

LOCAL CONTENT CATALOGUE



**Pipeline construction and maintenance
Products & Solutions**

About us ...

Founded in 1993, as agent and distributor of world leader brands, in pipeline anti-corrosion coating; such as Raychem.

From then on, «Solutions Technologiques Industrielles (S.T.I) » company was constantly expanding its range of products and solutions in order to satisfy local requirements, by keeping a “technology watch” on new techniques and products in the Oil & Gas industry and particularly pipeline construction and maintenance.

In 2014, using local know-how, STI decided to move on to production & integration by introducing some products and accessories, successfully, to the Oil & gas field.

STI mainly focuses on some stages of pipelines construction such as crossings areas through casing (spacers, insulators and end casing seal) hydrostatic tests and cleaning (pigs and foam pigs) and cathodic protection (anodes, electrodes, CP test posts, transformer-rectifiers ...)

We keep counting on the cooperation of our customers to launch other challenges.

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Solutions close to you ...

WELDING

External alignment clamps
(manual & hydraulic)



External alignment clamps (manual & hydraulic)

Allow line-up tubes before pipe welding process.
Available under a variety of diameters; from 2" to 72".
They may be provided with straight or U-shaped bars, depends on customers' requirements

CROSSING AREAS THROUGH CASING

CASING END-SEALS



Casing end-seals

Circular casing end-seals are used to seal the space between the carrier pipe and the casing when underground pipelines cross roadway, railroad or even rivers.

PIPELINE CLEANING

Cleaning pigs



Cleaning pigs

Polyurethane cups or discs mounted on steel or carbon fiber bodies to form pigs which are used for pipelines cleaning, available from 2" to 56".

Carbon fiber cleaning pigs



Carbon fiber cleaning pigs

As alternative to carbon steel body, STI innovated a very light cleaning pigs body made of carbon fiber with the same performance than steel body or even more. Available for all large diameters from 28" and above.

Innovation

Cups and discs
(spare parts for cleaning pigs)

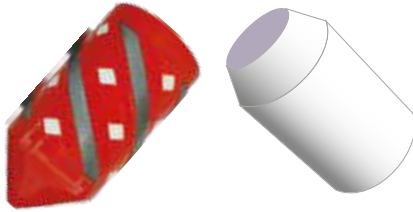


Cups and discs / spare parts for cleaning pigs

Both types of polyurethane spare parts (cups and discs) are available for pigs from 2" to 56". They are made of highest quality of polyurethane for maximum abrasion, and chemical resistance with an appropriate density.

PIPELINE CLEANING

Foam pigs



Foam pigs

High and low density foam pig for pipeline cleaning and drying.

A variety of densities of polyurethane foam pigs for a range of diameters from 2 "to 56".

CATHODIC PROTECTION

C.P Connection boxes



C.P Connection boxes

Cast aluminum boxes are used in cathodic protection systems to connect different cables to different components such as terminals, resistors, spark gaps, shunts...used for various purposes.

Terminals and components can be customized as per customer's requirements.

C.P Test posts



C.P Test posts

Made of epoxy coated steel, C.P test posts allow cathodic protection potential measurement of the protected structure.

Terminals can be customized as per customer's requirements.

Transformers-rectifiers



Transformers-rectifiers

Transformer-rectifiers units are used as power sources for impressed current system in cathodic protection.

Transformer-rectifier can be equipped with a variety of features, including remote monitoring and control, integral current interrupters with various types of electrical enclosures.

CATHODIC PROTECTION

Cables for cathodic Protection



C.P Cables

Double Sheathed Cables with copper conductor of different sections.

Used to connect different components of cathodic protection system.

Mainly available under $1 \times 10 \text{mm}^2$ / $1 \times 16 \text{mm}^2$ / $1 \times 25 \text{mm}^2$ / $1 \times 50 \text{mm}^2$ sections. (Other sections can be delivered on demand)

Galvanic anodes

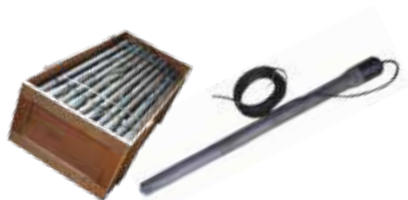


Galvanic anodes

Magnesium-based anode is the main component of a galvanic cathodic protection (CP) system used to prevent buried or submerged metal structures from corrosion. Magnesium anodes are often used in temporary protection.

Different shapes and weights can be provided on customers request.

Silicon-Iron anodes



Impressed current anodes (FeSi)

Manufactured from high silicon cast iron alloy, it is one of the most important anode materials used to protect steel structures against corrosion in a variety of situations. Silicon iron anodes are used in impressed current cathodic protection systems. They are of different weights and can be single headed for anodes bed or double headed for a deep well anodes.

Portable Reference Electrode (Cu-CuSO4)



Portable Reference Electrode (Cu-CuSO4)

Portable reference electrode is a constituent part of cathodic protection system of underground pipes, tanks or any other carbon steel structures. It is used for $E_{\text{OFF}}/E_{\text{ON}}$ and free corrosion potential measurement.

It is a conventional reference for the potential measurement.

As it is portable, it can be used for different CP sites. it can be also used as calibration electrode dedicated to insure a good control quality.

CATHODIC PROTECTION

Permanent reference Electrode
(Ag-AgCl)



Permanent reference Electrode (Ag-AgCl)

A permanent reference electrode for submerged and buried structures in chlorinated environment, generally pipelines, storage tanks, ...its concept ensures a long service life, high accuracy and stability.

