

The Secretary
Joint Committee on the National Broadband Network
PO Box 6021
Parliament House
Canberra ACT 2600

Via email : jcnbn@aph.gov.au

Dear Secretary

Subject: Review of Ribbon Optical Fibre Cable deployment into the NBN.

I am writing with my opinion on the deployment of Ribbon Optical Fibre Cable into the National Broadband Network and believe it is not in the best interests of the nation.

In my submission I shall outline my concerns as to why this decision needs to be reviewed.

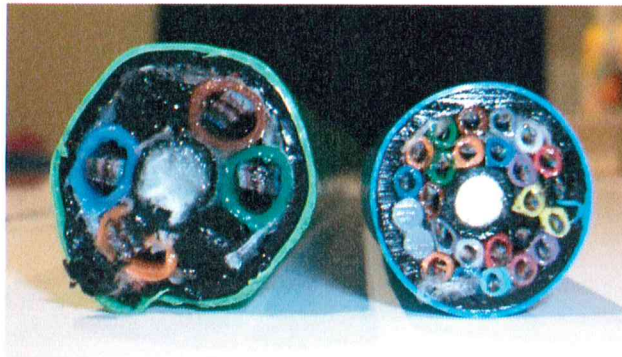
My Background

I started my career with Telecom Australia, and left Telstra 20 years later as a CO7 Field Manager responsible for the supervision of 120 people.

Nearly all that time was spent in the building and construction of the Telecom / Telstra Optical Fibre Network being one of the first trained Optical Fibre Splicer's in Australia, and for the past 15 years in private enterprise building Telco and private Optical Fibre networks Australia wide.

The Issues

The below photograph shows two optical fibre cables of the same fibre count, each cable containing 288 Optical Fibres.



The green sheathed cable (shown left) is 288 Fibre NBN Ribbon Optical Fibre Cable. The blue sheathed cable (shown right) is 288 Fibre Standard Loose Tube Single Stranded Optical Fibre Cable.

The argument given in support of the deployment of ribbon optical fibre cable;

- The cable can splice 12 fibres at a time, approximately a 50% reduction in set up and splicing time for 1 man's labour rate.

However this is not a true representation of the full installations costs associated with deploying Ribbon Optical Fibre Cable.

Ribbon Optical Fibre Cable is more suited to Asian countries and North America where the majority of their Telecommunications cabling is above ground, attached to poles.

In contrast in Australia, the majority of Telecommunications infrastructure is an underground network of pits, pipes and conduits.

As can be seen in the photograph above the NBN Ribbon Optical Fibre Cable is larger by approximately 20%.

Roll out Issues

The deployment of Ribbon Optical Fibre Cable shall require a more extensive upgrade of Telstra's already congested pit and pipe network.

This shall result in more civil construction upgrading of the Telstra pipe network to accommodate Ribbon cable. Therefore any cost savings made during the splicing shall be overwhelming lost due to additional costs in laying new pipes and reinstatement of nature strips and roads to original conditions.

This leads into unnecessary disruption the wider community during the construction phase.

With the ribbon cable being larger in size and weight, this will result in additional pit upgrades across the entire network, due to being unable to coil ribbon cable into existing pit infrastructure, therefore adding further civil construction costs.

Ribbon Optical Fibre Cable being larger and heavier requires additional manual hauling in the installation process, resulting in an increased installation cost and a greater risk of personal injury to the Cable Haulers.

Splice Method for Ribbon Fibre Cable Clad Aligned Splicing

- Ribbon fibre uses clad aligned splicing method and this method of splicing incurs a higher fault rate
- resulting in an inferior splice.
- Requiring in additional rework
- Clad aligned splice method results in a greater dB loss refer to extract shown below taken from NBN Co Document “Guide Fusion Splicing”.
- Splicing Standard Loose Tube Stranded Optical Fibre Cable requires core aligned splicing.

- NBN Co Document called “Guide Fusion Splicing”
- Document Number: NBN-TC-CTO-854 Issue Date: 15 November 2011 Status: Issued Version Number: 1.0
- **8.1 Clad Alignment Machine Acceptable Splice Value**
- The acceptable splice value when measured by OTDR is detailed in document NBN-TE-CTO-177, for the purposes of performing reliable splices the maximum machine estimated splice loss on any fibre where a clad alignment machine is utilised is **0.08dB**, for estimated losses on any fibre above this value the splice must be redone.
- **8.2 Core Alignment Machine Acceptable Splice Value**
- The acceptable splice value when measured by OTDR is detailed in document NBN-TE-CTO-177, for the purposes of performing reliable splices the maximum machine estimated splice loss on any fibre where a core alignment machine is utilised is **0.05dB**, for estimated losses on any fibre above this value the splice must be redone.

Additional Tool up costs

All telecommunications carriers in Australia deploy standard loose tube optical fibre cable. Therefore all companies are equipped in core aligned splicing machines.

Qualified companies to undertake work on the NBN, are required to tool up with Ribbon Fibre Splice Machines (clad alignment) which are approximately \$20,000 each.

This cost to small and medium business is unnecessary, when endeavouring to deliver better broadband services to Australia.

A typical small business employing 5 Fibre Splice Teams, would have a re tool cost of \$100,000.

My concern is Ribbon Optical Fibre Cable typically delivers a needlessly expensive and inferior product to Australians.

NBN Schedule of Rates on offer

Rates on offer to small and medium companies Tier 2 Contractors are unsustainable and are typically up to 50% lower than accepted industry standard rates.

Yet small to medium companies Tier 2 Contractors is where the hands on industry knowledge and expertise typically reside.

There is also a huge industry expertise shortfall in trained experienced Fibre Cable Installers and Fibre Splicer's across Australia.

I would urge the Committee to immediately review the deployment of Ribbon Optical Fibre Cable for rollout in the NBN, for all the reasons outlined above and with a view to stabilising some degree of certainty within the telecommunications industry. Whilst endeavouring to address the true build costs of a National Broadband Network constructed with Ribbon Optical Fibre Cable.

I would be pleased to discuss any of the issues raised above in greater detail, with any and all members of the Joint Committee on the National Broadband Network both now and into the future.

Kind regards

A handwritten signature in cursive script that reads "Greg Ingram". The signature is written in dark ink and is positioned above the printed name.

Greg Ingram