Optical Fibre LANmark Patch Panel for Snap-in adaptors

PRODUCT INSTALLATION GUIDE

November 2012

Nexans

Document information

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LANmark-OF Patch Panel

Installation is to be performed by qualified service personnel.

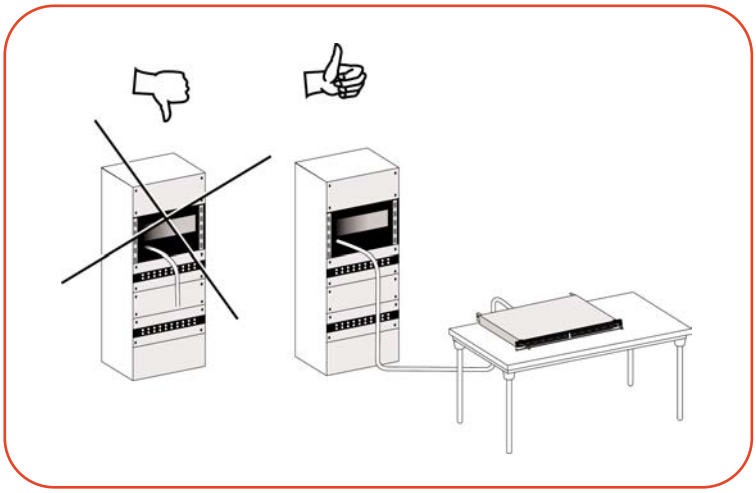
The Installation of a fibre Patch Panel must be carried out with care and precision. Ensure you work on a clean and level work-surface.

Each Patch Panel is supplied with:
- 1 Patch panel with front plate
- 4 Cage-nuts with screws
- 1 retaining nut for stud for splice tray location
- 3 loop rings
- 2 Star washers for earthing

All other ancillaries (e.g. Splice Tray) must be purchased separately, the product numbers are mentioned where needed.

Phase 1 Preparation of the patch panel

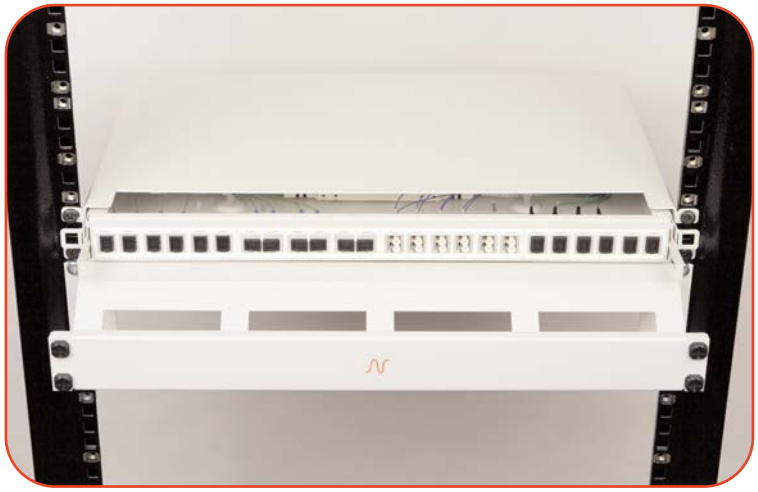
Ensure a length of spare cable (slack) is provided within the cabinet (5m recommended). As well as being required to facilitate the termination of the cable in the OF patch panel, spare cable will allow for the possibility of re-termination, repair and ability to relocate if required in the future.



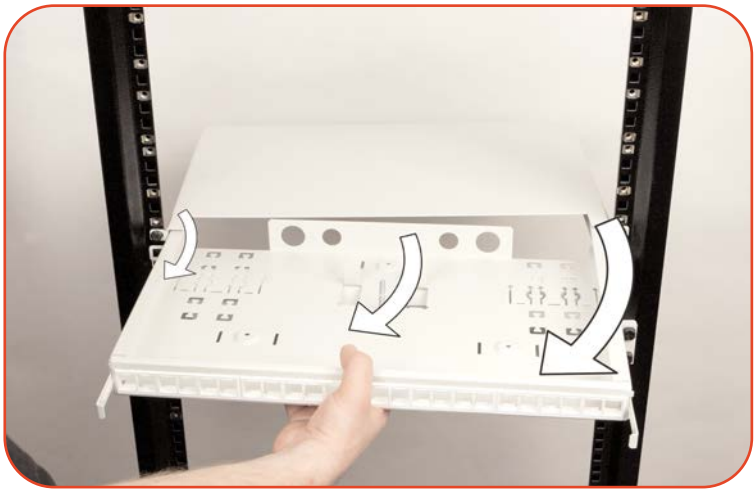
NB1. Spare cable may require special stowage requirements in the installation.

