

SPL™-ANODE SERIES

Impressed Current Linear Anodes









2500 foot lengths of MATCOR SPL™-Anodes
ready to ship for pipeline cathodic protection

MATCOR has developed a complete line of flexible impressed current SPL-Anodes that extend the benefits of linear anodes to the widest range of cathodic protection applications. Tight spaces, high traffic areas, poorly coated pipelines, tank bottom retrofits, reinforcing steel-in-concrete, cable ducts, sheet pile walls or inside large diameter pipes – we provide a linear anode for your application.

Linear anodes handle current distribution challenges by minimizing current densities and placement in close proximity to the structure. MATCOR's innovative design utilizing multiple internal connections provides redundancy, protects against uneven anode consumption and minimizes voltage drop. The SPL-Anode can simply be laid alongside a new pipeline; cable plowed next to an existing pipeline, or installed utilizing horizontal directional drilling (HDD) under an existing structure. SPL-Anodes require only a small trench for installation, ideal for congested areas and minimizing landowner "right of way" issues.



MATCOR Iron Gopher® HDD installation beneath a tank

MATCOR SPL-ANODE TYPE	APPLICATION
SPL™-FBR-Anode	 Along pipelines, beneath above ground storage tanks (ASTs) and congested areas
SPL-SandAnode™	 Beneath above ground storage tanks (ASTs) with very little clearance
Iron Gopher®	 Horizontal directional drilling (HDD) applications
SPL™-INT-Anode	 Internal pipeline protection
SPL™-Braid-Anode	 Special applications, water wells and industrial environments
SPL™-HDPE-Anode	 Marine environments, concrete and special applications

See back page for output range of MATCOR SPL-Anode Series.

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SPL™-FBR-ANODE

The SPL-FBR-Anode is primarily used along pipelines, in congested areas and beneath above ground storage tanks (ASTs). It is available in all standard SPL-Anode current outputs and in long continuous lengths. It is a complete, ready to install anode system encased in coke backfill.

The SPL-FBR-Anode is available in standard long lengths of 500 ft (152 m), 1,000 ft (305 m) and 1,640 ft (500 m); custom lengths up to 2500 ft (762 m) are also available.

SPL-FBR-ANODE COMPONENTS

Anode: continuous mixed metal oxide anode sized for the rated current output and life.

Cable: a continuous, high molecular weight, polyethylene covered, stranded copper cable sized for the current rating.

Kynex® Waterproof Connections: the Kynex connections between the anode and the internal header cable are spaced to provide uniform current distribution.

Backfill: conductive coke backfill, machine packed inside the fabric housing.



MATCOR SPL-FBR-Anode

SPL-FBR-ANODE BENEFITS

Single package impressed current linear anode system with uniform current distribution

Flexible

Can be installed by cable plow, trenching or other methods

Available in the MATCOR Concentric Tank Ring Anode System for ASTs; see Tank Ring Anode System data sheet

Continuous mixed metal oxide anode

Uses patented MATCOR Kynex® waterproof connections

Note: Some larger size cables and anodes for special orders may use the standard MATCOR five step connection process

CONTACT A CORROSION EXPERT

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SPL™-FBR-ANODE, cont'd

Fabric Housing: a continuous non-degrading fabric formulated for MATCOR SPL-Anodes that allows water and vapors to pass, but contains the coke backfill.

Braiding: heavy duty and color-coded for easy identification.

Packaging: supplied on wooden reels and suitable for export.

