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While anyone who installs, tests and certifies a network cabling plant knows the importance of meeting standards performance parameters and ensuring application support, even the best of us can make mistakes that can adversely impact the bottom line and customer satisfaction.

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The following is a quick list of some dumb things smart people do when testing network cabling systems

DO NOT:

Fail to specify the type of link testing you want.

The channel link is the complete link over which active equipment communicates and therefore includes equipment/user patch cords at both ends. While the network ultimately relies on the performance of the channel, channel testing has less stringent limits and can allow problems with the fixed portion of the network to go undetected. Permanent link testing assures that a passing link can reliably be configured into a passing channel by adding certified patch cords and is required for a warranty application.

Neglect to agree upon marginal test results upfront in writing.

A marginal pass suggests you are close to the limit, something which many customers will question and possibly reject. The problem is that ANSI/TIA-1152 and IEC 61935-1 state that a marginal pass simply results in an overall pass condition. It has met the requirements of the standard. If you want to reject marginal results, you will need to specifically state that in your test specification.

Fail to specify all test parameters to be tested.

When it comes to copper certification, ANSI/TIA-1152 and ISO/IEC 11801:2011 specify which parameters should be tested as a minimum in field testing, suggesting there are other parameters – which there are. These include DC resistance unbalance within a pair and between pairs for fully supporting PoE applications. Additional parameters such as TCL and ELTCTL are also specified, but are relegated to laboratory testing only. The latest field testers are capable of making these additional important measurements, but you will need to specify which parameters you want tested.

“Wing it” on Alien Crosstalk compliance.

The cabling vendor offering the warranty may not require alien crosstalk testing. Often considered optional by many, it’s not optional in either ANSI/TIA or ISO/IEC standards. Unless the test specification states no alien crosstalk testing required, you, the installer could be asked to do it by the end user, regardless of what the cabling vendor may say. Making the situation worse, this is a sample test. With no agreement in place, you could be looking at 100% testing of the installation for PS NEXT and PS AACR-F, at your cost.

Forget to enable plot data.

A test report without plot data is an empty test report. While there is nothing in either ANSI/TIA-1152 or IEC 61935-1 that states plot data must be recorded, plot data is the only way to really tell what might be causing an issue with your link under test. And besides, alien crosstalk testing requires plot data from in-channel tests. Furthermore, if you need Fluke Networks' troubleshooting support and you don't provide plot data, we will need it to help you, forcing you to retest with it enabled and more than doubling your test time. There is nothing in either ANSI/TIA-1152 or IEC 61935-1 that states plot data must be recorded.

Go with a non-EF compliant tester for testing multimode fiber.

If your specification states ANSI/TIA-568-C, ISO/IEC 11801 or ISO/IEC 14763-3, you're required to use an encircled flux (EF) compliant launch for multimode fiber testing. Measurement uncertainty with EF-compliant launch conditions are significantly reduced, which can save you from over-optimistic results that can leave your customers wondering why their application is not performing. Some cabling vendors are requiring EF testing for warranties, while others will not provide onsite support without seeing EF compliant results first.

Choose the two-cord reference for Tier 1 optical loss testing.

While a 2-cord reference may seem easier, referencing both testcords results in optimistic results and may provide negative loss results. For this reason, many cabling vendors reject results carried out with the 2-cord reference, which could prevent you from acquiring a warranty. ANSI/TIA and ISO/IEC only recommend a 1-cord reference. The test specification must call out the reference method, and only the 1-cord reference includes the loss of the connections at both ends of the link for the highest accuracy.

Use patch cords to certify a fiber cabling system.

Fiber patch cords typically have a maximum mated loss of 0.5 dB. That can and does result in inconsistent readings, possibly failing perfectly good links. ANSI/TIA and ISO/IEC specify the use of reference grade connectors for test cords, 0.1 dB for multimode and 0.2 dB for singlemode. Such cords are often referred to as Test Reference Cords or TRCs.

Rely on a duplex tester for certifying MPO trunks.

Testing 12-fiber MPO fiber trunks with a duplex tester requires 15 steps in the setup process, and with the time pressure put on technicians in the field, the chance that they will follow all 15 steps is slim to none. A tester with MPO testing capabilities, such as the Fluke Networks' MultiFiber™ Pro, requires just 5 setup steps and groups all 12 fibers of the MPO onto one test report. It also certifies 8 and 10 fiber count MPO links for the support of 40GBASE-SR4 and 100GBASE-SR10. Testing MPO trunks with a duplex tester can make it virtually impossible to stay on schedule.

Skip out on proper fiber inspection.

Contaminated connections remain the number one cause of fiber related problems, which is why fiber end faces should always be inspected before connecting. Unfortunately, relying on subjective human inspection produces inconsistent results. If you have inspection equipment, use it. And consider using the IEC 61300-3-35 standard's cleanliness grading criteria to avoid disputes. The latest generation of field testers can automatically grade an end face in around 1 second.