NB2. Before termination, always cut off the first metre of cable as this part can be damaged after pulling the cable, bending etc... The removal of this 1m section should be taken into consideration in respect to the final amount of cable slack provided. More specific installation guidelines on indoor optical fibre cable can be obtained from our "Optical Fibre Indoor Cable Installation Guide" which is available from our website under Documentation File Library section.

Position the patch panel as well as the patch guide into the rack.

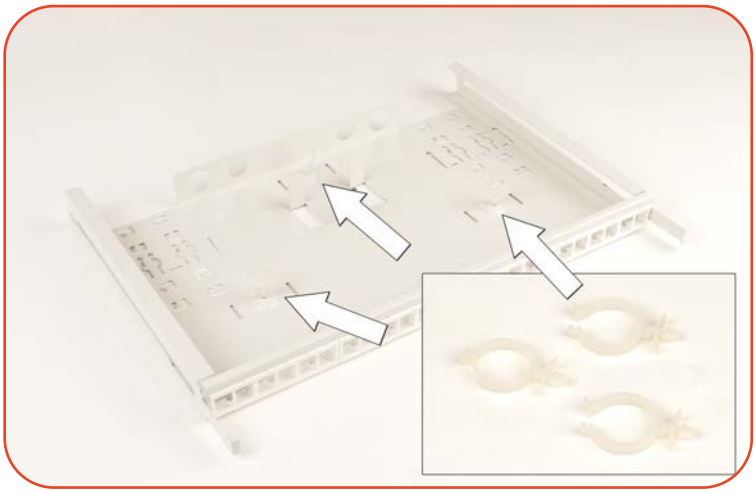


Remove the aluminium front plate and slide the housing base plate off the rack drawer.
Preferably use the Nexans outrigger (N500.120) or a table to terminate the panel.
Remember to complete earthing requirements for metallic items using star washers and suitable cable



Thread the cable through the gap between the cover of the patch panel and the patch guide.
Make sure to respect the minimum bending radius while handling the cable.

Press the loop rings in the raised indents. They will be used later to support the fibres.



Phase 2 Choosing connector types

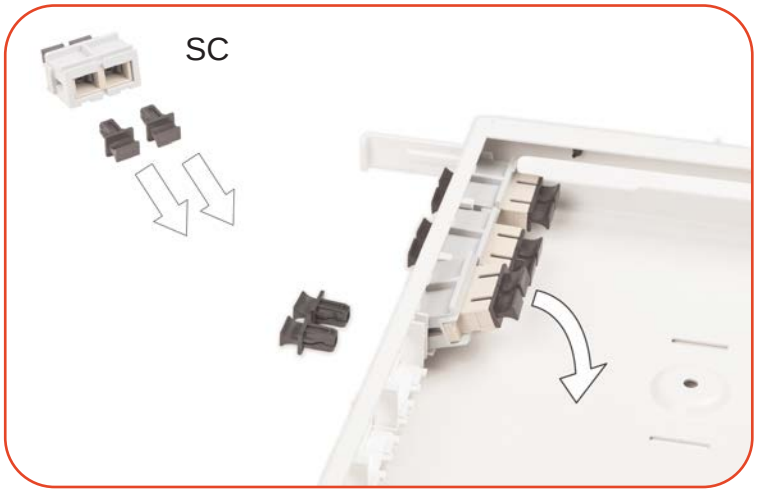
The advantage of the Snap-in patch panel is the flexibility to accept different types of couplers and connectors. Seven versions can be installed by using the LANmark snap-in couplers.
These couplers must be purchased separately.

N205.611 LANmark-OF Snap-in Adapter 2LC-2LC Multimode
N205.621 LANmark-OF Snap-in Adapter 2LC-2LC Singlemode
N205.614 LANmark-OF Snap-in Adapter DSC-DSC Multimode
N205.624 LANmark-OF Snap-in Adapter DSC-DSC Singlemode
N205.612 LANmark-OF Snap-in Adapter MT-RJ - MT-RJ
N205.613 LANmark-OF Snap-in Adapter SC-SC Multimode*
N205.623 LANmark-OF Snap-in Adapter SC-SC Singlemode*

*Please be aware that patch cords with a DSC connector are not compatible with two separate SC couplers as the orientation of the keyway is different.

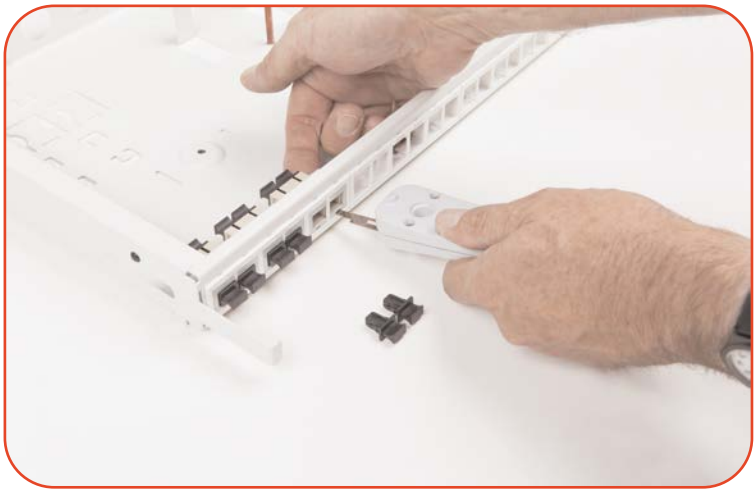
Snap the couplers into the Patch Panel by hooking the top of the coupler into the plastic moulding (rear of the front mounting plate) and then lowering the connector into its aperture to snap it.

