ELASPEED™

Medium Voltage Splice Kits

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The planet's pathways

ELASPEED™ SPLICE

DESCRIPTION

Elaspeed™ splices are a range taking, 105°C operating temperature, fully integrated splice utilizing cold shrink technology and widely recognized as the leading edge “delivery system” for cable accessories. As a fully integrated splice it is a “complete” splice, containing the splice core, a shielding braid, and a jacket. No special tools or torches are required. Cold shrinking the splice ensures concentric splice recovery. Even in tight installation spaces, Elaspeed splices recover to give consistent insulation wall thickness. The Elaspeed core, constructed from ethylene propylene rubber (EPR) insulation, is manufactured on a vertical extruder to ensure complete concentricity to the tightest tolerance possible. Elaspeed splices are suitable for installation in aerial, direct bury, duct bank and manhole environments and various kits are offered to accommodate splices between various cables commonly found in the industry. If installed in an aerial environment, a serve wire or basket support should be utilized to support the weight of the cable.

WHY USE ELASPEED™ SPLICES?

- **SPEED:** An Elaspeed™ Splice can be performed in 30 minutes or less, saving time and money over other splices.
- **TESTING:** All Elaspeed™ Splices are pre-tested as cable to ensure that the splice will maintain the integrity of the electrical system. The Elaspeed™ EPR insulation system provides the highest dielectric strength over the full voltage range as well as the highest BIL available from any splice technology.
- **SAFETY:** Elaspeed™ Splices utilize cold shrink technology, which requires no open flames, eliminating the problems associated with handling and transporting gas bottles.
- **RELIABILITY AND REPEATABILITY:** Elaspeed splices are reliable because they always shrink uniformly, and there is only one part to shrink – the triple-extruded body. Tight manhole spaces can create difficulty in assuring that the multiple layers of heat shrink splices receive adequate heating over the entire cable radius. No matter how many splices must be installed, the last splice will be as reliable as the first. The physical effort associated with push-on, and tape splices is eliminated with the simple cold shrink technique.

DESIGN FEATURES

- **UNIFORM CUTBACK DIMENSIONS:** The Elaspeed™ Splice is expanded to allow ‘parking’ on one side of the splice area, over the cable jacket. Installer errors during cable preparation are minimized because cutbacks for jacket, shield, semiconductor, and insulation are identical for both cables to be spliced.
- **INTEGRATED NEUTRAL SHIELD:** Splice comes with a 2/0 AWG equivalent or larger tinned copper braid.
- **WATERTIGHT INSTALLATION:** Major accessory users are concerned that ingress of water in damaged cable jackets and unsealed splices can lead to premature failures. The Elaspeed splice has successfully passed IEEE 404, the industry standard for splices. The Elaspeed splice also passes pressure tests at an external pressure of 45 psi. Internal mastic seals ensure that even cable jacket damage will not allow water to enter the splice area.
- **SMALL PROFILE:** Elaspeed™ Splices behave like EPR cable when it comes to bending in tight manhole situations. Splices can be bent to the same radius as the cable on which it is applied. This small profile consumes less racking space as well.
- **RANGE-TAKING CAPABILITY:** The splice can easily accommodate different types of insulation (EPR to XLPE), different insulation thicknesses (175 mil to 220 mil, or 260 mil to 345 mil), as well as different conductor sizes and metals.

SPECIFICATIONS AND RATINGS:

- IEEE 404
- RUS Listed

ELASPEED-S™ SPLICE

DESCRIPTION

Elaspeed-S ™ splices are an enhanced version of the Elaspeed ™ splice design by integrating a fail-safe sensor to detect voltage in the line where it is installed, granting greater safety to operators during maintenance or test services. When paired with Prysmian PryCAM support it can enable the user to detect Partial Discharge (PD) for 1km in either direction from the joint.

WHY USE ELASPEED-S™ SPLICES?