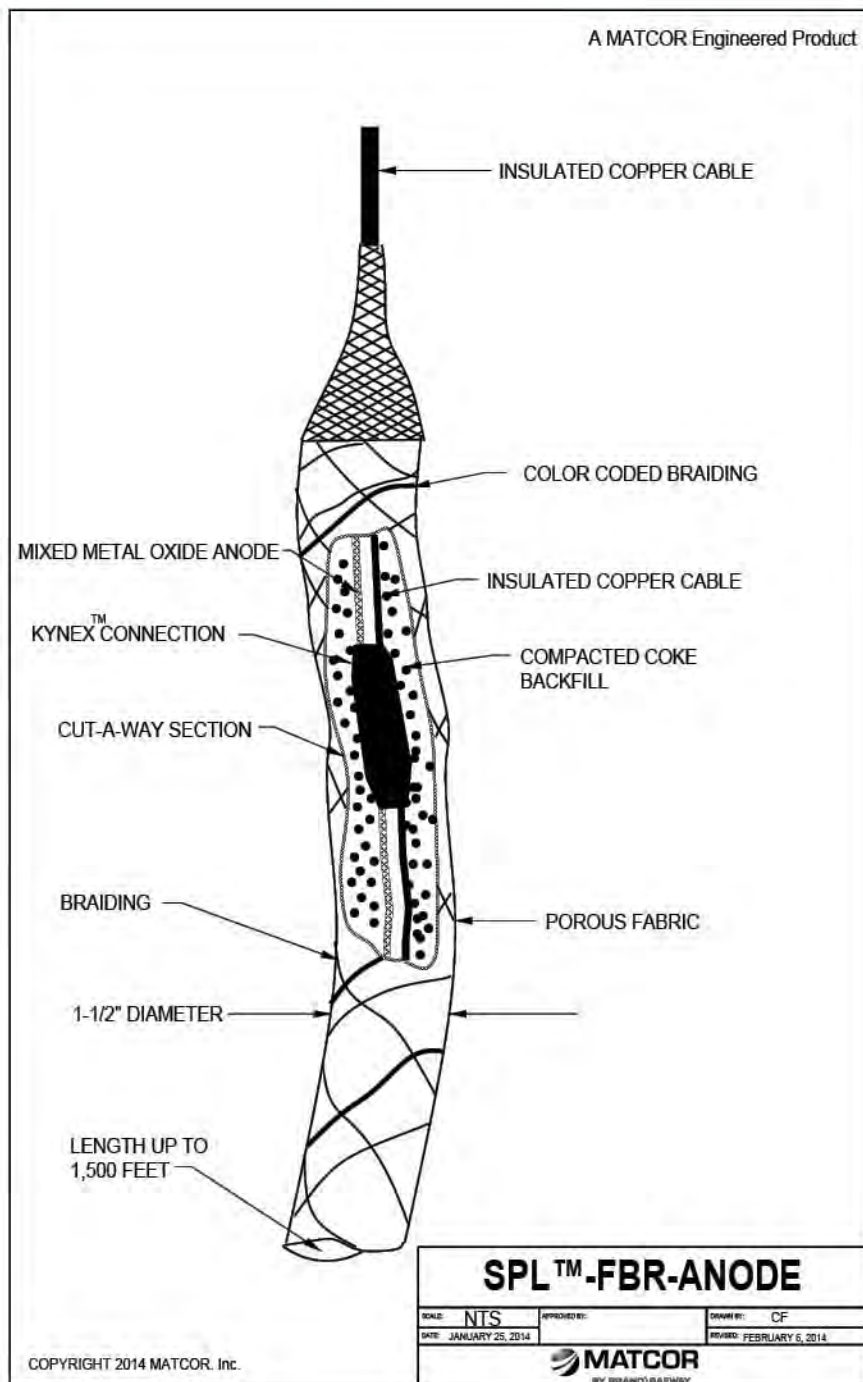
DESIGNING SPL-FBR-ANODES

The SPL-FBR-Anode can be designed for any application using the rated current outputs.

The SPL-FBR-Anode is available in any length required. The standard lengths for one reel are 500 or 1,000 feet. Contact MATCOR for assistance with designing or ordering SPL-FBR-Anodes.

INSTALLING SPL-FBR-ANODES

The SPL-FBR-Anode can be installed by laying it in a hand- or machine-dug trench or cable plowing. The linear anode can be easily field cut to appropriate lengths and/or it can be spliced to other SPL-FBR-Anode segments. Please contact MATCOR for assistance with the installation.



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SPL-SANDANODE™

The patented SPL-SandAnode is designed for cathodic protection where the anode is installed in close proximity to or in contact with the structure such as under an above ground storage tank (AST). The SPL-SandAnode is identical to the SPL-FBR-Anode with the exception of its engineered sand backfill that enables installation in close proximity to the structure and prevents the anode from physically shorting to the structure.

