WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS & TESTING DIVISION

MATERIALS PROCEDURE

CRITERIA TO APPROVE FENCE SUPPLIERS AND THEIR MATERIALS.

1. PURPOSE

1.1 To establish procedures for qualifying suppliers of fence materials acceptable for use on West Virginia Division of Highways (WVDOH) projects.

1.2 To establish a procedure for maintaining a record of such information.

1.3 To establish a procedure for transmitting such information to the WVDOH Districts and contractors on WVDOH projects.

2. SCOPE

2.1 This procedure shall apply to all suppliers who supply fence materials such as chain link fence, farm field fence, fence posts, tie wire, bolts, nuts, gate latches, barb wire, and other related fence materials.

2.2 This procedure shall apply to all fence products used by WVDOH projects unless project plans state otherwise.

3. APPLICABLE DOCUMENTS

WVDOH Specifications for roads and bridges.

UL Underwriters laboratories specifications

4. ACCEPTANCE PROCEDURE

4.1 With each shipment, of fence material to a WVDOH project, the fence Supplier shall provide shipping documents which contain an APL source number reflecting materials meeting quality specified by the WVDOH.

5. ACCEPTANCE PROCEDURE (APPROVED SOURCE)

5.1 For a Supplier to be considered an approved source of fence items as stated in section 2.1 the supplier must comply with the following requirements where applicable.

5.2 The Supplier is to complete and submit form HL-468 attainable from the website: https://transportation.wv.gov/highways/mcst/Pages/newproduct_evaluationprocedure.aspx and be submitted to the WVDOH Materials Control, Soils and Testing Division.

5.3 Once form HL-468 form is correctly submitted, an on-site investigation evaluation will be conducted by an Evaluator from the WVDOH at the supply distribution location, to determine if the proposed location should be listed as an approved source for fence items.

5.4 The initial evaluation and yearly renewal of the Supplier shall be conducted using guidelines set forth in Attachment 1 where applicable.

5.5 At the initial and subsequent annual investigation evaluations, all appropriate management, sales, and warehousing personnel will be made aware of specifications, shipping policies and requirements to sell and ship fence materials to WVDOH projects.

5.6 After the initial investigation evaluation has been completed, the Evaluator shall document the findings in an inspection report, indicate that the location was evaluated and whether it met the criteria to be included on an APL for fence items. If the report notes that the Supplier didn't meet the required criteria, then the reasons why will be stated in the inspection report.

5.7 Providing the evaluation was found to meet specifications, the inspection report shall be signed by the Evaluator and shall be given a laboratory approval number. This laboratory approval number will be the APL number used by the WVDOH. An example of the inspection report can be seen in Attachment 2.

5.8 The signed inspection report is a certification from the Evaluator that the Supplier has met the criteria to be included on the APL for Fence Suppliers. This report will be filed under the Supplier's name in the WVDOH electronic filing system.

5.9 Once the above requirements are met, Supplier approval status can be verified by accessing the WVDOH online APL for fence items.

5.10 If a Supplier is removed from approved source status for not meeting specification requirements, then the Supplier will be removed from the APL listing for one year. After a year, the Supplier may be reevaluated to ensure corrective measures have been met.

6. ACCEPTANCE PROCEDURES (NON-APPROVED SOURCE)

6.1 Any fence materials not supplied by an approved source are to be accepted or rejected by the direct coverage process.

6.2 If direct coverage inspection is required, the inspection or evaluation will conclude with a 7-digit Laboratory reference number indicating approval or rejection.

7. DOCUMENTATION REPORT

7.1 The approved source list for suppliers of fence items used on WVDOH projects may be updated at any time with the addition of a new facility, or with the removal of a facility.

Ronald L. Stanevich, P.E.
Director
Materials Control, Soils and Testing Division

Attachment 1

Below is a summary of topics that the prospective supplier of fence materials will be evaluated in accordance with.

1 To ascertain if the supply location is a business or a storage lot, meaning is the location a bare storage lot with material or a location with an office building with salespeople.

2 To determine if the location is an industrial supplier or a homeowner quality supplier. Meaning does the location supply for industrial applications or residential applications.

3 To determine if the location is a wholesaler/retailer or just a retailer, meaning does the location provide material to business or to retail customers.

