



TOOLBOX TALKS

Direct buried tube installation

RAISING STANDARDS ACROSS THE FIBROPTICS INDUSTRY

Good practice guidelines

It's essential to adhere to good practice to prevent future issues. Poor standards when direct-burying result in blocked, kinky or badly connected tubes that disrupt cable installation. This then means re-opened notices, missed deadlines and **lost time and money!**

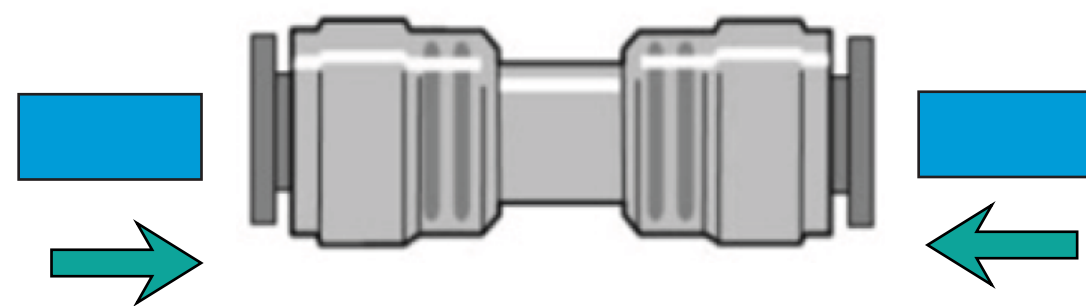
Cutting & connecting tubes

01 Only use the correct tube cutter for the task in hand and ensure the blade is sharp.

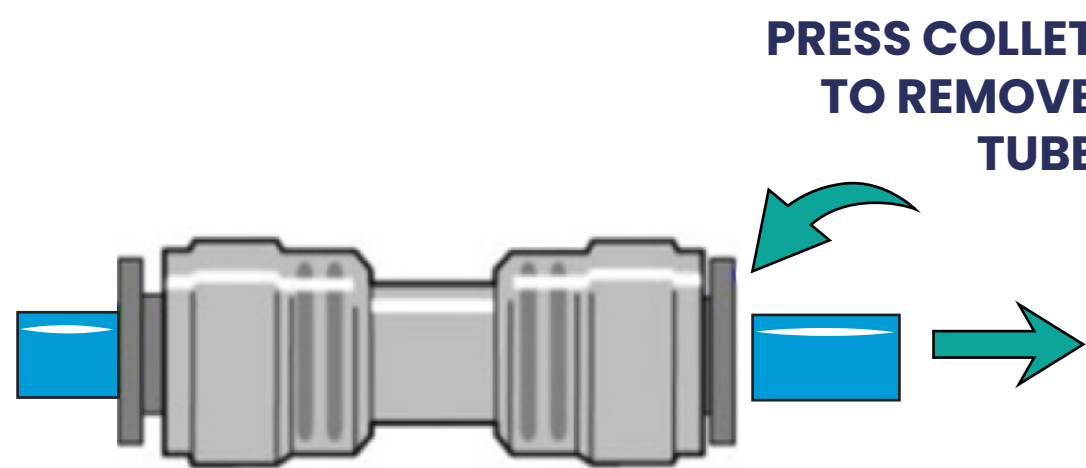
02 Cut the tubes to the right length for the connector type and ensure they are butted for a good connection.

! Blunt blades can crush the tube and slow or stop the cable as it passes through.

! Leaving gaps causes debris to get lodged and air to escape.



PUSH TUBES IN

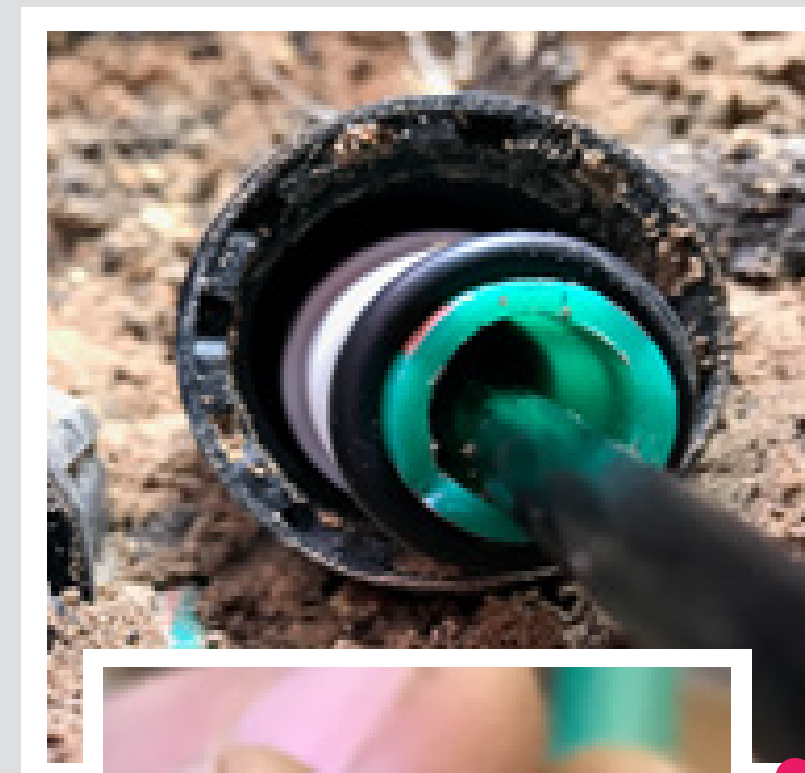
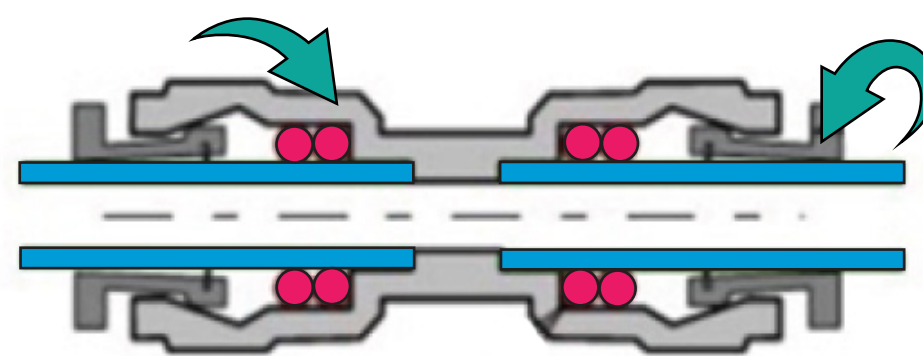