- **RELIABLE:** The sensor does not affect the electrical field distribution of the splice and the voltage detector is not affected by the operator's environment (stray capacitance) unlike existing solutions. All Elaspeed core components are extruded like a cable and 100% factory tested.
- **WATERTIGHT:** All Elaspeed™ splices have outstanding moisture and vapor withstand properties. The sensor connector included on the Elaspeed-S™ is watertight (IP68) resulting in the best-in-class splice.
- **SAFETY:** Elaspeed-S™ sensor output signal has a much lower amplitude than the traditional capacitive test point. The voltage detector device includes a self-test function as well as a sensor integrity check function. A tubular circumferential tubular copper braid shields the whole splice core and sensor and the IP68 connector prevents the splicer from touching the active poles.
- **ALL-IN-ONE:** All components (splice core, 2/0 AWG shielding braid or larger, and jacket) including the sensor are built in a single unit to shrink.
- **SPLICER FRIENDLY:** The Elaspeed-S™ Splice is expanded to allow 'parking' on one side of the splice area, over the cable jacket. Installer errors during cable preparation are minimized because cutbacks for jacket, shield, semiconductor, and insulation are identical for both cables to be spliced. The sensor is pre-installed in the factory and does not require any action during the splice installation. The sensor connector is left accessible after the splice completion and can be used with electrical insulating gloves.
- **SMALL PROFILE:** Elaspeed-S™ Splices behave like EPR cable when it comes to bending in tight manhole situations. Splices can be bent to the same radius as the cable on which it is applied. This small profile consumes less racking space as well.
- **RANGE-TAKING CAPABILITY:** The splice can easily accommodate different types of insulation (EPR to XLPE), different insulation thicknesses (175 mil to 220 mil, or 260 mil to 345 mil), as well as different conductor sizes and metals.
- **TESTING:** The Elaspeed-S™ splice meets and exceeds the stringent IEEE 404 test criteria. The sensor performances are immune to neighboring feeder disturbances (voltage and current) and to its splice feeder load (current load and permanent current in the metallic shield). The sensor withstands the thermal stress due to metallic screen short-circuits according to IEEE 404 in a splice with the neutrals connected outside.

SPECIFICATIONS AND RATINGS:

- IEEE 404
- RUS Listed

5-28kV: Prysmian Compact Elaspeed™

Fully Integrated Straight Splice

Prysmian Compact Elaspeed™ Fully Integrated Splice Kit contains one splice, qualified to IEEE 404. The Elaspeed splice is a range taking, 105°C operating temperature cable splice. The kits are designed for joining two medium voltage shielded power cables rated 5-28kV. The insulation is made from ethylene propylene rubber (EPR) on a vertical triple extruder which maintains its concentricity to tight tolerances. It is tested as a cable (partial discharge and AC withstand) to ensure long and trouble-free operation under a wide variety of applications and conditions. The enhanced splice, Elaspeed-S, includes a built-in voltage sensor, adding greater safety to operators during maintenance or test services. Each kit contains enough material to make one single phase splice. The table below lists the base kits.

TABLE 1

						Conservative Conductor Size (AWG / kcmil)				
Elaspeed Catalog Number NOTE 1	Insulation O.D. Range	Max Connector O.D.	Max Connector Length	Max Cable O.D.	Shielding Sock	5kV	8kV	15kV	25/28kV	35kV
15SDJCeC	0.68"–1.13"	1.13"	5.51"	1.339"	2/0 AWG	3/0 AWG – 250 kcmil	2/0 AWG – 250 kcmil	2 AWG – 3/0 AWG	—	—
15SEJCeC	0.75"–1.26"	1.26"	6.89"	1.496"	2/0 AWG	250 kcmil – 500 kcmil	4/0 AWG – 350 kcmil	2 AWG – 250 kcmil	—	—
15SFJCeC	0.91"–1.42"	1.42"	6.89"	1.890"	2/0 AWG	500 kcmil – 750 kcmil	350 kcmil – 500 kcmil	3/0 AWG – 500 kcmil	—	—
15SHJCeC	0.96"–1.57"	1.57"	9.06"	1.969"	2/0 AWG	500 kcmil – 750 kcmil	500 kcmil	4/0 AWG – 500 kcmil	—	—
15SIPJCeC	1.09"–1.77"	1.77"	10.43"	2.244"	2/0 AWG	500 kcmil– 1000 kcmil	750 kcmil – 1000 kcmil	350 kcmil – 750 kcmil	—	—
15SIJCeC	1.26"–2.20"	2.20"	10.43"	2.638"	2/0 AWG	1000 kcmil	1000 kcmil	500 kcmil – 1000 kcmil	—	—
25SDJCeC	0.68"–1.13"	1.13"	5.51"	1.339"	2/0 AWG	3/0 AWG – 250 kcmil	2/0 AWG – 250 kcmil	2 AWG – 3/0 AWG	1 AWG – 1/0 AWG	—
25SEJCeC	0.75"–1.26"	1.26"	6.89"	1.496"	2/0 AWG	250 kcmil – 500 kcmil	4/0 AWG – 350 kcmil	2 AWG – 250 kcmil	1 AWG – 2/0 AWG	—
25SFJCeC	0.91"–1.42"	1.42"	6.89"	1.890"	2/0 AWG	500 kcmil– 750 kcmil	350 kcmil – 500 kcmil	3/0 AWG – 500 kcmil	1/0 AWG – 350 kcmil	—
25SHJCeC	0.96"–1.57"	1.57"	9.06"	1.969"	2/0 AWG	500 kcmil– 750 kcmil	500 kcmil	4/0 AWG – 500 kcmil	2/0 AWG – 500 kcmil	—
25SIPJCeC	1.09"–1.77"	1.77"	10.43"	2.244"	2/0 AWG	500 kcmil– 1000 kcmil	750 kcmil – 1000 kcmil	350 kcmil – 750 kcmil	250 kcmil – 750 kcmil	—
25SIJCeC	1.26"–2.20"	2.20"	10.43"	2.638"	2/0 AWG	1000 kcmil	1000 kcmil	500 kcmil – 1000 kcmil	350 kcmil – 1500 kcmil	—

