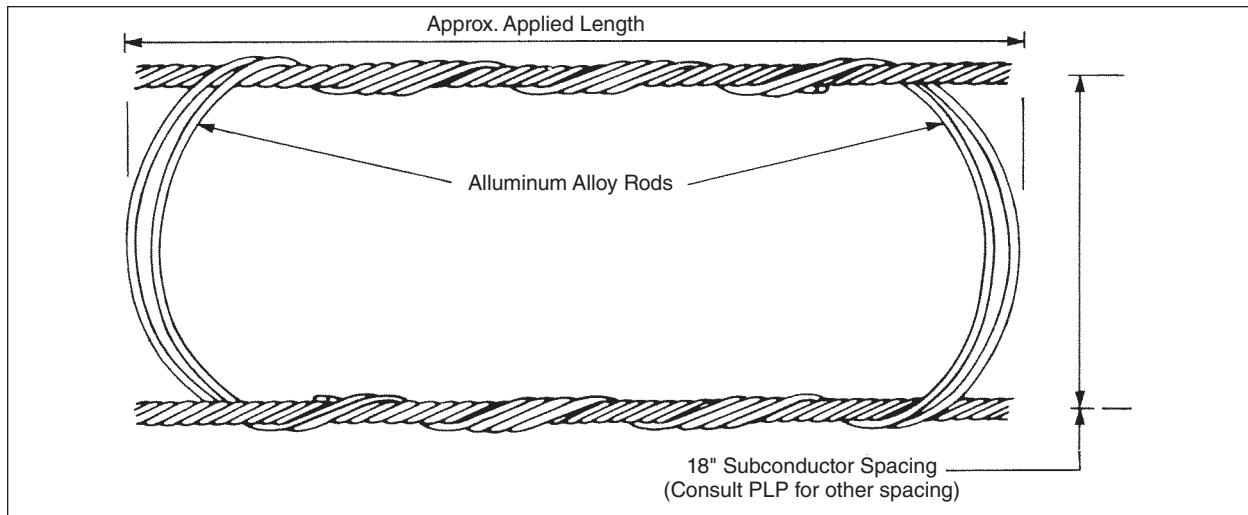




# Helical Rod Spacer

## NOMENCLATURE

Thermal Rating (Continuous) 125°C



## GENERAL RECOMMENDATIONS

**Intended Use:** The HELICAL ROD Spacer is recommended for use on **horizontal**, twin conductor bundles.

The functions of the HELICAL ROD Spacer are: to provide uniform spacing of horizontally bundled subconductors, to insure consistent electrical characteristics; to minimize wind induced motions such as subconductor oscillation so that no conductor damage results; to keep the subconductors from entangling due to galloping, ice unloading, and fault currents.

**Materials:** The standard HELICAL ROD Spacer for aluminum based conductors is constructed entirely of high strength aluminum alloy wire formed into helical rods. There are no loose parts or troublesome articulated joints to create radio noise through looseness. To avoid galvanic corrosion spacer rod material is always designed to be compatible with the conductor. Materials other than aluminum are available for special application to copper based conductor and galvanized steel wire.

**RIV-Corona:** Helical Spacers are designed to be corona-free at voltages 10-20% above operating up to 500 kV AC and 750 kV DC.

**Installation and Inspection:** The spacer is applied easily and uniformly without tools and can be installed with hot line tools. It is a simple matter to inspect for proper application from the ground since there are no bolts that need special torquing during installation.

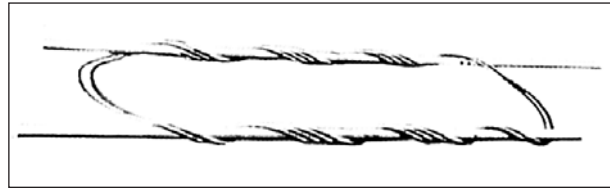
**Fault Currents:** The HELICAL ROD Spacer is designed to meet fault current requirements developed in most EHV line design. For special situations the fault current capacity of the standard 4-rod helical spacer can be increased by adding additional rods and/or increasing rod diameter. Complete fault current testing and analysis has been completed for the HELICAL ROD Spacer and is published in AIEE paper DP 58-779, and IEEE paper 63-88.

**Spacer Placement:** As a result of experimental work done on some of the early EHV lines, the normal distance between HELICAL ROD Spacers should not exceed 250-ft. However, in some geographical areas exposed to constant high winds and heavy ice accumulation, experience suggests that the spacing should be shortened in order to stabilize the conductor bundle. Results of laboratory and field experiments indicate that one of the most effective methods to reduce subconductor oscillation and increase bundle stability is by reducing subspan lengths and placing spacers in a non-symmetrical pattern. Asymmetric spacing detunes the entire spacer-conductor system and thereby reduces the incidence of sympathetic vibration between subspans.

Specific recommendations for spacer design and spacer placement should be predicated on an evaluation of the electrical characteristics, the line design parameters, and the environmental conditions. Through your representative, PLP® will help determine the most suitable spacer design and placement pattern for your line conditions.

# Helical Rod Spacer – Twin-18"

**For use on:**  
**ACSR, Aluminum Alloy**  
**All-Aluminum, AWAC®**  
**Compacted All-Aluminum**  
**Compacted ACSR**



Catalog Number	Diameter Range (Inches)		Typical Conductor Size	Approximate Applied Length (Inches)	Color Code
	Min.	Max.			
SU-MS-7424	.800	.835	397.5, 30/7	35	Purple
SU-MS-3352	.836	.868	477, 26/7	35	Blue
SU-MS-7425	.869	.910	477, 30/7	35	Green
SU-MS-3540	.911	.950	556.5, 26/7	44	Black
SU-MS-5423	.951	.994	715.5, 37-61W, All Alum.	44	Brown
SU-MS-7426	.995	1.038	666.6, 24/7	45	Orange
SU-MS-5504	1.039	1.088	795, 45/7	45	Blue
SU-MS-1245	1.089	1.140	795, 26/7	45	Yellow
SU-MS-3850	1.141	1.196	954, 54/7	46	Orange
SU-MS-6070	1.197	1.250	1113, 61W, All Alum.	46	Purple
SU-MS-5276	1.251	1.305	1272, 61W, All Alum.	46	Green
SU-MS-5519	1.306	1.365	1272, 45/7	48	Yellow
SU-MS-7228	1.366	1.425	1272, 54/19	48	Black
SU-MS-5285	1.426	1.492	1431, 54/19	49	Brown
SU-MS-4397	1.493	1.562	1590, 54/19	49	Red
SU-MS-5056	1.563	1.619	1780, 84/19	50	Green
SU-MS-4767	1.620	1.678	2000, 72/7	50	Yellow
SU-MS-5462	1.679	1.731	2250, 91W, All Alum.	50	Brown
SU-MS-4656	1.732	1.795	2156, 84/19	50	Orange
SU-MS-3807	1.796	1.855	2500, 91W, All Alum.	50	Red
SU-MS-6183	1.856	1.923	2750, 91W, All Alum.	50	Blue

Right-hand lay standard

**EXPLANATORY NOTES:**

- (1) Typical Conductor Size indicates one of various conductors within each range.
- (2) Design for conductors below .800" diameter available upon request.
- (3) Designs for other spacing and conductor materials available upon request.
- (4) AWAC and Copperweld are registered trademarks of the Copperweld Co.