The electrode can be supplied pre-packaged and provided with different cable diameters and lengths.

Permanent Reference Electrode
(CuSO4)



Permanent reference Electrode (Cu-CuSO4)

It has exactly the same function as the portable reference electrode CuSO4 with the only difference that it is buried underground, close to protected structure.

Current interrupter CYCL



Current interrupter

It is a device for automatic interruption and switching of the transformer-rectifier stations to enable reading of the E_{ON} and E_{OFF} potentials of the protected structure. It can be portable housing or integrated in the transformer-rectifier.

COATINGS TESTS

Holiday detector



Holiday detector

Holiday detector is for a non-destructive tests for different types of coating.

Holiday detector is also known as a holiday tester, porosity detector, pinhole tester, spark tester.

It allows checking any discontinuity or porosity in coating using the appropriate voltage.

Spring roll electrodes are available for different diameters of pipeline coating, from 4" to 72".

Description

The outer clamps are designed to allow perfect tube-to-tube alignment. STI provides manual and hydraulic clamps from 2" to 72".

These clamps are available with straight bars or with "U" bars, the later allows the weld bead to be produced without removing the clamp from the pipe.

Setting up the clamps

Using a sling, the side-boom conductor positions the clamps above the joints of the ends of the tubes, once in position ("U" bars or straight lines perpendicular to the weld bead) Pressurizing the cylinder, until the bars align perfectly both tubes. It is advisable to use a Hydraulic clamps for diameters beyond 20".



Hydraulic clamps

Clamping is done by a hydraulic cylinder

The grade of the manufacturing steel

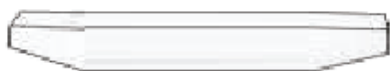
AFNOR 42CD4 treated steel



Manual clamps

Clamping is done manually

Straight bars



Bars in «U»



Specifications

Ø (inch)	Weight (kg)
02"	05.5
03"	07.7
04"	08.6
06"	14.5
08"	15.0
10"	23.2
12"	24.1
14"	31.8
16"	46.3
18"	50.0
20"	54.5

Specifications

Ø (inch)	Weight (kg)	Cylinder (ton)
14"	47	10
16"	56	10
18"	57	10
20"	59	10
22"	63	10
24"	74	15
26"	79	15
28"	82	15
30"	85	15
32"	87	15
34"	90	15
36"	143	20
38"	147	20
40"	151	20
42"	155	20
48"	167	20

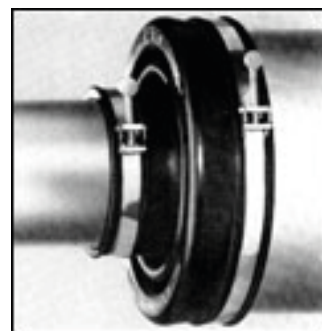
Description

Casing end-seal (OBC) serves to close the gap between the casing and the carrier pipe when crossing special areas (watercourses, railways, roads, etc.).

They are made of an elastomer with a suitable thickness to resist against external agents, aging and in particular possible rodents attacks.

They are always supplied in a suitable size for the carrier pipe / casing combination. No further adaptation on site is needed.

STANDARD (S)



Main features

Made of elastomers with a minimum thickness of 5 mm

Resistant to aging

Exposure temperature: - 5 ° C to + 55 ° C

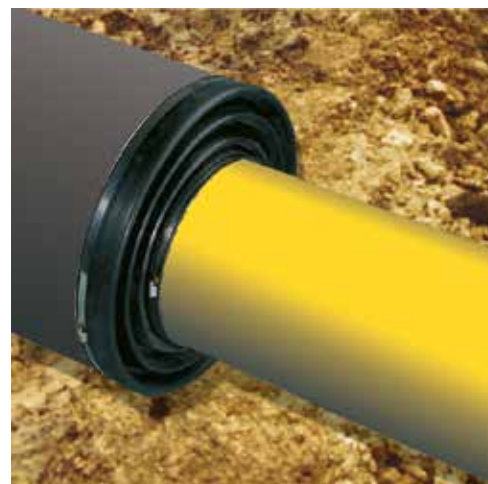
Approx. thickness : 5-6 mm

Shore hardness A : 50 +/- 5

Carrier pipe size: 4" to 48"

Casing size : 12" to 56"

Fastening strap material : Stainless steel

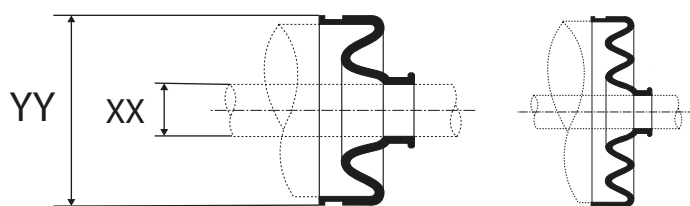


Ordering Guide : OBC-XX/YY-STI/Z

XX : Pipe diameter in inches

YY : Sheath diameter in inches

Z : (S) for Standard and (O) for Optional



OPTIONAL(O)



Description

Cups or discs made of appropriate Polyurethane are mounted on steel structure , which forms pigs used in pipelines cleaning during all stages of pipelines construction and maintenance. They are available for pipe diameters from 2" to 56".

