

State of Illinois
Department of Transportation
Bureau of Materials
Springfield

POLICY MEMORANDUM

Revised: September 6, 2019

23-08.4

This Policy Memorandum supersedes number 23-08.3 dated March 15, 2015

TO: REGIONAL ENGINEERS AND BUREAU CHIEFS IN THE OFFICE OF
HIGHWAYS PROJECT IMPLEMENTATION, AND WELDED WIRE
REINFORCEMENT/BAR MAT PRODUCERS

SUBJECT: WELDED WIRE REINFORCEMENT/BAR MAT PLANT CERTIFICATION
PROCEDURE

1.0 PURPOSE

1.1 To establish procedures whereby welded wire reinforcement (**WWR**) and/or **Bar Mats** furnished by a **Manufacturer** or **Supplier** will be accepted for use on **Department** projects.

2.0 SCOPE

2.1 This procedure is available to all **Manufacturers** and **Suppliers** of **WWR** and/or **Bar Mats**.

3.0 REFERENCES AND AUTHORITY

3.1 IDOT Standard Specifications for Road and Bridge Construction.

3.2 National Transportation Product Evaluation Program (NTPEP), "Standard Practice for Qualification of Highway Product Manufacturers Through the Use of NTPEP Audits (SP01)".

3.3 National Transportation Product Evaluation Program (NTPEP), "NTPEP Committee Work Plan for Evaluation of Reinforcing Steel Manufacturers".

3.4 AASHTO M54/M54M (ASTM A184/A184M), "Fabricated Deformed Steel Bar Mats for Concrete Reinforcement".

3.5 AASHTO M336/M336M (ASTM A1064/A1064M) "Steel Wire and Welded Wire, Plain and Deformed, for Concrete Reinforcement".

3.6 ASTM A706/A706M, "Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement".

4.0 DEFINITIONS

AASHTO - American Association of State Highway and Transportation Officials.

ASTM - American Society for Testing Materials.

BAR MAT - **ASTM** A706 deformed steel reinforcement bars welded together at right angles to form a sheet or mat.

BUREAU - Central Bureau of Materials (CBM), Illinois **Department** of Transportation.

CORRECTIVE ACTION REPORT (CAR) - A procedure used to originate a corrective action. It is used as a response to a defect. In simple words, it means an action/actions adopted to eliminate the problem from occurring again.

DEPARTMENT - Illinois Department of Transportation (IDOT), including its **Districts** and Central Bureau offices.

DISQUALIFIED PLANT - A **Plant** that is not qualified by the **Bureau** to ship **WWR** for immediate use on **Department** projects.

DISTRICT - District office, Illinois **Department** of Transportation.

ENGINEER - Chief Engineer of the **Department** of Transportation of the state of Illinois, or authorized representative as defined in Section 101 of the **Standard Specifications**.

INDEPENDENT ASSURANCE (IND) SAMPLE - A sample used to provide an independent check on the reliability of the **Manufacturer's Quality Control** program.

INSPECTOR - The authorized representative of the **Engineer** assigned to make detailed inspection of any or all portions of the work, material, product, etc., as applicable.

INVESTIGATION (INV) SAMPLE - A destination sample used to verify the acceptability of **WWR** or **Bar Mats** from a **Plant** or **Supplier**

MANUFACTURER - A term synonymous with **Producer**.

MMI - Manual for Material Inspection

MISTIC - Materials Integrated System for Test Information and Communication. A **Department**-wide database containing materials inspection and test information.

NTPEP - National Transportation Product Evaluation Program.

NTPEP COMPLIANT - A **Plant** which is listed by **NTPEP** as being compliant with its evaluation program for reinforcing steel **Manufacturers**.

PLANT - A **Producer's** facility or mill for manufacturing or fabricating products such as **WWR** or **Bar Mats** that are employed on **Department** projects.

PRELIMINARY (PRE) SAMPLE - A sample used to determine, in advance, if the **WWR** will comply with the **Specifications**.

PROBATIONARY PLANT - A **Plant** that is qualified by the **Bureau** to ship **WWR** for immediate use on **Department** projects on a conditional basis.

PROCESS CONTROL (PRO) SAMPLE - A sample used for the purpose of controlling production of **WWR** proposed for incorporation in **Department** projects.

PRODUCER - An individual or business entity providing materials and/or products for performance of prescribed work.

QUALIFIED PERSONNEL - Personnel with demonstrated capability to perform applicable production tasks, inspection and testing.

QUALIFIED PLANT - A **Plant** that is qualified by the **Bureau** to ship **WWR** for immediate use on **Department** projects.

QUALITY CONTROL - The sum total of activities performed by a **Producer**, Contractor, Consultant, **Manufacturer**, etc. to make sure materials; manufactured, fabricated or constructed items; processes; products; designs; conducted test procedures; etc. will satisfy the requirements of the **Specifications**, **Quality Control** program, etc., as applicable.

SPECIFICATIONS - Specifications for materials; manufactured, fabricated or constructed items; processes; products; designs; conducted test procedures, etc. which includes the **Standard Specifications**, supplemental specifications and recurring special provisions, highway standards, shop drawings, contract plans, project special provisions, **AASHTO Specifications**, **ASTM Specifications**, etc., as applicable.

SISTER SAMPLE - A term synonymous with **Split Sample**.

SPLIT SAMPLE - A sample in which half the material is tested by the **Bureau** or **NTPEP**, and the other half is tested by the **Manufacturer**.

STANDARD SPECIFICATIONS - The **Department's** Standard Specifications for Road and Bridge Construction.

