

PRODUCT DATA SHEET / CONFIGURATION GUIDE

High-Silicon Cast-Iron Anodes and Deep-Well Groundbed Components

Configurable HSCI anode supply packages for impressed-current cathodic protection of buried and immersed metallic structures. CathPro scopes can be defined around the anode casting, connection and sealing system, lead cable, carbonaceous backfill and project-specific deep-well hardware.



Representative concept visualization. Final material grade, construction, dimensions and inspection scope are controlled by the confirmed quotation, approved drawing and order documents.

01 Tubular HSCI anodes

Order-defined OD, ID, length, mass, lead and inspection scope.

02 Solid HSCI anodes

Drawing-defined or replacement configurations with confirmed dimensions.

03 Canistered anodes

Specified canister, coke backfill, cable and handling data.

04 Deep-well components

Anodes, leads and project-scoped vent, support, wellhead and AJB options.

Typical Applications

Onshore pipelines

Tank bottoms and buried storage

Well casings

Buried station and plant piping

FIRST-PRINCIPLES PRODUCT BOUNDARY

An ICCP groundbed is only as reliable as its complete electrical path. Material chemistry matters, but cable integrity, current transfer, sealing, coke contact, venting, installation geometry and soil resistivity also control performance.

Supply scope, technical values and acceptance criteria are defined by the confirmed quotation, approved drawing/BOM and project ITP.

THE COMPLETE ASSEMBLY

How the current path works

Direct current must pass continuously from the rectifier through the lead cable, cable-to-anode connection, HSCI body and coke column into the surrounding electrolyte, then to the protected structure and back through the negative return circuit.

Rectifier (+)	Lead cable	Internal connection	HSCI body	Coke backfill	Soil / electrolyte	Protected structure
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Element	Function	Why it must be defined
HSCI anode body	Provides the current-discharging surface and controlled anodic consumption.	Material, form, dimensions, mass and loading affect suitability.
Internal connection	Transfers current from the lead conductor into the casting.	Poor current transfer can overheat or fail before the casting is consumed.
Seal and strain relief	Protect the connection from moisture ingress and installation loads.	Method and acceptance criteria belong in the approved drawing and ITP.
Lead cable	Maintains circuit continuity throughout installation and operation.	Conductor, insulation, length, routing and termination are project-defined.
Coke backfill	Improves electrical contact and increases the effective current-discharge area.	Type, particle requirements, resistivity, density and fill mass affect performance.
Vent system	Provides a controlled gas-release path and reduces gas-blockage risk.	Venting is a system component, not a property of the HSCI casting.
Support and wellhead	Positions and protects the assembly during installation and service.	HSCI is brittle; the cable should not be treated as a lifting member.



Control the interfaces

The anode-to-cable connection, seal, cable insulation, coke contact and vent path can become life-limiting interfaces. Connection-resistance, pull and sealing inspections can be included only when the method and acceptance criteria are agreed in the project ITP.

Avoid unsupported claims such as waterproof, zero-failure, maintenance-free or a fixed service life independent of site conditions.

STANDARDS & ORDER-SPECIFIC DATA

Standards control different layers

Material standards apply to the HSCI casting. ISO and NACE documents are system design, installation, commissioning and operating references; they do not constitute a standalone product certification or approval. Standards are not automatically interchangeable.

ASTM A518/A518M-99(2022), Grade 3	Anode-body material available when specified, confirmed in the quotation and certified for the order.
BS 1591:1975	Alternative anode-body material specification, subject to project requirements and documented compliance.
GB/T 8491 - applicable edition	Applicable edition stated in quotation and order documents; not described as automatically equivalent to ASTM or BS.
ISO 15589-1:2026	On-land pipeline CP system design, equipment, installation, commissioning, operation and maintenance reference.
NACE SP0169-2024	General external-corrosion-control system and practice reference for underground or submerged metallic piping.
NACE SP0572-2024	Deep-well impressed-current anode-system design, installation, operation and maintenance reference.

RECOMMENDED WORDING

Material standard (anode body): ASTM A518/A518M-99(2022), Grade 3, when ordered and certified. System design references: ISO 15589-1:2026, NACE SP0169-2024 and NACE SP0572-2024, as applicable. System compliance depends on project design, installation, commissioning and operating conditions.

Order-Specific Technical Schedule

Configuration item	Defined for each quotation	Confirmation document
Anode body	Form, standard/grade, OD, ID, effective and overall length, mass, surface area and tolerances.	Quotation, approved GA, inspection report
Lead cable	Conductor size, insulation system, length, lead quantity, exit position, identification and termination.	Cable schedule and approved BOM
Connection and seal	Connection design, sealing system, inspection methods and acceptance criteria.	Approved drawing and ITP
Canistered unit	Canister construction, dimensions, coke specification and mass, gross weight and lifting arrangement.	GA, BOM and packing data
Deep-well package	Anode count, spacing/elevations, vent, support, bottom weight, wellhead and AJB/shunts.	Project GA and BOM

Groundbed resistance, current output, current distribution, interference risk, anode spacing and design life are project-calculated values - not fixed ratings of the HSCI casting. They depend on the resistivity profile, borehole geometry, coke column, current loading, cable integrity, venting, installation and operation.

INSPECTION, DOCUMENTATION & ORDERING

Build the evidence into the order

Inspection and documentation scope is agreed before order and stated in the project ITP. The agreed scope may include the records below; availability depends on the confirmed quotation and purchase-order requirements.

Quality or document item	Order-defined scope
Material identity	Heat or lot traceability and chemical-analysis or material-test documentation, as ordered.
Product inspection	Visual, dimensional and weight inspection tied to the product and batch identity.
Cable and connection	Cable identification, continuity and insulation checks; connection-resistance, pull and sealing inspection only where methods and criteria are defined in the ITP.
NDT / witnessing	Contract-specified NDT and third-party witness or hold points when agreed before quotation.
Release package	Certificate of Conformity, approved GA/BOM, inspection report and cable documentation according to the document register.
Shipping records	Packing list, net/gross mass, package identification and certificate-of-origin support as ordered.

Send Your BOQ, Client Specification or Groundbed Drawing

- Protected structure, application, country and client specification
- Available soil/water conditions and layered resistivity information
- Required protection current and design life
- Material standard/grade, product form, quantity and dimensions/drawing

- Borehole depth, diameter, active interval, anode spacing/elevations
- Cable size, insulation, length, exit and termination requirements
- Canister, coke, vent, support, bottom weight, wellhead and AJB scope
- Inspection, documentation, witness, destination, Incoterm and delivery date

SEND YOUR PROJECT
DATA

Technical RFQ Review

Upload the BOQ, drawing or client specification. If the design is incomplete, send the available site and groundbed data so the missing inputs can be identified.

[OPEN HSCI RFQ PAGE](#)

This document provides general product and configuration information. Contractual requirements, guaranteed values and acceptance criteria are only those stated in the accepted quotation, purchase order, approved drawings/BOM and ITP. System performance depends on project design, site conditions, installation, commissioning and operation.