

ELASPEED™

Medium Voltage Splice Kits





DESCRIPTION

Elaseed™ 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, Elaseed splices recover to give consistent insulation wall thickness. The Elaseed core, constructed from ethylene propylene rubber (EPR) insulation, is manufactured on a vertical extruder to ensure complete concentricity to the tightest tolerance possible. Elaseed 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 Elaseed™ Splice can be performed in 30 minutes or less, saving time and money over other splices.
- **TESTING:** All Elaseed™ Splices are pre-tested as cable to ensure that the splice will maintain the integrity of the electrical system. The Elaseed™ 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:** Elaseed™ Splices utilize cold shrink technology, which requires no open flames, eliminating the problems associated with handling and transporting gas bottles.
- **RELIABILITY AND REPEATABILITY:** Elaseed 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 Elaseed™ 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 Elaseed splice has successfully passed IEEE 404, the industry standard for splices. The Elaseed 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:** Elaseed™ 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

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 Elaseed™

Fully Integrated Straight Splice, ES3 & ES3S Series



Prysmian Compact Elaseed™ Fully Integrated Splice Kit contains one splice, qualified to IEEE 404. The ES3 Series 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, Elaseed-S (ES3S), 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

Elaseed Catalog Number	Elaseed-S Catalog Number	Insulation O.D. Range	Max Connector O.D.	Max Connector Length	Max Cable O.D.	Conservative Conductor Size (AWG / kcmil)				
						5kV	8kV	15kV	25/28kV	35kV
15DES3	15DES3S	0.68"-1.13"	1.13"	5.51"	1.339"	3/0-250	2/0-250	2-3/0	—	—
15EES3	15EES3S	0.75"-1.26"	1.26"	6.89"	1.496"	250-500	4/0-350	2-250	—	—
15FES3	15FES3S	0.91"-1.42"	1.42"	6.89"	1.890"	500-750	350-500	3/0-500	—	—
15HES3	15HES3S	0.96"-1.57"	1.57"	9.06"	1.969"	500-750	500	4/0-500	—	—
15IPES3	15IPES3S	1.09"-1.77"	1.77"	10.43"	2.244"	500-1000	750-1000	350-750	—	—
15IES3	15IES3S	1.26"-2.20"	2.20"	10.43"	2.638"	1000	1000	500-1000	—	—
25DES3	25DES3S	0.68"-1.13"	1.13"	5.51"	1.339"	3/0-250	2/0-250	2-3/0	1-1/0	—
25EES3	25EES3S	0.75"-1.26"	1.26"	6.89"	1.496"	250-500	4/0-350	2-250	1-2/0	—
25FES3	25FES3S	0.91"-1.42"	1.42"	6.89"	1.890"	500-750	350-500	3/0-500	1/0-350	—
25HES3	25HES3S	0.96"-1.57"	1.57"	9.06"	1.969"	500-750	500	4/0-500	2/0-500	—
25IPES3	25IPES3S	1.09"-1.77"	1.77"	10.43"	2.244"	500-1000	750-1000	350-750	250-750	—
25IES3	25IES3S	1.26"-2.20"	2.20"	10.43"	2.638"	1000	1000	500-1000	350-1500	—

NOTE: 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 Elspeed™

Fully Integrated Straight Splice, ES1 & ES1S Series



Prysmian Elspeed™ Fully Integrated Splice Kit contains one splice, qualified to IEEE 404. The ES1 Series 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, Elspeed-S (ES1S), 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

Elspeed Catalog Number	Elspeed-S Catalog Number	Insulation O.D. Range	Max Connector O.D.	Max Connector Length	Max Cable O.D.	Conservative Conductor Size (AWG / kcmil)				
						5kV	8kV	15kV	25/28kV	35kV
35HES1	35HESIS	0.96"-1.57"	1.46"	8.66"	1.97"	500-750	500	4/0-500	2/0-500	1-250
35IPES1	35IPESIS	1.09"-1.77"	1.65"	8.66"	2.24"	500-1000	750-1000	350-750	250-750	1/0-500
35IES1	35IESIS	1.26"-2.20"	2.52"	8.66"	2.64"	1000	1000	500-1000	350-1500	2/0-1000
35JES1	35JESIS	1.77"-2.83"	2.68"	9.69"	3.34"	2000	2000	1500-2000	1000-2000	1000-2000

NOTE: 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 Elaseed (page 4) or Elaseed (page 5) tables. Then select from the following tables any add-ons you want included with the kit.



