

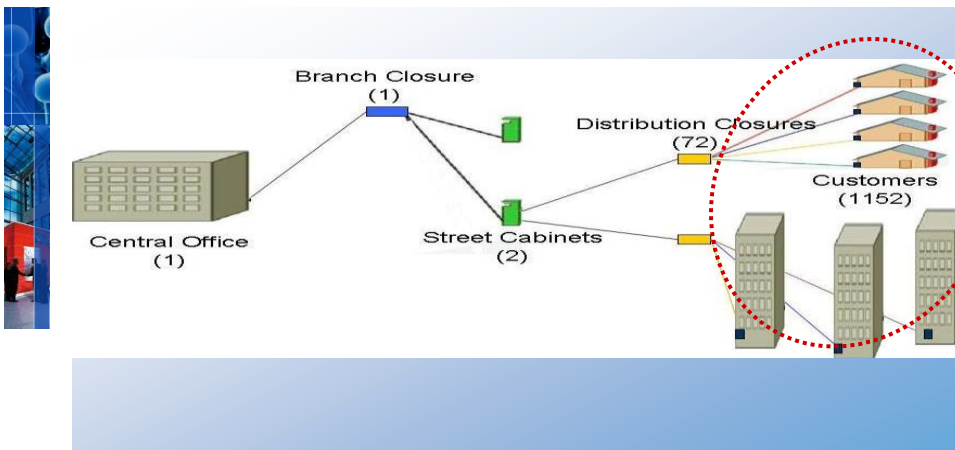
Distribuční boxy a konektivita vláken u koncového zákazníka

Martina Kubalíková



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Solutions for Customer Premise



Fiber Optic Distribution Boxes

PHYSICAL-MEDIA LAYER

Central Office, Aerial Fiber Plant, Buried Fiber Plant, Premises

Distribution Box Outdoor 8-32 Subscribers	Multi Dwelling Unit 12-96 Subscribers	Connection Box Internal 6 Subscribers	Distribution Box Indoor Internal 6-24 Subscribers	Transition Box 2-4 Subscribers
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flexibility

high density and various capacity

high performance

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Wall Boxes (termination/distribution)

OUTDOOR

- 2 different versions
- Possibility of using fusion or Fibrlok splicing
- IP55
- Optional key locking

PBO T1



DIM. (mm) 240x270x80

PBO T2



DIM. (mm) 255x400x85



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MDUO box for 12 subscribers with pre-wiring option

Multi Dwelling Unit Optical Box

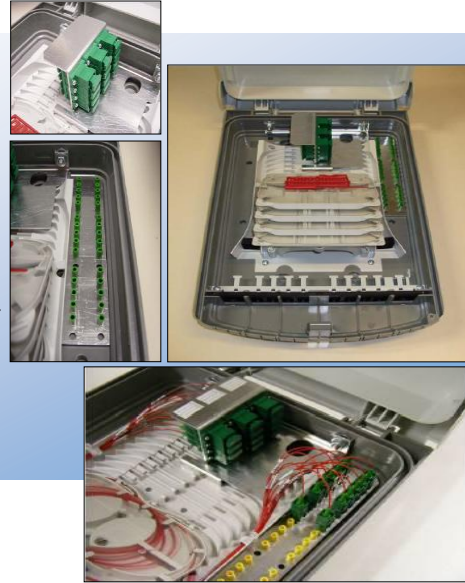


Features :

- Box & Plastic Organizer
- Dim: L:400 ; W:255 ; T:86
- IP55 / IK06
- 8+2 anchorage: 2 for cables up to 20mm, 8 for cables up to 12mm (16 drops for 3 to 5mm cables, 8 > 5mm)
- Organizer 7 slots
- Trays 5 or 10 mm from BPEO Evol
- Connection for 12 connectors SC, 24 pigtails in buffer

4 versions of pre-wiring :

- Empty
- Prewired P2P : 100 % pigtails & connectors for the riser and 50 % pigtails on the operator side
 - 12 pigtails for the riser & 12 on the operator side
 - 12 pigtails for the riser & 6 on the operator side
- Prewired PON: 100 % pigtails & connector for the riser and tray for splitter on the operator side
- Prewired PON: 100 % pigtails & connector for the riser and pre-connectorized splitter on the operator side



