

SYSTEMSHIELD™ TEST PASS/FAIL THRESHOLDS

PURPOSE

This document defines the official SystemShield™ pass/fail testing thresholds for ground path resistance, mechanical torque verification, visual inspections, and connection integrity. These standards must be used during kit installation, reinspection, and quality assurance reviews to ensure that SystemShield installations meet National Electrical Code (NEC), UL component alignment, and facility safety expectations.

1. RESISTANCE TESTING – GROUND PATH

Requirement	Value
Maximum allowable resistance	≤ 1.0 ohm
Recommended minimum continuity	< 0.5 ohm
Testing tool type	Digital clamp meter, micro-ohmmeter, or continuity tester
When to test	Post-installation and before re-energization
Failure condition	Any reading above 1.0 ohm

2. TORQUE VERIFICATION – CONNECTION HARDWARE

Component	Pass Range	Tool Required
#10–14 Compression Lug Screws	35–40 in-lbs	Torque screwdriver or 1/4" drive wrench
#6 Compression Lug Screws	45–50 in-lbs	1/4" or 3/8" drive torque wrench
10-32, 10-24, M4, M5 Machine Screws	20–30 in-lbs	Torque screwdriver
12-24 Screws	40–45 in-lbs	Torque driver or hand wrench
1/4"-20 Hex Bolts / Nuts	55–65 in-lbs	Torque wrench
Failure condition	Under-torque, over-torque, or visual thread distortion	

3. VISUAL INSPECTION – TERMINATION QUALITY

Criteria	Pass/Fail Conditions
----------	----------------------

Lug compression	Lug barrel must be flush with conductor and show no gap
Wire insulation	Must stop short of lug barrel; no insulation within crimp
Lug mounting	Must sit flat on surface with both holes engaged
Zip ties	Must be secure without pinching insulation
Bus bar	Must be mounted flush, level, and aligned with approved fasteners
Failure condition	Cracked lugs, deformed hardware, or stripped heads

4. BONDING AND SAFETY CONFIRMATION

Checkpoint	Pass Criteria
Ground bonding	Electrical continuity confirmed between terminal and chassis
Floating grounds	No voltage potential when isolated
Parallel bonding	Resistance equal or lower on multi-lug points
Mounting integrity	No movement or rotation under hand pressure

DISPOSITION INSTRUCTIONS

- If any value exceeds threshold, document the failure and submit a **Defect Report**
- Re-torque or reterminate hardware as needed
- Re-test ground path resistance and re-log results
- Do not re-energize until all points pass

DOCUMENT CONTROL

This document must be used by:

- Installers conducting final verification
- Inspectors reviewing SystemShield installations
- Supervisors closing out electrical work scopes
- Distributors performing kit validation or training

All test results must be logged on the official **Resistance Testing Record Sheet** and **Final Inspection Sign-Off Sheet**.

Contact SystemShield Engineering for clarification, special cases, or tool calibration support.

Email: systemshieldgrounding@gmail.com

Website: www.systemshield.tech

Secure Portal: <https://systemshield.tech/distributor-access>

