



# The global leader in cathode manufacturing.

For more than four decades, the EPCM Group has supplied the world's leading copper, nickel, manganese and cobalt producers with the highest-performing new, manufactured cathodes.

Nobody has more permanent cathode experience than we do.

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Our experience in cathode manufacturing has been forged through EPCM's global experience. We have had the opportunity to work closely and extensively with our clients to understand the challenges they face.

### Track Record

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**1,200,000+**  
cathodes manufactured

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**100,000**  
single largest order

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**100,000**  
new cathodes / yearly capacity

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**0**  
empty client cells in 2020

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**Millions**  
\$USD in annual savings

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### Expertise

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**3**  
cathode manufacturing facilities

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**35**  
clients

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**20**  
countries

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**100+**  
highly qualified technicians

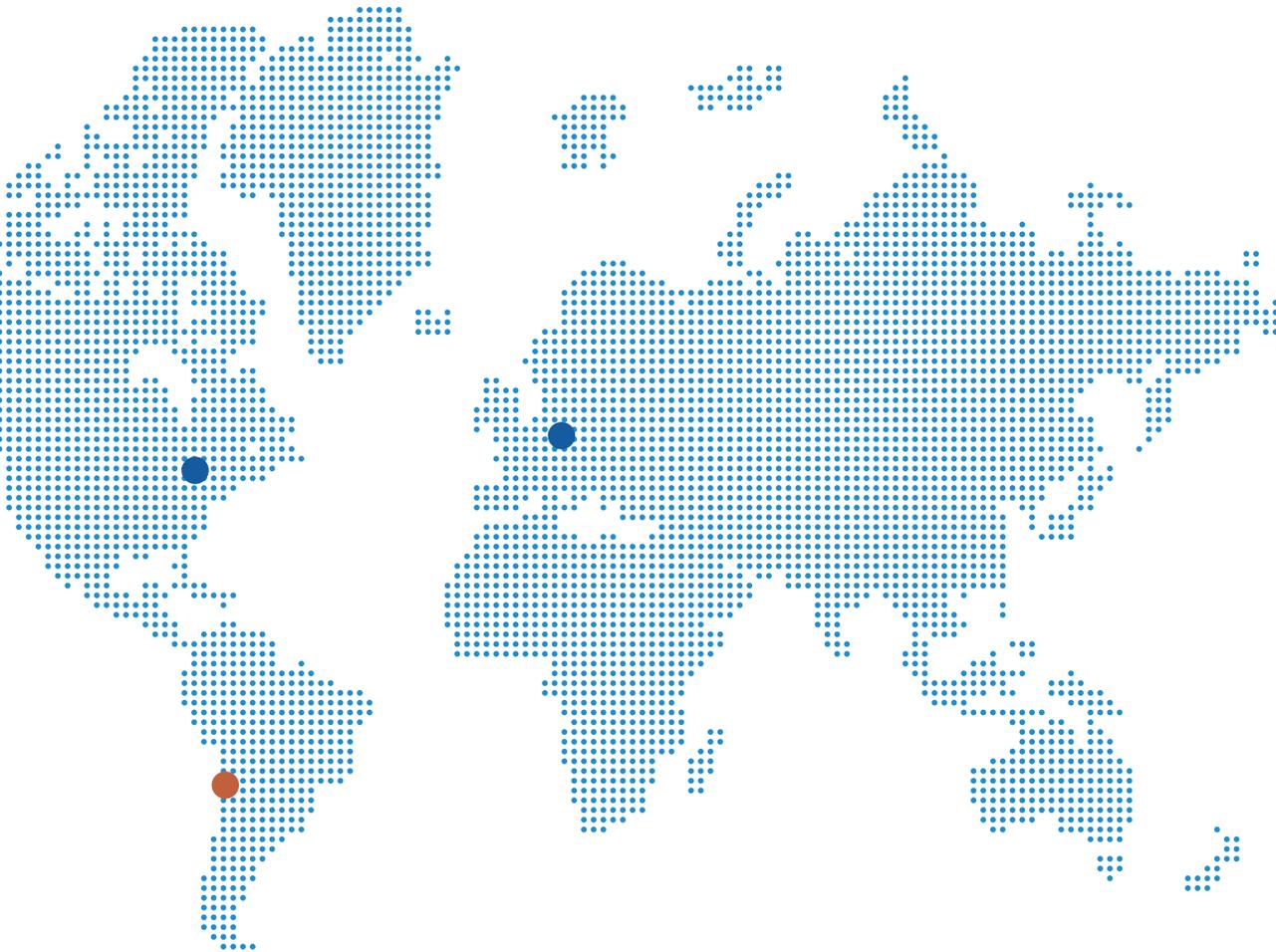
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**30+**  
years in process refinement