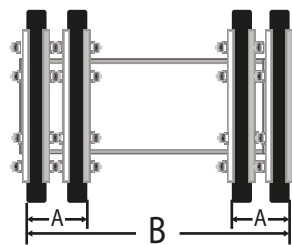
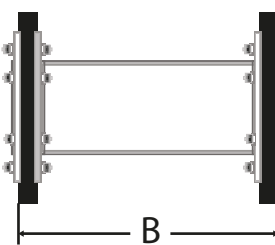
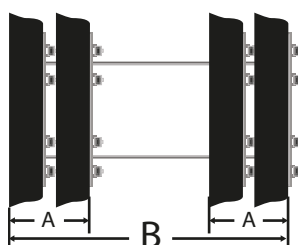
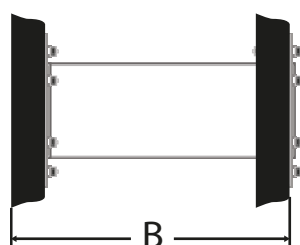


Unidirectional Pig with 02 Cups
PR-U2C-DNXXXX/STI*

Unidirectional Pig with 04 Cups
PR-U4C-DNXXXX/STI*

Bidirectional Pig with 02 Discs
PR-B2C-DNXXXX/STI*

Bidirectional Pig with 04 Discs
PR-B4C-DNXXXX/STI*



Dimensions

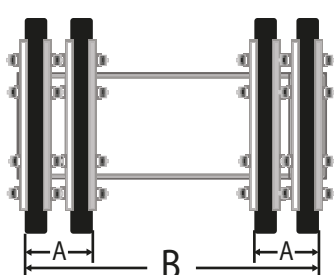
Ø		PR-B2C-DNXXXX/STI	PR-B4C-DNXXXX/STI		PR-U2C-DNXXXX/STI	PR-U4C-DNXXXX/STI	
Inch	DN	B	A	B	B	A	B
02''	50	75	30	75	110	66	142
03''	75	100	40	100	135	70	135
04''	100	150	40	150	175	80	175
06''	150	200	60	200	230	110	230
08''	200	250	70	250	280	130	280
10''	250	300	80	300	350	150	350
12''	300	375	90	375	400	150	400
14''	350	450	100	450	450	160	450
16''	400	500	100	500	550	163	550
18''	450	550	100	550	600	163	600
20''	500	625	125	625	650	184	650
22''	550	/	/	/	700	185	700
24''	600	725	125	725	750	195	750
26''	650	775	125	775	800	206	800
28''	700	825	125	825	850	208	850
30''	750	900	150	900	900	211	900
32''	800	950	150	950	950	214	950
34''	850	1000	150	1000	1000	230	1000
36''	900	1075	175	1075	1140	230	1140
38''	950	/	/	/	1200	230	1200
40''	1000	1150	175	1150	1300	260	1300
42''	1050	1200	200	1200	1400	260	1400
48''	1200	1400	200	1400	1500	260	1500

Description

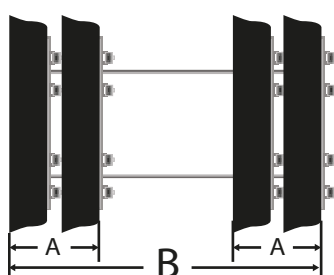
Cleaning pig with a very light body made of carbon fiber on which are mounted cups or discs made of Polyurethane. Compared to conventional steel body, It is stronger and Seven times less heavy.

The total weight of 48" cleaning pig is around 55 kg !

with the same performance, as steel body pig or even more
It is suitable for large diameters above 28". It could be handled by only one operator! Available for diameters from 28" and above



PRC-B4C-DNXXXX/STI
Bidirectionnel



PRC-U4C-DNXXXX/STI
Unidirectionnel



Innovation

Dimensions

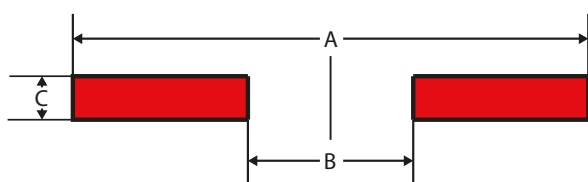
PRC-B4C-DNXXXX/STI			PRC-U4C-DNXXXX/STI		
Ø	A	B	Ø	A	B
36"	175	1075	36"	230	1140
38"	0	0	38"	230	1200
40"	175	1150	40"	260	1300
42"	200	1200	42"	260	1400
48"	200	1400	48"	260	1500
50"	upon request		50"	upon request	
52"	upon request		52"	upon request	
54"	upon request		54"	upon request	
56"	upon request		56"	upon request	

* XXXX corresponds to pipe external diameter in mm

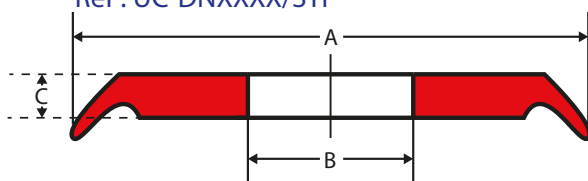
Description

Spare parts for STI brand pigs are available in two types : «Cup» for unidirectional pigs or «Disc» for bidirectional pigs. They can be used in Pipelines cleaning with a range of diameters from 2" to 56".

Discs for bidirectional pigs
Réf : BC-DNXXXX/STI*



Cups for unidirectional pigs
Ref : UC-DNXXXX/STI*



Dimensions				
\varnothing		A (mm)	B (mm)	C (mm)
Inch	DN			
02"	50	55	16	10
03"	75	80	22	12
04"	100	105	22	12
06"	150	155	22	20
08"	200	210	35	20
10"	250	260	35	25
12"	300	310	35	25
14"	350	355	35	28
16"	400	405	225	28
18"	450	460	225	28
20"	500	510	280	32
22"	550	565	310	32
24"	600	615	360	32
26"	650	665	360	32
28"	700	720	465	32
30"	750	775	465	32
32"	800	825	465	32
34"	850	880	465	35
36"	900	930	570	35
38"	950	985	615	35
40"	1000	1040	615	35
42"	1050	1090	615	38
44"	1100	1110	720	38
46"	1150	1170	770	38
48"	1200	1245	870	38

* XXXX corresponds to the nominal diameter (DN)

Description

Foam pigs with different densities are used in pipelines cleaning and drying. They are available with different densities and dimensions.