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MDUO box for 24 subscribers with prewiring option

Multi Dwelling Unit Optical Box

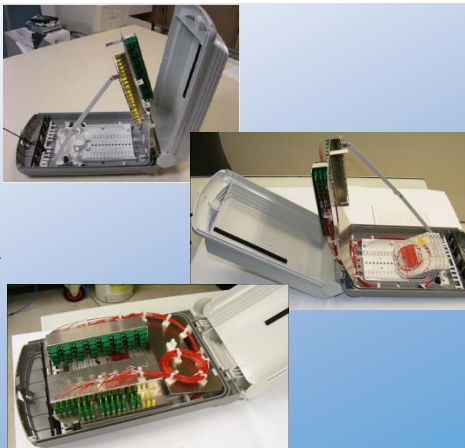


Features :

- Box & Plastic Organizer
- Dim: L:400 ; W:255 ; T:116
- IP55 / IK06
- 8+2 anchorage: 2 for cables up to 20mm, 8 for cables up to 12mm (16 drops for 3 to 5mm cables, 8 > 5mm)
- Organizer 7 slots
- Trays 5 or 10 mm from BPEO Evol

4 versions of pre-wiring :

- Empty
- Prewired P2P : 100 % pigtails & connectors for the riser and 50 % pigtails on the operator side
 - 12 pigtails for the riser & 12 on the operator side
 - 12 pigtails for the riser & 6 on the operator side
 - 24 pigtails for the riser & 24 on the operator side
- Prewired PON: 100 % pigtails & connector for the riser and tray for splitter on the operator side
- Prewired PON: 100 % pigtails & connector for the riser and pre-connectorized splitter on the operator side



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MDU boxes for 12-24-40 subscribers with pre-wiring option

Multi Dwelling Unit Optical Box

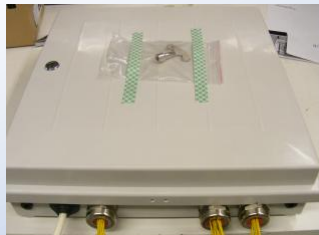


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CDS Fiber Boxes

For high number of connections

- There are 3 sizes with different capacities for direct splicing or patching with the option of PLC splitter usage



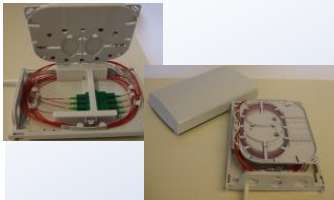
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Wall Boxes (termination/distribution)

OUTDOOR/INDOOR



FTB-M



Optional: Splice Tray !



- Outdoor/indoor distribution box
- IP54 protection level
- Compatible to Blown Fiber applications
- Up to 4 fibers terminated with NPC or Fibrok



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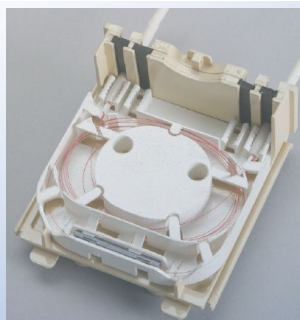
Wall Boxes (termination/distribution)

OUTDOOR/INDOOR



- Transition Box
- 25mm bend radius
- 4 Fibrok splicing slots

BTI



DIM. (mm) 89x91x45



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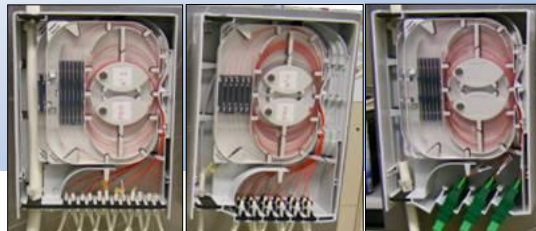
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Wall Boxes (termination/distribution)

INDOOR - RISER

PBPO/C (PBO 6-12)

- Floor Box
- Up to 48 splices*
- Up to 12 SC/E2000 connectors
- Indoor, wall-mount only