Using SC Duplex make sure to remove the dust caps on the front before fittng the coupler.



Visually check that correct adaptors (MM Beige or SM blue) are being used for the fibre being terminated. Blanks (N420.655) can also be obtained for unused positions.

N420.655



To remove the coupler: put a small blade (or equivalent) in the opening under the connector to unlock.

DO NOT discard ferrule dust caps! If removed in order to insert adaptors. Always re-fit afterwards. This is essential in order to maintain cleanliness & integrity of the fibre channel.

Phase 3 Fibre termination

There are 3 possible methods of fibre termination:

1. Direct termination:
This is suited primarily to Multimode fibres and restricted recommendations by connector type for Singlemode fibres. (See table below). MTRJ is not recommended for direct termination.

2 Pre-terminated solutions:
This is selected for ease of installation, particularly where the installation window is short and where the number of connectors and/or link loss budget is a determining factor (See reduced loss and warranty benefits with Nexans pre-term solutions).

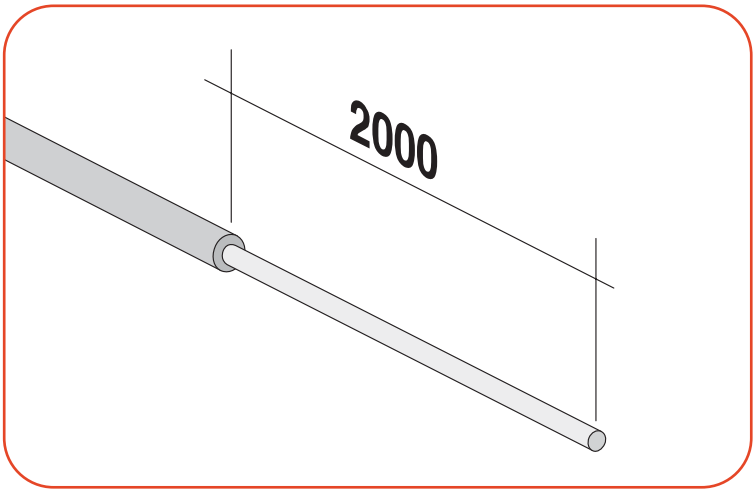
3. Splicing:
This is suitable for both tight buffered and loose tube constructions, with appropriate use of splice protectors and splice management.

Loose tube 250µm fibres	SC	LC	MT-RJ
Fusion Splicing MM	Yes	Yes	Yes
Connectorisation MM	Yes, with microtube	Yes with microtube	NO
Fusion Splicing SM	Yes	Yes	NO
Connectorisation SM	Not advised or with microtube	Not advised or with microtube	NO

Tight Buffer 900µm fibres	SC	LC	MT-RJ
Fusion Splicing MM	Yes, using Heatshrink splice protectors	Yes, using Heatshrink splice protectors	Yes, using Heatshrink splice protectors
Connectorisation MM	Yes	Yes	No
Fusion Splicing SM	Yes, using Heatshrink splice protectors	Yes, using Heatshrink splice protectors	Yes, using Heatshrink splice protectors
Connectorisation SM	Yes	Yes	No

Phase 3A Termination with Direct Connectorisation

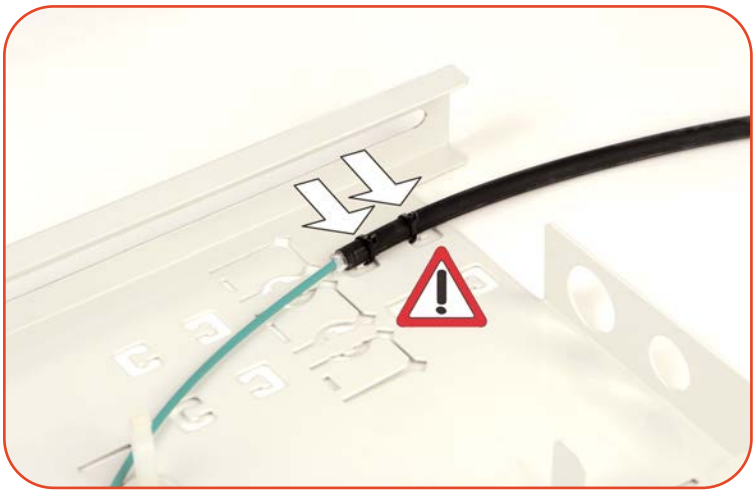
Remove approx 2 metres of the outer sheath and the aramid/glass yarns from the cable.
Consult specific guidelines on removing the outer jacket depending on the construction.
Special consideration may be required for grounding corrugated metal jacket constructions. Refer to customer / site installation specifications.



