



Construction and Materials Manual

Wisconsin Department of Transportation

Chapter 8 Materials Testing, Sampling, Acceptance

Section 50 Materials Testing and Acceptance Guide

Exhibit 1 Materials Testing and Acceptance Guide

Materials sampling and testing methods and documentation procedures prescribed in chapter 8 of the CMM are mobilized into the contract per [standard spec 106.3.4.1](#).

This presents minimum requirements for testing and acceptance of materials. (December 2016)

Section format was reorganized to improve access to material information.

Materials Testing and Acceptance Guide

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Delineators	Waterstops
Non-Precast Drainage Items	

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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AGGREGATES – SOURCE TESTING

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
Source Testing for Quality: Wear, Sound-ness, etc.					The regional person responsible for this area will oversee the provisions in items ^[1] and ^[2] below.
Aggregate Base Course (Dense and Open-Graded)	Source	Central Lab or Qualified Lab	^[1] , ^[2]	100# ^[3]	<p><u>Central and Qualified Laboratory Source Testing under Std. Spec 106.3.4.2</u></p> <p>^[1] A representative sample of processed material must be submitted from any deposit not previously tested.</p> <p>Samples for testing (except for soundness and wear) must be submitted as follows: Yearly - One per deposit, for deposits that exhibit substantial variation in test results. Five-year period - One per deposit, for deposits that exhibit minor variation in y test results. Additionally - When visually obvious changes in characteristics occur, as deposit is worked or as the material is delivered to the project.</p> <p>^[2] Soundness and wear tests must be run once per pit deposit per five year period and once per quarry deposit per three year period. For deposits having marginal soundness and wear values (within 5 percent of specification maximum limits), at least one test per deposit per year.</p> <p>^[3] 50# will suffice for wear and soundness tests if only R/No.4 (4.75 mm) material is submitted. This must be obtained by separating the graded material on a No. 4 (4.75 mm) sieve.</p> <p>^[4] At least one test per contract.</p> <p>^[5] At least one test for L.A. Wear per contract. Recycled concrete for use in concrete pavement will require a test for wear if material is supplied from a source outside the project limits.</p> <p>^[6] For concrete-making properties: Processed: One bag (±1 cubic foot) each of the fine aggregate and two sizes of coarse aggregate, except as otherwise requested by the laboratory in specific instances.</p> <p>^[7] 50# will suffice if about 90% or more of the material passes the No. 4 (4.75 mm) sieve.</p> <p>^[23] Alternate engineer acceptance must be documented in the material records. For Breaker Run refer to standard spec 311.2, Select Crushed Material - standard spec 312.2 and Pit Run – standard spec 313.2.</p>
Asphaltic Mixes			^[1] , ^[2]	100# ^[3]	
Breaker Run Stone			^[1] , ^[23]	100#	
Granular Subbase & Backfills (if there are plastic fines in the material)			^[1]	100# ^[7]	
Pit Run			^[1] , ^[23]	100# ^[7]	
Concrete			^[1] , ^[2]	^[6]	
Recycled/Reclaimed Materials or Industrial By-Products			^[5]	100# ^[3]	
Seal Coat			^[1] , ^[2]	100# ^[3]	
Selected Borrow (when sieve analysis or P.I. required). See standard spec 208 .			^[1] , ^[23]	100# ^[7]	
Select Crushed Material			^[1] , ^[23]	100#	

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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AGGREGATES - STOCKPILE TESTING

Aggregates Stockpile Testing	Source	Field ^[24]	^[25]		<p>^[24] Refer to appropriate Spec Section or QMP to determine if WisDOT or Contractor is to perform sampling and testing.</p> <p>^[25] Perform gradation, plastic limit, liquid limit and/or fracture tests on one stockpile or loadout sample from each source prior to placement.</p>
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AGGREGATES – PROJECT TESTING (Gradations, Plasticity, Fracture, etc.)

Aggregate (QMP Contracts)	Field	Field			<p>QMP Contracts - See the specific contract documents for guidance.</p> <p>All aggregate QC and QV tests must be reported according to the timeline in the applicable QMP provision on the MIT/MTS prefix 217 or 162 as applicable. Projects require a MIT/MTS prefix 155 QMP Base Aggregate Summary</p> <p>Report base aggregate dense 1 ¼-inch nuclear density QC and QV tests on MIT/MTS prefix 232. Projects require a MIT/MTS prefix 155 and/or QMP Base Aggregate Dense 1 ¼-Inch Compaction Summary report.</p>
Non-QMP Contracts	Field	Field			<p>Non-QMP contracts - All acceptance tests must be reported on the Materials Tracking System.</p> <p>The locations of project acceptance tests must be randomly distributed throughout the project. When the aggregates are used as produced and when uniform production and deposit conditions prevail, the minimum field acceptance tests below must be made and, in addition, observation must be maintained at the point of use for indications of deviations from normal gradation. When such deviation is noted, additional tests and necessary adjustment must be made immediately to rectify the condition.</p> <p>The minimum tests are only adequate after plant operations have been stabilized and uniformity of production, well within specification limits, has been obtained.</p> <p>Each sample must be tested for sieve analysis and other tests, as necessary, for determination of conformance with specifications</p>

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
AGGREGATES – PROJECT TESTING (Gradations, Plasticity, Fracture, etc.)					
Aggregate Base Course (Non-QMP contracts) Includes but is not limited to: - Crushed Agg. Base Course - Crushed Agg. Base Course, Open Graded - Recycled/Reclaimed Aggregates	Field	Field	[8]		[8] Contract ≤ 500 tons. Acceptance may be in accordance with CMM 8-45 (Minor Quantity and Incidental Work). 501 tons through 3000 tons /contract. One sample. More than 3000 tons/contract: One sample per 3000 tons cumulative. For 3000 tons or less/contract the material may be sampled for acceptance in the stockpile at the last location before use.
Aggregate for chip seals, seal coats	Field	Field	[9]		[9] Contract ≤ 500 tons: Acceptance may be in accordance with CMM 8-45 (Minor Quantity and Incidental Work). 501 tons through 1500 tons/contract: One sample. More than 1500 tons/contract: One sample per 1500 tons cumulative per contract.
Aggregate for Concrete Pavement & Ancillary Concrete (QMP Contracts)					QMP Contracts - See the specific contract documents for guidance.
Aggregate for Concrete Masonry Structures (QMP Contract)					QMP Contracts - See the specific contract documents for guidance.

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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AGGREGATES – PROJECT TESTING (Gradations, Plasticity, Fracture, etc.)

Aggregate for Concrete Masonry Structures (Non-QMP Contracts)	Field	Field	[11]		<p>[11] One through 100 CY of concrete/contract: One sample*. 101 CY through 400 CY of concrete/contract: A) One sample* for all substructure units. B) One sample* per deck pour per day. More than 400 CY of concrete/contract: A) One sample* per 350 CY or fraction thereof for substructure units. Contact the regional materials section for guidance when conditions of construction are such that more frequent sampling may be warranted (e.g. an extensive length of construction, mixture/material changes). B) One sample* per deck pour per day. For pours over 450 CY, additional samples may be required, contact the regional person responsible for this area for guidance. * One sample must consist of sampling each size of aggregate being incorporated into the work.</p>
Select Borrow	Field	Region	[12]		<p>Follow same sampling and testing as Granular Backfill. Refer to special provisions for material requirements.</p>

AGGREGATES – PROJECT TESTING (Gradations, Plasticity, Fracture, etc.)