DIM. (mm) 160x210x60

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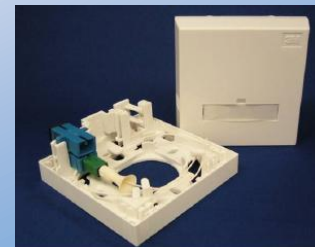
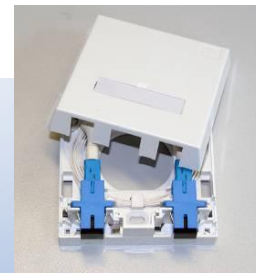
Wall Boxes (termination/distribution)

INDOOR/RESIDENTIAL

8686 FTTH WALL OUTLET

- Terminates indoor cable in the customer premise to a point ready for connection to an Optical Network Unit
- Up to 4 field mount connectors or 4 splices with SC connector pigtail

Features	Descriptions
Dimensions 86x86x30 mm	Small enough to fit into existing copper service distribution boxes
Multiple ports entry and termination capacity	Flexible and versatile. 6 cable entry ports and 8 back ports Up to 4 ports for SC coupling 5 drop terminations for customer premises Keystone RJ45 Jack
Multiple mounting capability	Wall mount (screw) Cabinet mount (double sided adhesive tape)
Integrated cable management	Can accommodate 2.5mm, 9mm and 2mm/4mm/5mm flat indoor fiber cables
Label Holder	Easy identification



DIM. (mm) 86x86x33

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Termination Box: 8686 FTTH Wall Outlet

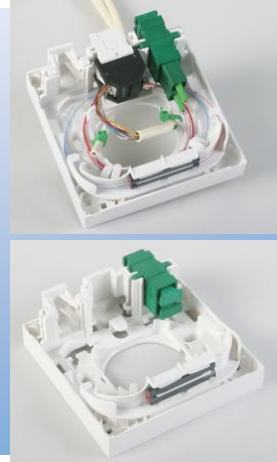


Features :

- 2 mechanical splices "Fibrlok"
- accommodate 2 "NPC" connectors terminated on a two fiber cables .
- Can integrate 1 keystone jack (RJ45)

Advantages – Benefits :

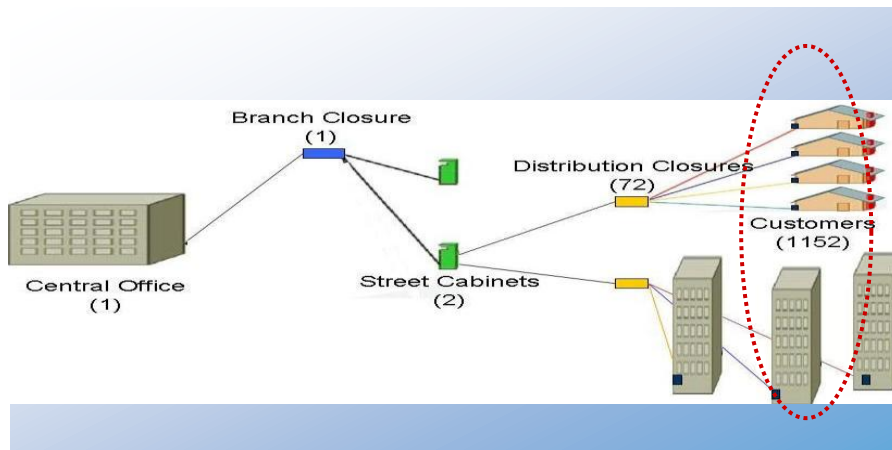
- Cost competitive
- Symmetric according to cable entry
- Compact size



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Customer Premise Solutions & Connectivity



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3M Products With Mechanical Splice



- Fibrlok™ II 250/900um Splice
- Fibrlok™ 250um Splice
- Fibrlok™ II Splice Holder
- Fibrlok™ II Splice Holder w/ Pigtail
- Fibrlok™ Angle Splice
- NPC SC PC and SC APC
- NPC LC PC and LC APC

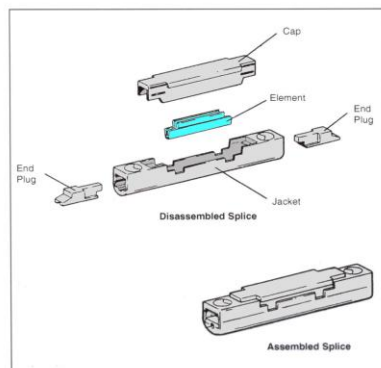


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Fibrlok™ II Universal Splice 2529 in detail