SUPPLIER - A company that supplies materials or products such as **WWR** or **Bar Mats** that it does not manufacture or fabricate.

WWR - Welded Wire Reinforcement.

5.0 WWR AND BAR MAT ACCEPTANCE PROCEDURES

- 5.1 **WWR and Bar Mats** will be accepted according to the **Specifications** and this policy memorandum.
- 5.2 Reinforcement bars used to fabricate **Bar Mats** shall be obtained by the **Manufacturer** from a **Department** qualified **Producer**. The **Bureau** maintains a list of "[Certified Reinforcing Bar and/or Dowel Bar Producers](#)" on the internet that indicates which **Producers** of reinforcement bars are qualified by the **Department**.
- 5.3 **Qualified Plant Procedure.** In order to supply **WWR** for use on **Department** projects, a **Manufacturer's Plant** shall be approved by the **Bureau**. Requirements for the **Qualified Plant** Procedure are contained in Section 6 of this policy memorandum.
- 5.4 **Qualified Plant List.** The **Bureau** will maintain a "[Qualified Producer List Of Certified Welded Wire Reinforcement](#)" on the internet which will indicate the **Qualified Plants** that meet the requirements of this policy memorandum. This list will include the name, location, and **Producer/Supplier** Number of each **Qualified Plant**. Other information, as appropriate, will also be provided on the list. **Qualified Plants** may ship **WWR** for immediate use on **Department** projects.
- 5.5 The Resident **Engineer** or **Inspector** will make a positive identification between **WWR** identification marks, or I.D. tags, and the **Qualified Plant** list when **WWR** is delivered to the jobsite, precast concrete **Plant**, or precast prestressed concrete **Plant**. See also Section 7.1. **WWR** from a **Qualified Plant** or **Supplier** will be accepted and entered into the **MISTIC** reporting system by the **District Materials Engineer**.
- 5.6 **Suppliers** shall only supply **WWR** from **Qualified Plants**.
- 5.7 **Bar Mats** will be accepted via visual inspection at the jobsite, precast concrete **Plant**, or precast prestressed concrete **Plant**. The Resident **Engineer** or **Inspector** will make a positive identification between reinforcement bar marks or I.D. tags, and the qualified **Producer** list for reinforcing and/or dowel bars when **Bar Mats** are delivered to the jobsite (See also Section 5.2). **Bar Mats** will be accepted and entered into the **MISTIC** reporting system by the **District Materials Engineer**.

6.0 QUALIFIED PLANT PROCEDURE

6.1 Preliminary Approval.

- 6.1.1 A **Manufacturer** requesting qualification shall provide or have available the following to the **Bureau**:
1. The **Plant** name and location
 2. A list of the **WWR** manufactured by the **Plant**
 3. A certification the **Plant** production meets the requirements of Section 3.0 for all products listed in Item 2 of this section

6.1.2 **NTPEP Compliance.** At the time of application for approval by the **Bureau**, the **Manufacturer** shall either be listed as **NTPEP Compliant**, or be in the process of becoming listed as **NTPEP Compliant** as determined by the **Bureau**.

6.1.2.1 Final **Qualified Plant** status will not be granted by the **Bureau** until the **Manufacturer** is listed as **NTPEP Compliant**.

6.2 **Quality Control Requirements for Qualified Plants.**

1. The **Manufacturer** shall establish and maintain **Quality Control** policies and procedures for production, sampling and testing of **WWR**. The **Bureau** shall be notified of any changes in the **Manufacturer's Quality Control** program.
2. The **Plant** laboratory test equipment shall be maintained in good working order and calibrated according to SP01
3. **Qualified Personnel** shall perform applicable production tasks, inspections, and testing

6.3 **Inspection, Sampling, and Testing Procedures.**

6.3.1 Sampling, testing and inspection procedures will not begin until the requirements of Section 6.1 of this policy memorandum have been met as determined by the **Bureau**.

6.3.2 **Inspection.** An **Inspector** from the **Bureau** will conduct a scheduled visit to inspect the laboratory facilities for the **Plant**; the **Plant** manufacturing processes; the **Plant** storage facilities; and the **Quality Control** policies, procedures, and practices performed at the **Plant** (See also Section 6.2). Access to all necessary **Plant** facilities and records (i.e., test, **Quality Control**, etc.) shall be made available to the **Inspector**. The **Manufacturer** shall be responsible for payment of transportation, per diem (meals), lodging, and incidental travel costs incurred by the **Inspector** if the trip from the **Bureau** to the **Plant**, the **Plant** inspection, and the return trip to the **Bureau** cannot be completed within one day's normal work hours of 8:00 AM to 4:30 PM. Reimbursement for travel costs shall be provided no later than 30 calendar days after receipt of costs submitted by the **Department**.

6.3.3 **Sampling.** During the **Plant** inspection or at another prearranged date and time, the **Inspector** or a representative from **NTPEP** (as determined by the **Bureau**) will select **Preliminary (PRE) Samples**. The material to be sampled will be selected from the sizes, grades and heats/lots in stock.

PRE Samples for testing conducted by the **Manufacturer**, and the **Bureau** or **NTPEP** shall be **Split Samples** or **Sister Samples**. Samples sent to the **Bureau** or **NTPEP** (as determined by the **Bureau**) for testing shall contain identification marks, or I.D. tags. The **Manufacturer** shall assume the cost to deliver the samples to the **Bureau** or **NTPEP**. **PRE Samples** shall be full width sheets obtained from 10 separate lots/heats that span the styles, sizes and grades produced by the **Manufacturer**. The length of each **PRE Sample** shall be as determined by the **Inspector** or a representative from

NTPEP. Samples shall be cut into specimens for various tests as detailed in Appendix A. Samples and specimens shall be marked/tagged and numbered in such a manner as to ensure traceability.

