<br>Sample in accordance with Tex-400-A. |
| | FINE AGGREGATE | Sand Equivalent | Tex-203-F | | 1 per source and as necessary for control | Sample in accordance with Tex-400-A.<br>Test combined aggregate when used. |
| | | Organic Impurities | Tex-408-A | | 1 per source | Sample in accordance with Tex-400-A. |
| | | Sieve Analysis **(A)** | Tex-401-A | | Each 1,000 CY of concrete (each source) | Sample in accordance with Tex-400-A. |

| TABLE III – HYDRAULIC CEMENT CONCRETE – STRUCTURAL (Classes: C, F, H, S, CO, K, LMC, or SS) | | | | | | |
|---|---|---|---|---|---|---|
| | | | | PROJECT TESTS | | |
| MATERIAL OR PRODUCT | | TEST FOR | TEST NUMBER | LOCATION OR TIME OF SAMPLING | FREQUENCY OF SAMPLING | REMARKS |
| MINERAL AGGREGATE (continued) | FINE AGGREGATE (continued) | Fineness Modulus | Tex-402-A | From stockpile at concrete plant (continued) | 1 per source and as necessary for control | Sample in accordance with Tex-400-A.<br>Test combined aggregate when used. Test to confirm material variability when strength values are in question. |
| | | Deleterious Material | Tex-413-A | | 1 per source and as necessary for control | Sample in accordance with Tex-400-A.<br>Test to confirm material variability when strength values are in question. |
| | | Acid Insoluble (AI) Residue or Micro-Deval Abrasion (See Remarks) **(A)** | Tex-612-J<br>Tex-461-A | | 2, each source | Only for concrete subject to direct traffic.<br>Verify the AI value of the source, as listed on the CRSQC, meets the project Specifications. If not, sample and submit to MTD for testing before use in accordance with Tex-499-A.<br>Alternatively, when blending fine aggregates, verify the AI and Micro-Deval values of the sources, as listed on the CRSQC, meet the project Specifications. If not listed on the CRSQC, sample and perform Micro-Deval testing, and sample and submit AI samples to MTD for testing, before use.<br>Sample in accordance with Tex-400-A. |
| SILICA FUME | | Compliance with DMS-4630 **(A)** | | Railroad car, truck, bags, or silos | 1 per class of concrete (for each type and brand) | Verify the source is listed on the MPL for silica fume.<br>Sample in accordance with DMS-4630 and submit to MTD for testing before use.<br>Additionally, provide MTD with 1 4”×8” concrete cylinder from trial batch for silica fume dispersion verification. |
| NATURAL POZZOLAN | | Compliance with DMS-4635 **(A)** | | Railroad car, truck, or silos | 1 per class of concrete (for each type and brand) | Sample in accordance with Tex-300-D and submit to MTD for testing before use. |

| TABLE III – HYDRAULIC CEMENT CONCRETE – STRUCTURAL (Classes: C, F, H, S, CO, K, LMC, or SS) | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING** | **REMARKS** |
| MIX DESIGN | Compliance with the Standard Specification | | At source (if not approved) | Min 1 design per class, per source | Verify whether cement, fly ash, slag cement, and chemical admixture sources are listed on the MPLs.<br>If not listed on the MPL, sample and submit to MTD for testing before use. Sample in accordance with Tex-300-D for cement, in accordance with Tex-733-I for fly ash, in accordance with ASTM C494 for chemical admixtures, and in accordance with ASTM C989 for slag cement.<br>Water testing is contracted by the concrete supplier (commercial lab report to be reviewed by TxDOT). |
| JOINT MATERIAL | Compliance with DMS-6310 | | Sampled at jobsite if not sampled at source by MTD | 1 per batch or shipment | Sample in accordance with Tex-500-C, Part VI.<br>Verify the source is listed on the MPL for joint sealers. If not, sample and submit to MTD for testing before use.<br>For Class 6 joint sealers with nominal width less than 1.625 in. and joint fillers, IQF's acceptance will be based on the review of the manufacturer-provided test report and physical observation. |
| CURING COMPOUND | Compliance with DMS-4650 | | Sampled at jobsite; tested by MTD | When requested by MTD | Only products listed on the MPL for concrete curing compounds will be allowed.<br>When sample is requested by MTD, sample in accordance with Tex-718-I and submit to MTD for testing before use. Ensure container has been agitated and mixed before sampling. |
| EVAPORATION RETARDANTS | Compliance with DMS-4650 | | | | Only products listed on the MPL for evaporation retardants will be allowed. |
| REINFORCING STEEL | Compliance with the Standard Specifications and Special Provisions | As specified | | | Only materials from MTD-approved sources listed on the MPLs for reinforcing steel mills and seven-wire steel strand will be allowed. |

