

Annex A.1.5.
(Non-Confidential version)

G652D vs G67A2 Singlemode Optical Fibre Differences and Advantages



G652D Vs G657A2 Singlemode Optical Fibre Differences and Advantages

Products Overview - February 18, 2019



Bend it like never before!

G652D and G657A2 specifications refer to the glass and cable construction of optical fibre and are generally the fibres of choice in optical fibre patch leads for singlemode systems.

ITU-T G652D singlemode fibres have been used in all networks for more than 30 years. Being backwards compatible, this makes for easier maintenance/repair (splicing fibres of the same type). The G652D fibre Mode Field Diameter is 10.4µm @1550nm.

G652D fibres provide marginally lower loss transmission, which is better in facilitating long distance communication links (up to and greater than 100km).

However, G652D fibres have limited bend resistance.

G657A2 fibres are used in advanced access cable network installation, where higher bend resistance is required for smaller cable jointing pits and also allows for cable and hardware miniaturisation.



G657A2 fibres are fully compatible with G652D fibres. The G657A2 fibre Mode Field Diameter is 9.8µm@1550nm. Splice losses are slightly higher when splicing the two different fibres together.

G657A2 fibre has greater resistance to bending (macrobend) losses (see figure below), and facilitating low-cost deployment techniques.

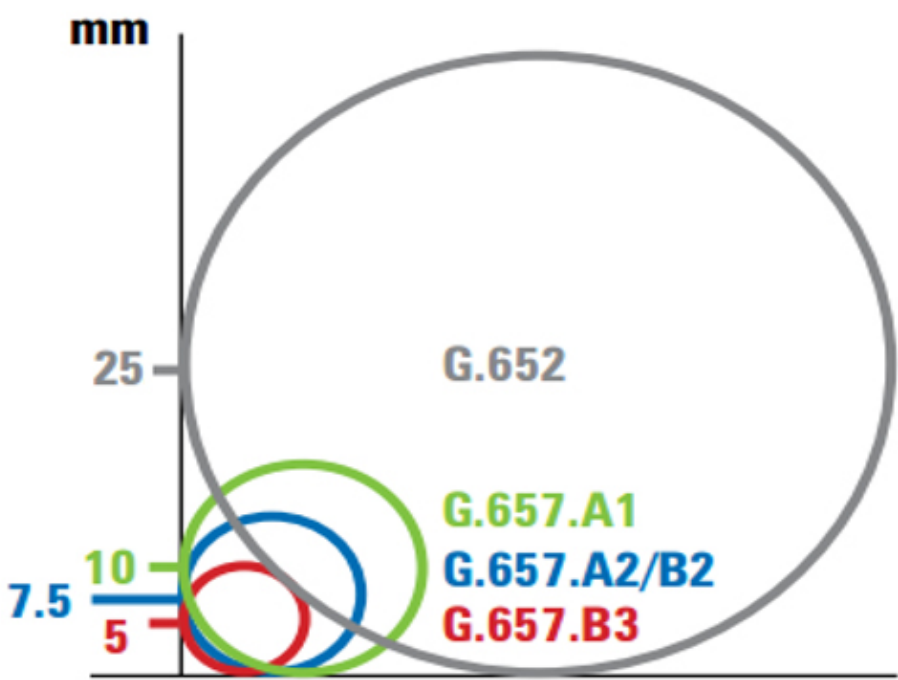



Figure1: Relevant Bending radii for G652 and G657 fibres.

- Fibre Bending Radii Vs Attenuation Increase at 1550nm.

<u>Fibre Type</u>	<u>Bending Radii</u>	<u>Attenuation Increase (db)</u>
G652D	100 turns on 25mm mandrel at 1310/1550nm	≤ 0.03
G652D	100 turns on 30mm mandrel at 1625nm	≤ 0.1
G657A2	10 turns on 15mm mandrel at 1550nm	≤ 0.05



G657A2	10 turns on 10mm mandrel	at 1625nm	≤ 0.1
G657A2	1 turn on 10mm mandrel	at 1550nm	≤ 0.1
G657A2	1 turn on 10mm mandrel	at 1625nm	≤ 0.2
G657A2	1 turn on 7.5mm mandrel	at 1550nm	≤ 0.5
G657A2	1 turn on 7.5mm mandrel	at 1625nm	≤ 1.0

Advantages:

G652D Marginally lower attenuation and lower splicing losses, when splicing like fibres. Providing longer cable networks.

G657A2 Smaller cable and cords installation radii, providing for low-cost installation, miniaturisation and higher density connectorization.

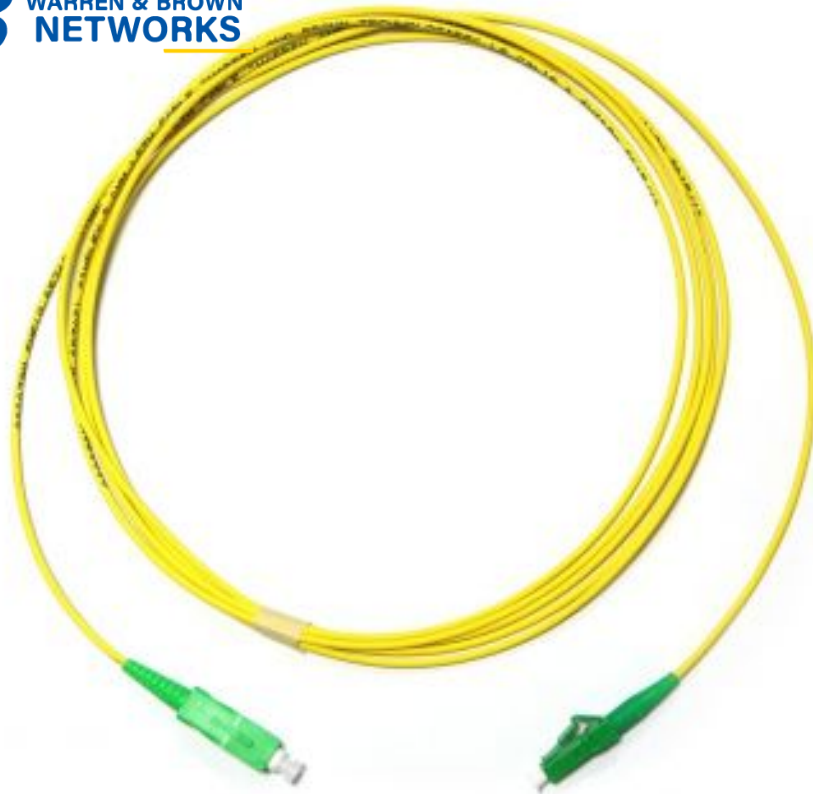
Therefore, G657A2 optical fibre in patch cords, provide an improved bend radius and flexibility, which may allow for better cable management and routing in congested areas. The improved bend radius may also allow for increased density in high-density patching fields. G657A2 optical fibre is becoming very popular in the Data Centre and Enterprise network deployments.

Warren & Brown Technologies has a full range of G652D and G657A2 connectivity infrastructure to suit any network, large or small.

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