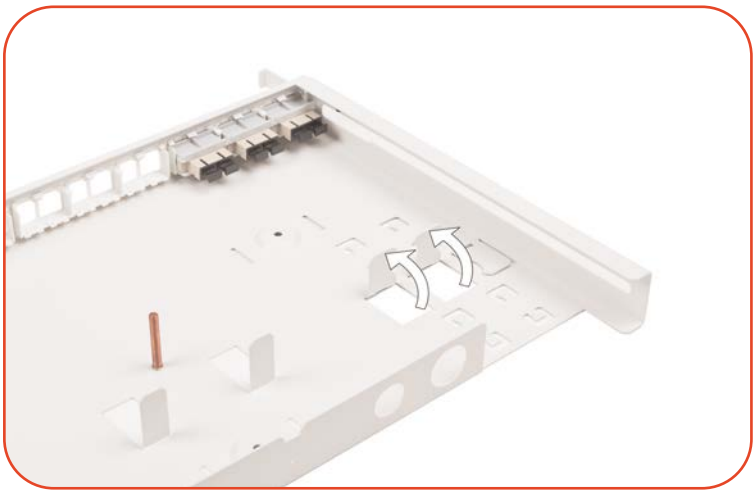
Avoid damaging the fibres while cutting the outer jacket and yarns. Collect all waste and dispose of correctly.
For 250µ fibres the tube must be removed leaving at least two loops in the loop rings. Make sure to clean the fibres with appropriate and approved cleaning solvents to remove the gel.

The sliding drawer unit features 3 options for retaining prepared fibre cables.

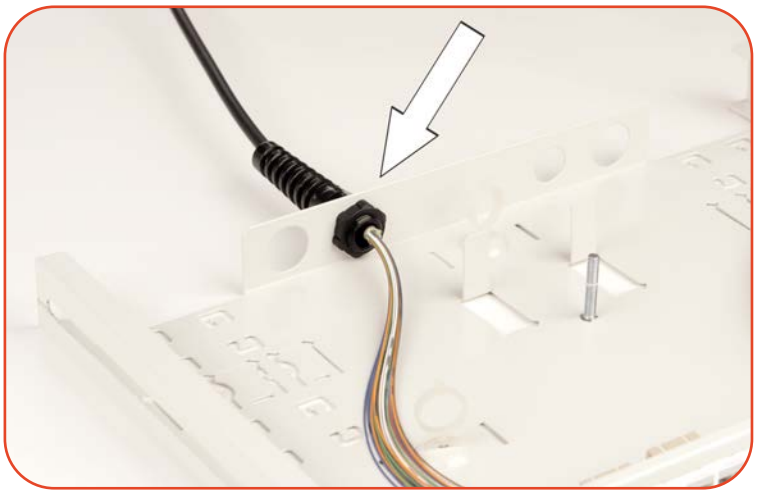
- Using Tie wraps at the corner positions



- Raising tabs to provide cable gland / slot entry at the tie-wrap location



- Using cable gland holes (20mm / PG11-13,5 and 25mm / PG16-21)



Fix a permanent label on the fibre cable for future identification. Provide for cable slack (at least two spare loops of core) in the patch panel and locate in the loop rings or in the LANmark-OF Internal Fibre Management Tool (ref.:N890.027)

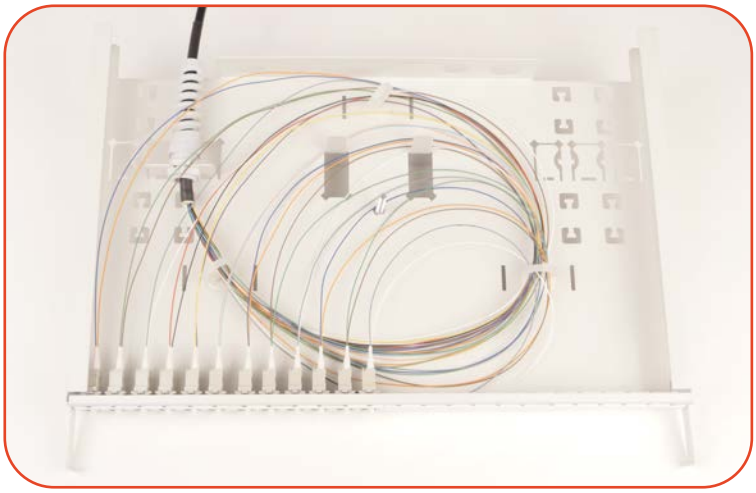
Measure the length of each fibre core to the coupler respecting both bending radius and the colour sequence, cut off surplus and dispose of correctly.

