_____

Insertion Loss Measurement Procedure
Three Cord, SMF Permanent Link
ISO-IEC 14763-3:2006-Amd 1:2009

One or three cord referencing methodology is mandated.

The default referencing methodology is the three cord method.

<u>In this document we cover the three cord method.</u>

To achieve consistent results, clean all connectors, through-connects and adapters associated with the test prior to and during measurement.

Ensure all SMF test cords meet IL specification of ≤ 0.2 dB.

Ensure the source has warmed up before commencing measurements.

1. Fit correctly sized air coil to source end of launch cord.

> Minimum of 2 single air-coiled turns or mandrel wraps of 35 ~ 50 mm / 1.4 ~ 2 inch diameter.

Table 1, Air Coil specification - IEC-61300-3-4
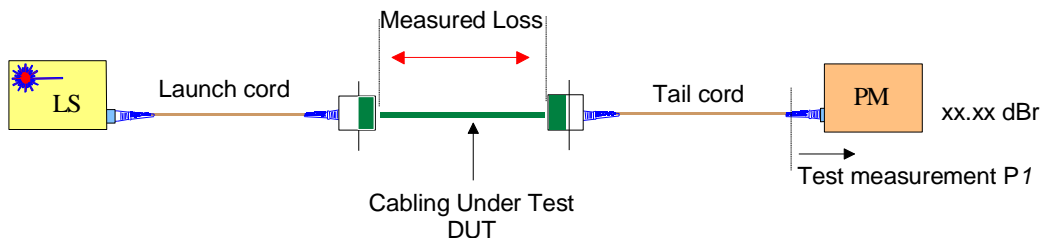
2. Connect launch cord, substitution cord and tail cord to meter and set the reference.

    For clarity the air coil is not shown.
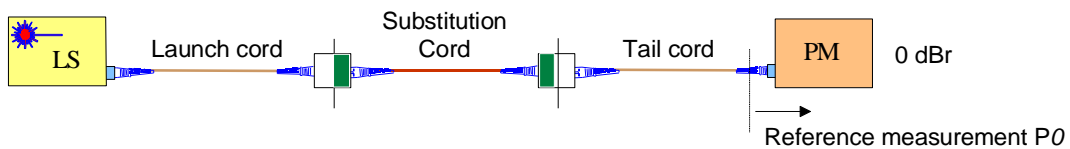
Figure 1, Three cord reference

3. Disconnect substitution cord. Connect launch cord to one end of the cabling under test (CUT/DUT).   Connect tail cord to other end of the DUT.

Figure 2, Three cord measure

4. Read the insertion loss directly in dBr.

5. Standard based pass/ fail calculations as detailed over the page can be applied to the result.

_____

_____

ISO-IEC 14763-3 / 11801

For installations tested in accordance with ISO/IEC specifications, the following maximum limits apply to the various cable plant components.

Item	Specification
Connector loss	0.75 dB
Splice loss	0.3 dB
1310 nm	1.0 dB/km
1550 nm	1.0 dB/km

Table 2, ISO-IEC cable plant specification

Pass / Fail formula

The international pass-fail standard uses a complex formula which is designed to allow for the differing insertion losses between a Reference-DUT connection and a DUT–DUT connection.

Further complexity is added by mandating a different referencing methodology for a Channel to that of a Permanent Link.
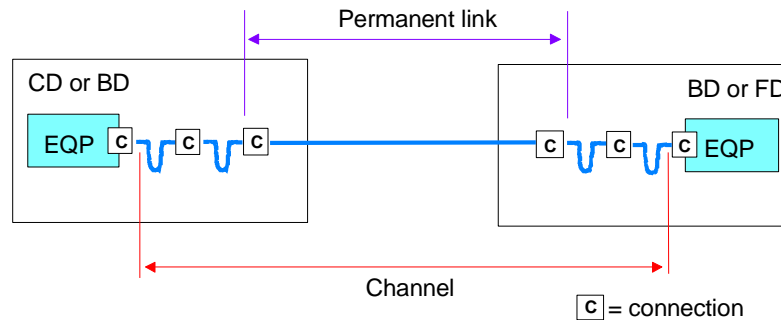
Figure 3, Link - channel definition

Three cord reference formula

Maximum IL at 1310 / 1550 nm = 0.6 + 1.0L + 0.3N + 0.75(C-2)

Where:-

L = Cable length in Km,

N = number of splices and

C = number of connectors.

The contents of this publication are subject to change without notice. All efforts have been made, to ensure the accuracy of this publication. Notwithstanding, Kingfisher International Limited does not assume responsibility for any errors nor for any consequences arising from any errors in this publication.

_____