Granular Backfill ^[A]	Field	Field	[12]		<p>[12] Contract ≤ 500 CY (1,000 TONS)::Acceptance may be in accordance with CMM 8-45 (Minor Quantity and Incidental Work). Contract > 500 CY (1,000 TONS): One sample per 3,000 CY (6,000 TONS) or portion thereof. Material may be sampled for acceptance at the source.</p> <p>Contract quantities exceeding 20,000 CY (40,000 TONS) contact the region TSS/Materials unit. Testing frequency to be applied per source of material. Plasticity and Liquid Limit: Test first gradation sample. If sample is Non-Plastic, test a minimum of once per 10 gradation tests If sample is plastic, test every gradation sample.</p> <p>^[A] Allowable Substitutions: Grade 1 granular backfill is an allowed substitution for Grade 2 granular backfill. Discuss with the Region how to document substitution.</p>
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Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
AGGREGATES – PROJECT TESTING (Gradations, Plasticity, Fracture, etc.)					
Structural Backfill ^[B]	Field	Region	^[12]		Follow same sampling and testing as Granular Backfill. ^[B] Allowable Substitutions: Type A structure backfill is an allowed substitution for Type B structure backfill. Discuss with the Region how to document substitution.
Breaker Run Stone ^[C]	Field	Field	^[13]		^[13] 1. Acceptance must be from a Source with current Quality Testing. If source does not have current Quality Testing: Have Quality Test performed. Alternate source acceptance may be granted in accordance with Standard Spec Section 312 . Perform visual gradation, fracture and durability tests. If visually obvious changes in quality characteristics occur or if material appears non-compliant, have fracture and gradation tests performed at the Regional laboratory. ^[C] Allowable Substitutions: Select Crushed is an allowed substitution for Breaker Run. Discuss with the Region how to document substitution
Select Crushed Material	Field	Field	^[13]		Follow same sampling and testing as Breaker Run Stone

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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AGGREGATES – PROJECT TESTING (Gradations, Plasticity, Fracture, etc.)

Pit Run ^[D]	Field	Field	^[13]		Follow same sampling and testing as Breaker Run Stone. ^[D] Allowable Substitutions: 3" BAD, Breaker Run and Select, Crushed are allowed substitutions for Pit Run. Discuss with the Region how to document substitution
Subbase	Field	Region	^[12]		Follow same sampling and testing as Granular Backfill.
Culvert Pipe Backfill Foundation ^[E]	Source	Contract or Lab	^[15]		^[15] Contractor to supply sample gradation, plasticity index and liquid limit results to engineer prior to placing material. Engineer may waive contractor testing for known sources.
	Field	Region	^[12]		Follow same sampling and testing as Granular Backfill. ^[E] Allowable Substitutions: Material with a GRADATION of ¾" BAD or 1 ¼" BAD are allowed substitutions for Culvert Pipe Foundation Backfill Discuss with the Region how to document substitution
Culvert Pipe Backfill Trench	Field	Field			Perform visual acceptance of material that complies with Standard Spec Section 520. If material does not meet specification, use an engineer approved material.

AGGREGATES – PROJECT TESTING (Gradations, Plasticity, Fracture, etc.)

Storm Sewer Backfill Foundation ^[F]	Source	Contractor Lab	^[15]		Follow same sampling and testing as Culvert Pipe Foundation Backfill.
	Field	Region	^[12]		Follow same sampling and testing as Granular Backfill. ^[E] Allowable Substitutions: ¾" BAD, 1 ¼" BAD and Crushed Stone Chips are allowed substitutions for Storm Sewer Foundation Backfill. Discuss with the Region how to document substitution. NOTE: Gradation of Crushed Stone Chips is determined based on pipe size. Include pipe size on sample card when submitting to the region lab.

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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AGGREGATES – PROJECT TESTING (Gradations, Plasticity, Fracture, etc.)

Storm Sewer Backfill Trench	Field	Region	[12]		Follow same sampling and testing as Granular Backfill. Allowable Material: Culvert Pipe Foundation Backfill Granular Backfill
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ANCHOR BOLTS AND RODS

Structure Bolts and Rods	Shop				<p>These items are to be supplied from an approved fabricator. The list of Approved Fabricators, Bridge Metal Secondary items is located at:</p> <p>http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx</p> <p>When anchor bolts and rods are not from an approved fabricator, immediately contact the region person responsible for this area, and the Structure Fabrication Unit.</p> <p>See CMM 8-45 for certification guidelines.</p>
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Base Structure Bolts	Field				<p>A manufacturer's certification of compliance is required and must be made available by the contractor. Reference on MIT/MTS prefix 905. See CMM 8-45 for certification guidelines.</p> <p>The end of each fabricated anchor bolt unit must be painted to identify the grade as follows: (Grade 36 - Blue); (Grade 55 - Yellow); (Grade 105 - Red)</p> <p>Visually inspect and document dimensions, condition, color marking, etc. Reject rods if not correctly marked.</p>
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Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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ANCHOR BOLTS AND RODS

High Strength Bolts, Structures	Shop or Field		Two bolts per size per length and/or contract. Three sets of nuts and washers per bolt size per length and/or heat contract		This item should be pre-sampled. The engineer should check the particular project number for which this item is intended, test prefix 115 of the Materials Tracking System. In the event that no Central Laboratory test exists for the lots received, the engineer must sample as indicated. Rotational -Capacity testing – two copies of the manufacturers' or distributor's Certified Report of Test of Rotational-Capacity must be provided by the contractor. Reference Certified Reports of Test and Analysis and field test reports on MIT/MTS prefix 905. Field rotational-capacity testing is to be completed by the contractor on each bolt, nut, and washer lot combination before installation as specified in Report No. FHWA SA 91-031 "High Strength Bolts for Bridges". Have the contractor complete form DT2113 . Department staff or consultant must verify the test and submit the completed form as a part of the permanent project records.
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ASPHALTIC MATERIALS

Asphalt Binder	Source and Field	Central Lab	Central Lab	1 Quart (1 L), Tin Container	A list of approved asphalt binder suppliers is shown on the Combined State Binder Group list at: http://wisconsindot.gov/Documents/doing-bus/eng-consultants/cnslt-rsrces/tools/gmp/csbq-policy.pdf A Bill of Lading is required for each truck shipment showing the supplier name, binder grade, and a statement of compliance with the requirements of the Combined State Binder Group, and must be made available by the contractor. Reference on MIT/MTS prefix 905. Provide sample tag DT1352 , with sample. See CMM 8-65 for tag example to be submitted
Liquid Asphalt (MC, SC types)	Field	Central Lab	See remarks	1-Quart (1 L) Tin container	Sample in the field per guidelines of standard spec 455.2.2 , CMM 8-65 and AASHTO R-66. Provide sample tag DT1352 , with sample. See CMM 8-65 for tag example to be submitted
Emulsified Asphalts (Tack Coats, Slope Paving, etc.)	Field	Central Lab	See remarks	1-quart plastic container	Sample in the field per guidelines of standard spec 455.2.2 , CMM 8-65 and AASHTO R-66. Provide sample tag DT1352 , with sample. See CMM 8-65 for tag example to be submitted. Emulsified asphalts have a limited life and should be submitted to the Central Laboratory as soon as practical. DO NOT allow samples to sit in the sun, be exposed to excessive heat, or freeze. NEVER use metal cans for samples, always use plastic or other non-reactive clean containers.