Refer to "Recommendations to maintain OF duplex channel polarity". A technical paper, which is available from our website under File Library. Knowledge of this document will assist in the sequence of preparation of the cores by colour and storing within the spindle or rings and thus reduce wasted time.

Take the fibre out of the loop rings and mount the connectors on the fibre. When mounting connectors on 250 µ fibre, you will need to use an optional microtube (N890.045) to reduce risk of damaging the fibre. It is advisable to label the fibres for easy identification. Labels must not compromise bend radius of the fibre cores. Remove the dust protection caps on the inside of the couplers where connectors will be inserted.
A quick cleanness check of the couplers may be advisable. Compressed air or alcohol can be used to clean the couplers if there is ingress of dust. Loop the fibres back in the loop rings and insert connectors according to the colour coding / position sequence of the couplers.

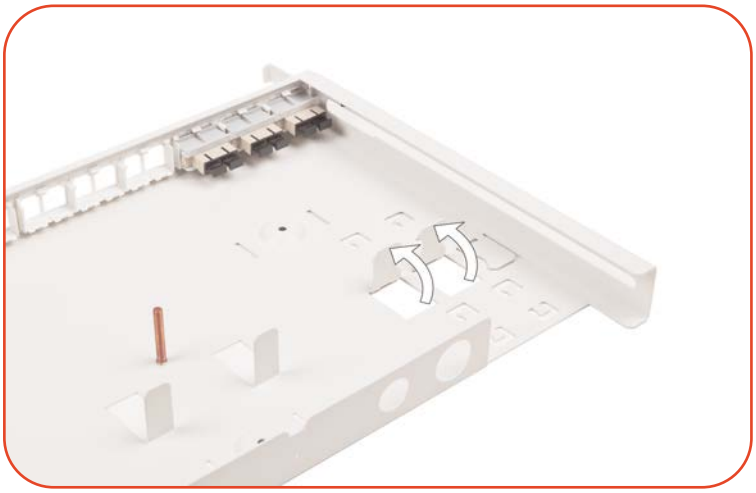
Maintain site cleanliness practices! Close the drawer whenever you leaving the site in an incomplete installation, keep dust caps fitted.

Continue with Phase 4



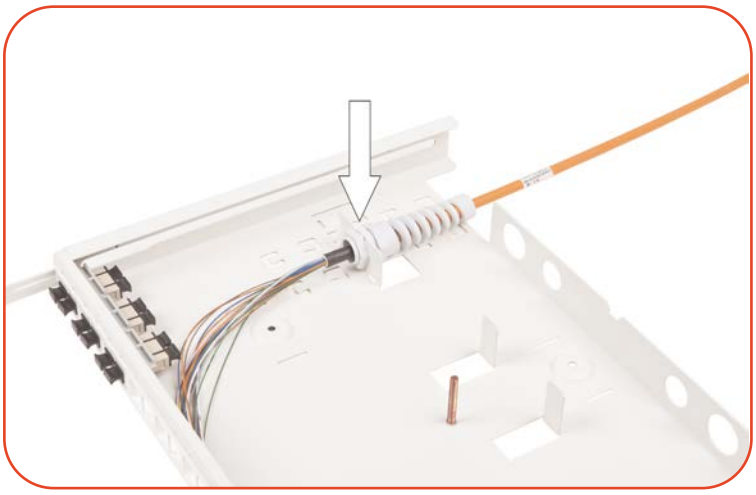
Phase 3B Termination with Pre-Terminated assemblies

Raised the tabs to provide cable gland / slot entry for the Pre-Terminated assemblies.



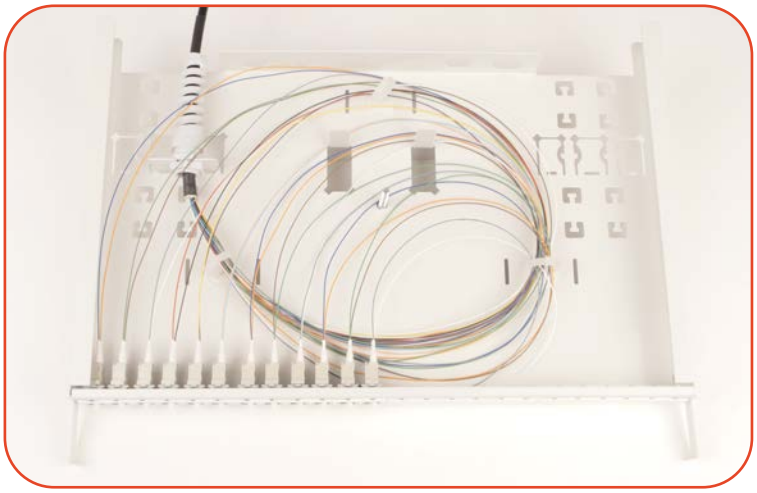
Insert the cable from the rear end of the panel. Partially remove the protective tube to access the cable gland. Fasten the gland on the raised plate and remove the protection tube. In the case where a pulling system is supplied with the assembly, the tie-wrap punchout provides for this to be attached, in addition aramid yarns can similarly be fixed on the base plate.
It is advisable to label the fibres for easy identification. Labels must not compromise bend radius of the fibre cores.

