



Care and Feeding of Optical Fibre

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Introduction

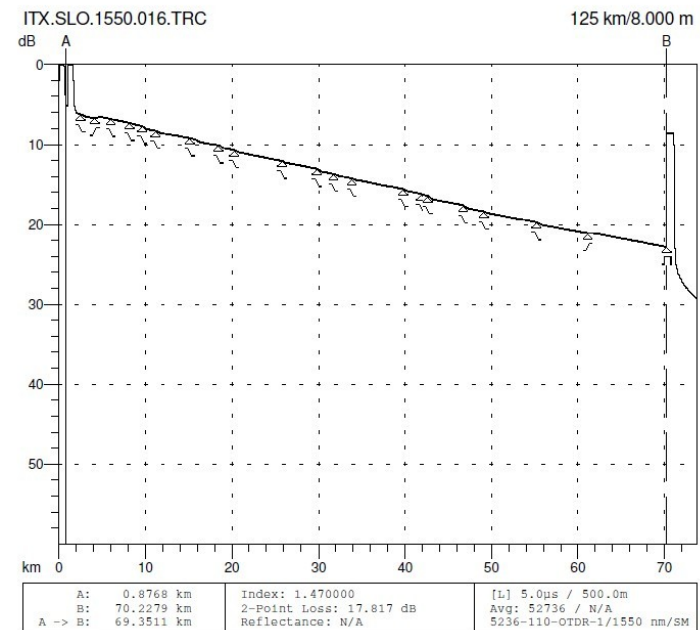
- Growing importance of cleanliness
- Anatomy of a connector
- Common “errors”
- Cleaning tools
- Inspection tools
- Live demo!

Importance of Cleanliness

- Over 75% of debugging of fibre connections is due to dirty fibre termination
- Increasingly important
 - High speed applications
 - WDM deployments
 - Longer reaches without regen
- 100GE will be an “embedded” WDM

Example of long metro span

- LINX extended network to Equinix LD4 in Slough
- ~70km span
- 10G DWDM
- ZR-D optics
 - 80km link budget



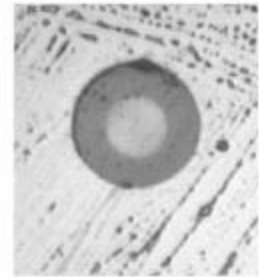
Anatomy of a Connector



- What really matters is the tip of the ferrule
 - What matters even more is the core itself

Common Errors

- Dust caps left off
 - E2000 integral dust cap
- Wiping fibre on your sleeve
- Licking the end!
- Misaligned notches (FC connector)



PC and APC Connectors

- PC – “Physical Contact”
 - Normal Connector – Blue body/boot
- APC – “Angled Physical Contact”
 - 8° angled end – Green body/boot
 - Used in applications requiring low return loss (reflections)
- DO NOT MIX!
 - Happens often, causes air gap.



General Good Hygiene

- Even brand new fibres need cleaning
- Always clean fibre before connecting it
 - Hand-held fibrescope – easy inspection
- Easy to spread dirt between connectors
 - Grinding it into the face of the connector
- Use dust caps!

Fibre end cleaning

- Alcohol and pads
 - Cheap, but messy
- Alcohol wipes
 - Messy, drop lint
- Cletop S
 - About £80
 - Refillable
 - Clean, foolproof



Bulkhead Connector Cleaning

- Cleaning buds
 - “Special cotton bud”
- Dry air canisters
 - Blowing out dust
- Specialist ferrule cleaners
 - e.g. “HUXCleaner”, “Ferrulemate”
 - ~£70-100



Inspection Tools

- Your eyes!
- Hand-held microscope
- Video probe
 - Free standing with display
 - Part of OTDR or other tester
 - Probe that works with laptop



Live Demo...