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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ASPHALTIC MIXTURES

Uncompacted	Field	Field	[16]		<p>[16] For Quality Management Program (QMP) contracts, see the specific contract documents for guidance. All QV, and corresponding QC tests must be reported in a timely manner on the MIT/MTS prefix 254. Projects require MIT/MTS prefix 155 QMP HMA Mixtures Summary.</p> <p>[17] One to 500 tons (450 Mg)/contract acceptance may be in accordance with CMM 8-45. For ASPHALTIC SURFACE (Section 465) a visual inspection must be made and documented in the inspector's diary. If visual inspection indicates a problem may exist, the mixture may be sampled and tested for composition as determined by the engineer. Reference the approved WisDOT mix design test electronically on a MIT/MTS prefix 905. Sample uncompacted mixtures in accordance with instructions in the CMM, "Methods of Sampling Asphaltic Paving Mixtures". See CMM 8.65.</p>
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ASPHALTIC PAVEMENT DENSITY

Density	Field	Field			<p>For QMP contracts, see the specific contract documents for guidance. For Non-QMP contracts, see standard spec 460.3.3. Report all HMA pavement Nuclear Density tests on MIT/MTS prefix 262. Projects require a MIT/MTS prefix 155 QMP HMA Nuclear Density Summary.</p>
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Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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BEARING PADS/LAMINATED ELASTOMERIC BRIDGE BEARING PADS

Bearing Pads or Laminated Elastomeric Bridge Bearing Pads	Shop				<p>These items are to be supplied from an approved fabricator. The list of Approved Fabricators, Bridge Metal Secondary items is located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx</p> <p>If the bearing pads are not furnished by an approved fabricator, the engineer must immediately contact the region person responsible for this area, and the Structure Fabrication Unit before installation.</p> <p>If approved by the above, the below noted documentation must be provided to the region contact for this area and the Structure Fabrication Unit.</p> <p>For sheet lead and preformed fabric, a manufacturer's certification of compliance must be made available by the contractor. See CMM 8-45 for certification guidelines.</p> <p>For elastomeric, the engineer must have before use a manufacturer's certified report of test or analysis indicating conformance to the contract requirements.</p>
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BLOCK & BRICK

Concrete Brick and Block	Field				<p>These items are to be supplied from an approved fabricator. A list of approved manufacturers of concrete brick and block is located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx</p> <p>Bill of Lading or other documentation identifying the manufacturer and plant location is required. This is an incidental/non-pay item. Reference on MIT/MTS prefix 905.</p>
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Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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SECONDARY BRIDGE FABRICATIONS

Secondary Fabricated Items including: Rail Posts, Anchor Assemblies for posts, Sleeves, Shims, Rail panels, Anchor bolts, Protection angles, Structural fasteners, Expansion devices, Curb and sidewalk cover plates, Floor drains, Guardrail anchors, Sheet lead, Elastomeric pads, Bearing assemblies (steel), Structural steel diaphragms	Field				These items are to be supplied from an approved fabricator. The list of Approved Fabricators, Bridge Secondary Metal items is located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx See CMM 8-75 for the "Certification Method of Acceptance for Bridge Metal Secondary Fabrication Items." If not on an approved list, immediately contact the regional person responsible for this area. Note: Each shipment must include a certification statement and a loading document from the fabricator. See CMM 8-75 for requirements of certification statement. Reference on MIT/MTS prefix 905.
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BRONZE PLATES, LUBRICATED

	Shop or Field				If sourced from a fabricator on the approved list, refer to the list of Approved Fabricators, Bridge Metal Secondary items located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx In the event that the plates are not from an approved fabricator, the engineer must have before permitting their installation, a manufacturer's certified report, test or analysis indicating conformance with the contract requirements. See CMM 8-45 for certification guidelines.
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Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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CASTINGS, GRAY IRON

Castings, Gray Iron	Field				<p>The list of approved Gray Iron Casting manufacturers is located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx For all other manufacturers a certification of compliance must be made available by the contractor. See CMM 8-45 for certification guidelines.</p>
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CONCRETE MATERIALS

Concrete Aggregates					<p>See Aggregate for Concrete in this document: Aggregates – Source Testing for Quality Aggregates – Stockpile Testing Aggregates – Project Testing</p>
Concrete Admixtures					<p>Approved lists for concrete admixtures are located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx Refer to the approved lists for AASHTO M194 Types A and D admixtures and AASHTO M154 air-entraining admixtures. AASHTO M194 Types C, E, F, and G admixtures are accepted by certified report of test, reference on MIT/MTS prefix 905. Calcium Chloride as a set accelerator is not allowed, except as incidental to bid items 416.1715, and 416.1725, accepted by manufacturer’s certification of compliance, reference on MIT/MTS prefix 905, diary entry to include concentration and addition rate. * Calcium Chloride is excluded. See separate material entry.</p>
Cementitious Materials:					

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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CONCRETE MATERIALS

Portland Cement	Region	Central Lab	One per year per source and type when in use on WisDOT work	4 pounds	The list of approved Portland Cement Manufacturers – Certified Suppliers is located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx See CMM 8-70 for the "Sampling of Cement."
Non-certified cement	Field	Central Lab	One per 400 tons	4 pounds	Note: Routine field sampling is not required for certified materials, unless noted on the approved list for a specific vendor/plant. Random sampling will be done through region materials staff in accordance with the Portland cement certification program
Fly Ash	Field	Central Lab	One per 2000 tons	4 pounds	At least 14 days prior to use, the engineer must have a copy of a certified report of tests showing satisfactory chemical and physical properties. Reference Certified Reports of Test and Analysis on MIT/MTS prefix 905. See CMM 8-45 for certification guidelines. For contracts with less than 100 tons, no sampling is required
Pozzolans	Field	Central Lab	One per 2000 tons		Used as a complete replacement for fly ash. Approved list materials only may be used. The list of Pozzolans - Approved Manufacturers is located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx For contracts with less than 100 tons no sampling is required.
Slag	Field	Central Lab	One per 2000 tons	4 lbs	At least 14 days prior to use, the engineer must have a copy of a report of tests showing satisfactory chemical and physical properties. A manufacturer's certification of compliance must be made available by the contractor upon request of the engineer. See CMM 8-45 for certification guidelines. Reference Certified Reports of Test and Analysis on MIT/MTS prefix 905. For contracts with less than 100 tons, no sampling is required.

