

Principles and Notes for Mechanical Splicing

Principles for Mechanical Splicing

Mechanical splice utilizes mechanical splice elements (see Figure 1). Internally structured as shown in Figure 2, they align the axes of bare fibers using a V-groove and maintain the connection between fibers by applying pressure with a clamping mechanism. In the central area of the element, index matching gel is filled to minimize light reflection and ensure optimal connection values, allowing the fiber end faces to connect through this gel. To make the connection, a wedge is inserted into the mechanical splice element using a connecting tool, as shown in Figure 3, to widen the V-groove gap and allow for fiber insertion. Once fibers meet from both sides of the element, removing the wedge secures them in place using a clamping mechanism.

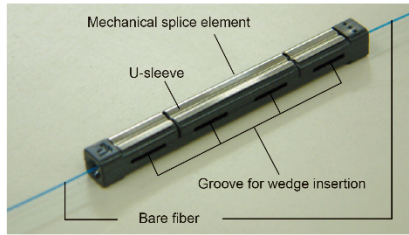


Figure 1 Mechanical splice element

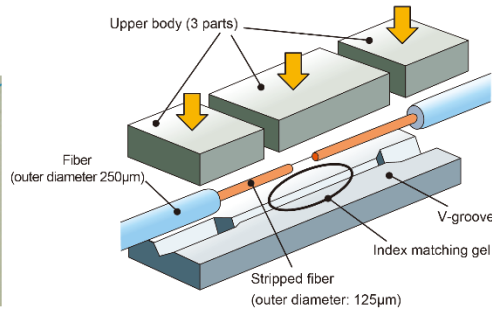


Figure 2 Internal structure of mechanical splice element

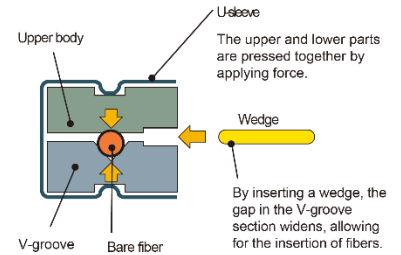
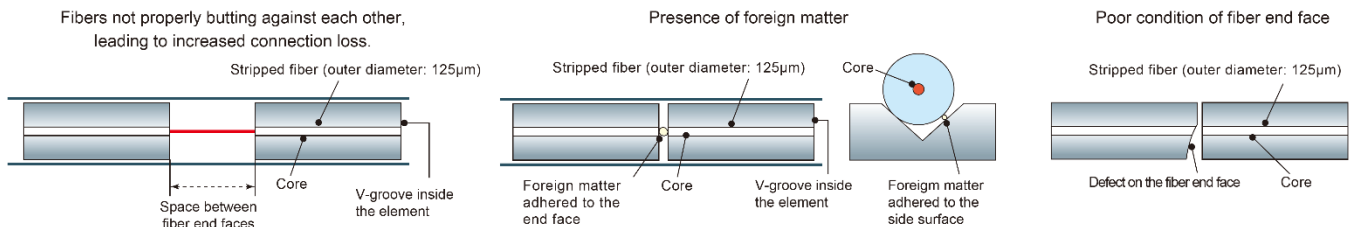


Figure 3 Wedge insertion

Attention

In post-installation inspections, potential causes of loss and defects include: a.) fibers not properly butting against each other, b.) foreign matters trapped inside the mechanical splice elements, and c.) poor condition of fiber end faces. Therefore, it is necessary to review and confirm the connection procedures and methods thoroughly before proceeding with the work.



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