The recommended anode system for most above ground storage tanks (ASTs) is the MATCOR SPL-FBR-Anode in the concentric Tank Ring Anode System configuration.* However, when the clearance between the tank bottom and anode is less than 1 foot (32 cm), the SPL-SandAnode is used in the concentric ring configuration or in parallel linear lengths.

The MATCOR SPL-SandAnode is the only impressed current linear anode made specifically for under-tank installation in close proximity to metal.

*See Tank Ring Anode System data sheet



MATCOR SPL-SandAnode

SPL-SANDANODE BENEFITS

Single package impressed current linear anode system with uniform current distribution

Flexible, yet lays flat without use of additional weights

Can be installed under tank bottoms and come in contact with the tank bottom

Available in the MATCOR Concentric Tank Ring Anode System for ASTs; see Tank Ring Anode System data sheet

Continuous mixed metal oxide anode

Uses patented MATCOR Kynex® waterproof connections

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SPL-SANDANODE™ COMPONENTS

Anode: continuous mixed metal oxide anode sized for the rated current output and life.

Cable: a continuous high molecular weight, polyethylene covered, stranded copper cable sized for the current rating.

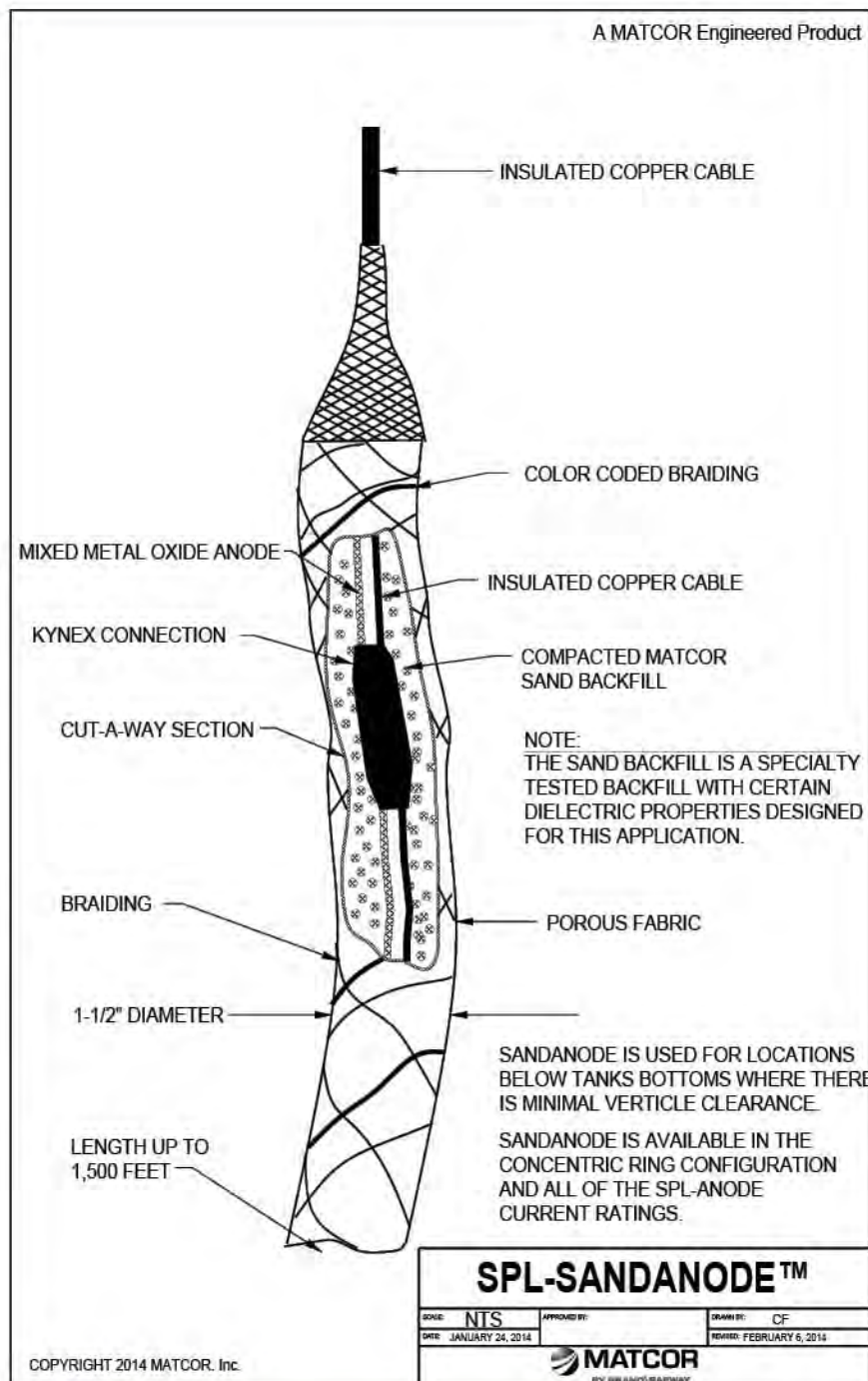
Kynex® Waterproof Connections: the Kynex connections between the anode and the internal carrier cable are spaced to provide uniform current distribution.