4 To inform sales personnel that materials supplied such as barbed wire, chain link fence, farm field fence, steel posts, post braces, gate frames come from established APL lists, and where to find them online if necessary. All gates must have padlock hardware equipped prior to shipment.

5 To inform sales personnel of shipping procedures, meaning documents must have lab numbers, CID numbers, if direct coverage. If shipped from an approved source, then sales tracking numbers and APL numbers must be listed for WVDOH District personnel.

6 Informing sales personnel of what materials are covered under buy American requirements and what materials are not subject to buy American. This is done mostly during the outdoor evaluation at inventory during the initial evaluation.

7 An outside and inside inventory evaluation of materials describing what materials have their own APL and what do not. Informing what materials are not covered by locations with anAPL number.

8 Discuss with sales personnel how to ship backorder material and partial material, also drop shipped materials, or how materials may be obtained by other sources, such as other approved sources or other non-approved sources.

9 Discuss with sales personnel about grounding kits, and that they are to be approved by location APL and not by other means.

10 Discuss with sales personnel that all items shall be coated by hot dip galvanizing or may be aluminumized by deposit coatings, all requiring 20 yr. minimum guarantee unless project plans indicate otherwise

11 All right of way fence shall meet requirements of WVDOH specification section 608

12 Discuss with sales personnel that silt fence is not covered by location APL but is covered by other means.

13 Discuss with sales personnel that all right of way fence posts, braces and grate frames shall meet AASHTO M181 requirements and be on their own APL number covered by other means.

14 Discuss with sales personnel that all studded tee posts shall meet AASHTO M281/ASTM A702 requirements and be approved on their own APL number

15 Discuss with sales personnel that bolts and hardware must be hot dipped galvanized or be cadmium coated to ASTM B766 specifications. And be of industrial quality.

16 Discuss with sales personnel that chain link fence shall be approved only if material meets AASHTO M181

17 Discuss with sales personnel that all barbed wire shall meet AASHTO M280 for the correct classification of barbed wire, class 1 unless otherwise specified by contractor.

Attachment 2

Below is an example of the report from the evaluator to certify that the location is suitable to be included on an APL for fence materials.

REPORT NUMBER	1112458
LOCATION EVALUATION REPORT	
SUBJECT:	Location evaluation of: Wombat Fence Products, Suppliers of fence items, located in Metropolis, Illinois
DATE OF REPORT:	October 27, 2021

1 INTRODUCTION

The purpose of this evaluation is to affirm confidence in the ability of Wombat Fence Products, of Metropolis, Illinois to supply industrial fence materials in accordance with WVDOH and ASTM international standards used in West Virginia Department of Transportation, Division of Highways (WVDOT/DOH) construction projects.

2 INVESTIGATION

In January 2022, Mr. Brice Banner of the WVDOH Materials Control, Soils and Testing Division traveled to Wombat Fence Products, in Metropolis, Illinois, to meet with Mr. Cecil Kent, General Manager, and Billy Wayne industrial sales coordinator, to discuss specifications and supply demands required by the WVDOH Additionally, an extensive evaluation tour of the entire manufacturing facility was conducted.

3 CONCLUSION

3.1 After the meeting and the supply location evaluation were completed, it was determined that fence materials provided by Wombat Fence Products, of Metropolis Illinois, did meet the requirements for fence materials used in highway construction on WVDOH projects where specified and the criteria noted in Attachment 1 of MP 712.05.57. It is recommended that Wombat Fence Products be added to the approved source list (APL) for fence materials.

Nicholas Fury
Evaluator

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS AND TESTING DIVISION

MATERIALS PROCEDURE

INSPECTION AND ACCEPTANCE PROCEDURES FOR PRECAST CONCRETE PRODUCTS

1. PURPOSE

1.1 To set forth procedures for the inspection and acceptance of precast concrete products, including inlets, manholes, box culverts, 3-sided bridge units, retaining wall panels, headwalls, wingwalls, lagging, junction boxes, and any other precast products, and the approval of the plants at which they are fabricated.

2. SCOPE

2.1 This procedure will apply to all precast concrete products supplied for use on West Virginia Division of Highways projects and to all precast concrete product fabricators that supply material for use on West Virginia Division of Highways projects.