| TABLE III – HYDRAULIC CEMENT CONCRETE – STRUCTURAL (Classes: C, F, H, S, CO, K, LMC, or SS) | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING** | **REMARKS** |
| MECHANICAL COUPLERS | Compliance with DMS-4510 | Tex-744-I | Sampled at jobsite; tested by MTD | 3 couplers per lot (500 couplers) for each type, model, bar size, and grade | Only materials from MTD-approved sources listed on the MPL for mechanical couplers will be allowed.<br>Sample in accordance with Tex-743-I and submit to MTD for testing. |
| LATEX | Compliance with DMS-4640 for Concrete Chemical Admixtures | | | | Verify the latex is listed on the MPL for chemical admixtures. If not, sample in accordance with ASTM C494 and submit to MTD for testing before use. |
| EPOXY | Compliance with DMS-6100, Unless Otherwise Specified | | Sampled at jobsite if not preapproved by MTD | 1 per batch or shipment | Verify the source is listed on the MPL for epoxies and adhesives. If not, sample in accordance with Tex-734-I and submit to MTD for testing before use. |
| CONCRETE | Compressive Strength **(A)** | Tex-418-A | At point of concrete placement | 4 cylinders for each 60 CY (or fraction thereof) of class of concrete per day, per source, per class, per mix design<br>For bridge railing and traffic railing: Testing may be reduced to 4 cylinders for each 180 CY (or fraction thereof) of class of concrete per day, per source, per class, per mix design | Sampling must be in accordance with Tex-407-A.<br>Making additional cylinders for 56-day testing should be considered when slow strength gain mixtures are being used, or when the approved mix design has a history of failing to meet design strength at 28 days.<br>Test 2 cylinders at 7 days and if the average value is below the design strength as defined in Item 421, Table 8:<br>• Test the remaining 2 cylinders at 28 days; or<br>• If mutually agreed by IQF and TxDOT, test the remaining 2 cylinders at 56 days if additional cylinders were not made.<br>If the average value of the 2 cylinders tested at 7 days meets the minimum design strength listed in Item 421, Table 8, the 2 remaining cylinders need not be tested.<br>If the average value of the 7- and 28-day cylinders is below the design strengths, and 56-day cylinders were made, test the remaining set at 56 days. |

| TABLE III – HYDRAULIC CEMENT CONCRETE – STRUCTURAL (Classes: C, F, H, S, CO, K, LMC, or SS) | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING** | **REMARKS** |
| CONCRETE (continued) | Slump | Tex-415-A | At point of concrete placement (continued) | 1 test, per 4 strength specimens | Sample in accordance with Tex-407-A.<br>Perform slump and temperature tests on the same load from which strength test specimens are made.<br>Perform entrained air test only when entrained air concrete is specified on the plans.<br>Check temperature of every load for bridge slabs and mass concrete placements.<br>DB Contractor's required testing will be in accordance with Specification requirements for the appropriate Specification Item. |
| | Entrained Air **(A)** | Tex-416-A or Tex-414-A | | | |
| | Temperature of Concrete **(A)** | Tex-422-A | | | |
| | Top Slab Thickness and Depth of Reinforcement (for Bridge Deck or Culvert) | Tex-423-A, Part II | At or behind screed. Do not take depth measurements over a beam or girder. | 1 test (3 depth check locations) per span per day | Min 6 locations per span. Perform depth checks during dry run and during concrete placement. |

| TABLE III – FOOTNOTES | |
|---|---|
| **A** | When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Engineering Judgment Log. |
| **B** | Each test performed that is based on a quantity of material is considered "or fraction thereof" for calculating number of tests. |