Coil the fibre using loop rings provided with the panel or by means of the LANmark-OF Internal Fibre Management Tool (ref.:N890.027)



Remove the dust protection caps on the inside of the couplers where connectors will be inserted. A quick cleanness check of the couplers may be advisable. Compressed air or alcohol can be used to clean the couplers if there is ingress of dust. Loop the fibres back in the loop rings and insert connectors according to the colour coding / position sequence of the couplers.

Refer to "Recommendations to maintain OF duplex channel polarity". A technical paper, which is available from our website under File Library. Knowledge of this document will assist in the sequence of preparation of the cores by colour and storing within the spindle or rings and thus reduce wasted time.

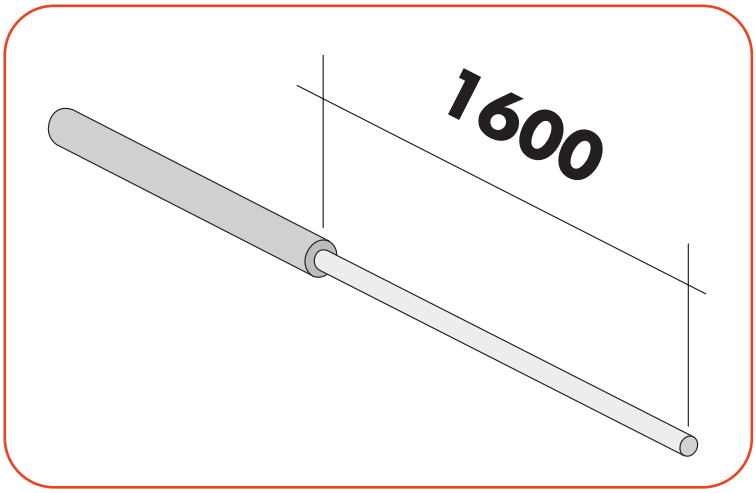


Maintain site cleanliness practices, close the drawer whenever leaving site in an incomplete installation, keep dust caps fitted.

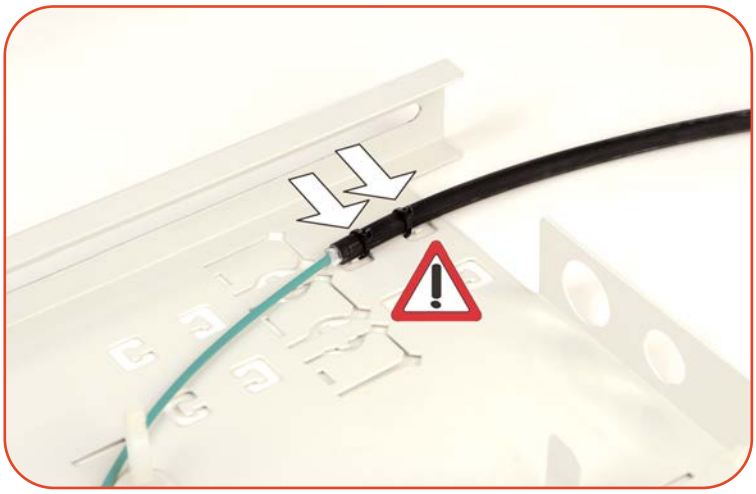
Continue with Phase 4

Phase 3C Termination with Fusion Splicing

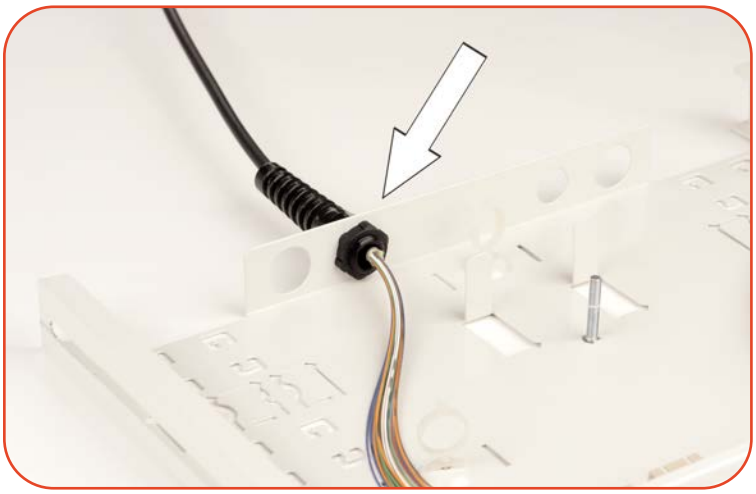
In case of tight buffer fibre:
Un-strip the fibre cable to a length of at least 1.6 meters to allow enough spare fibre for later maintenance purposes.
Consult specific guidelines on removing the outer jacket depending on the construction.
Avoid damage to the fibres while cutting the outer jacket and yarns.
In case of loose tube fibre:
Remove 1.6 meters of outer sheath from the tube(s).
Use the correct tools in order not to damage the fibres while cutting the tube.