2.2 For prestressed concrete members refer to MP 603.10.40 “Inspection and Acceptance Procedure for Prestressed Concrete Bridge Beams.”

3. FABRICATOR APPROVAL

3.1 All precast concrete product fabricators (hereafter referred to as the Fabricator) shall be approved by Materials Control Soils and Testing MCS&T Division prior to the start of any work for the WVDOH. If not listed on the WVDOH Approved List of Precast Concrete Fabricators, a Fabricator shall contact MCS&T Division a minimum of six weeks prior to the planned date on which fabrication is to begin to initiate the approval process.

3.2 In order for a Fabricator to be approved and listed on the WVDOH Approved List of Precast Concrete Fabricators, they must be NPCA (National Precast Concrete Association) certified, QCAST (American Concrete Pipe Association) Certified, or have an equivalent type of certification.

3.3 The process for approving a Fabricator shall include, but not be limited to, an on-site visit to the fabrication plant by a WVDOH representative from MCS&T Division. During this visit, the WVDOH Quality Assurance (QA) personnel shall inspect the fabrication facility and Quality Control (QC) lab, meet with QC and other key personnel from the Fabricator, and sample component materials which will be used in the fabrication of precast items.

3.3.1 Sampling and testing of component materials shall be done in accordance with MP 603.02.10. Copies of recent component delivery tickets should be presented on the day of sampling. All component materials must be approved prior to the start of fabrication.

3.3.1.1 Any Fabricator which does not produce for the WVDOH for a period of 2 years shall be removed from the Approved Fabricator list. After removal from the approved list, before a Fabricator can again produce for the WVDOH, they must repeat the approval process. Sampling of component materials will not continue when the plant is not listed on the Approved Fabricator list.

3.3.2 Personnel from the Fabricator required to be present during the initial on-site visit and meeting between WVDOH and Fabricator shall include representatives from Production and Quality Control. Any questions and concerns regarding WVDOH requirements, including applicable Specifications, Materials Procedure (MP's), Standard Details, and QC/QA Inspections shall be addressed at this meeting.

3.3.3 The Fabricator must submit the Quality Control Manual/Plan for review at this meeting.

3.4 All Concrete Mix Designs which will be used on products fabricated for the WVDOH must be submitted for review & approval, prior to the start of fabrication. Any design mix with an aggregate(s) that has a reactivity class~~es~~ R1, R2, or R3, as shown as in Approved Aggregates Source List, shall be developed in accordance with WVDOH specifications, subsection 601.3.1.1. If an aggregate Source is not listed on the Approved Aggregates Source List, the Division will test the fine and coarse aggregate from the Source, in accordance with AASHTO T 303, to determine the reactivity class of the aggregate prior to its use on any WVDOH project. The Division will inform the Fabricator of the reactivity class of aggregates that they are proposing to use. If a cement Source and/or a SCM Source are not listed on the Approved Source List, the Division will test cement and/or SCM from that Source prior to its use on any WVDOH project.

3.5 The Fabrication Plant QC Personnel, as a minimum, shall be a certified ACI Grade I Concrete Field Testing Technician and/or a WVDOH PCC Inspector. In addition, if Self-Consolidating Concrete (SCC) is used, Fabrication Plant QC Personnel shall be a certified ACI SCC Testing Technician.

3.6 All Precast Concrete items shall be accepted by Direct or Master Coverage except when a Fabricator is certified as an Approved Source of concrete lagging as defined in Section 7.0.

4. FABRICATION & INSPECTION OF PRODUCTS FOR DIRECT & MASTER COVERAGE

4.1 Prior to beginning fabrication of any precast concrete products, the Fabricator shall provide written or email notification to MCS&T Division at least one calendar week in advance of the date on which fabrication is to begin.

4.1.1 Depending upon the precast items being fabricated, MCS&T Division may choose to monitor fabrication. Fabrication of structurally significant products such as box culverts and 3-sided bridge units shall be monitored. Other items may be monitored at the discretion of MCS&T.

4.1.2 After fabrication has begun, the Fabricator shall keep MCS&T Division and the Inspector (whether a WVDOH employee or a contract employee representing the WVDOH) informed in advance of the days on which fabrication will take place.