| TABLE IV – HYDRAULIC CEMENT CONCRETE – NON-STRUCTURAL CONCRETE (Classes: A, B, or E) | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING** | **REMARKS** |
| CONCRETE | Compressive Strength **(A)** | Tex-418-A | At point of concrete placement | 2 cylinders for each 180 CY of class of concrete per day or fraction thereof (per source, per class, per mix design) | Strength will be determined by 7-day specimens.<br>Sample in accordance with Tex-407-A. |
| MIX DESIGN | Compliance with the Standard Specification | | At source if not approved | Min 1 design per class of concrete, per source | Verify whether cement, fly ash, slag cement, and chemical admixture sources are listed on the MPLs.<br>If not listed on the MPL, sample and submit to MTD for testing before use. Sample in accordance with Tex-300-D for cement, in accordance with Tex-733-I for fly ash, in accordance with ASTM C494 for chemical admixtures, and in accordance with ASTM C989 for slag cement.<br>Water testing is contracted by the concrete supplier (commercial lab report to be reviewed by TxDOT). |
| SILICA FUME | Compliance with DMS-4630 | | Railroad car, truck, bags, or silos | 1 test per class of concrete (for each type and brand) | Verify the source is listed on the MPL for silica fume.<br>Sample in accordance with DMS-4630 and submit to MTD for testing before use.<br>Additionally, provide MTD with 1 4”×8” concrete cylinder from trial batch for silica fume dispersion verification. |
| NATURAL POZZOLAN | Compliance with DMS-4635 | | Railroad car, truck, or silos | 1 test per class of concrete (for each type and brand) | Sample in accordance with Tex-300-D and submit to MTD for testing before use. |

| TABLE IV – FOOTNOTES | |
|---|---|
| **A** | When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Engineering Judgment Log. |

| TABLE V – GROUT (VARIOUS APPLICATIONS) | | | | | | |
|---|---|---|---|---|---|---|
| | | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING** | **REMARKS** |
| ROCK/SOIL NAIL ANCHORS | MIX DESIGN | Compliance with Standard Specification Item 410 and Item 411 | N/A | Before grout use in wall anchors | Review/approve each mix design | Verify whether cement, fly ash, slag cement, and chemical admixture sources are list on the MPLs. If not, sample and submit to MTD for testing before use.<br>Water testing is contracted by supplier (commercial lab report to be reviewed by TxDOT).<br>Sample in accordance with Tex-300-D for cement and in accordance with Tex-733-I for fly ash. |
| | Approved Batch Plant Produced | Compressive Strength **(A)** | Cylinders: Tex-418-A or Cubes: Tex-442-A | At point of placement | 1 test per 180 CY, per mix design **(B)** | Sample in accordance with Tex-442-A.<br>Strength will be determined by 7-day specimens.<br>Cube strength based on average of 3 specimens (2-in. cubes).<br>Cylinder strength based on average of 2 specimens (3"×6" cylinders). |
| | On-Site Mixer Produced | | | | 1 test per 3,000 lb of product **(B)** | |
| MISCELLANEOUS APPLICATIONS | On-Site Mixer Produced | Compressive Strength **(A)** | Cylinders: Tex-418-A or Cubes: Tex-442-A (DMS-4675) | At point of placement | 1 test per day, per product **(B)** | Sample in accordance with Tex-442-A.<br>Strength will be determined by 7-day specimens.<br>Cube strength based on average of 3 specimens (2-in. cubes).<br>Cylinder strength based on average of 2 specimens (3"×6" cylinders). |
| POST-TENSIONING | On-Site Mixer Produced | Compressive Strength **(A)** | Cylinders: Tex-418-A (DMS-4670) | At point of placement | 1 test per day, per product **(B)** | Sample in accordance with Tex-442-A.<br>Compressive strength is based on average of 2 specimens (3"×6" cylinders).<br>Test 2 cylinders at 7 days, and if the average value is below the design strength as defined in the Specification, then test the remaining 2 cylinders at 28 days. |

| TABLE V – FOOTNOTES | |
|---|---|
| **A** | When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Engineering Judgment Log. |
| **B** | First compressive strength specimens of any new structure shall be sampled during grout production for initial placement. |

