FIELD INSPECTION GUIDE

(CLF - FIG 0111)

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THE PURPOSE OF THIS MANUAL

The purpose of this manual is to aid field inspectors of chain link projects in their task of assuring compliance to specifications. Laboratory tests are needed to assure compliance on some items such as the weight of zinc, zinc-5% aluminum alloy or aluminum coatings, following procedures in ASTM A90, or ASTM A428.

This manual is produced in conjunction with CLFMI Product Manual (CLF-PM0610), which references all current ASTM material specifications and test procedures applicable. The standard dimensions listed are in inch-pound units with metric values given in parenthesis for information only.

(Note: For complete material specification requirements on this project, refer to standards referenced in the project specifications.)

SUGGESTED INSPECTION PROCEDURES

Certifications:

Original manufacturer's material Certification of Compliance should be supplied by the contractor. Certification should:

1. Be written on original manufacturer's letterhead
2. Reference project by number and/or name
3. Reference ASTM standard used in project specification
4. Be signed by an officer of the corporation.

Site:

The owner's representative should determine that all fence lines are accurately marked for the contractor. Particular attention should be directed to gate locations, underground utilities and property lines.

Post Settings:

Periodic on-site inspections should be made during framework installation. Compliance checks for post settings and spacings should include:

1. Measure hole diameter
2. Measure hole depth
3. Check post embedment
4. Validate post spacings

Framework:

After the fence lines and gate locations have been verified, the framework material should be inspected for compliance to plans and specifications. To verify the wall thickness of framework members, a micrometer with ball tips should be utilized.

Compliance check, follow ASTM F1043 and F1083 specifications and tolerances

1. Outside diameter
2. Wall thickness
3. Weight per foot
4. For polymer coated framework, verify coating thickness and adhesion per ASTM F1043

CAUTION- Remember the acceptable tolerances when a nominal thickness and weight is specified. Check appropriate specifications.

Overall post length should be verified before installation. Posts should be at least the height of the fabric, plus the required post embedment depth, depending on the post type, line corner, pull or gate.

The ends of all framework items should be plain, i.e. no threads or couplings.

Welded posts are usually not permitted except for special applications requiring posts longer than available manufacturer's standard mill lengths.

All framework materials should be reasonably straight and free from defects. The coatings should be free of voids or excessive roughness.

Fabric:

Mesh – measure the minimum clear distance between the wires forming the parallel sides of the mesh, taking the average of two measurements at right angles to each other. Normal tolerance is plus or minus 1/8" (3.2mm). See table 3.

Height – measure from tip to tip of fabric selvages. Tolerance is plus or minus 1” (25mm).

Metallic coated wire size – two measurements are needed. Take the average of two readings (with a micrometer) at right angles to each other on a straight portion of wire to the nearest 0.001” (0.025mm). Normal tolerance is plus or minus 0.005” (0.127mm).

Popular gauge decimal equivalents are:

11 gauge is 0.120” (3.05mm)
9 gauge is 0.148” (3.76mm)
6 gauge is 0.192” (4.88mm)

Polymer coated wire – There are three types of polymer coated fabric, ascertain from the specifications if the fabric is extruded, extruded and adhered to, or fused and adhered to. The gauge of polymer coated wire is determined by the core wire diameter. To measure the core diameter it will be necessary to strip off the polymer. Polymer thickness can be determined by actually stripping off a piece of polymer and measuring its thickness or scraping the coating from one side of the wire, then measuring the reduced diameter. Polymer adhesion tests should be conducted on any polymer extruded and adhered to, or fused and adhered to, products by the method described in ASTM F-668.

Diamond count – Typical diamond count for each standard height is shown (see chart). Other diamond counts are permissible, providing they are consistent within a lot.

Fabric Workmanship:

Galvanized (ASTM A392) – reasonably free of excessive roughness, blisters, flaking and frozen joints.

Zinc-5% aluminum alloy (ASTM F1345) and aluminum coated (ASTM 491) – reasonably free of excessive roughness, flaking, and heavy machine scars in bends.

Polymer coated (ASTM F668) – fabric shall be without cuts, breaks or voids of any kind which reveal the core wire.

Selvages:

Knuckles – loop closed or nearly closed to a measurement less than the diameter of the wire.

Twists – wire beyond the twist at least ¼” (6.4mm) 1-1/2 machine turns.