4.2 Shop Drawings must be approved by the West Virginia Division of Highways prior to the start of any work by the Fabricator. The Inspector must have a copy of these approved shop drawings prior to start of any work by the Fabricator.

4.3 Concrete cylinders shall be made for compressive strength testing with 6-inch by 12-inch (150 mm by 300 mm) or 4-inch by 8-inch (100 mm by 200 mm) molds. The cylinders are to be cured in the same area as the products for which they represent (Field Cured as outlined in AASHTO T23) until tested to create a curing environment similar to the product that they represent. A compressive strength test shall consist of the average result of a set of cylinders, which is at least two cylinders. Form removal for wet cast concrete is not permitted ~~allowed~~ until concrete has reached 50% of the design strength, unless otherwise specified. If forms are stripped from box culverts at 50% of the design strength, another curing method from section 601.12, or ASTM C1577 ~~AASHTO M259, or M273 (whichever is applicable)~~ must be used until 70% of the design strength is obtained. Form removal limitations do not apply to elements fabricated with dry cast concrete. Dry cast concrete is defined as concrete with a slump less than 1-inch.

4.3.1 For both conventional wet cast concrete and SCC mixes, a minimum of one set of compressive strength cylinders shall be fabricated from every 7 yards of concrete, or fraction thereof, with a minimum of one set per day per mix design. Both the form removal strength and the 28-day strength must be confirmed by a set of cylinders. Cylinders shall be the same size as those used in the initial approved mix design. For conventional concrete, slump, temperature, and air content tests shall be conducted on the first batch of concrete each day and every time that cylinders are fabricated. For SCC mixes, spread, temperature, and air content tests shall be conducted on every batch. For all types of concrete, unit weight and yield tests shall be conducted on the first batch of concrete each day and thereafter as deemed necessary by Quality Control and Quality Assurance Personnel.

4.3.2 For dry cast mixes, ~~the 28-day strength shall be confirmed by a set of compressive strength cylinders. Compressive strength testing for form removal is not required for~~

dry cast mixes. A a minimum of one set of compressive strength cylinders per day shall be fabricated and tested to verify that a minimum 2,000 psi is achieved prior to stripping and handling is achieved. A minimum of one set of 28-day compressive strength cylinders shall be fabricated day of,Additionally, twith a minimum oftwocompressive strength fabricated from every 14 yards of concrete, or fraction thereof, with a minimum of one set per day per mix design. The cylinders are to be fabricated in the molds on the vibration table in accordance with ASTM C497. For dry cast mixes, slump testing is not required, and concrete temperature testing shall be performed on the first batch of concrete each day and every time that cylinders are fabricated. and yield at least

4.4 For precast manholes fabricated withWhen required, for wet cast and SCC mixes, absorption tests are to be conducted in accordance with ASTM C642 13,. and tTests should be conducted on a weekly basis for each mix design used, at a minimum,; unless otherwise specified.

4.44.5 For precast products fabricated with dry cast mixes, an absorption tests, are to be conducted in accordance with ASTM C642, and tests should be conducted shallshould be conducted on performed at least once for every day's productionon a weekly basis for each mix design used. , and tThe maximum allowable absorption shall be 9%.

4.54.6 Unless otherwise specified, for conventional wet cast and SCC mixes, plastic concrete shall have an air content measured at 7.0 ± 2.0%. For dry cast concrete, the air content test requirement is waived.

4.5.14.6.1 Prior to the use of Self-Consolidating Concrete in precast items all mix designs must be submitted to MCS&T for approval and meet the requirements of the following table. Test results from trial batches produced by the laboratory which designed it shall be included in the submittal. The compressive strength of the design mix shall be at least 15% above the specified design strength.