| TABLE VI – HYDRAULIC CEMENT CONCRETE PAVEMENT (Classes: P or HES) | | | | | | |
|---|---|---|---|---|---|---|
| | | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING (B)** | **REMARKS** |
| MINERAL AGGREGATE | COARSE AGGREGATE | Decantation | Tex-406-A, Part I | From stockpile at concrete plant | Each 20,000 CY of concrete (each source) | Sample in accordance with Tex-400-A. Part I testing frequency shall be kept at each 20,000 CY regardless of whether Part III is performed. |
| | | | Tex-406-A, Part III | | Each 20,000 CY of concrete (each source) | Perform Tex-406-A, Part III, to increase the loss by decantation limit per the Specification.<br>Sample in accordance with Tex-400-A. |
| | | Sieve Analysis **(A)** | Tex-401-A | | Each 20,000 CY of concrete (each source) | Sample in accordance with Tex-400-A.<br>Test combined aggregate when used.<br>When producing optimized aggregate gradation (OAG) concrete, test every 10,000 CY of concrete in accordance with Tex-470-A. |
| | | Deleterious Materials | Tex-413-A | | Each 20,000 CY of concrete (each source) | Sample in accordance with Tex-400-A. |
| | | L.A. Abrasion **(A)** | Tex-410-A | | 2, each source | Verify the value of the source, as listed on the current CRSQC, meets the project Specifications. If not, sample and submit to MTD for testing before use in accordance with Tex-499-A.<br>Sample in accordance with Tex-400-A. |
| | | 5-Cycle Magnesium Sulfate Soundness **(A)** | Tex-411-A | | | |
| | FINE AGGREGATE | Sand Equivalent | Tex-203-F | | Each 3,000 CY of concrete (each source or combination of sources) | Sample in accordance with Tex-400-A.<br>Test combined aggregate when used. At least 1 per week's production. |
| | | Organic Impurities | Tex-408-A | | 1 per source | Sample in accordance with Tex-400-A. |
| | | Sieve Analysis **(A)** | Tex-401-A | | Each 20,000 CY of concrete (each source) | Sample in accordance with Tex-400-A.<br>Test combined aggregate when used.<br>When producing OAG concrete, test every 10,000 CY of concrete in accordance with Tex-470-A. |
| | | Fineness Modulus | Tex-402-A | | | |
| | | Deleterious Material | Tex-413-A | | Each 20,000 CY of concrete (each source) | Sample in accordance with Tex-400-A. |

| TABLE VI – HYDRAULIC CEMENT CONCRETE PAVEMENT (Classes: P or HES) | | | | | | |
|---|---|---|---|---|---|---|
| | | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING (B)** | **REMARKS** |
| MINERAL AGGREGATE (continued) | FINE AGGREGATE (continued) | Acid Insoluble (AI) Residue or Micro-Deval Abrasion (See Remarks) **(A)** | Tex-612-J<br>Tex-461-A | From stockpile at concrete plant (continued) | 1 per source | Verify the AI value of the source, as listed on the CRSQC, meets the project Specifications. If not, sample and submit to MTD for testing before use in accordance with Tex-499-A.<br>Alternatively, when blending fine aggregates, verity the AI and Micro-Deval values of the sources, as listed on the CRSQC, meet the project Specifications. If not listed on the CRSQC, sample and perform Micro-Deval testing, and sample and submit AI samples to MTD for testing, before use.<br>Sample in accordance with Tex-400-A. |
| MIX DESIGN | | Compliance with the Standard Specification | | At source, if not approved | Min 1 design, per class, per source | Verify whether cement, fly ash, slag cement, and admixture sources are listed on the MPLs.<br>If not listed on the MPL, sample and submit to MTD for testing before use. Sample in accordance with Tex-300-D for cement, in accordance with Tex-733-I for fly ash, in accordance with ASTM C494 for chemical admixtures, and in accordance with ASTM C989 for slag cement.<br>Water testing is contracted by the concrete supplier (commercial lab report to be reviewed by TxDOT). |
| SILICA FUME | | Compliance with DMS-4630 | | Railroad car, truck, bags, or silos | 1 per class of concrete (for each type and brand) | Verify the source is listed on the MPL for silica fume.<br>Sample in accordance with DMS-4630 and submit to MTD for testing, before use.<br>Additionally, provide MTD with 1 4”×8” cylinder from trial batch for silica fume dispersion verification. |
| NATURAL POZZOLAN | | Compliance with DMS-4635 | | Railroad car, truck, or silos | 1 per class of concrete (for each type and brand) | Sample in accordance with Tex-300-D and submit to MTD for testing before use. |