6.3.4 Testing. The **Manufacturer** shall test its portion of the 10 **PRE Samples** according to the Test/Measurement schedule outlined in Table 1 for plain **WWR**. The **Manufacturer** shall test its portion of the 10 **PRE Samples** according to the Test/Measurement schedule outlined in Table 2 for deformed **WWR**. The test results shall be signed and submitted to the **Bureau** or **NTPEP**, as determined by the **Bureau**.

Table 1. Testing and Conformance Requirements for plain **WWR**

Sample #: *A number from the 1st to the 10th sample*
Longitudinal and Transverse Wire Designation/Size: *W#*
Lot #: *Lot # number the sample came from*

Test/Measurement	Conformance Requirement
Diameter, (ASTM A1064 Section 7.1.6, Tables 1 & 8), in. ¹	Permissible Variation from Table 1: < W 5 ±0.003 W 5 to ≤ W 12 ±0.004 > W 12 to ≤ W 20 ±0.006 > W 20 ±0.008
Tensile, (ASTM A1064 Sections 8.1.1 & 7.1.4.1, Table 5), psi	Min from Table 5
Bend Test, (ASTM A1064 Sections 8.2 & 7.1.5, Table 7), Pass/Fail	No Cracking of Outside Radius as Determined by the Inspector
Weld Shear, (ASTM A1064 Sections 8.3 & 9), lbs ²	Min 35000 x Nominal Area of Larger Wire in sq. in.

¹See Appendix B for a detailed procedure on diameter measurements.
²If nominal area of smaller wire is less than 40% of nominal area of larger wire, weld shear test does not apply.

Table 2. Testing and Conformance Requirements for deformed **WWR**

Sample #: A number from the 1st to the 10th sample
Longitudinal and Transverse Wire Designation/Size: D#
Lot #: Lot # number the sample came from

Test/Measurement	Conformance Requirement
Unit Weight, (ASTM A1064 Section 7.2.7, Table 3), lb/ft	Permissible Variation from Table 3: 6%
Tensile, (ASTM A1064 Sections 8.1.1 & 7.2.5.1, Table 10), psi	Min from Table 10
Bend Test, (ASTM A1064 Sections 8.2 & 7.2.6, Table 11), Pass/Fail	No Cracking of Outside Radius as Determined by the Inspector
Weld Shear, (ASTM A1064 Sections 8.3 & 9), lbs ^{1,2}	Min 35000 x Nominal Area of Larger Wire in sq. in.
Deformation Spacing, (ASTM A1064 Section 7.2.4), # Deformations/in.	3.5 ≤ Avg # Deform./in. ≤ 5.5
Deformation Height, (ASTM A1064 Section 7.2.4, Table 3), in.	Min Avg Height from Table 3

¹Small wire shall not be less than D 4.

²If nominal area of smaller wire is less than 40% of nominal area of larger wire, minimum weld strength is 800 lb.

If wire is cold drawn at the **Plant**, the **Manufacturer** shall demonstrate this process for at least 1 draw down at the **Plant** in the presence of the **Inspector** or **NTPEP Representative**. The reduction in area of the cold drawn wire shall be reported by the **Manufacturer**.

Measurements by the **Manufacturer** of deformation height and spacing for deformed wire will only be required for 1 heat/lot unless otherwise directed by the **Bureau** or **NTPEP**.

The **Bureau** or **NTPEP** (as determined by the **Bureau**) will test its portion of the 10 **PRE Samples** according to the Test/Measurement schedule outlined in Table 1 for plain **WWR**. The **Bureau** or **NTPEP** (as determined by the **Bureau**) will test its portion of the 10 **PRE Samples** according to the Test/Measurement schedule outlined in Table 2 for deformed **WWR**. Measurement of deformation spacing and height will be conducted by the **Bureau** or **NTPEP** (as determined by the **Bureau**) at its discretion.

- 6.4 **Sample, Heat, and Laboratory Comparison Assessment Criteria.** Results from the tests outlined in Table 1 and/or Table 2, as applicable, on the **PRE Samples** conducted by the **Manufacturer** will be evaluated for excessive variation from the tests results on the **PRE Samples** conducted by the **Bureau** or **NTPEP** according the criteria outlined in Section 6.4.1.

Test results on the **PRE Samples** will be evaluated for conformance with Table 1 and/or Table 2, as applicable, according to the criteria outlined in Section 6.4.2.

6.4.1 Laboratory Comparison Requirements.

6.4.1.1 Laboratory Comparison Requirements for Individual **PRE Split Sample** Results.

The test results for each of the individual specimens cut from **PRE Split Samples** shall vary between laboratories by not more than the following:

1. Tensile Strength 10.0%
2. Unit Weight¹ 5.0%

¹Deformed wire only.

6.4.1.2 Laboratory Comparison Requirement for Heat/Lot Average **PRE Split Sample** Results.

The average test results from the individual specimens cut from **PRE Split Samples** for each heat/lot shall vary between laboratories by not more than the following:

1. Tensile Strength 5.0%
2. Unit Weight¹ 2.0%

¹Deformed wire only.