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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CONCRETE WATER

- Municipal Sources	Field	Central Lab	No Sampling Required	1/2 gal	Samples must be submitted in a clean plastic container well packed for shipment to preclude breakage. For water used from sources permitted without test, see standard spec 501.2.4 . * If problems with any water source are suspected, based on current conditions or historical data, the department may request sampling at any time. In particular, surface water sources should be closely monitored at all times during concrete production. If conditions change significantly during the life of the project (i.e. an algae bloom or muddy storm runoff, etc.) a fresh sample should be tested prior to approval of continued use of the source.
- Private Wells	Field	Central Lab	1/source/5yrs*	1/2 gal	
- Surface Water	Field	Central Lab	1/source/yr*	1/2 gal	

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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CONCRETE CURING AND SEALING

Liquid Membrane Curing Compounds	Source or Field	Central Lab	When not source inspected. One per 2000 gallons or fraction thereof. ^[18]	1 Quart	<p>Liquid membrane curing compound, when source inspected, must be marked with evidence of being approved for use in Wisconsin. If there is any doubt whether a batch is satisfactory, contact the Regional Materials Section.</p> <p>Lists of WisDOT tested and approved batches of Liquid Membrane Curing Compounds for the current year is maintained at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnsit-rsrcs/tools/appr-prod/default.aspx</p> <p>Lots or batches carried over from the previous year must be re-tested before use.</p> <p>When not source inspected, in addition to field sampling and testing at central lab, a manufacturer's certified report of test or analysis identified with the manufacturer's name or trademark listing the lot or batch number of the material delivered to the job is required, reference on MIT/MTS prefix 905.</p> <p>Field sampling may be waived for small quantities of 220 gallons or less. For these cases, a manufacturer's certificate of compliance must be made available when requested by the engineer.</p> <p>The "Concrete curing compounds" approved list covers three types of curing compound:</p> <p>Poly-methyl-alpha-styrene (PAMS); ASTM C309 material for curing concrete pavement, called in 415.2.4</p> <p>White Pigmented – ASTM C309 material called in 501.2.9, must be used in place of PAMS for pavement or base receiving an overlay.</p> <p>Linseed Oil – tested under C309, formerly allowed under 501.2.9, not allowed on projects let after December, 2015</p> <p>See CMM 8-45 for certification guidelines.</p> <p>A diary entry is required for lots or batches of curing compound used as per CMM 8-45.</p>
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Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
CONCRETE CURING AND SEALING					
Clear and Translucent	Field				<p>A manufacturer's certificate of compliance is required, reference on MIT/MTS prefix 905.</p> <p>This material is called under 502.2.6, for structure concrete surfaces not receiving protective surface treatment. Approved field practice allows substitution of material from the approved list for Cure & Seal Compounds for Non-trafficked Surfaces on Structural Masonry/Pigmented Surface Sealer. No sampling or testing is required.</p> <p>See CMM 8-45 for certification guidelines.</p> <p>A diary entry is required for lots or batches of curing compound used as per CMM 8-45</p>
Crack and Surface Sealers	Field				<p>Lists of WisDOT- approved Crack and surface Sealers are maintained at: http://wisconsin.gov/Pages/doing-bus-eng-consultants/cnsit-rsrcs/tools/appr-prod/default.aspx</p> <p>Crack and Surface Sealer - 502.2.11 calls three lists/applications as follows: Low Viscosity Crack Sealer, Non-pay, incidental to Item 502.0100 : Per 502.3.13.1, primarily for use in sealing small deflection and shrinkage cracks in new bridge decks Concrete Protective Surface Treatment, Item 502.3200: Per 502.3.13.2, primarily for use in surface sealing of the top and edges of bridge decks Cure and Seal Compounds for Non-Trafficked Surfaces on Structural Masonry/Pigmented Surface Sealer, Item 502.3210: Per 502.3.13.3, primarily for use in sealing the inside faces and tops of parapets/barriers on bridges</p> <p>See CMM 8-45 for certification guidelines. A diary entry is required for all items; see CMM 8-45.</p>
Clear Protective Coating					<p>Clear Protective Coating, Item 502.6500 – No approved list.</p> <p>Called in 502.2.13(1) primarily for sealing concrete substructure surfaces. A manufacturer's certificate of compliance must be made available by the contractor. Reference on MIT/MTS prefix 905.</p>

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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CONCRETE MASONRY REINFORCEMENT

<p>Bar Steel (Uncoated – “Black Steel”) and Bar Steel (Epoxy Coated – “Green Steel”)</p>	<p>Field</p>	<p>Central Lab</p>	<p>One for each 50,000 lbs increment or portion for each individual bar size with a quantity equal to greater than 50,000 lb.</p>	<p>5 Feet</p>	<p>It is not necessary to submit samples from all heats and lots. Do not submit splice bars or test bars in lieu of cut samples. Apply the sampling threshold individually for each size of bar. Sample each bar steel size for which the project quantity equals or exceeds 50,000 lbs. Replace cut samples with bars long enough to provide additional lap length for splicing as prescribed in CMM 5-15.5.6.</p> <p>When bars are delivered to the field the engineer must:</p> <ul style="list-style-type: none"> - Be sure all bundles are identified with heat numbers. - Obtain one copy of the mill test reports and shipping invoice representing all steel types, grades, bar sizes and heat numbers included in the shipment. - When epoxy coated, in addition to the above, a copy of the resin manufacturer's certification of coating materials and the applicator's certification attesting to compliance with all of the coating details of the specifications. - Attach to the invoice, the mill test reports and when applicable, the coating manufacturer's and applicator's certification. Place in the project records. - Reference electronically on a Materials Tracking System prefix 905 the mill reports and certifications received. <p>For each sample selected, attach a tag with the following information and submit to the Central Laboratory for testing.</p> <ul style="list-style-type: none"> - Steel type, Grade, Bar size, Heat Number and manufacturer - If epoxy coated, the epoxy resin manufacturer. - Quantity of material the sample represents. <p>When quantities are less than 50,000 lbs. of any one bar size visually inspect and document in accordance with CMM 8-45. Bar Steel delivered without plainly marked heat # tags must not be accepted. If this occurs, immediately contact the regional person responsible for this area.</p> <p>Sampling Frequency Chart:</p> <table border="1" data-bbox="926 1089 1694 1308"> <thead> <tr> <th colspan="2">BAR STEEL MINIMUM SAMPLING FREQUENCY</th> </tr> <tr> <th>BAR STEEL (pounds)</th> <th>NUMBER OF SAMPLES</th> </tr> </thead> <tbody> <tr> <td>0 - 49,999</td> <td>No sample required</td> </tr> <tr> <td>50,000 – 99,999</td> <td>2 samples required</td> </tr> <tr> <td>100,000 – 149,999</td> <td>3 samples required</td> </tr> <tr> <td>150,000 – 199,999</td> <td>4 samples required</td> </tr> <tr> <td>200,000 – 249,999</td> <td>5 samples required</td> </tr> <tr> <td>250,000 – 300,000</td> <td>6 samples required</td> </tr> </tbody> </table> <p><i>Add one sample for each 50,000 lb or portion thereof.</i></p> <p>Only approved powdered epoxy resins are permitted for use. The list of approved Epoxy Coating for Bar Steel Reinforcement is located at: http://wisconsin.gov/Pages/doing-bus/eng-consultants/cnsit-rsrcs/tools/appr-prod/default.aspx</p>	BAR STEEL MINIMUM SAMPLING FREQUENCY		BAR STEEL (pounds)	NUMBER OF SAMPLES	0 - 49,999	No sample required	50,000 – 99,999	2 samples required	100,000 – 149,999	3 samples required	150,000 – 199,999	4 samples required	200,000 – 249,999	5 samples required	250,000 – 300,000	6 samples required
BAR STEEL MINIMUM SAMPLING FREQUENCY																					
BAR STEEL (pounds)	NUMBER OF SAMPLES																				
0 - 49,999	No sample required																				
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Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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CONCRETE MASONRY REINFORCEMENT