| TABLE VI – HYDRAULIC CEMENT CONCRETE PAVEMENT (Classes: P or HES) | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING (B)** | **REMARKS** |
| JOINT MATERIAL | Compliance with DMS-6310 | | Sampled at jobsite if not sampled at source by MTD; tested by MTD. | 1 per batch or shipment | Sample in accordance with Tex-500-C, Part VI.<br>Verify the source is listed on the MPL for joint sealers. If not, sample and submit to MTD for testing before to use.<br>For Class 6 joint sealers with nominal width <1.625 in. and joint fillers, IQF's acceptance will be based on the review of the manufacturer-provided test report and physical observation. |
| CURING COMPOUND | Compliance with DMS-4650 | | Sampled at jobsite; tested by MTD. See remarks. | When requested by MTD | Only products listed on the MPL for concrete curing compounds will be allowed.<br>Sample in accordance with Tex-718-I, when requested, and submit to MTD for testing. Ensure container has been agitated and mixed before sampling. |
| EVAPORATION RETARDANTS | Compliance with DMS-4650 | | | | Only products listed on the MPL for evaporation retardants will be allowed. |
| REINFORCING STEEL | Compliance with the Standard Specifications and Special Provisions | As specified | | | Only materials from MTD-approved sources listed on the MPL for reinforcing steel mills and seven-wire steel strand will be accepted. |
| MULTIPLE PIECE TIE BARS | Compliance with DMS-4515 | Tex-712-I | Sampled at jobsite; tested by MTD. See remarks. | 1 set (10 tie bars per sample set), for each type, model, bar size, and grade | Only materials from MTD-approved sources listed on the MPL for multiple piece tie bars for concrete pavements will be allowed.<br>Sample in accordance with Tex-711-I. |
| EPOXY | Compliance with DMS-6100 | | Sampled at jobsite, if not preapproved by MTD | 1 batch per shipment | Verify the source is listed on the MPL for epoxies and adhesives. If not, sample in accordance with Tex-734-I and submit to MTD for testing before use. |
| CONCRETE | Strength **(A) (B)** | Tex-418-A | At point of concrete placement | 1 test (2 specimens) for each 3,000 SY of concrete per day or fraction thereof (per source, per class, per mix design) | Sample in accordance with Tex-407-A.<br>Test 7-day job control samples for compressive strength. Or test job control samples at any age if proven to meet the 28-day compressive strength, as correlated in accordance with Tex-427-A. |

| TABLE VI – HYDRAULIC CEMENT CONCRETE PAVEMENT (Classes: P or HES) | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION OR TIME OF SAMPLING** | **FREQUENCY OF SAMPLING (B)** | **REMARKS** |
| CONCRETE (continued) | Slump | Tex-415-A | At time and location when strength specimens are made | 1 test for each 3,000 SY of concrete per day or fraction thereof (per source, per class, per mix design) | Sample in accordance with Tex-407-A.<br>Slump is not required for slip-formed pavement.<br>Perform slump and temperature tests on the same load from which the strength specimens are made.<br>Perform entrained air test only when entrained air concrete is specified on the plans. |
| | Entrained Air **(A)** | Tex-416-A or Tex-414-A | | | |
| | Temperature | Tex-422-A | | | |
| | Thickness | Tex-423-A, Part I | Center of paving machine | Every 500 ft. or fraction thereof | Methods other than Tex-423-A may be shown on the plans. |
| | Saw Cut Depth | Tex-423-A, Part III | Within 24 hr. after saw cutting or before joints are sealed (whichever is sooner) | Every 500 ft. or fraction thereof for all longitudinal contraction joints and 10% of transverse contraction joints in CPCD for each daily placement | |
| | Pavement Texture | Tex-436-A | Final riding surface of travel lanes | 1 per day, per driving lane | Perform when carpet drag is the only surface texture required as shown on the plans. |
| | Ride Quality **(A)** | Tex-1001-S surface test Type B | Full length of final riding surface of all travel lanes | Each travel lane of finished surface | Perform the QA testing as described in TxDOT Standard Specification Section 585.3.2.2.2.<br>Report results from surface test Type A when requested by TxDOT. |