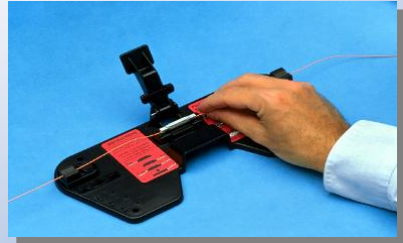
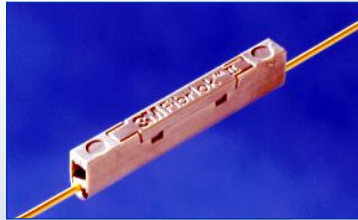
Exploded View of the Fibrlok™ II 2529 Universal Optical Fiber Splice



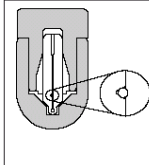
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Fibrlok™ II Universal Splice 2529

- Single fiber splicing of 250um & 900um of
- Single Mode & Multimode fiber



Cross-sectional view of open and actuated Fibrlok II Splice 2529



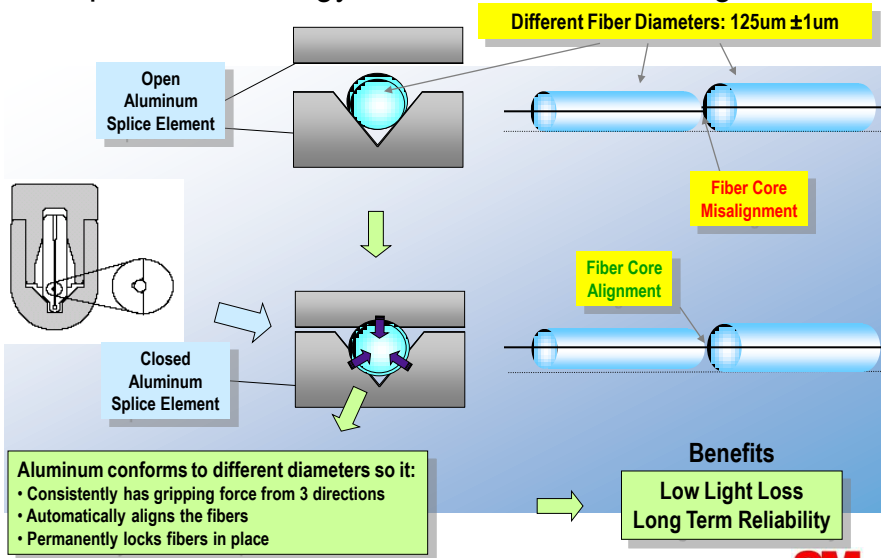
After preparation, the fibers are inserted into the Fibrlok II Splice 2529 element. The assembly tool is then used to close the cap, forcing the clamping and locating surfaces against the fibers and aligning the fibers precisely and permanently in place.

Features	Benefits
<0.1dB insertion loss	High performance
30 second installation time	Increased productivity
Minimum tooling requirements	Low capital cost
No epoxy or electricity required	Easy on-site installation
Simple, easy to use	Minimal training, lower installed cost



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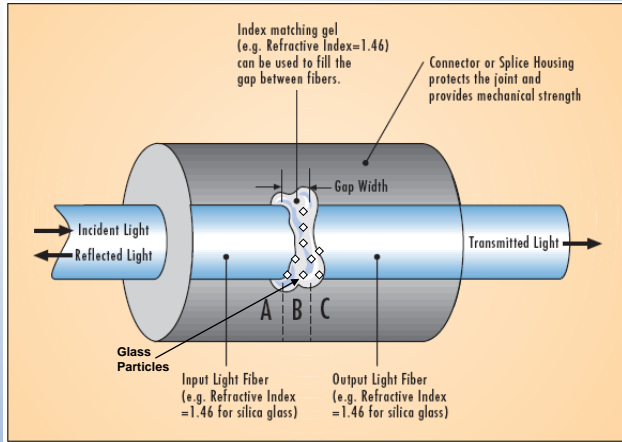
3M Splice Technology Ensures Fiber Core Alignment



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Fiblok™ / NPC – Gel Performance