EXAMPLE: A request for a 25kV IP Compact Elaseed Splice Kit with a single #2 AWG Ground Braid, spliced together with 1/0-500 Shear Bolt Connector and Cable Cleaning Kit would be: 25IPES3-GB1200-ALSB3-1P

EXTERNAL GROUNDING ADD-ONS:

Prysmian Elaseed 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	2	
GB2400	4 AWG	83,480		
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.

SPLICE CONNECTOR ADD-ON:

The Prysmian Elaseed 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 connectors Prysmian can supply with an Elaseed 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		Oil Stop	Color Code	Tooling	ES3 Series														ES1 Series				Shear Bolt	Compression	Conductor					
	Compressed Stranding	Compact Stranding				15DES3	16ES3	16FES3	16HES3	15IPES3	15IES3	25DES3	25EES3	25FES3	25HES3	25IPES3	25IES3	35HES1	35IPES1	35IES1	35TES1	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	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	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	X	X	X	X	X	X	X	X
ALSB4	350 – 750		X	—	8mm Hex Key					X	X					X	X			X	X	X	X	X	X	X	X	X	X	X	X
ALSB5	500 – 1000		X	—	8mm Hex Key						X								X			X	X	X	X	X	X	X	X	X	X
ALSB6	750 – 1250		X	—	8mm Hex Key						X								X			X	X	X	X	X	X	X	X	X	X
ALSB7	1250 – 1500		X	—	8mm Hex Key																	X		X	X	X	X	X	X	X	X
ASC2TN	2	—	X	—	TQ, 45, 348, 163, 1/2, 6A	X	X	X	X			X	X	X	X			X									X		X	X	X
ASC1TN	1	1	X	—	TQ, 45, 348, 163, 1/2	X	X	X	X			X	X	X	X			X	X								X		X	X	X
ASC1/0TN	1/0	1/0	X	—	TU, 52, BC, 243, 5/8	X	X	X	X			X	X	X	X			X	X	X							X		X	X	X
ASC2/0TN	2/0	2/0	X	—	TW-TY, 58, 297, 5/8-1	X	X	X	X	X		X	X	X	X	X		X	X	X						X		X	X	X	X
ASC3/0TN	3/0	—	X	—	TV, 66, 167, 467, 10A	X	X	X	X	X		X	X	X	X	X		X	X	X						X		X	X	X	X
ASC4/0TN	4/0	250	X	—	TX, 71H, 298, 840, 11A	X	X	X	X	X		X	X	X	X	X		X	X	X						X		X	X	X	X
ASC250TN	250	300	X	—	TX, 76, 249, 840, 11A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X		X	X	X	X
ASC350TN	350	400	X	—	96, 299, 655, 1 ¹⁸ -1, 13A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X		X	X	X	X
ASC500TN	500	600	X	—	106A, 300, 317, 1 ¹⁹ / ₁₆ , 14A			X	X	X	X			X	X	X	X	X	X	X	X	X				X		X	X	X	X
ASC750TN	750	900	X	—	140H, 301, 342, 1 ¹²					X	X					X	X			X	X	X				X		X	X	X	X
ASC1000TN	1000	—	X	—	161, 292, 302, 319, 1 ¹⁴					X							X				X	X				X		X	X	X	X
BSCL2	2			Brown	ECW-H3D	X	X	X	X			X	X	X	X			X								X					X
BSCL1	1			Green	ECW-H3D	X	X	X	X			X	X	X	X			X	X							X					X
BSCL1/0	1/0			Pink	ECW-H3D	X	X	X	X			X	X	X	X			X	X	X						X					X
BSCL2/0	2/0			Black	ECW-H3D	X	X	X	X	X		X	X	X	X	X		X	X	X						X					X
BSCL3/0	3/0			Orange	ECW-H3D	X	X	X	X	X		X	X	X	X	X		X	X	X						X					X
BSCL4/0	4/0			Purple	ECW-H3D	X	X	X	X	X		X	X	X	X	X		X	X	X						X					X
BSCL250	250			Yellow	ECW-H3D	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X					X
BSCL350	350			Red	ECW-H3D	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X					X
BSCL500	500			Brown	ECW-H3D		X	X	X	X	X		X	X	X	X	X	X	X	X	X					X					X
BSCL750	750			Black	ECW-H3D				X	X						X	X	X	X	X	X					X					X
L100-ML	1000			—	ECW-H3D					X	X					X	X									X					X

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

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. Prysmian Cleaning Kits including two cleaning pads, two drying pads, and an aluminum oxide abrasive cloth.

TABLE 7

Catalog ID	Contents
NP	No Cleaning Kit
1P	1 x Cleaning Kit



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