Threaded Bar Couplers	Field	Field			Threaded bar couplers will not require sampling and may be accepted in the field. The contractor must furnish to the engineer a Certified Report of Tests or Analysis based on a minimum of 3 tests for each type of threaded bar coupler used in the work.
Tie Bars Dowel Bars Dowel Bar Assemblies	Field ^[19]				Tie Bars, Dowel Bars, & Dowel Bar Assemblies in concrete pavement will not require sampling and may be accepted in the field. The contractor must furnish to the engineer a Certified Report of Tests or Analysis for all heat numbers used in the work. See CMM 8-45 for certification guidelines.
Dowel Bar Lubricant	Field				Contractor to provide product data sheets. Diary entry required. See CMM 8-45 for certification guidelines.
Hook Bolts	Source or Field				An approved fabricator usually furnishes hook bolts for bridges. The list of Approved Fabricators, Bridge Metal Secondary items is located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx For hook bolts furnished by an unapproved fabricator, the contractor will have a manufacturer's certification of compliance available. See CMM 8-45 for certification guidelines.

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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CONCRETE

Note: For contracts with QMP provisions, see specific contract documents for guidance. Projects require MIT/MTS prefix 155 QMP Concrete Pavement Summary, QMP Concrete Structures Summary, and/or QMP Ancillary Concrete Summary. Below are testing and sampling/testing requirements for contracts without QMP provisions.

Air Entrainment	Field	Field	Two tests per day except for small quantities See remarks		See instructions in CMM 8-70 for testing procedures. Observations must be maintained for deviations from selected consistency and entrained air target values and additional tests and adjustments will be necessary when such occurs. Superstructure elements may also require more frequent testing to properly administer the contract requirements. For slip-form paving, slump testing will be as required by the engineer.
Slump	Field	Field			

Compressive Strength (Note: One set of cylinders = two cylinders. See specific strength testing requirements below, based on use.)

-Incidental Construction and Ancillary Concrete	Field	Lab	One set per 200 CY per contract		When daily pours exceed 200 CY using the same source and mix, the rate of sampling may be reduced to one set per day. For contracts with quantities less than 100 CY cylinders do not need to be cast. The QMP ancillary concrete item covers most incidental concrete construction. Follow the requirements for QMP ancillary concrete specified in the contract.
-Pavement and Base Course	Field	Lab	One set per 10,000 SY or less		
-Bridges	Field	Lab			
-Substructures	Field	Lab			One set per substructure unit (e.g. pier, abutment).
-Superstructures	Field	Lab			For bridge decks, one set for each 150 CY or fraction thereof, with at least one set for each pour in a span. For parapets, one set per unit.
-Deck Overlay	Field	Lab			One set per pour. For pours over 450 CY, additional samples may be required, contact regional person responsible for this area for guidance
-Culverts and Retaining Walls	Field	Lab			Mold and submit one set per 100 CY or fraction thereof.

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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DELINEATORS

- Bracket - Mounting Hardware - Reflectors - Posts	Field				A manufacturer's certification of compliance must be made available by the contractor when requested by the engineer. See CMM 8-45 for certification guidelines.
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NON-PRECAST DRAINAGE ITEMS (See PRECAST CONCRETE for concrete pipe and appurtenances)

Note: A diary entry is required for these items. See [CMM 8-45](#) for requirements..

Corrugated Metal Drainage Products	Field				<p>All corrugated metal drainage materials supplied under the following categories shall be from vendor(s) listed on WisDOT approved fabricators list for Corrugated Metal Pipe Products posted here: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx</p> <p>Corrugated Steel Pipe – Items 520.1000 – 3399, OR 520.3500 – 3599, OR 520.4100 – 8500, OR 521.0100 – 1900, OR 612.0100 - 0599</p> <p>Corrugated Aluminum Pipe– Items 525.0100 – 0499, OR 612.0100 - 0599</p> <p>Polymer Coated Corrugated Steel Pipe– Items 528.0100 – 0499</p> <p>Aluminum Coated Corrugated Steel Pipe– Items 529.0100 - 0499</p> <p>Structural Plate Pipe and Pipe Arches, Items 527.0100 – 0499, are not required to be from an approved vendor. A Manufacturer’s Certificate of Compliance with AASHTO M219 or M167 (as applicable) is required, reference on MIT/MTS prefix 905. .</p> <p>For All Metal Pipe Materials: 1. Retain the Bill of Lading, or other documentation supplied with the material, which must identify the original manufacturer, and plant location, the mill and heat number for the steel from which the product was manufactured, and a statement certifying compliance with the provisions of the Buy America Act, 23 CFR 635.410, in the project record.</p> <p>2. Perform delivered material inspection on CMP. See CMM 5-50.3 for inspection and acceptance guidelines.</p> <p>3. Diary entry required.</p>
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CMM 8-50 Materials Testing and Acceptance Guide

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
- ABS Pipe - Polyvinyl Chloride (PVC) Pipe	Field				Pipe must be marked AASHTO M278 (ABS Pipe), or ASTM D2680 (PVC Pipe) Bid items 612.0100 - 0599 A manufacturer's certificate of compliance must be made available by the contractor when requested by the engineer. See CMM 8-45 for certification guidelines.
NON-PRECAST DRAINAGE ITEMS (See PRECAST CONCRETE for concrete pipe and appurtenances) Note: A diary entry is required for these items. See CMM 8-45 for requirements..					
Composite Pipe	Field				Pipe must be marked ASTM D2680. A manufacturer's certification of compliance must be made available by the contractor when requested by the engineer. Items 608.6000 – 6099 See CMM 8-45 for certification guidelines.
Joint Materials (Storm Sewer) - External Rubber Gaskets - Rubber and Plastic Gaskets	Field				A manufacturer's certification of compliance must be made available by the contractor when requested by the engineer. See CMM 8-45 for certification guidelines.
Pipe Mandrel for Deflection Testing	Field	Field	See remarks	N/A	Pipe mandrel shall be 92.5% of specified inside diameter of pipe that is tested. Mandrel shall have cable attachment points on each end of core. Mandrel shall have nine fins or legs for deflection measurement. Pipe deflection should be tested before paving or finish grading. Testing shall be done on 10% of the overall project, as designated by the engineer. The mandrel must pass entire section in one pass when pulled by hand without excessive force.
Drains and Downspouts for Bridges	Field				An approved fabricator normally furnishes these items. The list of Approved Fabricators, Bridge Metal Secondary items is located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx In the event the item(s) is not furnished by an approved fabricator, a certification of compliance must be made available. See CMM 8-45 for certification guidelines.

