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Applications
Engineering Note

Splice Trays in Optical Hardware

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Introduction

In most network applications, splice trays are used to protect optical fiber splices and their accompanying fiber slack. A splice tray is a thin, rectangular sheet metal or plastic tray base with a removable sheet metal or plastic cover. The tray base contains a molded device called the organizer that holds the actual splices. This device is different for different types of splice protection hardware. The purpose of the splice tray is to strain relieve the fibers coming into the tray so tensile stresses on the incoming fibers are isolated from the splice joint. It also provides a place to store fiber slack and a method of retaining and protecting the splice joint.

Types of Splices

Common splice types used in the industry are fusion and mechanical splices. A fusion splice fuses, or melts, the glass ends of the fibers together. This splice is then protected with a coating of silicone sealant, a heat-shrinkable sleeve containing a steel or dielectric stiffening rod that prevents the joint from flexing, or a clam-shell metal or plastic component that sandwiches the fiber joint to protect it. Fusion splices protected with silicone sealant are often called RTV fusion splices. Heat-shrink fusion splices may be accomplished one fiber pair at a time (single fiber heat-shrink fusion, or HSF) or multiple fiber pairs at a time (heat-shrink mass fusion, or HSMF). Clam-shell style fusion splice protectors are called the Corning Splice Pak™ or the Crimp & Go®. The Splice Pak is a folding plastic element that folds over the splice joint and is retained with a pressure sensitive adhesive. The Crimp & Go is an aluminum clam- shell device containing an elastic material. Advantages of the Splice Pak and Crimp & Go are that no power is required for installation, and the splice protector can be added after the splice is made. Mechanical splices take many shapes that are totally dependent on the manufacturer, but generally accomplish the splice by precisely bringing two prepared fiber ends together in a section of index matching gel. Corning offers two different mechanical splice products: CamSplice™ and Fibrlok™. Of all types of splices, single fiber fusion splices with heat shrink splice protectors are the most common.

Types of Splice Trays

Different types of splice trays are used in different types of optical hardware. In general, reduced length trays are used in wall-mounted hardware and ‘standard’ length trays are used in rack-mounted hardware. RTV fusion and HSF splices usually go in thin trays (0.2 inch thick) and mechanical splices go in thicker trays (0.4 inch thick) due to their larger package size.
Corning has introduced a typing system to define these trays:

Type 2R Reduced-length splice trays 0.2 x 3.5x6.9 inches

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Type 4R Reduced-length splice trays 0.4 x 3.5 x 6.9 inches

Type 2S Standard-length splice trays 0.2 x 3.9 x 11.7 inches

Type 4S Standard-length splice trays 0.4 x 3.9 x 11.7 inches

Type 2M Standard-length molded splice trays 0.2 x 3.5 x 11.7 inches

Type 4A Universal molded splice trays 0.4 x 4.2 x 13 inches

On the next page is a table summarizing the types of splices and the appropriate Corning splice tray part number to use for the application listed:

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SPLICE TRAY APPLICATION GUIDE				
Splice Type	**Tray Type**	**Tray Part No.**	**Splices/Tray**	**Comments**
Heat Shrink Fusion (single fiber)	2R	M67-068	6	
	2S	M67-048	12	
	2S	M67-112	24	2" longer
	2M	M68-048	12	
	4R	M67-110	12	
	4S	M67-076	12	
	4S	M67-078	24	½" wider
	4A	UST-024	24	
RTV Fusion	2R	M67-060	12	
	2S	M67-041	12	
	2S	M67-092	24	
	2M	M68-041	12	
	4R	Use M67-060	--	
	4S	M67-086	12	
	4A	UST-024	24	
Mechanical CamSplice™	2R	M67-061	6	
	2S	M67-031-M	12	
	2M	M68-031	12	
	4R	Use M67-061	--	
	4S	M67-070	12	
Mechanical Fibrlok™	2R	Not Available	--	
	2S	Not Available	--	
	2M	Not Available	--	
	4R	M67-110	6	
	4S	M67-076	6	
	4S	M67-078	12	
	4A	UST-024	24	
Heat Shrink Mass Fusion (12f Ribbons)	2R	Not Available	--	
	2S	Not Available	--	
	4R	M67-091	4	48 fiber
	4S	M67-076	6	72 fiber
	4A	UST-024	24	288 fiber
Crimp & Go®	2R	M67-060	12	
	2S	M67-041	12	
	2M	M68-041	12	
	4R	Use M67-060	--	
	4S	M67-086	12	
	4A	UST-024	24	
Splice Pak™	2R	Not Available	--	
	4R	M67-108	12	
	4S	M67-113	12	
	4A	UST-024	24	

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Note: Some M67- series trays are available with clear plastic covers and are designated with a "– C" suffix. All Type 2M and Type 4A trays have clear covers.

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