Table 4.5.1 - SCC Mix Design Acceptance

Fresh Property	**Mix Design Batch Acceptance Criteria**
Air Content	7.0± 1.5%
Spread (ASTM C1611)	Target ± 1.5 inches (38 mm) 2 seconds ≤T_{50}≤ 7 seconds Visual Stability Index ≤1.0
Passing Ability (ASTM C1621)	J-Ring Value ≤1 inch (25 mm)
Segregation Resistance (ASTM C1610)	Segregation ≤ 12%

Unit Weight and Yield	±2% of Theoretical

4.5.24.6.2 The following table lists the criteria for SCC production.

Table 4.5.2 - SCC Production Acceptance

Fresh Property	**Production Acceptance Criteria**
Air Content	7.0± 2.0%
Spread (ASTM C1611)	Target ± 2 inches (50 mm) 2 seconds ≤T_{50}≤ 7 seconds Visual Stability Index ≤1.0
Concrete Temperature	<90°F (32°C)
Unit Weight and Yield	±2% of Theoretical

4.5.34.6.3 SCC should only be given minimal vibration; and shall not be dropped from a distance greater than 4 feet relative to the top of the form.

4.6.4 Precast ~~elements~~products –fabricated with dry cast concrete shall be limited to a maximum wall thickness of 12 inches when single sided vibration is used and 18 inches when double sided vibration is used. ~~Dry cast sizes~~.

5. FINAL INSPECTION

5.1 After fabrication is completed and prior to shipment, the precast items will be stored on dunnage. The Fabricator shall provide MCS&T Division with a written or email request for final inspection a minimum of one calendar week prior to the desired date of inspection. Effective communication from the Fabricator to MCS&T Division and Consultant Inspection Agency is the key to avoiding any scheduling conflicts regarding final inspection.

5.2 At the final inspection, the fabricator shall provide the inspector with documentation of required data pertinent to the product(s) being produced. Attached to this document is a sample inspection sheet to be used as a guide for presenting this information. This documentation is also available on the MCS&T Division Website[1].

5.2.1 For the final inspection, the Inspector may witness compressive strength tests if required, inspect repairs as needed, and conduct a thorough visual examination of each member. A copy of the Inspector's daily reports, a copy of the final inspection report,

[1] https://transportation.wv.gov/highways/mcst/Pages/WVDOH-Materials-Procedures.aspx

and all other pertinent information provided to the Inspector by the Fabricator shall be kept on file by MCS&T Division.

5.2.2 For box culverts, trial fitting of adjacent pieces, prior to shipping, will be required as part of the final inspection process. Each adjacent box culvert will be stacked trial fitted in pairs horizontally or vertically; the gaps between each pair will be measured.,, and dDunnage will be placed on a smooth level surface below the bottom of the culvert to prevent damage. The maximum gap between the adjacent pieces shall not exceed ½ inch (13 mm), unless otherwise stated in the construction plans.

6. ACCEPTANCE & REJECTION

6.1 Upon completion of final inspection, if a precast product meets all specification requirements and does not contain any defects, the Inspector will stamp the precast product as accepted by MCS&T Division and provide a 7-digit Laboratory Reference Number for shipment.

6.2 If, however, the precast product does not meet all specification requirements due to damage, defect, or dimensional tolerance, the product must be further evaluated before potential acceptance by the MCS&T Division or the District for which the product was produced, as discussed further in the next sections.

6.2.1 Minor damage and/or defects may be repaired in accordance with the pre-approved repair procedures which should be incorporated within the Fabricator QC Plan. For cracks 4 mils (0.1 mm) or less a silane treatment may be used. Cracks between 4 mils (0.1 mm) and 16 mils (0.4 mm) shall be repaired by epoxy injection in accordance with Section 603.10.2. Products with cracks exceeding 16 mils (4 mm) shall be rejected by MCS&T. If repairs appear satisfactory and all other specifications are met, the Inspector shall stamp the product as approved for shipment. MCS&T Division will issue a 7-digit Laboratory Reference Number for acceptance.

6.2.2 Major damage and/or defects shall be evaluated on a case-by-case basis. If a product is approved for repair and if repairs appear satisfactory, the Inspector shall stamp the product as approved for shipment.

6.2.3 If a product does not meet specification requirements due to dimensional measurements not within tolerance, the product must be evaluated by the contractor and or District as to its potential acceptance. If the decision is made to accept the product, acceptance shall be provided by the District through a DMIR. If, however, the product will not be accepted, the Inspector will reject the product, and MSC&T Division will apply a Laboratory Reference Number documenting the rejected product.