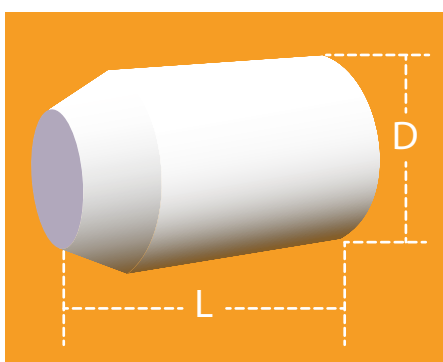
- 1- Soft Foam Pigs « SFP »
- 2- Hard Foam Pigs « HFP »

Type	Application	Density (kg/ m3)	Speed (m/s)	Temperature (°C)	Pipe radius
SFP	Pipelines slight cleaning and drying	25-35	1 – 4	-20 à +65	1,5 D
HFP	Pipelines filling, hydrostatic testing and cleaning.	115-130	1 – 4	-20 à +65	1,5 D

1- SOFT FOAM PIGS TYPE «SFP»

Polyurethane open-cell foam Pig reinforced by a polyurethane sealed bottom plate

Application: Drying and light cleaning

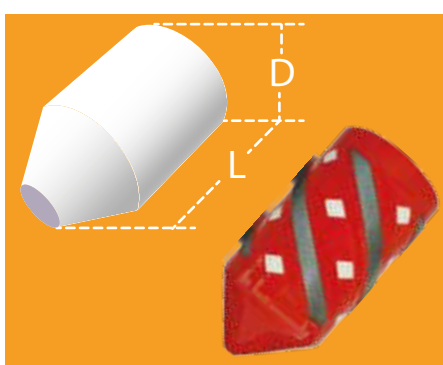


Diameter		D	L	Diameter		D	L	Diameter		D	L
Inch	DN			Inch	DN			Inch	DN		
2"	50	75	150	12"	300	350	450	30"	750	820	1150
2.5"	65	90	200	14"	350	400	600	32"	800	880	1250
3"	80	100	220	16"	400	450	700	34"	850	930	1300
4"	100	130	250	18"	450	520	750	36"	900	980	1350
5"	125	150	275	20"	500	570	800	40"	1000	1080	1540
6"	150	190	300	22"	550	620	850	42"	1050	1120	1680
7"	175	200	320	24"	600	670	900	44"	1100	1190	1680
8"	200	230	360	26"	650	730	1100	48"	1200	1300	1800
10"	250	290	430	28"	700	770	1100	56"	1400	1500	2240

2- HARD FOAM PIGS TYPE «HFP» (with or without coating)

Polyurethane highly compressed foam Pig reinforced by a polyurethane sealed bottom plate

Application: Filling and wiping.



Diameter		D	L	Diameter		D	L	Diameter		D	L
Inch	DN			Inch	DN			Inch	DN		
2"	50	65	155	12"	300	321	510	30"	750	760	1130
2.5"	65	75	155	14"	350	348	530	32"	800	810	1170
3"	80	86	155	16"	400	410	595	34"	850	855	1350
4"	100	110	195	18"	450	455	660	36"	900	910	1370
5"	125	125	220	20"	500	505	760	40"	1000	1010	1470
6"	150	168	266	22"	550	555	810	42"	1050	1060	1580
7"	175	177	280	24"	600	605	880	44"	1100	1120	1640
8"	200	215	330	26"	650	665	945	48"	1200	1220	1760
10"	250	270	415	28"	700	710	990	56"	1400	1430	2100

Description

Connection boxes are used in cathodic protection systems to connect cables to various components of the system. It contain cut-off strips, variable resistors, spark gaps ...

(can be adapted to customer's requirements)

SPECIFICATIONS (STANDARD)

DIMENSIONS

- Box: 310x265x100 mm
- Bakelite plate : 265x200x5 mm
- Galvanized steel tube \varnothing 2" 1500mm

INSTALLATION

- On concrete base
- In full soil

COMPOSITION






- Housing in cast aluminum IP55, IK10.
- Galvanized steel support tube
- Bakelite insulation board

OPERATING CONDITIONS

- Maximum temperature of the environment: +60 ° C
- Minimum temperature of the environment: -20 ° C
- humidity: 95%



STANDARD CONFIGURATIONS

				
4 Connections 1x16 & 1x25 mm ² 1 spark	4 Connections 1x16 & 1x25 mm ² 1 Variable resistance 10Ω/ 50W ou 100W	4 Connections 1x16 & 1x25 mm ² 2 sparks	5 Connections 1x16 & 1x25 mm ² 1 spark	5 Connections 1x16 & 1x25 mm ² 2 sparks

Description:

PP-STI is a test post used for potential measurement from cables connected to underground protected steel structures.

Different connections can be obtained on the main plate, Such as cables connected to the reference electrode to the anode or the coupon, etc...

The main plate made of Bakelite provides additional space for small electrical components like (switches, fuses, surge protection, RMU ... etc.).