- Gel consists of silicone with glass particles
- Gel index-of-refraction closely matches glass index-of-refraction at room temperature



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Fiblok™ 250um 2540G

**Over 2 Million Deployed
In Japan FTTH Market**

- ✓ Single Fiber Splice
- ✓ Reduced size of 4mm by 4mm
- ✓ Similar performance as Fiblok™ II
- ✓ 250um fiber capable

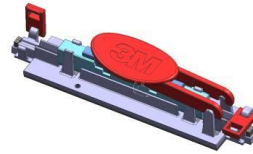


Features	Benefits
Hand held tool	Splice anywhere
Small size	Fits in many fusion splice trays
Simple, easy to use	Minimal training, lower installed cost

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Fibrlok™ II w/ Splice Holder



ONT mounted to side of house.
Fiber coming into ONT from the ground.



Technician has installed the splice holder, and is routing the pigtail.

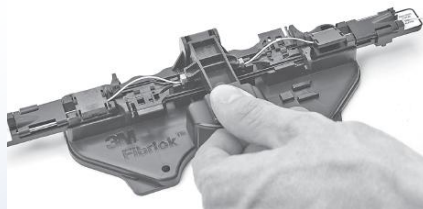


Completed Installation

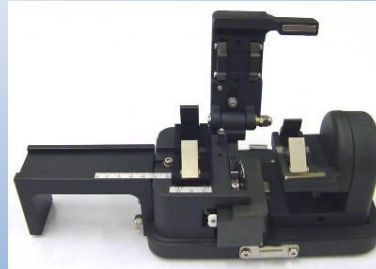


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Fibrlok™ Angled Splice Tooling



Fibrlok Angled Splice

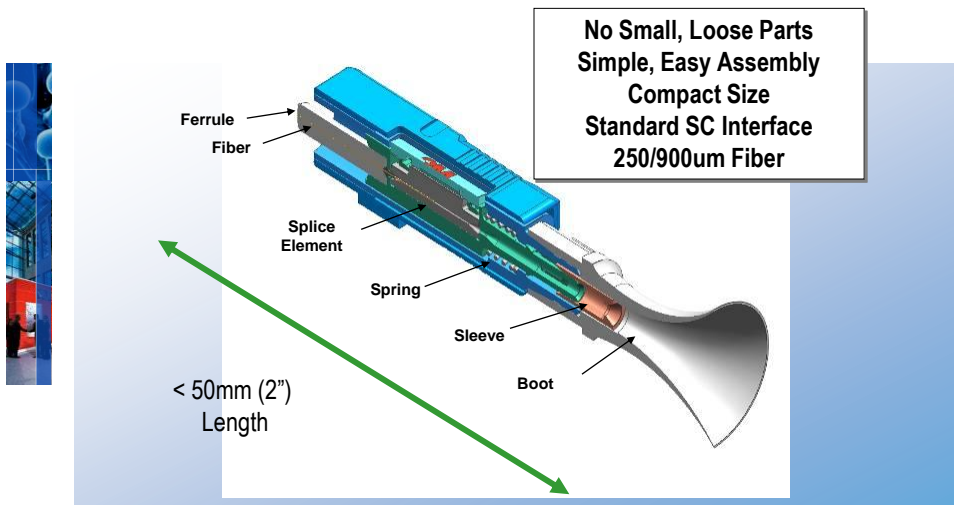


Angled Splice Cleaver 2535



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Non Polish Connector



Fully Pre-Assembled



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NPC Connector – Features & Benefits

and with the following advantages...

low insertion loss
typ. 0,3 dB

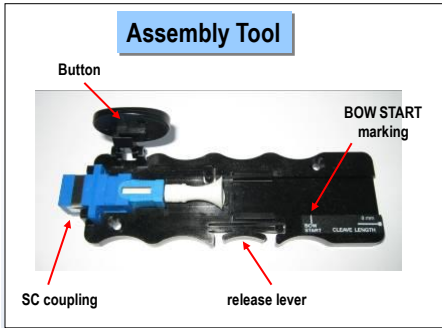
excellent return loss performance with the NPC/APC Connector
< -65 dB (@ RT)
< -60 dB (@ temp. extremes)

standardized connector interface
SC-connector, you will see in ~ 90% of FTTx – projects worldwide
LC-connector, increasing tendency