| TABLE VI – FOOTNOTES | |
|---|---|
| **A** | When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Engineering Judgment Log. |
| **B** | Each test performed that is based on a quantity of material is considered "or fraction thereof" for calculating number of tests. |

| TABLE VII – HOT-MIX ASPHALT PAVEMENT (Items 341, 342, 344, 346, 347, and 348)<br>(All testing as noted in Table VII may be waived for exempt production as defined by Specification.) | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION** | **FREQUENCY OF SAMPLING** | **REMARKS** |
| COARSE AGGREGATE | L.A. Abrasion **(A)** | Tex-410-A | Stockpile **(B)** | 1 per aggregate source | Verify the published value of the source, as listed on the current BRSQC, meets the project Specifications. If not, sample in accordance with Tex-221-F and submit to MTD for testing before use in accordance with Tex-499-A. |
| | Magnesium Sulfate Soundness **(A)** | Tex-411-A | | | |
| | Surface Aggregate Classification **(A)** | Tex-499-A | | | |
| | Micro-Deval Abrasion | Tex-461-A | | 1 per aggregate source | Not required when the rated source soundness magnesium loss is 15 or less as listed on the current published BRSQC. If testing is required, sample in accordance with Tex-221-F. |
| FINE AGGREGATE | Sand Equivalent | Tex-203-F | Stockpiles, hot bins, or feeder belts | 1 per aggregate source, per design | Does not apply to Item 342.<br>Sample in accordance with Tex-221-F. The timing of when the test is performed is at the discretion of the IQF. |
| ASPHALT BINDER | Compliance with Item 300 **(A)** | | Sampling port nearest the storage tank | 1 per grade, per source | Test a minimum of 1 sample taken from the project.<br>Sample binder at hot-mix plant in accordance with Tex-500-C, Part II.<br>Verify that the binder is from a preapproved source when it arrives at the project, and that the lab number on the shipping ticket is within the valid dates shown in the MTD QM test report.<br>Binder should arrive at the project preapproved. |
| TACK COAT | Compliance with Item 300 **(A)** | | Distributor | 1 per grade, per source | Test a minimum of one sample taken from the project. Sample tack coat in accordance with Tex-500-C, Part III.<br>Verify that the binder is from a preapproved source when it arrives at the project, and that the lab number on the shipping ticket is within the valid dates shown in the MTD QM test report. |

| TABLE VII – HOT-MIX ASPHALT PAVEMENT (Items 341, 342, 344, 346, 347, and 348)<br>(All testing as noted in Table VII may be waived for exempt production as defined by Specification.) | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION** | **FREQUENCY OF SAMPLING** | **REMARKS** |
| MIX DESIGN VERIFICATION | Compliance with applicable Specification | Tex-204-F | At source (if not approved) | Min 1 design per mix type and asphalt grade | Verify that aggregates, recycled asphalt pavement, mineral filler, asphalt binder, anti-stripping additives, and warm mix systems are on the MPL where applicable and that they meet project Specification requirements.<br>Project sampling and testing may be conducted on individual materials as necessary for control.<br>A new mix design verification will be required if there is a change in aggregate sources. |
| COMPLETE MIXTURE | Asphalt Content (%) **(A)** | Tex-236-F | Truck sample | 1 per sublot | Sample in accordance with Tex-222-F.<br>Determine correction factors for ignition oven using Tex-236-F once every 12 mo. or more frequently as needed.<br>When Tex-236-F does not yield reliable results, the IQF may use an alternative method for determining asphalt content, such as Tex-210-F (ASTM D8159, D2172/AASHTO T 164). |
| | Voids in Mineral Aggregates (VMA) | Tex-204-F | Truck sample | 1 per sublot | Sample in accordance with Tex-222-F.<br>Does not apply to Item 342 and Item 348. |
| | Gradation **(A)** | Tex-200-F | Truck sample | 1 per sublot | Sample in accordance with Tex-222-F.<br>Determine correction factors for ignition oven using Tex-236-F once every 12 mo. or more frequently as needed. |
| | Moisture Susceptibility | Tex-530-C | Truck sample | 1 per lot or as directed by the IQF | When shown on the plans.<br>Sample in accordance with Tex-222-F. |
| | Indirect Tensile Strength—Dry | Tex-226-F | | 1 per mix design (Lot 1) | Sample in accordance with Tex-222-F.<br>Does not apply to Items 342, 346, 347, and 348. |
| | Moisture Content | Tex-212-F, Part II | Truck sample | 1 per mix design | Sample in accordance with Tex-222-F. |
| | Lab-Molded Density **(A)** | Tex-207-F, Part I and Part VI | Truck sample | 1 per sublot | Sample in accordance with Tex-222-F.<br>DB Contractor's required testing will be in accordance with Specification requirements for the appropriate Specification Item. |