Specifications (STANDARD MANUFACTURING)

DIMENSIONS

120 mm x 120 mm x 1500 mm (L x W x H)

MATERIALS

Made of epoxy coated steel (RAL 7033) or Stainless steel (INOX 304L / 316L)

ACCESSORIES

Bakelite plate, with 2 or 4 cable terminals (1x25mm or 1x16mm)

INSTALLATION TYPE

Directly into the ground
Casting on concrete base

ORDERING GUIDE

PPS-STEEL-STI : Test post with 2 terminals

PPA-STEEL-STI : Test post with 4 terminals

Note

Other models can be manufactured based on customer requirements.



Description

The transformer-rectifier is used to inject current in cathodic protection system in order to protect buried or submerged metal structures such as pipelines and storage tanks.

Standard Technical Specifications

- Input voltage AC: 220V, single phase, 50 Hz or triple phase 380 V
- Cooling: Natural Air or Oil cooling.
- Power output: from 100 to 22500 W
- Maximum output voltage: from 20 to 150 V / DC
- Maximum output current intensity: from 5 to 150 A / DC
- Rectifier Type: Composite bridge-Diodes Thyristors or auto-transformer
- Setting of the output values (voltage, current and potential) by the UT-08 electronic module.
- Control: manual or automatic.
- Possibility of remote operation and remote control via 4-20 mA signal or other RMU.
- Integrated measuring instruments:
 - Voltmeter to measure the output voltage
 - Ammeter to measure the intensity of the output current
- Operating indicator by indicator light
- Protection against overvoltage.
- Protection against overcurrent: Breaker with various breaking capacities.
- Extreme operating temperatures: -5°C to $+55^{\circ}\text{C}$
- Maximum Operating Humidity: 95%
- LED safety factor SCR/s.
- Degree of protection: IP55
- Connecting terminals:
 - Terminal for connecting Cables 50 mm².
 - Terminal for grounding Cables 25 mm².
 - Terminals for connecting cables 16 mm².

N.B: Other characteristics can be provided upon request.



General data:

Standards: IEC 60502-1

Number of Conductors: 1

Conductor / Shape: Copper annealed-Shrunked

Isolation / Phase Identification: XLPE

Aarmor: N/A

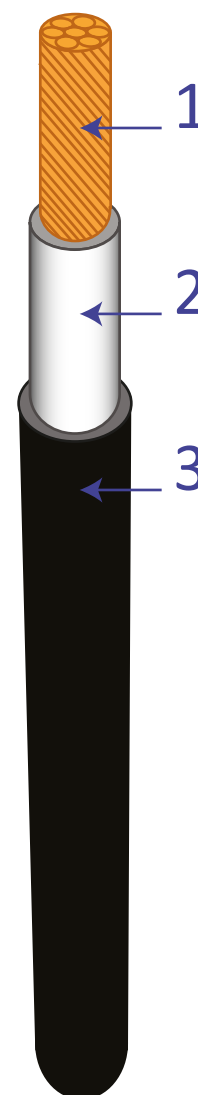
Outer sheath / Color: PVC/Black

Phase Section:	16 mm ²	25mm ²	50mm ²
➤ Approximate total cable weight:	190 Kg/Km	280Kg/Km	490 Kg/Km
➤ Approximate outer diameter:	8,3 mm	9.8 mm	12.3 mm
➤ Minimum bending radius:	85 mm	100 mm	125 mm

Lorem ipsum

Cable Description:

- 1- Copper conductor
- 2- XLPE Insulation
- 3- PVC Outer sheath



Electrical data

➤ Operating voltage	0.6 / 1 (1.2) kV	0.6 / 1 (1.2) kV	0.6 / 1 (1.2) kV
➤ Maximum continuous current resistance of conductor at 20 °C	1,15 ohm/km	0,727 ohm/km	0,387 ohm/km
➤ AC conductor resistance at maximum operating temperature at 50 Hz	1,467 ohm/km	0,927 ohm/km	0,494 ohm/km
➤ Maximum operating temperature	90°C	90°C	90°C
➤ Maximum conductor temperature during a short circuit	250°C	250°C	250°C
➤ Short-circuit current in the conductor for 1 sec	2,3 kA	3,6 kA	7,2 kA

Packaging

➤ Length of manufacture	1000 (± 5%) m	3000 (± 5%) m	5000 (± 5%) m
➤ Roll Diameter	1050 mm	1300 mm	1550 mm
➤ Type of drum	wood	wood	wood

Cable shall be supplied in the lengths as specified in the technical table on wooden or steel coils and specified by the manufacturer. The ends of the cable will be sealed to prevent water from entering during transport and storage.

Testing

All individual tests required by IEC 60502-1 are carried out on the cable and a test certificate will be provided on request

By our
Algerian partner

Description:

The magnesium anode is characterized by small density, big theoretical electrical capacity, low potential negative polarization rate and large driving voltage for iron and steel (> 0.6 V). Magnesium sacrificial anode is suitable for the protection of buried or submerged steel structures where the electrical resistivity is higher. Our magnesium anode is mainly used to prevent buried pipelines, onshore platforms, huge boilers and steel structures against corrosion.

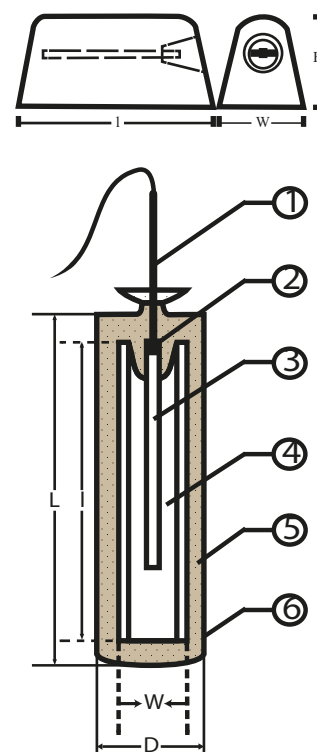
It is available in different weights and shapes.