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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ELECTRICAL

Controllers and Related Equipment	Shop and Field				Acceptance of these items is based on their performing in accordance with the sequence in the contract and in many cases, passes an acceptance test by the WisDOT Electrical Shop in Madison. See the contract plans and specifications for detailed instructions.
Luminaires, Fuses, Tape, Fuse Holders, Varnish, Connectors, Breakaway Bases, Traffic Signal Standards, Polyethylene Duct, Traffic Signal Mounting Hardware, Traffic Signal Faces, Junction Boxes,- Pull Boxes, Cast Rings and Covers, Electrical Service Material, Splice Kits, Multi-Conductor Cable, Cable-In-Duct (Multiple Wires), Wiring (Lighting & Signalization)	Field				The department specifies approved materials and construction products for electrical work on the department's approved products list. The Qualified Electrical Products List (EQPL) is located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx Accept electrical materials not on the EQPL in accordance with standard spec 651.2 . See CMM 8-45 .
Electrical Wire & Cable for Lighting & Signalization	Field			24" pieces	Accept these electrical materials in accordance with standard spec 651.2 . * When samples are required, include one complete set of lettering.

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
ELECTRICAL					
Anchor Rods	Field	Central Lab	One per signal location		When these electrical items are specified in the contract, a manufacturer's certification of compliance covering such items must be submitted to the project manager with the material list.
Mast Arms					See CMM 8-45 for certification guidelines.
- Trombone					The contractor is to furnish poles, arms and pedestal bases from an approved manufacturer. Pre-qualified manufacturers are listed in the EQPL. Per the requirements of standard spec 657 the contractor is to also furnish a certification of compliance and shop drawings for all poles and arms.
- Luminaire					Reference Certifications of Compliance, Certified Reports of Test and Analysis, and shop drawings electronically on MIT/MTS prefix 905.
- Monotube					If the engineer requests, the contractor is to provide one randomly selected sample pedestal base per traffic signal location. The department will base acceptance of all pedestal bases at that traffic signal location on destructive tests of that sample base.
s					
Poles					
Bases, Pedestal & Transformer					
VB					
ELECTRICAL CONDUIT					
- Rigid Metallic	Field				Conduit with Underwriters Laboratories, Inc. (UL) label/emblem affixed to each piece signifies acceptable material and may be incorporated into the work. See standard spec 652.2.1 . When the UL label/emblem is not affixed, or the label/emblem is suspect, do not use the material. See CMM 6-55 .
- Rigid Nonmetallic					
- PVC Schedule 40 and 80					
EMBANKMENT					
Embankment	Field				For QMP contracts, see the specific contract documents for sampling and testing guidance. For non-QMP contracts contact the regional soils engineer for the latest acceptance procedures and required documentation. For additional guidance, see the CMM as follows: Standard Compaction: CMM 3-30 Special Compaction: CMM 3-30 & CMM 8-45 Report QV, QA and QC Soils Nuclear Density tests on MIT/MTS prefix 232 or 805 (if applicable).

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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EROSION CONTROL MATERIALS

Erosion Control Materials	Field				<p>The Erosion Control Product Acceptability Lists (PAL) available at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/pal/default.aspx</p> <p>The Erosion Control PAL lists approved products for the following categories: Tackifier – Incidental to Items 627.0200 - 0205 Erosion Mat, all Classes and Types – Items 628.2000 – 2099 Soil Stabilizer Types A & B – Items 628.6500 - 6599 Inlet Protection1 – Items 628.7000 - 7099 Temporary Ditch Checks2 – Item 628.7504</p> <p>ACCEPTANCE NOTES: Inlet protection devices may be fabricated according to the Plans, using Type FF fabric from the PAL, or proprietary devices from the PAL. Temporary ditch checks may consist of straw bales as detailed in the Plans, or proprietary devices from the PAL installed per manufacturer’s recommendation. Straw bales for ditch checks are incidental to the bid item and will not be paid for separately. All materials listed require a diary entry. Retain the Bill of Lading or other documentation identifying the vendor as listed on the PAL for the particular material/bid item in the project record.</p>
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CMM 8-50 Materials Testing and Acceptance Guide

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
FENCING					
Chain Link Fabric	Field	Central Lab	One per 50 rolls or fraction thereof.	1 SF	When test results indicate noncompliance, additional samples must be taken from two rolls, units, or coils other than initially sampled, both of which must meet the requirements.
Posts and Top Rails	Field	Central Lab	One per 500 or fraction thereof per size. See remarks	2 - 12 inch lengths and 1 - 3 foot length. See remarks	Two specimens for determination of weight of coating must be cut approximately 12 inches in length from opposite ends of the lengths of members selected for testing. Also, a third specimen, for determination of tensile strength, must be cut approximately three feet in length, from the center portion of each member selected for testing. Specimens must be cut from one length selected at random from each lot of 500 lengths, or fraction thereof, of each size. If the weight of coating and/or tensile strength test results of any lot indicate noncompliance, samples of two additional lengths must be taken for each test from the same lot as initially sampled both of which must meet the requirements.
Tension Wire	Field	Central Lab	One per 10 rolls or fraction	3 foot length	When test results indicate noncompliance, additional samples must be taken from two rolls, units, or coils other than initially sampled, both of which must meet the requirements.
Woven Wire Fabric	Field	Central Lab	One per 50 rolls or fraction thereof.	3 foot full width including 3 vertical stay wires	When test results indicate noncompliance additional samples must be taken from two rolls other than initially sampled, both of which must meet the requirements.
Barbed Wire	Field	Central Lab	One per 50 spools or fraction thereof	6 barb lengths	When test results indicate noncompliance additional samples must be taken from two spools other than initially sampled, both of which must meet the requirements.
High Strength Wire	Field	Central Lab	One per 50 spools or fraction thereof	3 foot length	When test results indicate noncompliance additional samples must be taken from two spools other than initially sampled, both of which must meet the requirements.
Flexible Tubular Marker Posts and Bases	Field				The list of Approved Flexible Tubular Marker products is located at: http://wisconsin.gov/Pages/doing-bus/eng-consultants/cnsit-rsrcs/tools/appr-prod/default.aspx A manufacturer's certification of compliance must be made available by the contractor when requested by the engineer. See CMM 8-45 for certification guidelines.

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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GEOSYNTHETICS

<p>Geotextile Fabric General Requirements applies to particular fabrics listed below</p>	<p>Field</p>	<p>Central Lab</p>	<p>See remarks</p>		<p>This sample size description applies for all types of geotextile fabrics. Samples must be full width of the fabric and a minimum of 4 feet in length. The total sample size must be a minimum of 40 SF.</p> <p>See standard spec 645 and contract special provision specifications for additional information.</p> <p>Product data sheets will not be accepted as a substitute for the manufacturer's certification of compliance or certified report of test or analysis.</p> <p>Reference Certified Reports of Test and Analysis, and Certifications of Compliance electronically on MIT/MTS prefix 905.</p> <p>PROTECT SAMPLES – Geotextile fabric samples must be protected from ultraviolet light.</p> <p>For contracts with quantities or fabrics not requiring a sample, a diary entry is required.</p> <p>See CMM 8-45 for requirements.</p>
<p>Subgrade Aggregate Separation (SAS) Fabric</p>	<p>Field</p>	<p>Central Lab</p>			<p>For contract quantities up to and including 20,000 SY a manufacturer's certificate of compliance must be made available. One sample is required for each 20,000 SY or lesser portion used in the work.</p> <p>For contract quantities over 20,000 SY, the contractor must furnish to the engineer at least ten days prior to use in the work a manufacturer's Certified Report of Test or Analysis that the geotextile fabric delivered for use in the work meets the specified requirements. The delivered geotextile fabric must bear markings to clearly identify it with the applicable test report furnished to the engineer. If not so marked, the fabric must not be used. Samples of fabric for testing will be obtained from the job site for each 20,000 SY or lesser portion used on the contract.</p> <p>See CMM 8-45 for certification guidelines.</p>

