

Put Your Finger on Fiber-Optic Network Failures

Connector Cleanliness, Contamination and Damage Are the Greatest Causes of Fiber-Optic Network Failure





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0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Installer Network

Source: NTT-Advanced Technology study

Dust and Oil: The Main Sources of Contamination





While the presence of particles on the core can result in catastrophic failure, the size and number of scratches crossing the fiber mode field diameter (MFD) determines the level of degradation.

Oil Contamination

Oil contamination results in major changes to return loss (10 dB to 12 dB), but not insertion loss. However, contamination does lead to significant degradation of bit-error-rate test (BERT) performance.



The Missing Link: How Physical
Connectivity Affects NetworkDirty
ConnecorBroken
Optical FiberPoorly Mated
ConnectorMultipath
Interference

Performance

Many assume that packet loss is caused by congestion. But, in reality, poor physical connectivity leads to a high number of bit errors and packet loss, which in turn dramatically reduce network performance.



Always assess connector cleanliness, mating quality and return-loss performance!