Composition

Item N°	Description
1	Connecting cable XLPE/PVC (length and section according to requirements)
2	Weld spot of the cable to the ingot
3	Center of galvanized steel
4	Magnesium Ingot
5	Backfill (75% Gypsum CaSO_4 , 20% Bentonite and 5% Sodium Sulfate)
6	Coton bag



Anode Ingot



Chemical analysis of the Magnesium Ingot

Silicium (Si) %	Manganese (Mn) %	Aluminium (Al) %	Copper (Cu) %	Nickel (Ni) %	Iron (Fe) %	Zinc (Zn) %	Lead (Pb) %	Magnésium (Mg) %
0,3	0,25	5,30 - 6,70	0,08	0,03	0,05	2,50 - 3,50	0,03	89 Min

Electrochemical characteristics

Maximal Consumption	Current Efficiency	Earth Potential at 25°C	Density
7,0 kg / A / year	50%	-1.55 à - 1.60 V / reference electrode Cu/CuSO ₄	1,84 à 1.94 g/Cm ³

Anodes Dimensions and Weights

Anode Reference	Weight (kg)				Dimensions				
	Ingot	Backfill			Total Weight	Mg Ingot			Backfilled Anode
		Gypsum	Bentonite	Sulfate		L (mm)	W (mm)	H (mm)	
AMG-3D3-PREBACK	1,4	1,65	0,44	0,11	3,6	127	89	95	254
		Total backfill : 2,2 kg							152
AMG-5D3-PREBACK	2,3	4,05	1,08	0,27	7,7	216	89	95	305
		Total backfill : 5,4 kg							152
AMG-9D3-PREBACK	4,1	6,08	1,62	0,41	12,2	356	89	95	432
		Total backfill : 8,1 kg							152
AMG-17D3-PREBACK	7,7	9,53	2,54	0,64	20,4	645	89	95	864
		Total backfill : 12,7 kg							191
AMG-20D2-PREBACK	9,1	17,03	4,54	1,14	31,8	1518	70	76	1676
		Total backfill : 22,7 kg							127
AMG-32D5-PREBACK	14,5	12,98	3,46	0,87	31,8	521	140	127	711
		Total Backfill : 17,3 kg							203
AMG-32D3-PREBACK	14,5	20,10	5,36	1,34	41,3	1149	89	95	1346
		Total backfill : 26,8 kg							165
AMG-40D3-PREBACK	18,1	19,05	5,08	1,27	43,5	1518	89	95	1676
		Total backfill : 25,4 kg							165
AMG-48D5-PREBACK	21,8	17,70	4,72	1,18	45,4	787	140	146	965
		Total Backfill : 23,6 kg							203
AMG-60D4-PREBACK	27,2	22,13	5,90	1,48	56,7	1524	102	102	1626
		Total backfill : 29,5 kg							178

Description:

This high silicon cast iron anode, which is one of the component of CP system, is manufactured from high silicon cast iron alloy, which is one of the most effective anode materials in various environments. Single head type is used to protect steel structures such as pipelines and storage tanks. the Silicon-Iron ingot is connected to a 3 meters length cable or any other length specified by client

Structural Description

Item N°	Description
1	Copper cable 16 mm ²
2	Silicon-Iron Ingot

Nominal Dimensions

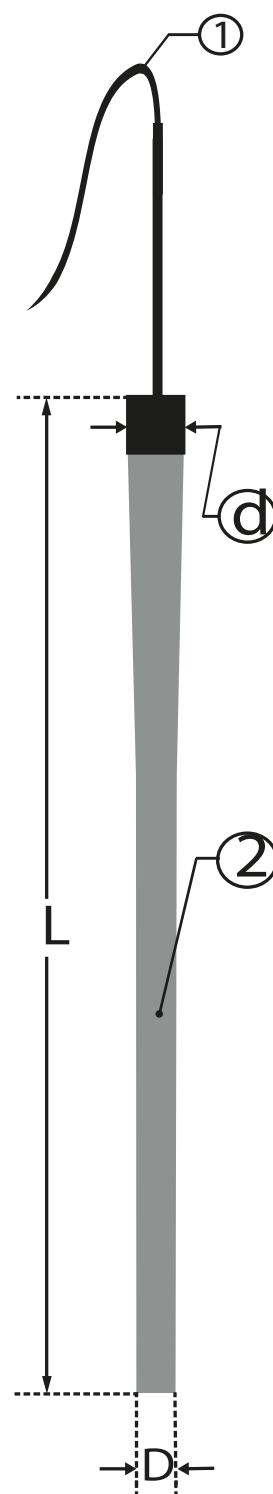
Reference	Weight (kg)	FeSi Ingot		
		L (mm)	D (mm)	d (mm)
EHA-FS-23	23,6Kg	1520	51	76