7. PROCEDURE FOR APPROVED SOURCE OF PRECAST CONCRETE LAGGING

7.1

Precast concrete Fabricators may be classified as an Approved Source of precast concrete lagging if they have met the requirements of Section 3 and are producing lagging which is made in accordance with the relevant WVDOH Standard Details.

Once classified as an Approved Source of precast concrete lagging, an Approved Source Lab Number will be assigned to the Fabricator for material tracking.

7.2

MCS&T Division may perform regular quality assurance inspections prior to shipment and/or, monitor fabrication of lagging from a Fabricator that is an Approved Source. The Approved Source Lab Number shall be noted on all shipping documents from the fabricator, and material coverage will be requested under the assigned Approved Source Lab Number. All relevant concrete test data, component material information, QC inspection data, and shipping information shall be kept on file at the Fabricator for the last three years of fabrication and be shall available upon request by the Division. Failure to produce requested documentation may result revocation of the Fabricator's Approved Source certification status.

7.3

Approved Sources will be evaluated by the Division by random audits. Audits will be conducted on the material that is available to the Inspector at the time of the audit. All documentation and records for the pieces must be made available to the Inspector on the day of the audit and must be complete, current, and accurate. Failure to produce records shall be a cause for decertification.

7.3.1

All shipping documentation, concrete test data, and component material certifications shall be made available to the Inspector for review. These documents shall include all documents from material that has been shipped to state projects since the last audit. If data indicates that any material did not conform to this MP, the applicable Specifications, or Standard Detail; and was used in a state project, then the Fabricator will be de-certified as an Approved Source of precast concrete lagging.

7.3.2

In addition to documentation, the audit will consist of fabrication monitoring, test observance, and a visual inspection of material that is stocked for shipping on the day of the audit.

7.3.2.1

Each material test monitored during the audit must be performed in accordance with the applicable Standards, and Specifications. Visual inspection of stocked material will include quality checks of surface finish for cracks, spalls, and other surface blemishes after all repairs have been performed and dimensional checks. The material shall be properly stored to avoid handling damage and be accessible to the Inspector. Audits shall be graded on a point system deducted from 100 and weighted based on the Non-Conformance Points found per Table 7.3. A minimum score of 75 shall be considered passing.

TABLE 7.3

Audit Category	Non-Conformance Points
Material Test Data Review	10 (per error)
Component Material Certification Review	10 (per error)
Shipping Documentation	10 (per error)
Stocked Material Visual Inspection	15 (per defect)
Dimension Check	20 (per error)
Test Performance Check	15 (per Test)

7.3.4

When a Fabricator, which is an Approved Source, fails an audit, the Fabricator must submit a written corrective actions plan to bring their QC program back into compliance with this MP and corresponding Specifications during a probationary period of one month during which time the fabricator must prove they have fulfilled the corrective actions they submitted before supplying the material again. If the Fabricator fails to bring their material back into compliance within the probationary period, the Approved Source status will be revoked for a minimum of one year from the date of the end of the probationary period, or until the Fabricator has corrected the nonconformances listed during the failed audit. Two failing audits in a year shall result in revocation of the Fabricator's Approved Source status for one year from the date of the last failed audit. Any evidence of document falsification shall result in immediate loss of Approved Source status, and removal from the Approved List of Concrete Fabricators for a minimum 2 years. Depending on the severity and the legality of the falsified documents the removal may be permanent.

7.3.5

Non-Conforming material received by WVDOH projects and reported to MCS&T shall result in an immediate failing audit and will require the Fabricator to submit corrective actions. If the Fabricator fails the subsequent audit, it will result in the loss of their Approved Source status.

Ronald L. Stanevich, P.E.
Director
Materials Control, Soils and Testing Division

RLS:Mt
Attachment

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS AND TESTING DIVISION
MATERIALS PROCEDURE

ACCEPTANCE CRITERIA FOR STEEL WIRE REINFORCEMENT USED IN CONCRETE

1. PURPOSE

1.1 Establish a procedure to qualify approved and non-approved manufactures that produce drawn bright finish wire reinforcement for use on West Virginia Division of Highways (WVDOH) projects.