NOTE 1: For Elaspeed-S kits add "S" to the end of the Catalog Number. ***Example: 25SIJCeC --> 25SIJCeCS***

NOTE 2: Cable sizes listed are conservative estimates based on cable designed per ICEA S-94-649. Always confirm the kit meets the cable insulation outer diameter (OD) and max cable outer diameter (OD). If externally grounding with CN or Flat Strap wires, consider the thickness of the wires would add to the cable jacket diameter.

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5-35kV: Prysmian Elaspeed™

Fully Integrated Straight Splices

Prysmian Elaspeed™ Fully Integrated Splice Kit contains one splice, qualified to IEEE 404. The Elaspeed splice is a range taking, 105°C operating temperature cable splice. The kits are designed for joining two medium voltage shielded power cables rated 5-35kV. The insulation is made from ethylene propylene rubber (EPR) on a vertical triple extruder which maintains its concentricity to tight tolerances. It is tested as a cable (partial discharge and AC withstand) to ensure long and trouble-free operation under a wide variety of applications and conditions. The enhanced splice, Elaspeed-S, includes a built-in voltage sensor, adding greater safety to operators during maintenance or test services. Each kit contains enough material to make one single phase splice. The table below lists the base kits.

TABLE 2

						Conservative Conductor Size (AWG / kcmil)				
Elaspeed Catalog Number NOTE 1	Insulation O.D. Range	Max Connector O.D.	Max Connector Length	Max Cable O.D.	Shielding Sock	5kV	8kV	15kV	25/28kV	35kV
35SHJC	0.96"–1.57"	1.46"	8.66"	1.97"	2/0 AWG	500 kcmil – 750 kcmil	500 kcmil	4/0 AWG – 500 kcmil	2/0 AWG – 500 kcmil	1 AWG – 250 kcmil
35SIPJC	1.09"–1.77"	1.65"	8.66"	2.24"	2/0 AWG	500 kcmil – 1000 kcmil	750 kcmil – 1000 kcmil	350 kcmil – 750 kcmil	250 kcmil – 750 kcmil	1/0 AWG – 500 kcmil
35SIJC	1.26"–2.20"	2.52"	8.66"	2.64"	2/0 AWG	1000 kcmil	1000 kcmil	500 kcmil – 1000 kcmil	350 kcmil – 1500 kcmil	2/0 AWG – 1000 kcmil
35SJJC	1.77"–2.83"	2.68"	9.69"	3.34"	4/0 AWG	2000 kcmil	2000 kcmil	1500 kcmil – 2000 kcmil	1000 kcmil – 2000 kcmil	1000 kcmil – 2000 kcmil

NOTE 1: For Elaspeed-S kits add "S" to the end of the Catalog Number. ***Example: 35SIJC --> 35SIJCS***

NOTE 2: Cable sizes listed are conservative estimates based on cable designed per ICEA S-94-649. Always confirm the kit meets the cable insulation outer diameter (OD) and max cable outer diameter (OD). If externally grounding with CN or Flat Strap wires, consider the thickness of the wires would add to the cable jacket diameter.

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Splice Kit Selection

Using cable insulation diameter and max outer diameter select an appropriate splice kit from Compact Elaspeed (page 4) or Elaspeed (page 5) tables. Then select from the following tables any add-ons you want included with the kit.

Splice Kit	—	External Grounding Kit	—	Connector	—	Cable Cleaning Kit
↑		↑		↑		↑
Table 1 Table 2		NG = None Table 3 Table 4 Table 5		NC = None Table 6		Table 7

EXAMPLE: A request for a 25kV IP Compact Elaspeed Splice Kit with a single #2 AWG Ground Braid, spliced together with 1/0-500 Shear Bolt Connector and Cable Cleaning Kit would be: 25SIPJCeC-GB1200-ALSB3-1P

EXTERNAL GROUNDING ADD-ONS:

Prysmian Elaspeed Splice is a fully integrated splice that can be left internally grounded or externally grounded. External grounding options will depend on the cable neutral shield. If you are working with Jacketed Concentric Neutral or Flat Strap cable the neutrals can be pulled out on one or both sides of the splice. If working with a different neutral shield or do not want to take neutral wires out, a splice can be externally grounded with the use of one or two ground braids with solder block (reference Table 3), a flat strap ground (reference table 4), or a LC connector (reference Table 5). Add the external ground catalog ID to the splice kit. If no external grounding add-on is needed use “NG”.

