CP-DS-MG-WH-001 · REV. A · 2026-08-13

Magnesium Water Heater Anode Rods

Straight and flexible sacrificial anode assemblies for glass- or enamel-lined storage water heaters.

Market-ready configuration families for North American and European OEM interfaces.

EXTRUDED	STRAIGHT	FLEXIBLE

PRODUCT OVERVIEW

Protection through controlled sacrifice.

When correctly selected, installed and electrically connected, the magnesium body preferentially oxidizes and supplies protective current to exposed steel at enamel defects, welds and other wetted areas. The anode is a consumable component and requires periodic inspection and replacement in accordance with the appliance manufacturer's instructions.

DESIGNED AROUND THE TANK

- Net active magnesium mass
- Tank geometry and mounting position
- Water chemistry and temperature
- Electrical continuity and core design
- Pressure-boundary interface and seal

STRAIGHT HEX-HEAD FAMILY
Lengths and body diameters are controlled by released SKU drawing.

FLEXIBLE SEGMENTED FAMILY
Designed for service locations with restricted top clearance.

SYSTEM RESPONSIBILITY

Anode selection and tank protection validation remain the responsibility of the water-heater or storage-tank manufacturer. There is no universal tank-volume-to-anode conversion.

Dimensions and interfaces

International standards do not prescribe one universal water-heater anode diameter, length or connection. The combinations below are catalog reference families; production dimensions and tolerances are governed by the approved drawing.

NORTH AMERICAN FAMILY

Family	Style	Body diameter	Market-reference length	Tank-side connection
NA-S084	Straight / hex	Ø0.840 in (21.3 mm)	9, 16, 32 or 44 in	3/4-14 NPT
NA-S075	Straight / hex	Ø0.750 in (19.1 mm)	44 in typical	3/4-14 NPT
NA-S090	Straight / hex	Ø0.900 in (22.9 mm)	OEM-specific	3/4-14 NPT
NA-F084	Flexible / segmented	Ø0.840 in (21.3 mm)	44 or 48 in reference	3/4-14 NPT
NA-CUSTOM	OEM configuration	Ø0.500-1.050 in reference	Per approved drawing	NPT / outlet nipple

Market-reference dimensions only. OEM fit shall be confirmed by appliance model, tank drawing and connection geometry.

EUROPEAN / INTERNATIONAL FAMILY

Family	Style	Observed market family	Connection
EU-M	Rod with metric stud	Ø18 / 21.3 / 26 / 33 mm reference	M6 or M8 × specified exposed length
EU-G	Plug-mounted rod	Ø21.3 / 26 / 33 mm reference	G3/4, G1 or G1¼ per ISO 228-1
EU-R	Thread-sealing plug	Diameter and length per drawing	R thread per ISO 7-1
EU-F	Flexible / chain	Ø22 or Ø33 mm segment reference	M8 or plug-mounted interface
EU-X	Long extruded rod	Ø21.3 / 26 / 33 mm reference	Socket, stud or extended core wire

CONNECTION DEFINITION

A complete interface callout includes more than nominal thread size.

- Thread standard, size, gender and gauge acceptance
- Hex across flats, plug height and engagement length
- Plug material, coating and sealing method
- Recommended and maximum assembly torque
- Pressure / leak test for complete plug assembly
- Rod-to-cap internal connection and electrical path

Do not interchange 3/4-14 NPT, G 3/4 and R 3/4. The designations use different thread and sealing systems.

DIMENSIONAL RELEASE

For each ordered SKU, confirm body diameter, active magnesium length, installed length from the sealing face, overall assembly length, minimum net magnesium mass, core diameter, thread callout, seal geometry and drawing revision.

Technical core

Published electrochemical properties are valid only with the stated alloy, test method, medium, temperature, duration, current density and reference electrode.

2.5-3.5%
Aluminum range

0.6-1.4%
Zinc range

3.4 mm
Reference steel core

Mg-Al-Zn
Source chemistry family

SOURCE ALLOY CHEMISTRY

Element	Content (mass %)
Al	2.500-3.500%
Zn	0.600-1.400%
Mn	0.200-1.000%
Si	0.100% max.
Fe	0.005% max.
Cu	0.010% max.
Cd	0.040% max.
Ni	0.001% max.
Mg	Remainder

Source chemistry is retained from the existing CathPro water-heater rod specification. Final alloy designation, analysis method and potable-water impurity limits shall be confirmed per released SKU.