Backfill: engineered sand backfill with special electrical properties that is machine packed in the fabric housing.

Fabric Housing: a continuous, non-degrading fabric formulated for SPL-Anodes that allows water and vapors to pass, but contains the coke backfill.

Braiding: heavy duty and color-coded for easy identification. The coding is different than the SPL-FBR-Anode coding.

Packaging: supplied on wooden reels.



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Impressed Current Linear Anodes

DESIGNING AND ORDERING SPL-SANDANODES

The SPL-SandAnode™ can be designed for any application using the rated current outputs. Because the spacing of the anodes will vary with the application and the distance between the anode and the structure, we recommend contacting MATCOR engineering for assistance with the design.

The SPL-SandAnode is available in any length required. The standard length for one reel is 1,500 feet. Contact MATCOR for assistance with designing or ordering the SPL-SandAnode.

INSTALLING SPL-SANDANODES

The SPL-SandAnode can be installed by laying it directly on the ground or membrane. The SPL-SandAnode will lay flat without using weights or hold-downs. In some cases it may be installed with a cable plow. For additional information and assistance, contact MATCOR.

IRON GOPHER® Linear Anode for HDD Applications

MATCOR's patent-pending Iron Gopher is the only impressed current linear anode designed and



Iron Gopher® comes coiled and ready to install.

manufactured specifically for horizontal directional drilling (HDD) applications. Please refer to the separate data sheet for the MATCOR Iron Gopher for additional information.

SPL™-INT-ANODE for Internal Pipeline Surfaces

MATCOR's patented SPL™-INT-Anode System for internal pipeline cathodic protection (CP) is the only impressed current, linear anode system for cathodic protection of internal pipeline surfaces. Used for water



MATCOR's SPL™-INT Anode and entrance fitting.

and salt water pipelines, the system features entrance fittings spaced as far as two hundred feet apart. Please refer to the separate SPL-INT-Anode data sheet for additional information.

SPL™-BRAID-ANODE

The SPL-Braid-Anode is a special anode designed for use in both salt and potable water. The anode is wrapped in chlorine resistant Kynar® braiding and is available in all standard SPL-Anode current outputs and in long continuous lengths. It is a complete, ready to install anode system.

Long lengths of the SPL-Braid-Anode are available with the standard longest length being 1,500 feet.

SPL-BRAID-ANODE COMPONENTS

Anode: continuous mixed metal oxide anode sized for the rated current output and life.

Cable: continuous high molecular weight polyethylene, Kynar® insulated, stranded copper cable sized for the current rating.

Kynex® Waterproof Connections: the Kynex connections between the anode and the internal carrier cable are spaced to provide uniform current distribution.

Housing: a continuous non-degrading, chlorine resistant Kynar braiding.

Packaging: supplied on wooden reels.