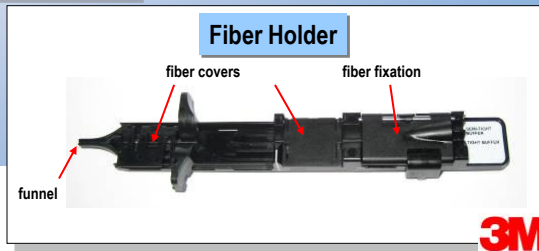
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NPC Connector – Assembly Tool



- It is a part of each packaging unit (MOQ 60 pc.)
- It is equal for all offered SC connector types

- Fiber Holder: for all fiber types with 250µm & 900µm

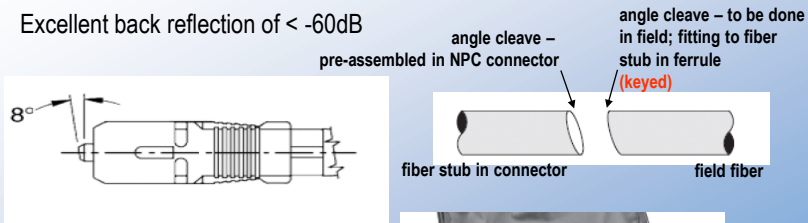


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SC APC NPC Connector

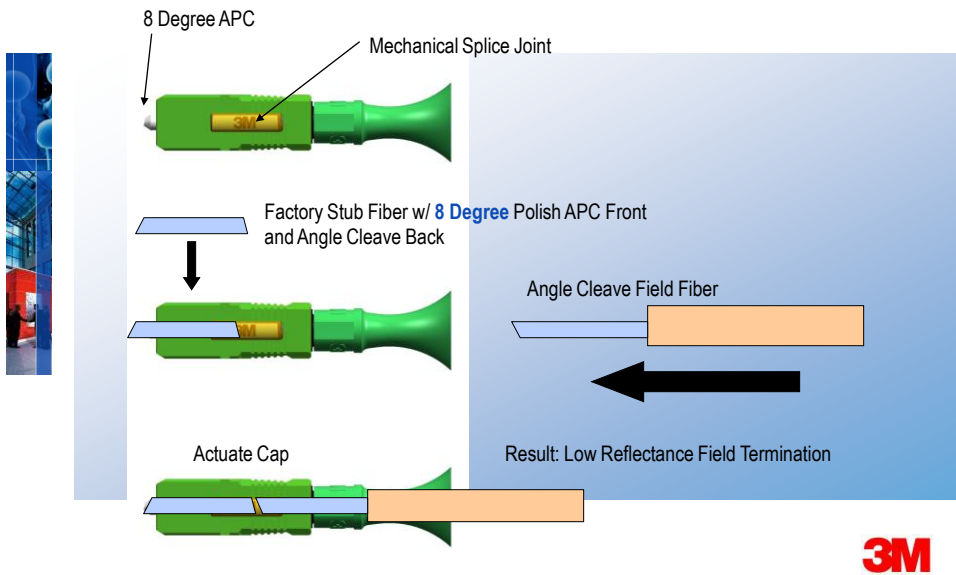


- 8 APC ferrule with angled (cleave) splice
- Angle splice (keyed angled splice) with Angle Cleaver 2535
- Excellent back reflection of < -60dB



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SC APC NPC/AS Connector – Field Termination



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NPC Connectors with SC Interface

UPC – Versions

- SC Multi Mode 50 μ m (flat splice) 250/900 μ m
- SC Multi Mode 50 μ m OM3 (flat splice) 250/900 μ m
- SC Multi Mode 62,5 μ m (flat splice) 250/900 μ m
- SC Single Mode 9 μ m (flat splice) 250/900 μ m
- SC Single Mode 9 μ m (angled splice) 250/900 μ m



APC – Versions

- SC/APC Single Mode 9 μ m (angled splice) 250/900 μ m
- SC/APC Single Mode 9 μ m (angled splice) jacketed 3mm
- SC/APC Single Mode 9 μ m (flat splice) 250/900 μ m
- SC/APC Single Mode 9 μ m (flat splice) jacketed 3mm



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Děkuji za pozornost!

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