6.4.1.3 Failure of the **Manufacturer** to meet the requirements of Section 6.4.1.1 or 6.4.1.2 will result in the **Plant** not achieving initial qualified status or maintaining current qualified status. However, at the discretion of the **Bureau**, a heat or heats may be re-sampled, re-tested and re-assessed according to Section 6.5.

6.4.2 Specification Conformance Requirements.

6.4.2.1 Conformance Requirements detailed in Table 1 and/or Table 2, as applicable, shall apply to all tests conducted by the **Bureau** or **NTPEP**, as well as all the tests conducted by the **Manufacturer**.

6.4.2.2 For determination of **Plant** qualification, the test results obtained by the **Bureau** or **NTPEP** supersede those of the **Manufacturer**.

6.4.2.3 All of the specimens cut from **PRE Split Samples** test results shall meet the Conformance Requirements outlined in Table 1 and/or Table 2, as applicable.

6.4.2.4 Failure of the **Manufacturer** to meet to the requirements of Sections 6.4.2.1 through 6.4.2.3 will result in the **Plant** not achieving initial qualified status or maintaining current qualified status. However, at the discretion of the **Bureau**, a heat or heats may be re-sampled, re-tested and re-assessed according to Section 6.5.

6.5 Re-Sampling, Re-Testing, and Re-Assessment Criteria.

6.5.1 Inter-Laboratory.

6.5.1.1 At the discretion of the **Bureau**, heats/lots that do not conform to the requirements of Section 6.4.1.1 may be re-sampled from the same heat/lot and re-tested according to Section 6.3. Re-assessment will be according to Section 6.4.1.1 and 6.4.1.2.

6.5.1.2 At the discretion of the **Bureau**, heats/lots that do not conform to the requirements of Section 6.4.1.2 may be re-sampled from the same heat and re-tested according to Section 6.3. Re-assessment will be according to Section 6.4.1.1 and 6.4.1.2.

6.5.1.3 Heats/lots that have been re-sampled and re-tested according to Section 6.5.1.1 and/or Section 6.5.1.2 shall also meet the requirements of Section 6.4.2.

6.5.2 Specifications.

6.5.2.1 At the discretion of the **Bureau**, heats/lots that do not conform to the requirements of Section 6.4.2 may be re-sampled from the same heat/lot and re-tested according to Section 6.3.

6.5.2.2 Re-assessment of re-sampled and re-tested heats/lots will be according to Section 6.4.2. At the discretion of the **Bureau**, re-assessment may also be according to 6.4.1.1 and/or 6.4.1.2.

6.5.3 Subsequent Re-Sampling, Re-Testing, and Re-Assessment Criteria. Heats/lots that do not meet the requirements of Section 6.5.1 and/or Section 6.5.2 will be rejected, and should not be subsequently re-sampled, re-tested and re-assessed unless otherwise authorized by the **Bureau**.

6.6 **Initial Plant Qualification.** The **Bureau** will notify the **Manufacturer** in writing if the request for qualification is approved or denied. A request may be denied if the **Manufacturer** fails to meet any of the requirements outlined in Sections 6.1 through 6.5. If the request for qualification is denied, the **Manufacturer** shall meet the requirements of Sections 7.7.3, 7.7.4, 7.7.5, 7.7.6, and 7.7.8 Item 3 in order to re-apply for qualification.

6.7 **Plant Requalification.** The **Bureau** will notify the **Manufacturer** in writing if the request for requalification is approved or denied. A request may be denied if the **Manufacturer** fails to meet any of the requirements outlined in Sections 6.2 through 6.5, or if the **Plant** falls out of compliance with **NTPEP**. If the request for requalification is denied, the **Plant** will either be designated as **Disqualified** or **Probationary** at the discretion of the **Bureau**. In order to become **Qualified** once again, **Disqualified** or **Probationary Plants** shall meet the requirements of Section 7.7.

7.0 REQUIREMENTS DURING PERIOD OF QUALIFICATION

7.1 Record and Reporting Requirements.

1. Records of production control tests shall be maintained by the **Manufacturer** for a minimum period of 5 years and shall be made available to the **Bureau** upon request.
2. Copies of shipping orders, bills of lading, and invoices shall be maintained by the **Manufacturer** or **Supplier** for a minimum period of 5 years. Copies of shipping orders, bills of lading, and invoices shall be provided to the Resident **Engineer** or **Inspector**, and the **District Materials Engineer** upon delivery to a jobsite, precast concrete **Plant**, or precast prestressed concrete **Plant**.

7.2 **NTPEP Compliance.** If a **Plant** falls out of **NTPEP Compliance**, it will be designated as **Disqualified**. In order to become **Qualified** once again, **Disqualified Plants** shall meet the requirements of Section 7.7 and become **NTPEP Compliant** once again.

7.3 **Inspection.** During the period of qualification, a **Plant** may be inspected according to Section 6.3.2 at the discretion of the **Bureau**. If a **Plant** fails the inspection, it will be designated as either **Disqualified** or **Probationary** at the discretion of the **Bureau**. In order to become **Qualified** once again, **Disqualified** or **Probationary Plants** shall meet the requirements of Section 7.7.

7.4 Process Control Sampling.

7.4.1 **Process Control (PRO) Samples** may be taken at any time during the period of qualification.

7.4.2 Sampling at the jobsite, fabricator, or any other location by a **District** will be as directed by the **Bureau**.

7.4.3 **PRO Samples** shall be taken according to Appendix C.

7.5 Process Control Testing and Assessment Criteria.

7.5.1 All tests on the **PRO Samples** collected according to Section 7.4 will be conducted by the **Bureau**, and all results shall meet the Conformance Requirements in Table 1 and/or Table 2, as applicable.