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
Drainage Filtration (DF) Fabric	Field	Central Lab	See remarks		<p>Engineer will obtain one sample for each 2000 SY or lessor portion used in the work.</p> <p>For quantities of over 2,000 SY the contractor must furnish to the engineer at least ten days prior to use in the work a manufacturer's Certified Report of Test or Analysis that the geotextile fabric delivered for use in the work meets the specified requirements. The delivered geotextile fabric must bear markings to clearly identify it with the applicable test report furnished to the engineer. If not so marked, the fabric must not be used.</p> <p>See CMM 8-45 for certification guidelines.</p>
GEOSYNTHETICS					
Subgrade Reinforcement (SR) Fabric	Field	Central Lab	See remarks		<p>For quantities up to and including 10,000 SY, a certificate of compliance must be made available by the contractor.</p> <p>For quantities over 10,000 SY, the contractor must furnish to the engineer at least ten days prior to use in the work a manufacturer's Certified Report of Test or Analysis that the geotextile fabric delivered for use in the work meets the specified requirements. The delivered geotextile fabric must bear markings to clearly identify it with the applicable test report furnished to the engineer. If not so marked, the fabric must not be used. Samples of fabric for testing will be obtained from the job site for each 10,000 SY or lesser portion used on the contract.</p> <p>See CMM 8-45 for certification guidelines.</p>
Rip Rap Fabric (R) Heavy Rip Rap Fabric (HR) Modified SAS Fabric (C) Silt Fence Fabric	Field				<p>A manufacturer's certificate of compliance must be made available by the contractor when requested by the engineer.</p> <p>See CMM 8-45 for certification guidelines.</p>

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
Geotextile Fabric (ES)	Field	Central Lab	See remarks		<p>The contractor must deliver to the engineer a sample of the geotextile material at least 15 days prior to its incorporation into the work. At the same time, the contractor must also furnish a sewn seam sample using the same geotextile fabric, thread, seam spacing and number, and overlap distance as are intended or required for use in the work.</p> <p>The contractor must furnish to the engineer at least 15 days prior to use in the work a manufacturer's Certified Report of Test or Analysis that the geotextile fabric delivered for use in the work meets the specified requirements. The delivered geotextile fabric must bear markings to clearly identify it with the applicable test report furnished to the engineer. If not so marked, the fabric must not be used. Samples of fabric for testing will be obtained from the job site for each 10,000 SY or lesser portion used on the contract.</p> <p>See CMM 8-45 for certification guidelines</p>
JOINT SEALERS					
- Cold Poured Silicone Type	Field ^[23]				<p>^[23] A diary entry is required for these items.</p> <p>See CMM 8-45 for requirements.</p> <p>A manufacturer's certification of compliance must be made available by the contractor when requested by the engineer.</p> <p>See CMM 8-45 for certification guidelines.</p> <p>A manufacturer's certified Report of Test or Analysis must be made available by the contractor when requested by the engineer for both the sealer and lubricant-adhesive, indicating conformance of the materials with the contract requirements.</p> <p>See CMM 8-45 for certification guidelines.</p>
- Hot Poured Elastic Type					
- Non-Bituminous					
- Preformed Elastomeric	Field ^[23]				
- Compression and Lubricant-Adhesive					
LUMBER AND TIMBER					
Treated	Field				<p>A certification of treatment and specification compliance must be made available by the contractor when requested by the engineer.</p> <p>See CMM 8-45 for certification guidelines. A diary entry is required for these items.</p>
MORTAR					
Mortar Sand					Contractor to supply gradation test results prior to use.

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
Mortar Cement Portland Cement Masonry Cement Hydrated Lime					A manufacturer's certification of compliance is required. See CMM 8-45 for certification guidelines. A diary entry is required for these items. Document percentage of each material used.
PAINT					
For Use On Metal - New Structural Steel - Structural Maintenance Painting - Other Metal Surfaces	Field Field				See contract special provision specifications for paint system requirements for new structural steel. The list of Paint Systems for New Structural Steel (per STSP 517-040) is located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx The list of Approved Paint Systems- Structure Maintenance Painting is located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx See contract special provision specifications for all other paint system requirements.
PAVEMENT MARKING					
Permanent` Cold Preformed Plastic (With Glass Spheres) Preformed Thermoplastic Paint (Cold Applied) Paint (Hot Applied)	 Field Field Field Source				Solvent born and Waterborne Paint - The list of approved paint products is located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx Items not source inspected - the engineer must have, prior to use, a certified report(s) of test(s) for samples of the material(s) furnished for the contract. The reports must contain the batch number(s) to which the results apply. See CMM 8-45 for certification guidelines. Reference Certified Reports of Test and Analysis on MIT/MTS prefix 905.

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
Epoxy	Source				<p>Furnish epoxy from the departments approved list. Pre-qualified products are listed on the Pavement Marking QMP located at:</p> <p>http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnsit-rsrcs/tools/appr-prod/default.aspx</p> <p>Before use, submit a certificate of compliance certifying the epoxy supplied under the contract conforms to the specification.</p> <p>See standard spec 646.2.4.</p>
PAVEMENT MARKING					
Glass Spheres for Paint	Source				<p>Only pre-qualified WisDOT tested batches are permitted for use. A summary list of WisDOT Central Laboratory tested Glass Spheres for pavement marking is maintained at:</p> <p>http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnsit-rsrcs/tools/appr-prod/default.aspx</p> <p>"Utah Performance"-type glass beads called in STSP 646-024 are not required to be from the approved product list. A manufacturer's certificate of compliance with the specified gradation is required, reference on MIT/MTS prefix 905.</p>
PILING					
<ul style="list-style-type: none"> - Steel - Sheet (Permanent Installation) - Bearing - Shell 	Field	See remarks		See remarks	<p>Before use, the engineer must have certified copies of mill test reports showing satisfactory chemical and physical properties for each heat or lot delivered for the contract. All piling materials are to be marked to identify the materials with the certified report of test documents. If identification markings are absent, the contractor must certify that all delivered materials are from the same lot as the test report represents.</p> <p>When mill test reports are not available, the engineer must submit a section 2-feet in length and 9-inches in width to the Central Laboratory for testing. Reference Certified Reports of Test and Analysis 905 Certified Reports of Test and Analysis.</p>
- Steel Oil Field Pipe	Field	Field	See remarks		<p>See standard spec 511.2.2.</p> <p>Each piling delivered for the contract must be marked with a unique identification for each load that must conform to the bill of lading. The marking must be durable and legible. Markings can be transferred by contractor when cut offs are complete.</p> <p>A manufacturer's certification of compliance must be made available by the contractor.</p> <p>See CMM 8-45 for certification guidelines.</p>