Secure the outer jacket of the cable onto the base at the back of the patch panel by means of tie-wraps. Tighten the tie wraps firmly.

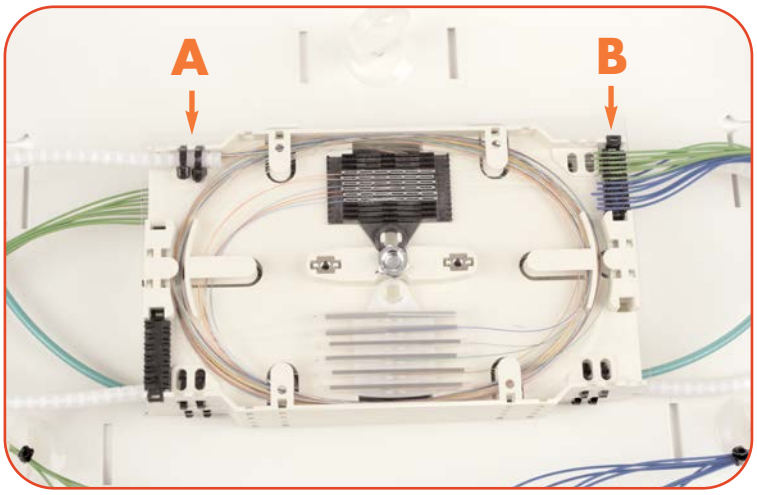


If no tie wraps are used, then an optional cable gland (20mm / PG11-13,5 or 25mm / PG16-21) has to be used to affix the cable to the patch panel.

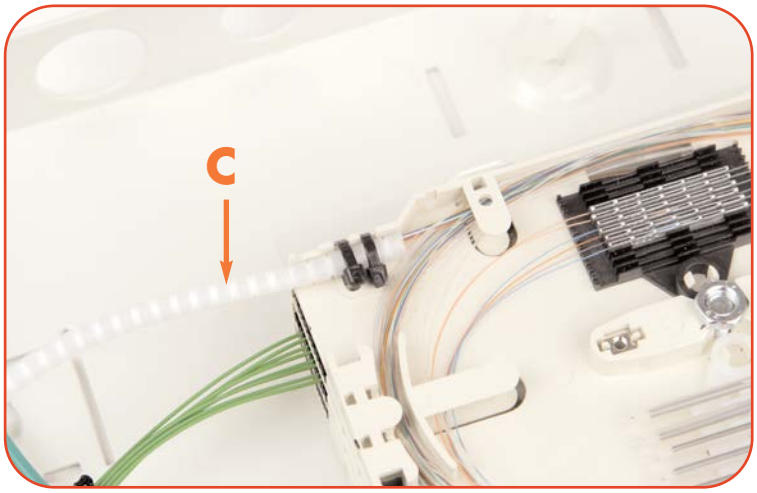


Fix a permanent label on the fibre jacket for future identification.
Up to 4 splice trays may be installed to hold up to 48 fibre splices. Splice trays for fibre splice protections are available in metallic or heat-shrink versions. It is advisable to install a maximum of 12 splice protections per tray. In specific cases up to 24 metallic protected splices can be installed. Fix the first splicetray on the stud in the patchpanel and retain with the supplied nut.

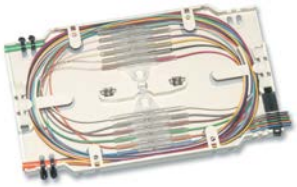
Remove the tube from the fibre to allow fixation in the splice tray (**A**) by means of tie wraps. Clean the fibres with an approved and suitable solvent to remove the gel.
Make sure to have at least two loops of slack fibres in the splice tray. Up to twelve fibres can be installed per heat shrink splicetray and up to 24 splices can be installed using metallic aluminium protectors.
Remove the dustcaps from the couplers on the inside of the Patch Panel. A quick cleanness check of the couplers may be advisable. Compressed air or alcohol can be used to clean the couplers if there is ingress of dust. Insert the connectors of the pigtails in the couplers.
Measure the length of the 900µ buffer needed to fix the pigtail in the comb (**B**) of the splicetray keeping in mind the bending radius. Make sure to use the entry comb on the side of the connectors you have just installed.
The fibres from the pigtails should make two loops in the opposite direction. **Our Maxi strip pigtails allow to remove the 900µ buffer in one go after being cut at the right length.**