7.5.2 Failure of the **Manufacturer** to meet to the requirements of Section 7.5.1 will result in the **Plant** being designated as **Disqualified** or **Probationary** at the discretion of the **Bureau**. However, at the discretion of the **Bureau**; **PRO Samples** may be re-sampled, re-tested and re-assessed according to Section 7.6.

7.6 Process Control Re-Sampling, Re-Testing, and Re-Assessment Criteria.

7.6.1 Re-sampling shall be according to Sections 7.4.2 and 7.4.3.

- 7.6.2 Re-testing shall be according to Section 7.5.1. Re-assessment shall be according to Sections 7.5.1 and 7.6.3.
- 7.6.3 If all the re-tested **PRO Samples** meet the requirements of Section 7.5.1, the **Manufacturer** will remain as a **Qualified Plant**. If at least 1 of the test results does not meet the Conformance Requirements in Table 1 and/or Table 2, as applicable, the **Plant** will be designated as either **Disqualified** or **Probationary** at the discretion of the **Bureau**. In order to become **Qualified** once again, **Disqualified** or **Probationary Plants** shall meet the requirements of Section 7.7.
- 7.7 **Disqualification, Probation, and Corrective Action.**
- 7.7.1 **Disqualified Plants** will be immediately removed from the **Qualified Plant** List and shall not supply **WWR** to **Departmental** projects.
- 7.7.2 **Probationary Plants** will not be immediately removed from the **Qualified Plant** List and may supply **WWF** to **Departmental** projects on a conditional basis.
- 7.7.3 **Disqualified** and **Probationary Plants** shall submit a **Corrective Action Report (CAR)** (See Section 7.7.4) for each identified issue to the **Bureau** within 15 business days of the date of disqualification or probation. Failure to submit a **CAR** or **CARs** within this time frame will result in the **Plant** having to undergo the full **Qualified Plant** Procedure outlined in Section 6.0 as well as repeat Section 7.7 in order to become **Qualified** once again. In addition, **Probationary Plants** will be designated as **Disqualified Plants**.
- 7.7.4 **CARs** shall contain detailed descriptions of the issue to be addressed, the course of action to be taken to remedy the issue, and a timeline for when this course of action will be accomplished. See also Appendix D. A separate **CAR** is required for each identified issue to be addressed by the **Manufacturer**.
- 7.7.5 The **Bureau** will determine if a proposed **CAR** is acceptable and may revise or amend a **CAR** before approval.
- 7.7.6 The **Bureau** will determine when and/or if the issue addressed in a **CAR** has been remedied.
- 7.7.7 If the **Bureau** determines that each issue has been remedied within the timelines stipulated in each submitted and approved **CAR**, the **Manufacturer** will be reinstated as a **Qualified Plant**.
- 7.7.8 If the **Bureau** determines that an issue has not been remedied within the timeline stipulated in a **CAR**, the **Manufacturer** will either:
1. Remain a **Probationary** or **Disqualified Plant** until the **Bureau** determines the issue addressed in a **CAR** has been remedied
 2. Be declared a **Disqualified Plant** until the **Bureau** determines the issue addressed in a **CAR** has been remedied

3. Be required to undergo the full **Qualified Plant** Procedure outlined in Section 6.0, and, at the discretion of the **Bureau**, repeat Section 7.7 in order to become **Qualified** once again
- 7.8 **Independent Assurance (IND) and Investigation (INV) Sampling, Testing and Assessment Criteria.**
- 7.8.1 **IND or INV Samples** may be taken at any time during the period of qualification.
 - 7.8.2 **IND Sampling** will be according to Appendix C, or as otherwise determined by the **Bureau**.
 - 7.8.3 **INV Sampling** will be according to Appendix C, or as otherwise determined by the **Bureau** or **District**.
 - 7.8.4 **IND or INV Sample** testing and assessment will be according to Section 7.5.
 - 7.8.5 **IND or INV re-Sampling**, re-testing, and re-assessment will be according to Sections 7.6, 7.8.2, and 7.8.3.
- 8.0 **REQUALIFICATION PROCEDURE**
- 8.1 **Procedure.** Requalification shall be according to Sections 6.2, 6.3, 6.4, 6.5 and 6.7.
 - 8.2 **Interval. Qualified Plants** shall be requalified on an annual basis or as determined by the **Bureau**. The **Bureau** will inform the **Manufacturer** when the requalification procedure will commence.
- 9.0 **CLOSING NOTICE**
- Archived versions of this policy memorandum may be examined by contacting the **Bureau**.
- The current **Bureau** Chief of Materials has approved this policy memorandum. Signed documents are on file with the **Bureau**.

Appendix A: Sampling and Specimen Outline (Section 6.3.3)

Specimens per Sample Lot/Heat for Plain WWR*

Plain Wire Lot/Heat #'s 1 through 10		
Specimen Type	# of Mill Specimens	# of Sister or Split Specimens ⁵
Longitudinal Diameter ¹	4	8 (From Same Wire as Mill Specimens)
Transverse Diameter ¹	2	4 (From Same Wire as Mill Specimens)
Longitudinal Tensile ²	4 Across Weld	8 Across Weld
Transverse Tensile ²	2 Across Weld	4 Across Weld
Longitudinal Weld Shear ³	4 Welds	8 Welds
Bend Test ⁴	1	2

¹See also Appendix B.

²Specimens selected according to ASTM A1064 Section 8.1.1.