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# New cathodes that save money while improving operational results.

Our clients are often surprised to learn that 95% of solid copper header bars can actually last 30+ years.



Headquartered in Canada, EPCM operates globally but supports clients locally through our operations in North America, South America and Europe.

## Around the world

EPCM

**1980**

established

**6k**

monthly capacity

**25**

employees

COBRA

**1998**

established

**10k**

monthly capacity

**450**

employees



We apply decades of experience and insight to select the right materials that help our clients maximize productivity while reducing costs. Not all plants are equal.

We specialize in selecting the right material – so you can keep your operations running at peak effectiveness.



## Our proven approach

### We can make it

We can match your current cathode geometry and performance requirements while including the benefits of our own design.

### Performance, maintainability & cost

Our cathode design choices are based on what's most important to our end users.

### We're ready to help

Sometimes you need cathodes fast. We stock common sizes of raw materials to help provide a quick delivery.

### One size does not fit all

Different tankhouses require different cathodes. We work with you to optimize your design and material selection.

### No job too big – no job too small

We've successfully completed projects ranging from 132,000 cathodes to 100.

### Use the best edgestrips

We have experience with all types of edgestrips. We know which is best for you to minimize life-cycle cost.

## Project summary: Copper refinery client

When deciding on which cathode to purchase, many clients do not consider the product life cycle costs. Below is a summary of savings for a typical copper refinery when comparing a cathode with solid copper hanger bar design to competitors in the market.

### Cathode raw material options:

316L stainless steel  
316+ stainless steel  
EPCM easy strip  
Titanium  
Duplex stainless steel

#### Associated losses

- Improved copper stripping
- Highest end-of-life value on the market
- Lower energy consumption over lifetime
- Higher current efficiency
- Increased copper production
- Uniform plating quality

Issue	Our solutions	Results & savings (per cathode)
Copper bar/ copper weld	Physical electrical connection	<b>Performance</b> 1% increase in electrical performance. \$31.10/year
Repairability	Copper header bar – lasts longer and can be reused	<b>CAPEX savings</b> \$8.00/year
Milled edgestrip	Improved safety, 80% reduction in material handling	<b>OPEX savings</b> \$13.00/year
End of life	Higher residual value	<b>Less scrap</b> \$6.25/year

Total savings per cathode: **\$58.35/year USD**

*An EPCM-made cathode delivers a bigger harvest per cell and a lower cell voltage. The copper-welded cathode ensures a good payback on our investment.*

South African Technical Manager



EPCM has been designing, fabricating and repairing cathodes for global clients for more than 40 years.

We are the go-to experts for restoring nonperforming cathodes – and your tankhouse productivity.

Contact us today to schedule a free onsite assessment of your cathodes.

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*By reusing our 20-year-old copper header bars when replacing the stainless steel sheets, we have dramatically lowered the CAPEX cost. We've achieved \$7.5 million USD in project savings.*

North American Refinery  
Tankhouse Manager

## Global insight. Local presence.

Celebrating 40+ years of global excellence in engineering, procurement and construction management. We deliver single-source life-cycle solutions through EPCM Engineering, EPCM Automation, EPCM Service & Supply, and Tecnologias COBRA. Our customer-first solutions are specifically designed to help our clients achieve and maintain leadership in their industries.



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