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
- Steel Oil Field Pipe Continued	Field	Field	See remarks		<p>The contractor must also furnish at or prior to delivery a certification of chemical composition of the pipe from which a carbon equivalency (CE) may be determined. The CE must be computed by the following equation: $CE = C + 1/6 (Mn + Si + Cr + Mo + V) + 1/15 (Ni + Cu)$.</p> <p>(The equation items are the chemical composition values identified on the certification.)</p> <p>Reference Certified Reports of Test and Analysis on MIT/MTS prefix 905.</p> <p>Pipe delivered in a magnetized condition must be limited to non-welded applications. Pipe delivered with a CE greater than 0.55 must not be incorporated into the work unless approved by a representative of the Metals and Fabrication Inspection Unit.</p>
POSTS, TREATED WOOD					
<ul style="list-style-type: none"> - Guardrail - Right of Way (Security Fence) - Screen Fence - Sign, Etc. 	Field				<p>A manufacturer's certification of treatment must be made available by the contractor upon request of the engineer.</p> <p>A diary entry is required for these items.</p> <p>See CMM 8-45 for diary entry requirements.</p>

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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PRECAST CONCRETE

Precast Concrete Materials	Shop				<p>The following items are covered by the approved vendors list posted here: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx</p> <p>All of the following precast materials must be from vendors on the approved list:</p> <p style="text-align: center;"><u>Category A</u></p> <p>Circular Reinforced Pipe - Items 522.0100 – 0699 OR 520.2000 - 5199 Circular Non-reinforced Pipe – Items 607.0100 – 0399 (Not used on contracts let after 12/2015) Elliptical Reinforced Pipe – Items 523.0100 - 0499 Arch Pipe – SPV Cattle Pass – Item 522.2000 Apron Endwalls – Items 522.1000 – 1199 OR 520.1000 - 1199</p> <p style="text-align: center;"><u>Category B</u></p> <p>Manholes – Items 611.2000 - 2699 Components (Cones, Lids, etc.) – Incidental to Items 611.1000 - 3999 Riser Rings – Incidental to Items 611.8105 - 8115 Inlets – Items 611.3000 – 3999 Catch Basins – Items 611.1000 - 1999</p>
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Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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PRECAST CONCRETE

Precast Concrete Materials	Shop				<p>The following items are covered by the approved vendors list posted here: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx All of the following precast materials must be from vendors on the approved list:</p> <p style="text-align: center;"><u>Category C</u></p> <p>Box Culverts – Item 504.2000.S Wall Panels (non-prestressed only) – SPV/MSE Panels Temporary Traffic Barrier – Item 603.8000 Special Structures – SPV/Three-Sided Precast Structures</p> <p style="text-align: center;"><u>Category D</u></p> <p>Concrete Masonry Units/Concrete Brick – Incidental to Items 611.1000 – 3999 Modular Retaining Wall Blocks – SPV ** See project special provisions for acceptance requirements for precast materials/items not listed above, including: Noise Wall Panels Accelerated Bridge Construction elements (Columns, Pier Caps) All precast materials must be marked as follows: Manufacturer and Plant Location Date of manufacture Specification designation (Applies to all Pipe, Inlets, Manholes, Catch Basins, Box Culverts)</p>
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Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
PRESTRESSED CONCRETE					
Prestressed Concrete					<p>The shipping document must be stamped as indicated in the Plant Certification Program for Fabrication of Prestressed Concrete elements.</p> <p>See CMM 8-75.</p> <p>Reference the shipping documents on MIT/MTS prefix 905.</p> <p>The list of approved Prestressed Concrete suppliers is located: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnsit-rsrces/tools/appr-prod/default.aspx</p> <p>If the supplier is not on the list of certified plants, immediately contact the regional person responsible for this area.</p>
SIGNING					
<ul style="list-style-type: none"> - Base - Face - Message 	Field				<p>A manufacturer's certification of compliance must be made available by the contractor when requested by the engineer.</p> <p>See CMM 8-45 for certification guidelines.</p> <p>A diary entry is required for these items.</p> <p>See CMM 8-45 for diary entry requirements.</p>
<ul style="list-style-type: none"> - Sign Bridges - Sign Supports 	Shop or Field				<p>A manufacturer's certification of compliance or a certified report of test or analysis indicating conformance with the contract requirements must be made available to the engineer by the contractor for all materials not shop inspected.</p> <p>See CMM 8-45 for certification guidelines.</p> <p>A diary entry is required for these items.</p> <p>See CMM 8-45 for diary entry requirements.</p>

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
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STEEL PRODUCTS					
Steel Forgings (Bridges)	Shop				An approved fabricator usually furnishes these items. The list of Approved Fabricators, Bridge Metal Secondary items is located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnsit-rsrcs/tools/appr-prod/default.aspx
Steel Grid Floor	Shop or Field				When not shop inspected a manufacturer's certification of compliance must be made available by the contractor. See CMM 8-45 for certification guidelines.
Steel Plate Beam Guard Sheet Steel Beams	Field	Field	See remarks		List of Steel Plate Beam Guard pre-qualified manufacturers: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnsit-rsrcs/tools/appr-prod/default.aspx See CMM 6-25.3.5 for acceptance procedure. Projects require MIT/MTS prefix 155 Beam Guard QV Summary Report.
End Shoe Sections Terminal Sections Anchor Assembly	Field				If the quantity is 20 or more, the engineer must also have before installation a manufacturer's certified report of test or analysis indicating compliance with the contract requirements for all heat numbers delivered to the project. See CMM 8-45 for certification guidelines.
Steel Reinforcement					See "Concrete Masonry Reinforcement."
Structural Steel - Bridges					Items are inspected at the steel fabrication shop and acceptance is on the basis of a shop inspection report (Structures Fabrication Unit form DT1832). Reference shop inspection reports on MIT/MTS prefix 905.
- Carbon Steel, Shaftings - Castings, Bronze - Castings, Steel					These items are usually furnished through an approved fabricator though they are manufactured items. Acceptance is on the basis of a shop inspection report (Structures Fabrication Unit form DT1832).
Stud Shear Connectors	Field				A manufacturer's certification of compliance must be made available by the contractor when requested by the engineer. See CMM 8-45 for certification guidelines.

Material	Where Sampled/ Accepted	Where Tested	Minimum Sampling Frequency	Central Lab Sample	Remarks
TRAFFIC CONTROL DEVICES					
- Drums	Field				A list of WisDOT approved work zone sheeting products for the current year is located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx
- Barricades Signs					Written certification from the manufacturer or supplier that the device conforms to crashworthiness criteria. Include the federal-aid reimbursement eligibility letter with that submittal.
WATERSTOPS					
- Polyvinyl Chloride	Field				Polyvinyl Chloride - A manufacturer's certification of compliance must be made available by the contractor when requested by the engineer. See CMM 8-45 for certification guidelines.
- Rubberized Waterproof Membrane	Field				Must be selected from the department-approved list. The list of approved products is located at: http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/appr-prod/default.aspx The material must be backfilled within 30 days of installation or otherwise protected from ultra violet radiation.