³Specimens selected according to ASTM A1064 Sections 8.3.4 and 11.2.

⁴Specimen length as determined by the Inspector or NTPEP Representative.

⁵Split Specimens contain backup specimens.

Specimens per Sample Lot/Heat for Deformed WWR*

Deformed Wire Lot/Heat #'s 1 through 10		
Specimen Type	# of Mill Specimens	# of Sister or Split Specimens ⁴
Longitudinal Unit Weight ¹	4	8
Transverse Unit Weight ¹	2	4
Longitudinal Tensile ²	4 Across Weld	8 Across Weld
Transverse Tensile ²	2 Across Weld	4 Across Weld
Longitudinal Weld Shear ³	4 Welds	8 Welds
Bend Test ¹	1	2

¹Specimen length as determined by the Inspector or NTPEP Representative.

²Specimens selected according to ASTM A1064 Section 8.1.1.

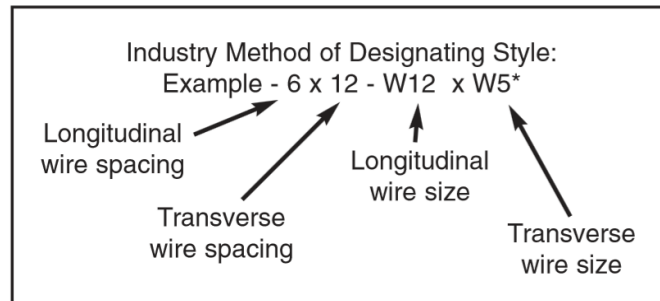
³Specimens selected according to ASTM A1064 Sections 8.3.4 and 11.2.

⁴Split Specimens contain backup specimens.

*See also Figure A2

Test Demonstrations at Plant During Qualification Procedure

1. Reduction of area for cold drawn wire shall be as directed by the Inspector or NTPEP Representative.
2. Deformation height and spacing – Specimen length 12 in. minimum [sampling may also be required for testing by the Bureau or NTPEP (as determined by the Bureau)].



*Note: The prefix W is for plain wire. The prefix D is for deformed wire.