| TABLE VII – HOT-MIX ASPHALT PAVEMENT (Items 341, 342, 344, 346, 347, and 348)<br>(All testing as noted in Table VII may be waived for exempt production as defined by Specification.) | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION** | **FREQUENCY OF SAMPLING** | **REMARKS** |
| COMPLETE MIXTURE (continued) | Theorical Maximum Specific Gravity | Tex-227-F | Truck sample | 1 per sublot | Sample in accordance with Tex-222-F.<br>DB Contractor's required testing will be in accordance with Specification requirements for the appropriate Specification Item. |
| | Drain Down Test **(A)** | Tex-235-F | Truck sample | 1 per sublot | Sample in accordance with Tex-222-F.<br>Not required for Item 341 and Item 344. For Item 347, only required during design. |
| | Hamburg Wheel Test **(A)** | Tex-242-F | Truck sample | 1 per mix design | Sample in accordance with Tex-222-F. Sample during production.<br>Required for all mixes.<br>For Item 342 and Item 348, this test is only required for PFC-F during trial batch. |
| | Cantabro Loss **(A)** | Tex-245-F | Truck sample | 1 per mix design | Sample in accordance with Tex-222-F. Sample during production.<br>Does not apply to Items 341, 344, 346, and 347. |
| | Overlay Test **(A)** | Tex-248-F | Truck sample | 1 per mix design | Sample in accordance with Tex-222-F. Sample during production. Only required for Item 346 and Item 347. |
| ROADWAY | In-Place Air Voids **(A)** | Tex-207-F, Part I and Part VI; Tex-227-F | Roadway | 2 cores per sublot | Two cores taken per sublot and averaged. Sample in accordance with Tex-251-F.<br>Does not apply to Items 342, 347, and 348. |
| | Segregation Profile **(A)** | Tex-207-F, Part V | Roadway | 1 per sublot | Not required when DB Contractor uses thermal imaging system. Does not apply to Items 342, 347, and 348. |
| | Joint Density **(A)** | Tex-207-F, Part VII | Roadway | 1 per sublot | Does not apply to Items 342, 347, and 348. |
| | Thermal Profile **(A)** | Tex-244-F | Immediately behind paver | 1 per sublot | Not required when DB Contractor uses thermal imaging system. |
| | Ride Quality Test Type B **(A)** | Tex-1001-S | Full length of final riding surface of all travel lanes | Each travel lane of finished surface | Perform the QA testing as described in TxDOT Standard Specification Section 585.3.2.2.2.<br>Report results for surface test Type A when requested by TxDOT. |
| | Permeability **(A)** | Tex-246-F | Roadway | 1 per sublot | Only applies to Items 342, 347, and 348. |

| TABLE VII – HOT-MIX ASPHALT PAVEMENT (Items 341, 342, 344, 346, 347, and 348)<br>(All testing as noted in Table VII may be waived for exempt production as defined by Specification.) | | | | | |
|---|---|---|---|---|---|
| | | | PROJECT TESTS | | |
| **MATERIAL OR PRODUCT** | **TEST FOR** | **TEST NUMBER** | **LOCATION** | **FREQUENCY OF SAMPLING** | **REMARKS** |
| FABRIC UNDERSEAL | Compliance with DMS-6220 | | Sampled, tested, and approved by MTD | | Sampling must be in accordance with Tex-735-I.<br>Verify the source is listed on the current MPL for silt fence, filter fabric, and fabric underseals. If not, sample and test before use in accordance with DMS-6220. |

| TABLE VII – FOOTNOTES | |
|---|---|
| **A** | When this project acceptance test fails but the product is accepted, document the reasons for acceptance on the Engineering Judgment Log. |
| **B** | Sampling may be performed at the plant, quarry, or both. Aggregate properties may be re-tested at any time during the project. These project tests may be used for one or more projects furnishing hot mix with the same aggregate source. |