MATCOR SPL-Braid-Anode

SPL-BRAID-ANODE BENEFITS

Single package impressed current linear anode system with uniform current distribution

Flexible

High resistance to chlorine

Can be used in salt water environments

Continuous mixed metal oxide anodes

Uses patented MATCOR Kynex® waterproof connections.

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Impressed Current Linear Anodes

DESIGNING AND ORDERING SPL-BRAID-ANODES

The SPL™-Braid-Anode can be designed for any application using the rated current outputs. Contact MATCOR for assistance with the design of the cathodic protection system using the SPL-Braid-Anode.

The SPL-Braid-Anode is available in any length required.

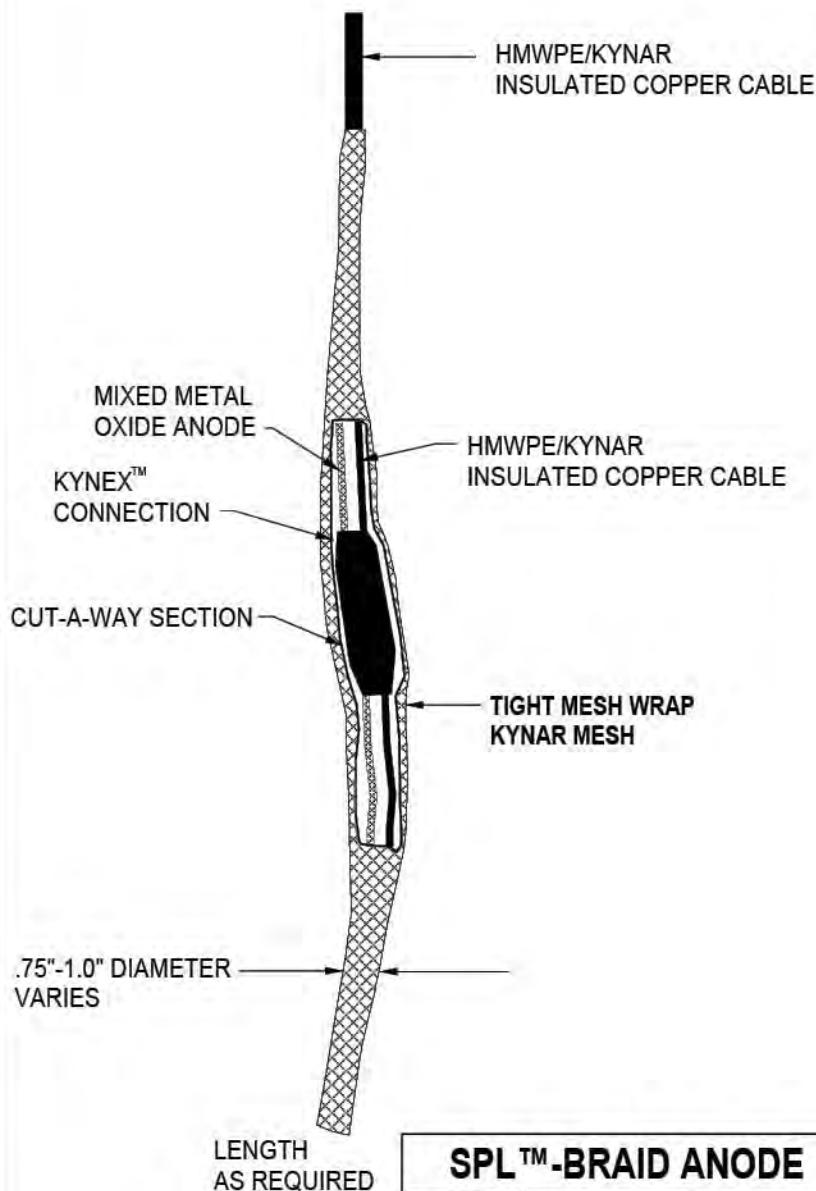
INSTALLING SPL-BRAID-ANODES

The SPL-Braid-Anode can be installed utilizing various methods including hanging, stretching between supports, laying on the sea floor and more. For sea floor or river bottom installations, MATCOR can supply weights to keep the anode in position. For hanging installations, contact MATCOR to include an internal support system inside of the braid.