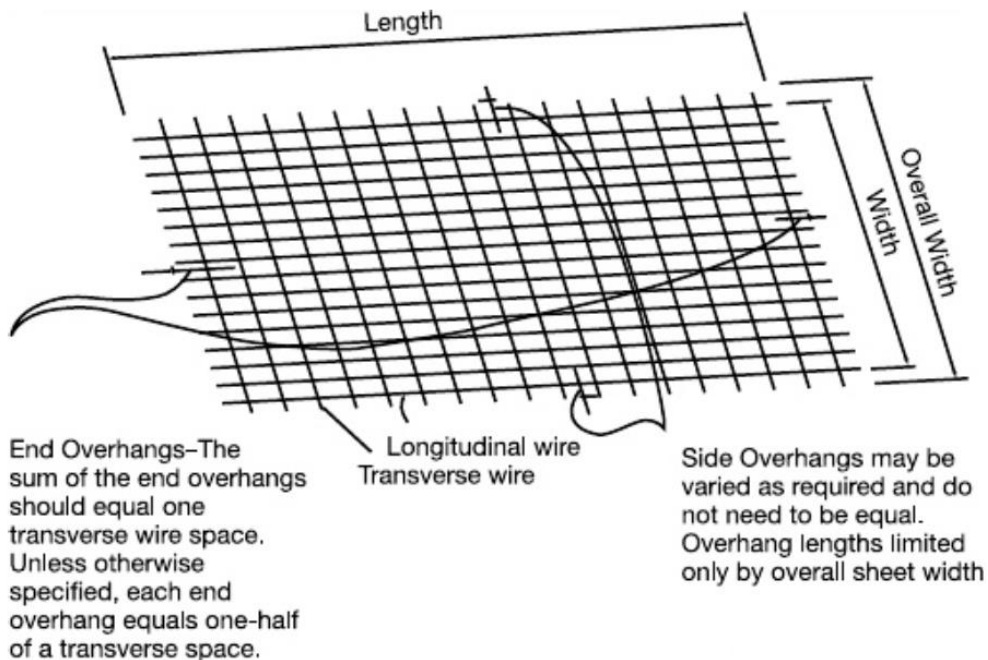


Figure A1 – Industry Standard Nomenclature and Definitions

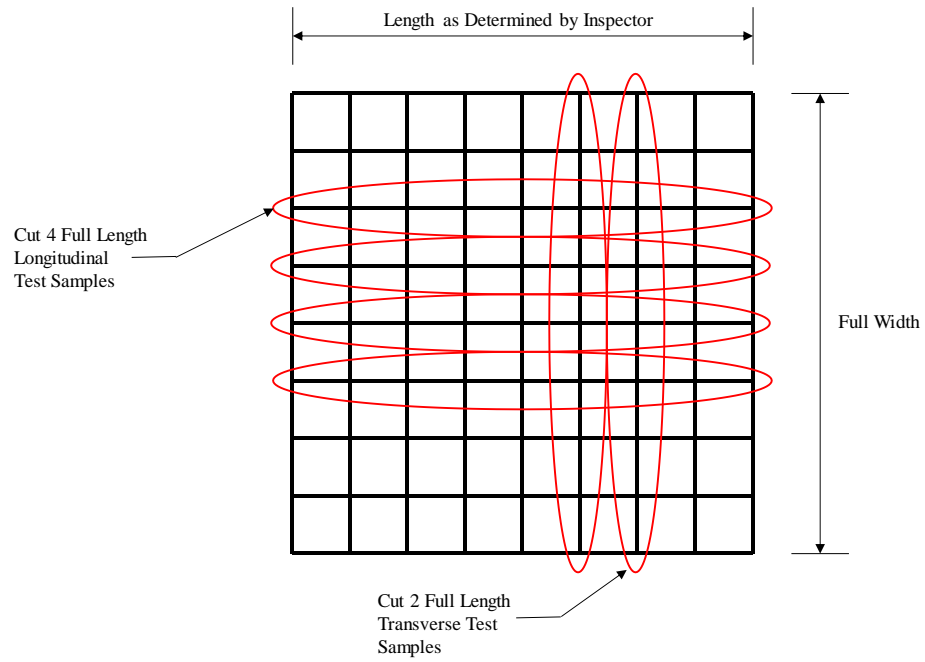


Figure A2 – Sample Cutting Diagram (Standard WWR Mesh)

Appendix B: Plain Wire Diameter Measurement Procedure [Section 6.3.4 WWR According to ASTM A1064]

1. As shown in Figures B1 (Mesh ≥ 4 in.) and B2 (Mesh < 4 in.), Orientation B is rotated 90° from Orientation A. Three (3) readings shall be obtained at Orientation A and 3 readings shall be obtained at Orientation B at each Location.
2. A single recorded plain steel wire diameter measurement is the average of 6 individual readings at a Location (I.e., the average of Readings A1, A2, A3, B1, B2 and B3 at a Location) as shown Figures B1 (Mesh ≥ 4 in.) and B2 (Mesh < 4 in.).
3. Readings A1 (B1) and A3 (B3) shall be within a distance of $\pm \frac{1}{2}$ in. as shown in Figures B1 (Mesh ≥ 4 in.) and B2 (Mesh < 4 in.).
4. Reading A2 (B2) shall be within a distance of $\pm \frac{1}{4}$ in. of Readings A1 (B1) and A3 (B3) as shown in Figures B1 (Mesh ≥ 4 in.) and B2 (Mesh < 4 in.).
5. A minimum of 4 recorded measurements by the **Manufacturer** shall be taken for longitudinal wires.
6. A minimum of 2 recorded measurements by the **Manufacturer** shall be taken for transverse wires.