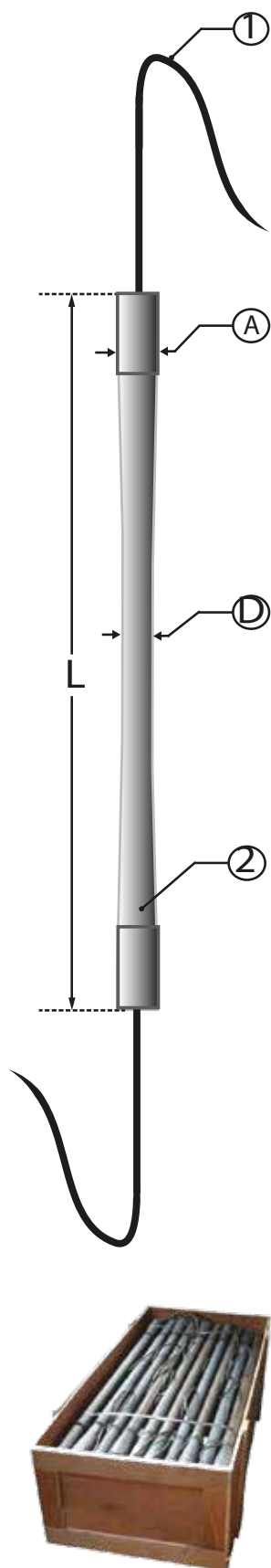
Chemical composition

01 Silicium	02 Manganese	03 Carbon	04 Copper	05 Molybdenum	06 Chrome	07 Iron
(Si) %	(Mn) %	(C) %	(Cu) %	(Mo) %	(Cr) %	(Fe) %
14,20 - 14,75	0,60 - 1,10	0,70 - 1,10	Max 0,50	Max 0,20	3,50 - 5,00	76,95 - 80,30

Electrical characteristics

Mass consumption	Maximum resistivity	Current density
0,5 kg / A / year	1 Ω x m	15 A/m ²





Description:

Double head Silicon-Iron anodes are used to protect steel structures such as pipelines and storage tanks in cathodic protection systems. The package includes the Silicon-Iron ingot which is connected to cables of different sections on both heads. It is recommended for deep well installation. It is usually used in impressed current system.

Structural Description

Item N°	Description
1	Copper cable 16 mm ²
2	Silicon-Iron Ingot

Nominal Dimensions

Reference	Weight (kg)	FeSi Ingot		
		L (mm)	D (mm)	A (mm)
EHM-FS-23	23Kg	1524	53	76
EHM-FS-50	50Kg	1524	76	102

Chemical composition

01 Silicium	02 Manganese	03 Carbon	04 Copper	05 Chrome	06 Iron
(Si) %	(Mn) %	(C) %	(Cu) %	(Cr) %	(Fe) %
14,20 - 14,75	0,60 - 0,75	0,70 - 1,10	Max 0,50	3,50 - 5,00	77,90 - 80,50

Electrical characteristics

Mass consumption	Maximum resistivity	Current density
0,5 kg / A / year	1 Ω x m	15 A/m ²

Description:

Copper/copper sulfate reference electrode is made of a sturdy ceramic tip with a flat surface. The ceramic plug is especially designed for application purposes to allow the electrode to be used in any circumstances, such as pipe merlons, rocky soil, ground / concrete, Storage tanks, etc.).

The high purity copper rod and the rigid lexan tube give the electrode long life reliability.

The transparent strip along the electrode enables checking of saturated copper sulfate solution. this solution has to be prepared, inside the tube, by the end user in accordance with industry standards.

Delivered with a starting quantity of copper sulfate crystals.

Using guide:

To preserve the electrode, it is recommended to attach a wet piece of sponge on the active end of electrode to facilitate contact with the electrolyte (soil).

Rod material:	High purity copper
Electrode body:	Partially Transparent with for checking
Tip shape:	Flat
Diameter of the electrode:	35 mm

Designation:

Tech-RE-05 : Copper/Copper Sulfate : Cu- CuSO₄

Applications:

Underground pipes, underground and aboveground storage tanks, etc...

Measures the performance of cathodic protection of embedded metal structures.



By our partner



Features:

Minimum 30 year service life.

Available in three types:

Water, soil & Concrete.

Color coded for quick and easy identification!!!.

Special porous ceramic contact plugs allows removing and re-entering into liquid without damaging the reference electrode.

Therefore, it can be re-used and maybe reactivated (after use) for a period of up to one year.

Technologically advanced "ion trap" prevents contamination.



High-impact resistant plastic (for water application only) will not deteriorate even in highly corrosive environments.

Complete installation instructions included.

Material:

Temperature Range: -50°C to 85°C

Stability: +/- 5 millivolts with 3.0 microamp load

By our partner

ASSISTANCE MANAGEMENT DES OIL & GAS INDUSTRIES
TECHNO PROTECTION
ALGERIE

Description:

The Tech-EC-S7 Dual is a so-called coupon electrode dedicated to the installations of buried carbon steel structures, generally pipelines, storage tanks and tanks, etc. The concept of double coupons; allows perfect control of surface of both coupon which have the same steel grade as the structures to be protected. This concept provides a long service life with high precision and stability. This electrode is delivered pre-packaged with a suitable type and length of cable and even a fixing kit if necessary.

Active ingredient:

Active element: Copper

Dimension: 50 mm diameter, 240 mm Length

Coupon 1: 50 cm² /appropriate steel.

Coupon 2 : 50 cm² /appropriate steel.

Other coupons sizes are available upon request.

Cable type and length: As per client specifications



Model designation: Tech- EC-S7 Dual

Application:

Any underground structure requiring potential readings with IR ohmic drop control.

A simulation that allows the measurement of corrosion of a particular area in a pipeline for control purposes 2X50 square cm of sensing surface gives the positioning of the electrode less critical to obtain accurate readings.