1.2 To establish a procedure for maintaining a record of such information.

1.3 To establish a procedure for transmitting such information to the districts and contractors of WVDOH projects.

2. SCOPE

2.1 This procedure shall apply to all producers who "manufacture" from a rough casted steel rod material to a drawn smooth bright finish wire product, or produce a welded wire reinforcement product "WWR" from smooth bright finish wire.

2.2 This procedure shall apply to all steel wire reinforcement for concrete furnished to WVDOH projects and purchase orders. The WVDOH may elect to use other controlprocedures when special conditions dictate.

3. APPLICABLE DOCUMENTS

3.1 ASTM A1064 Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.

3.2 NTPEP Certificate of conformance from manufacturer.

4. ACCEPTANCE PROCEDURE

4.1 With each shipment, the wire manufacture shall provide shipping documents which contain either the steel wire approved source number, or the approval number that was assigned to the material as per Section 6.1 of this document.

5. ACCEPTANCE PROCEDURE (APPROVED SOURCE LIST)

5.1 For a producer to be considered an approved source manufacturer of steel reinforcement wire, either welded or non-welded, the manufacturer must comply with the following requirements:

5.2 The manufacturer is to submit a statement to the WVDOH Materials Control, Soils and Testing (MCS&T) indicating intention to be included on the WVDOH approved source list (APL) as an approved source of steel wire reinforcement for concrete.

5.3 The prospective source shall produce a certificate indicating the prospective source is an active member in compliance with the National Transportation Product Evaluation Program "NTPEP." [1]

5.4 The prospective source shall additionally submit a certified statement that all material shipped to the MCS&T will conform to Specification ASTM A1064 ~~or AASHTO~~ ~~M32~~ by a representative of the manufacturer that has the authority to bind the company shall sign the certified statement.

5.5 An evaluation and sampling of the material at the manufacturing facility shall be conducted by MCS&T personnel or by their designee for conformance to ASTM A1064. This shall be to reinforce confidence in the ability of the facility to produce a quality product within WVDOH Specifications.

5.5.1 Five samples each, five-foot in length, each of different sizes or lots are to be tested by MCS&T or their designee (as determined by the active date as discussed in Section 5.6) to confirm WVDOH specification compliance.

5.6 Once the above requirements are met, a laboratory approval number will be assigned to the manufacturer to indicate WVDOH requirement conformance, this approval number shall be active for one year. Acceptance of manufacturers facility can be verified by accessing the MCS&T online approved source list.

5.7 Revocation of approved source status may result from non-conformance to NTPEP or tested material that does not comply with the specifications listed above.

5.8 "Approved Source" approval may be reinstated at the discretion of the MCS&T based on the findings of an investigation. The reinstatement process will commence upon the receipt of a letter of request from the manufacturer to the MCS&T. The letter of request should indicate reasons for reinstatement, and documentation to substantiate such reasons.

6. ACCEPTANCE PROCEDURES (NON-APPROVED SOURCE)

6.1 Steel wire used for concrete reinforcement will require testing and evaluation on a lot-by- lot basis by direct coverage, provided the material meets the following requirements:

6.2 The wire source shall produce a certificate indicating the manufacturing source of basic bright finish wire is an active member in compliance with the National Transportation Product Evaluation Program "NTPEP".

6.3 A five-foot length of basic bright finish steel reinforcement representative of the sizes and heats used in the concrete structure shall be obtained by MCS&T personnel or its designee to be tested in MCS&T laboratories or their designee's laboratories.

6.4 The metallic components of the wire shall be tested to conform to the requirements of ASTM A1064 for yield, tensile, and reduction.

6.5 If the results of the testing reveal that the material is in compliance with Specifications, an approval number will be issued by the MCS&T that shall be affixed to the shipping documents of the basic bright finish steel reinforcement.

[1] http://www.ntpep.org/Pages/default.aspx

7. DOCUMENTATION REPORT

7.1 An updated list of steel wire reinforcement for concrete shall be conducted once a year, but no longer than two, and can be updated at any time with a new facility, or with a removal of a facility.

7.2 A current approved list of steel wire reinforcement is available to all contractors, fabricators, and suppliers by accessing the MCS&T APL Website[2]

05/30/2019

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[2] https://transportation.wv.gov/highways/mcst/Pages/Listings_Sorted.aspx