MATCOR's patented, waterproof Kynex® anode to cable connection is an injection-molded encapsulation that creates a continuous outer cable connection.

A MATCOR Engineered Product



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SPL™-BRAID ANODE

SCALE: NTS	APPROVED BY:	DRAWN BY: CF
DATE: JANUARY 25, 2014	REVIEWED:	REVIEWED: FEBRUARY 6, 2014

MATCOR
BY BRAIDING SAFETY

CONTACT A CORROSION EXPERT

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SPL™-HDPE-ANODE

The SPL-HDPE-Anode is used in concrete and marine environments. It is a mixed metal oxide anode housed in tough, perforated, continuous, high-density polyethylene housing without backfill. Used in marine environments, the anode is protected in the housing that enables water to surround the anode while maintaining good current distribution from the anode.

The SPL-HDPE-Anode has been used successfully on sea floors and river bottoms to protect submerged structures such as bulkheads, pipelines and pilings. The anode is held in place on the river or sea bottom with weights provided by MATCOR.

Used in concrete, the SPL-HDPE-Anode protects embedded reinforcing metal objects in the concrete. The perforations are sized to allow concrete and normal aggregate to fill the inside of the HDPE housing.

Because the HDPE housing is resistant to chlorine gas and other substances, the anode has been used successfully in industrial applications where the anode is submerged in fluids. Contact MATCOR for assistance with industrial applications.



MATCOR SPL-HDP-Anode

The SPL-HDPE-Anode is available in all standard SPL-Anode current and life ratings.

SPL-HDPE-ANODE BENEFITS

Single package impressed current linear anode system with uniform current distribution

Flexible

Can be used in concrete

Continuous mixed metal oxide anodes

Uses patented MATCOR Kynex® waterproof connections.

SPL™-ANODE SERIES

Impressed Current Linear Anodes

SPL™-HDPE-ANODE COMPONENTS

Anode: continuous mixed metal oxide anode sized for the rated current output and life.

Cable: a continuous, high molecular weight, polyethylene covered, stranded copper cable sized for the current rating. The cable is also available in dual extrusion with primary Kynar® insulation for chemical resistance.

Kynex® Waterproof Connections: the Kynex connections between the anode and the internal carrier cable are spaced to provide uniform current distribution.

Housing: a high density polyethylene perforated to precise measurement on automated machinery at MATCOR.

Packaging: wooden reels or loose coils.