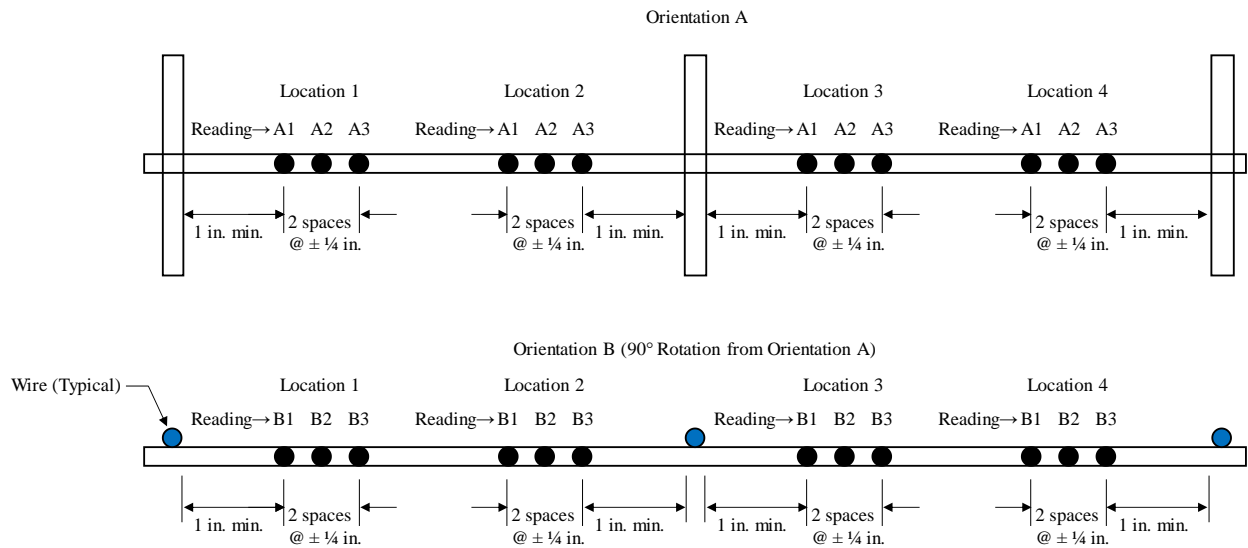


Figure B1 - Mesh Sizes 4 in. x 4 in. and Larger

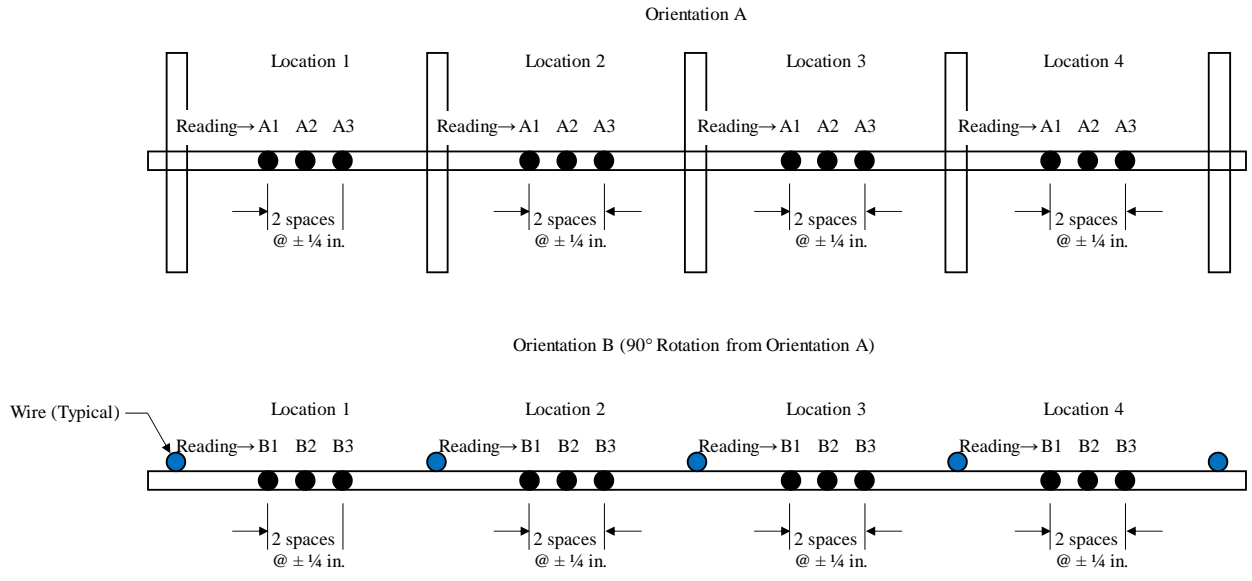


Figure B2 - Mesh Sizes Smaller Than 4 in. x 4 in.

Appendix C: Sampling and Specimen Outline [Sections 7.4 & 7.8 Welded Wire Reinforcement According to ASTM A1064]

Mesh Sizes Smaller Than 8 in. x 8 in.¹

1 Sample: 3 feet x 3 feet (See also Figure C1)

Mesh Sizes Greater Than or Equal to 8 in. x 8 in.¹

1 Sample: 4 feet x 4 feet (See also Figure C1)

¹If sampling according to Figure C1 is not possible, sampling shall be as directed by the Inspector

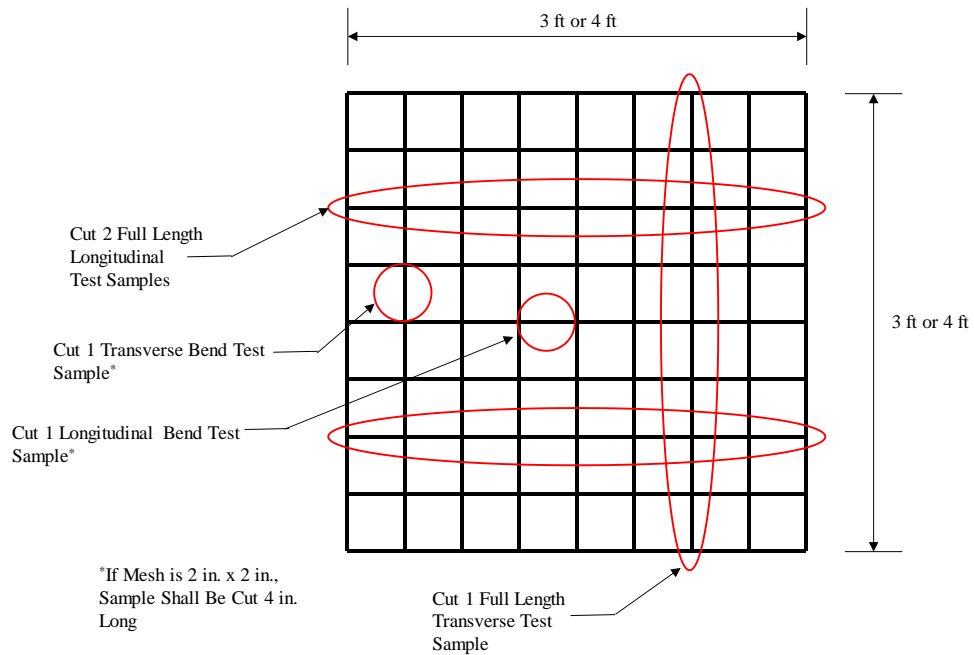


Figure C1 - Sample Cutting Diagram (Standard WWR Mesh)

**ILLINOIS DEPARTMENT OF TRANSPORTATION
Corrective Action Report**

Complete and submit the following [form](#) (link embedded) to the Central Bureau of Materials via e-mail (Michael.Brydl@illinois.gov) within 15 business days of notification of Disqualification, Probation, or Denial of Qualification.

Plant and Location:	Date of Transmittal:
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Describe in the areas provided the corrective action taken to resolve the issue. Corrective action of issues includes root cause analysis and a plan to monitor the effectiveness of the corrective action. Attach any supporting documentation (e.g.: modified/new procedures, purchase requests, proof of new training, calibration records, etc.)

Issue
Description (to be completed by IDOT):

Immediate Action
Description of the Immediate Action Taken to Prevent Recurrence of Issue (to be completed by Manufacturer):

Root Cause Analysis
Description of the Reason(s) That Allowed the Issue to Happen (to be completed by Manufacturer):

Actionable Solution

Description of the Improvements to the Quality Control Program that will be Implemented to Prevent a Similar Occurrence of the Issue. Include a Timeline for Implementation (to be completed by Manufacturer):

Planned Monitoring Activities

Description of the Plans to Monitor the Effectiveness of the Actionable Solution Given Above (to be completed by Manufacturer):