CONSTRUCTION CONTROL

Item	Controlled definition
Active body	Extruded magnesium alloy; cast options by released SKU
Internal core	Steel, Ø3.4 mm reference; material/coating per drawing
Electrical path	Continuous from magnesium body to terminal/plug
Straight rod	Core concentricity, straightness and pull-out controlled
Flexible rod	Segment count, cable material, pull and continuity controlled
Mounting	Direct metallic or electrically isolated measurable mounting
Pressure boundary	Plug, seal, torque and leak test defined separately
Traceability	SKU, drawing revision, heat/batch and quantity

STANDARDS AND DECLARATION BOUNDARY

Reference	Permitted use	Boundary
ASTM B843-18(2025)	Cast and extruded magnesium-anode material requirements	Prescriptive material standard; finished dimensions and hot-water performance are not established
EN 12438:2017	Alloy grade, chemistry and specified tests for cast anodes	Does not provide full-product conformity for extruded rods or define threads / dimensions
ISO 26202:2019	Magnesium-alloy ingots and cast anodes	Not a water-heater sizing or connector standard
DIN 4753-3:2025-12	Enamelled drinking-water tank and cathodic-protection system	System design and validation reference; not a standalone anode product certificate
ASME B1.20.1	NPT thread dimensions and gauging	Does not establish plug pressure rating or sealing performance
ISO 228-1 / ISO 7-1	G parallel thread / R-Rp-Rc pipe-thread systems	Exact designation and sealing method shall be stated; interfaces are not interchangeable

CERTIFICATION STATUS

No CE, NSF/ANSI/CAN 61, WRAS, ACS, UBA, AS/NZS 4020 or other potable-water approval is claimed unless the exact released SKU, production facility, contact materials and use conditions are included in a valid supporting certificate or listing.

Specify the complete assembly

A reliable quotation requires the tank, water, interface and verification conditions - not only nominal rod diameter and length.

ORDERING CODE

MA-[REG]-[PROC]-[STYLE]-D[OD]-L[BL]-[CONN]-[MOUNT]-[DWG/REV]

Field	Definition
REG	NA / EU / OEM
PROC	X extruded / C cast
STYLE	S straight / F flexible / P plug assembly
D[OD]	Magnesium-body diameter + unit
L[BL]	Active body length + unit
CONN	NPT / G / R / M6 / M8 / drawing
MOUNT	D direct / I electrically isolated
DWG/REV	Controlled drawing and revision

INFORMATION REQUIRED

- Target country, appliance model and tank volume
- Tank internal geometry and enamelled surface area
- Water conductivity, pH, temperature and chemistry range
- Required alloy and manufacturing process
- Net active magnesium mass or system design basis
- Body diameter, active length and overall installed length
- Core, terminal and electrical-mounting arrangement
- Exact thread designation, gender and tolerance
- Seal geometry, material and assembly torque
- Inspection, CoA, type-test and hygiene-document scope
- Approved drawing number and revision

QUALITY CONTROL AND AVAILABLE RECORDS

Control area	Inspection focus	Typical record
Material	Chemical composition, heat/batch identification and surface condition	CoA / MTC when ordered
Dimensions	Body diameter, lengths, thread gauge, hex geometry and core position	Dimensional inspection record
Assembly	Electrical continuity, connection integrity, pull / torque criteria	Assembly inspection record
Pressure interface	Seal geometry, torque and leak / pressure test where applicable	Test report when specified
Flexible configuration	Segment count, cable joints, minimum clearance and axial pull	Configuration inspection record
Release	Quantity, marking, packing, traceability and document revision	Packing record / Certificate of Conformity

JIAOZUO HUAYU MAGNESIUM INDUSTRY CO., LTD.

Export brand: CathPro
No. 218 Hetang Road, Middle Section of Heshuo Avenue, Wuzhi County, Jiaozuo, Henan, China
Email: sales@cathprocp.com
Phone: +86 188 3900 1234 | WhatsApp: +86 159 7878 1890
Web: www.cathprocp.com

IMPORTANT NOTES

- Anode mass or Ah/kg alone does not establish service life.
- Thread conformity does not establish pressure-tightness of the assembly.
- Replacement interval follows the appliance manufacturer’s instructions.
- Full tank-system validation is required before a protection-life or warranty claim.

CONTROLLED STATUS

This Rev. A Data Sheet is a technical marketing release. Catalog dimensions are nominal reference families. Purchase orders, production and acceptance inspection shall reference the approved SKU drawing, revision and agreed inspection scope.