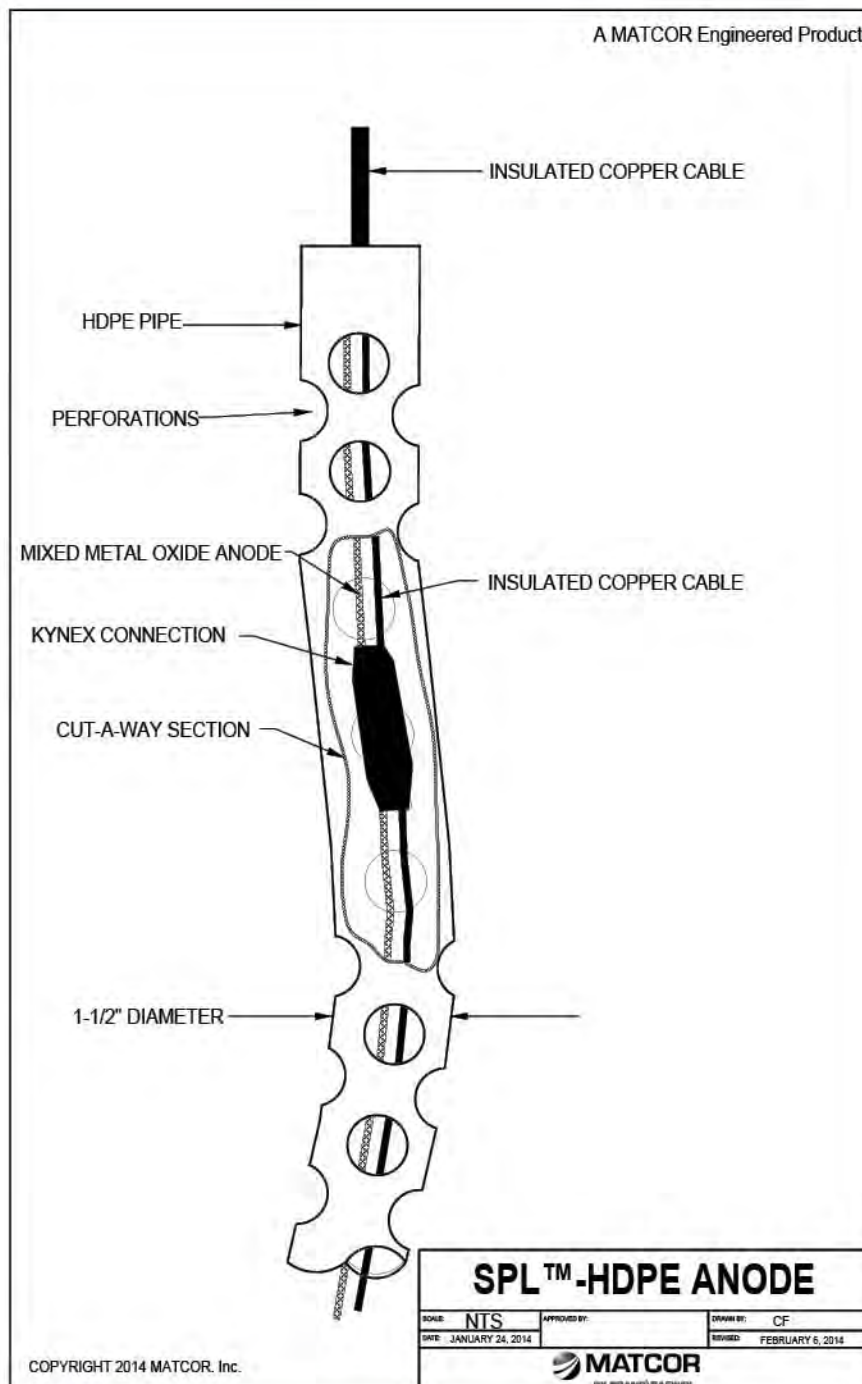
DESIGNING AND ORDERING SPL-HDPE-ANODES

The SPL-HDPE-Anode can be designed for any application using the rated current outputs.

INSTALLING SPL-HDPE-ANODES

The SPL-HDPE-Anode can be installed utilizing a variety of methods.

Contact MATCOR for additional information or assistance with designing or ordering the SPL-HDPE-Anode.



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MATCOR SPL-FBR-Anode provides cathodic protection for power company assets

Additional Matcor Products For Use With SPL-Anode Series

Rectifiers

Cathodic protection cables

Splice kits

Permanent reference electrodes

**Installation hardware and
AC service fittings**

MATCOR SPL-Anodes are available in a range of standard DC current outputs:

SPL-ANODE SERIES OUTPUTS AND SPECIFICATIONS

16 Milliamperes/ln. ft. (51ma.ln. meter)

25 Milliamperes/ln. ft. (80ma.ln. meter)

50 Milliamperes/ln. ft. (160ma.ln. meter)

100 Milliamperes/ln. ft. (320ma.ln. meter)

250 Milliamperes/ln. ft. (800ma.ln. meter)

Higher outputs are available

Rating is based on single anode in soil/coke

Design Life: Minimum of 25 years at the rated output

Anode Type: Mixed Metal Oxide

COMPLETE CONSTRUCTION AND INSTALLATION SERVICES

Experience, training and an impeccable safety record—not to mention the largest fleet of advanced drill rigs and installation equipment in the industry—make MATCOR the logical choice for your system installations and project management.

Contact MATCOR for additional information or assistance with designing, installing or ordering SPL-Anodes.

REGIONAL OFFICES

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TX-Gulf 281 558 2600
TX-West 832 755 2714
WY 307 401 2534



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