A potential without IR is a potential measured at the exact location where the surface of the structure interacts with the environment. A potential measurement under these conditions is not distorted by the resistance of the ground between the reference electrode and the surface of the structure and independently of the amplitude of the protective current.

Measures the performance of cathodic protection of embedded metal structures

Cable: Standard 10 mm², 5m length (or any other length upon request)

Electrolyte property:

A hydrophilic mixture that avoids the migration of contaminants from the

Surrounding soil Long term stability: Stability: +/- 5 millivolts with 3.0 micro-amps of load

By our partner

ALGERIE MANAGEMENT FOR THE OIL & GAS INDUSTRY
TECHNOPROTECTION
ALGERIE

Description:

The Tech-RE-CU-02-BAG, our permanent reference electrode is used for underground structures installation, generally pipes, storage tanks and tanks.

The concept of bagging ensures uniform control of the reading environment while ensuring long life, high accuracy and stability over several decades of service life without leaching. The electrode is delivered prepackaged with a suitable type and length of cable and even a fixing kit if necessary.

Active ingredient:

Active material: Copper

Dimensions: 400 mm X 150 mm

Cable length and type: As per client requirements.

Weight 2,5 kg



Model designation:

Tech-RE-CU-02-BAG

Copper/Copper Sulfate: Cu- CuSO₄

Application: Underground structures

Electrolyte: A hydrophilic mixture which avoids the migration of contaminants from the Surrounding soil

Material: Biodegradable

Long term stability: Stability: +/- 5 millivolts with 3.0 micro-ampere load

Tech-R-CU-02-BAG :

This Reference electrode is specially designed for use in dry soil, the change in moisture content in the soil has no effect on the electrode.

Service life: 30 years minimum

235 cm² of contact surface.

This makes the positioning of the electrode less critical to obtain accurate reading.

pH Range: 4-9

By our partner

ASSISTANCE MANAGEMENT DES OIL & GAS LEAKERS
TECHNO PROTECTION
ALGERIE

Description:

The Tech-RE-C0002, permanent reference electrode for underground installation used in buried structures, generally pipes, storage tanks and tanks.

Our concept ensures long life, high accuracy and stability over several decades of service life without leaching.

Its selective ion exchange membrane and its gelled electrolyte allow it to be used in any environment or contamination area. The electrode can be supplied pre-packaged and provided with a suitable cable type and length and even a fixing kit if necessary.



Active ingredient:

Copper / gelled electrolyte

Body with porous ceramic

Diameter: 50 mm et length 150 mm

Cable type and length: As per client requirements

Designation:

Tech-RE-CU-02:

Copper/Copper Sulfate: Cu- CuSO₄

Applications: Underground pipelines, tanks, etc....

Measure performance of cathodic protection

Property of the electrolyte: A hydrophilic mixture with an ion exchange membrane, avoiding the migration of contaminants from the surrounding soil

Material: ceramic with moisture retention membrane.

Long-term stability: Stability: +/- 5 millivolts with 3.0 micro-ampere charge

Tech-R-CU-02:

Reference electrode specially designed for use in dry soil

Electrode does not dry in arid soils

The change in moisture content in the soil has no effect on the electrode Duration: Minimum of 30 years

235 cm² of contact surface.

This makes the positioning of the electrode less critical to obtain precise readings.

Potential range: ± 5 millivolts with load of 10 MegOhms

PH range: 4-9

By our partner

ASSISTANCE MANAGEMENT THE DIT & SEA-ROVERS
TECHNO PROTECTION
ALGERIE

Description

It is a device for automatic interruption and switching of the transformer-rectifier stations to enable reading the EON and EOFF potentials of the protected structures. It can be delivered in compact and portable housing or integrated in the transformer-rectifier.



Technical characteristics

Spécifications	Description
Weight	~40 lbs (18 kg)
Dimensions	Height : 13 po Width : 11 po Depth : 7 po
Installation	Portable
Temperature	-20 à 50°C (32 à 122°F) Humidity 5 à 85%
Electrical source	Voltage: 230 à 416Vac Power : 50 va maximum Frequency : 50-60hz
Fuses	Input: Class CC 0.5A Fast (2)
Analogic input	NONE
Output TOR	NONE
SSR Relay	100V rms AC/DC 150V peak 100A dissipation 20W à 100A

REVTEST BZ58

Description

Holiday detector is for a non-destructive tests for different types of coating on metallic substrate such as carbon steel pipelines.

Holiday detector is also known as a holiday tester, porosity detector, pinhole tester, spark tester.

Spring roll electrodes for pipeline coating are available for a large variety of diameters, from 4" to 72".

Voltage can be adjusted from 1 to 35 Kv.

Maximum coating thickness: 12 mm



Main Features

- Easy to use
- Visual and audible signal
- High stability of the tension on the rod.
- Possibility to adjust the voltage with 0.1 v accuracy.
- Fast battery replacement.

Technical characteristics

- Adjustment of the voltage with a resolution of 0.1 kV
- Testing of external coatings, using a spring, on pipes up to 64 "in diameter.
- Testing of internal linings, using discs, on pipes up to 64 "in diameter.
- Rechargeable battery powered.
- Dimension of the unit: 252 X 233 X 82 mm.
- Dimension of the handle: Ø 27 X 760 L mm.

Package Contents

- High voltage transformer handle.
- Control unit.
- Extension of the handle.
- Grounding cable with clamp and magnet.
- Protective bag of the control unit.
- Set carrying case.
- User Manual.



Spring rolls for pipeline testing are available for all diameters on customer demand.

Main References

non exhaustive list





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