PRESS COLLET TO REMOVE TUBE



RUBBER O RING SEAL

TUBE RETAINING COLLET



03

Always use end caps when tubes are to be left or laid within the excavation.



Gritty issue!

A commonly reported issue by cable installers is the need to blow out sand and grit stuck in the tube.

Tube installation

01 The tube must always be rolled or pulled off the drum using an A-frame.

! Tube removed from a drum laid on its side and then straightened out is **not acceptable**. This causes friction on the cable and restricts installation distances, requiring excavation.

02 Make sure a level sand bed is in place before any tube is laid.

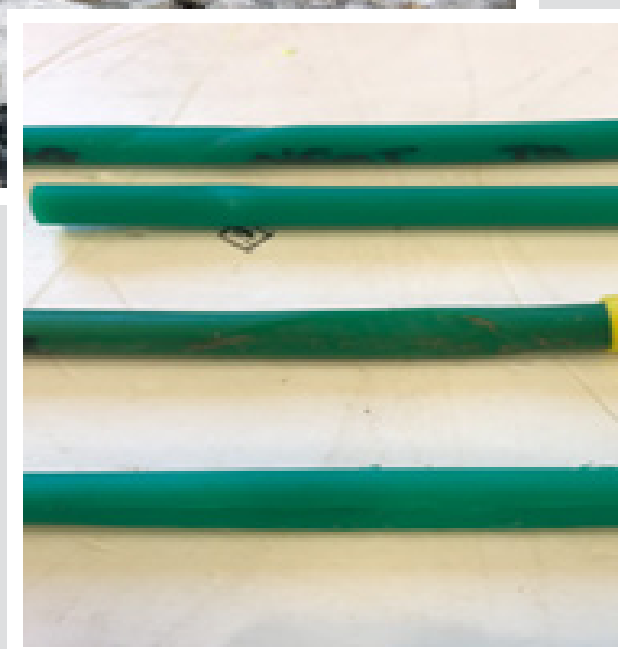
! Undulations cause friction and restrict blowing distances.

03

The tubes must have the correct amount of sand cover.



Hard debris can penetrate the tube and cause indentations, which then restrict cables.

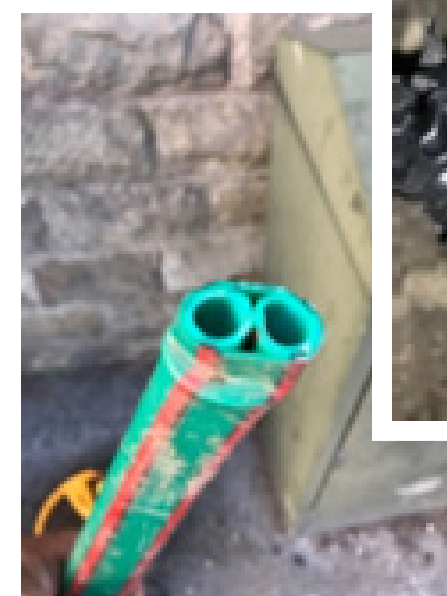


04

The tubes must be formed and taped together at a minimum of **1 metre** intervals.



Failure to implement this step causes the tubes to splay out, creating kinks and bends, which again, restrict the cable.



BELOW & RIGHT: The images show an example of kinked tubes running over a service and tubes undercut when coupled.



Reducing bends in tubes

It's essential to keep bends to an absolute minimum. Manufacturers state there should be no more than 15 in bends any one section.

RIGHT: A sharp bend that was uncovered after an excavation to investigate an issue with a tube installation



06

Excavations should be open in front to allow for slow deviation over and around services.



Sharp and sudden bends around a service result in multiple kinks and undulations which make it difficult for cables to pass through.

And finally!

If you have any concerns about the drawings you have been provided, please contact your agent!

Do you need to fill any knowledge gaps?

The FIA can help in many ways with expert technical help or advice on professional training. For more information, visit www.fia-online.co.uk.

05

Tube installers should ensure the slowest descent possible to the correct depth.



This is particularly important when approaching a road crossing.

This Toolbox Talks is by Mej Yousaf, managing director of Micron Networks Ltd and member of the FIA Council