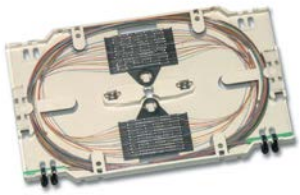
A minimum two loops of fibre core from the pigtail is advised in the splice tray.
In case of using a fibre cable with more than 12 x 250µm fibres, a separation of extra fibres is needed. This can be done by using 20 cm (**C**) of empty tube for splice trays N890.145 to link both splice trays on the opposite side of the pigtails. The top-right entry comb of the second splice tray must be removed in order to accept the tube with the fibres.
Cut the first 12 fibres to the right length and joint them by fusion splicing with pigtails respecting the colour sequence.
The "Recommendations to maintain duplex OF channel polarity" technical paper, which is available from our NCS website (under the File Library), should be considered when choosing the colour order.



Heat Shrink Protection

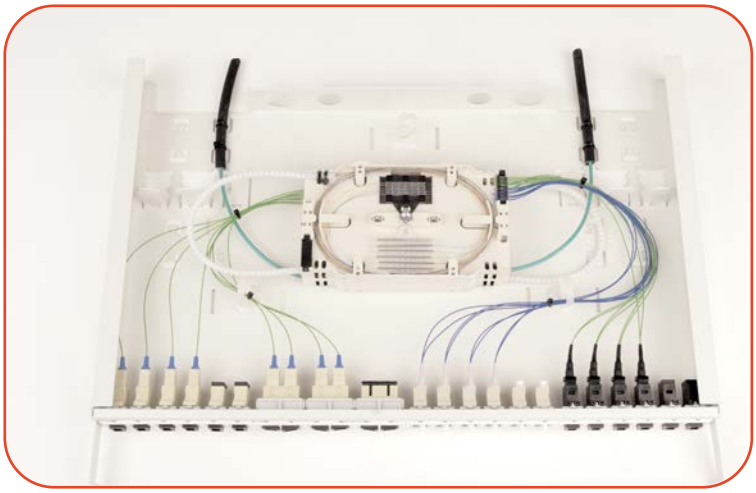


Aluminium Protection



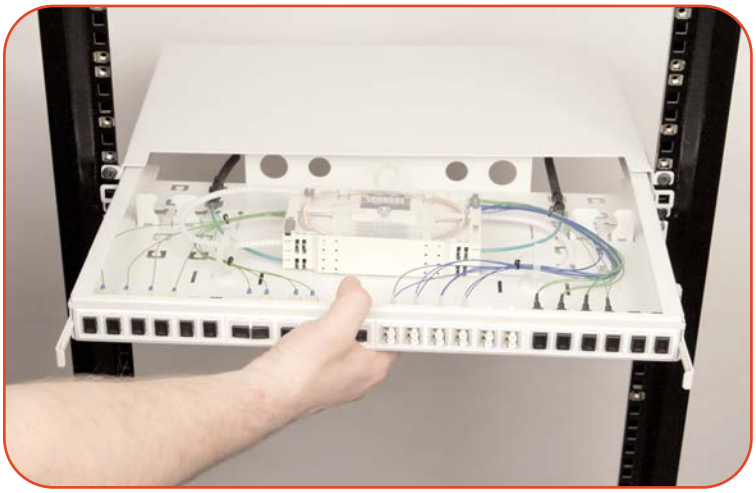
Protect the splices with an aluminium protector N890.003
(Tool N890.004 must be used) or a heat shrink splice protector N890.021.
For splicetray with metallic splice protection use N890.010.
For splicetray with heat shrink protection use N890.020.
For splicetray cover use N890.022
After installation of the first splice tray you may insert the other fibres from the same cable in the empty tube and fix the tube to the second splice tray.
You may repeat the same process to add the third and fourth splice tray where the pigtails are installed on the other side.

Continue with Phase 4



Phase 4 Finalization of the installation

The drawer assembly can now be refitted to the housing.



An earth connection can be made to the drawer using an earth lead. Spare / slack cable should then be appropriately secured depending on the installation requirements of the site.

Add the front cover after installation in the cabinet. Label the ports conforming to the site labeling scheme.
The Patch panel is now installed.

Testing must now be carried out in accordance with client requirements and Nexans procedures for warranty submission.

Use a 2 HU patchguide to cater for patchord bend radius.

Patch cords can now be installed. An additional push on each individual boot of a SC duplex patch cord might be required to ensure that the SC connector is properly clicked into the adaptor.

Push back the tray after installing all the patchcables, this recesses the connectors giving added protection.

On completion the installation must be handed over to the customer with all dust caps fitted to unpatched adaptors.
Any dust caps that have been removed must be stored appropriately for potential re-use.
Optical Power / Safety levels warning labelling, and security procedures must have been implemented on completion of the installation.
An example is where the optical hazard requires identification labels to be fitted and security procedures for racks and doors to be fitted and closed/locked.