TABLE 3 STANDARD 1” & LARGER MESH SIZES AND GAUGES FOR CHAIN LINK FABRIC

ASTM A392 galvanized, ASTM A491 aluminum coated, ASTM F1345 zinc-5% aluminum-misch metal alloy, ASTM F668 polymer coated

Size of Mesh	Gauge*	Nominal Diameter	Recommended Usage
2 1/2” [54 mm]	111/2	0.113” [2.87 mm]	Residential
2” [50 mm]	11	0.120” [3.05 mm]	Residential/light commercial
2” [50 mm]	9	0.148” [3.76 mm]	Residential/commercial/ind.
2” [50 mm]	6	0.192” [4.88 mm]	Commercial/ind./security
1 3/4” [44 mm]	11	0.120” [3.05 mm]	Tennis court
1 3/4” [44 mm]	9	0.148” [3.76 mm]	Heavy commercial/industrial
1 3/4” [44 mm]	6	0.192” [4.88 mm]	Security
1 1/4” [32 mm]	11	0.120” [3.05 mm]	Residential/swimming pool
1 1/4” [32 mm]	9	0.148” [3.76 mm]	Heavy/Industrial/Security
1” [25 mm]	11	0.120” [3.05 mm]	Industrial
1” [25 mm]	9	0.148” [3.76 mm]	Heavy/Industrial/Security

*polymer coated core wire gauge is specified fabric wire gauge not the coated finished diameter/gauge.

Barbed Wire:

Compliance checks for barbed wire:

1. Number of points on barbs
2. Spacing of barbs
3. Wire size
   a. Line wire
   b. Barbs
4. Coatings type and class

Tension wire:

1. Measure wire size, 7 gauge – 0.177” ± 0.005” (4.50mm ± 0.13mm) unless otherwise specified.
2. Check hog ring spacing.
3. Coating type and class.

Fittings and Accessories:

Fittings and accessories should be checked for compliance to the plans and specifications. Common requirements are tension bar size, band width and gauge, tie wire sizes and barbed wire arm strengths.

Gates:

Gates should be checked for workmanship and dimensions. Gates should be reasonably level, plumb and aligned. In absence of project specifications, ASTM F900 for swing gates and ASTM F1184 for horizontal slide gates are recommended as standards.

Workmanship:

Gates shall be produced in accordance with good commercial practice. Defects in welds, chain link fabric, bracing and truss rods, and accessories shall be noted and, if present shall provide basis for rejection.

CLFMI recommends that material found not in compliance be replaced with materials which meet specifications. Price adjustments after installation result in inequality for the purchaser and establish trends for noncompliance action on future projects.

INSTALLATION:

ASTM standard practice F567 on installation of Chain Link Fence is a proper guide covering installation practices, unless modified or amended by project specifications.

GUIDE FOR FENCE INSPECTION

Date _____ General Contractor _____

Project _____ Fence Contractor _____

	Spec	Actual	Approved
Site Inspection – Before Installation	_____	_____	_____
Fence Line Marked	_____	_____	_____
Underground Utilities Marked	_____	_____	_____
Specification Compliance			
Hole Diameter	_____	_____	_____
Hole Depth	_____	_____	_____
Post Embedment	_____	_____	_____
Post Spacing	_____	_____	_____
Framework – Post & Rails			
Outside Dimension	_____	_____	_____
Wall Thickness	_____	_____	_____
Weight	_____	_____	_____
Vinyl Thickness (if applicable)	_____	_____	_____
Fabric			
Mesh	_____	_____	_____
Height	_____	_____	_____
Wire Size	_____	_____	_____
Coating	_____	_____	_____
Diamond Count	_____	_____	_____
Selvages	_____	_____	_____
Barbed Wire			
Points on Barbs	_____	_____	_____
Barb Spacing	_____	_____	_____
Line Wire Size	_____	_____	_____
Coating and Class	_____	_____	_____
Tension Wire			
Hog Ring Spacing	_____	_____	_____
Wire Size Coating & Class	_____	_____	_____
Fittings	_____	_____	_____
Gates	_____	_____	_____

Comments _____

Items Not in Compliance _____

_____

By _____

Date _____

Acceptance Report or Rejection Report given to General/Fence Contractor

Name of Party Advised_____ Date _____