TABLE 3 – Ground Braid with Solder Block Kit

Catalog ID	Braid Size	Eq. CMA	Braid Qty	Braid Length
GB1800	8 AWG	16,510	1	24"
GB1600	6 AWG	26,240		
GB1400	4 AWG	41,740		
GB1200	2 AWG	66,360		
GB2400	4 AWG	83,480	2	
GB2200	2 AWG	132,720		

NOTE: Can be used with Concentric Neutral, Flat Strap, LC or Tape Shield Cable.

NOTE: Select a Grounding Braid Kit by identifying one that is greater than or equivalent to the cable neutral circular mil area (CMA). Kits that include two braids, assume you are using both braids on the same side of the splice.

TABLE 4 – Flat Strap Ground Kit

Catalog ID	Application Dia. Range	Braid Size	Ground Wire (Not Included)	Qty
FS120	1” - 2.5”	#2 AWG	#2 AWG Solid Bare Cu	1

NOTE: Can be used with Concentric Neutral, Flat Strap, LC or Tape Shield Cable.

NOTE: The Flat Strap Ground is wrapped around the cable neutral shield and externally grounds the splice by crimping a #2 AWG Solid Bare Copper Wire (not included) to the lug soldered to the ground braid.

TABLE 5 – LC Connector Kit

Catalog ID	Application Dia. Range	Max Shield Diameter	Ground Wire	Wire Length	Wire Voltage
LC112	0.73" - 1.14"	1.90"	#1 AWG	3 FT	600V
LC113	0.93" - 1.46"				
LC114	1.22" - 1.97"				
LC115	1.73" - 2.76"				
LC223	0.93" - 1.22"	1.65"	#2 AWG		
LC224	1.22" - 1.97"				

NOTE: Can be used with LC Shield Cable ***only*** as the contact ring is corrugated to match the ridges of an LC Shield.

NOTE: The LC Connector must be sized to the cable LC shield diameter.

RECOMMENDED SPLICE CONNECTOR ADD-ON:

The Prysmian Elaspeed Splice Series is compatible with a wide range of connectors available in the market so long as they fall within the connector limits specified in Tables 1 and 2. Below are the recommended splice shear bolt connectors Prysmian can supply with an Elaspeed splice kit. If no connector is to be included in the kit use "NC", otherwise use the catalog ID listed in the table.

TABLE 6

Catalog ID	Cable Size AWG / kcmil		Oil Stop	Tooling	Elaspeed Splice Kit																Conductor	
	Compressed Stranding	Compact Stranding			15SDJCeC	15SEJCeC	15SFJCeC	15SHJCeC	15SIPJCeC	15SIJCeC	25SDJCeC	25SEJCeC	25SFJCeC	25SHJCeC	25SIPJCeC	25SIJCeC	35SHJC	35SIPJC	35SIJC	35SJJC	Aluminum	Copper
ALSB1	6 – 3/0		X	5mm Hex Key	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ALSB2	2 – 250		X	5mm Hex Key	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ALSB3	1/0 – 500		X	6mm Hex Key			X	X	X	X			X	X	X	X	X	X	X	X	X	X
ALSB4	350 – 750		X	8mm Hex Key					X	X					X	X		X	X	X	X	X
ALSB5	500 – 1000		X	8mm Hex Key						X						X			X	X	X	X
ALSB6	750 – 1250		X	8mm Hex Key						X						X			X	X	X	X
ALSB7	1250 – 1500		X	8mm Hex Key												X				X	X	X

NOTE: Cable sizes are based on round conductors. If working with sector cable contact your Prysmian representative for assistance.

NOTE: If a compression connector is required, please contact your Prysmian representative for assistance and provide the conductor size, material, stranding. This information is critical for selecting an appropriate connector for the application.

CABLE CLEANING KIT ADD-ON:

Cable preparation and cleaning is critical for the install and operation of any medium voltage accessory. If you do not have access to suitable cleaning supplies, it is recommended a cleaning kit be included.

TABLE 7

Catalog ID	HP Cleaning Pad	Drying Pad	180-Grit AL Oxide Abrasive Cloth
NP	–	–	–
1P	2	2	1

NOTE: Cable preparation and cleaning is critical for the install and operation of any medium voltage accessory. If you do not have access to suitable cleaning supplies, it is recommended a cleaning kit be included. It is critical that cleaning pads are not reused to clean other cables, so consider how many phases you will be preparing with the kit requested when selecting how many cleaning items are needed.

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