

# The global leader in cathode repair.

For more than four decades, the EPCM Group has supplied the world's leading copper, nickel, manganese and cobalt producers with the highest-performing repaired cathodes. Along the way, we've saved clients millions annually.

Nobody knows the cathode repair business like we do.



Our state-of-the-art technology, proven designs and extensive experience ensure exceptional cathode performance. We understand your environment and your business and will recommend the materials and design to best suit your needs.

Track Record	Expertise
600,000 + cathodes repaired in 2023	cathode repair facilities
200,000 sheets of copper stripped in 2023	30 clients
200,000  new cathodes / year capacity	10 countries
empty client cells in 2023	200+ highly qualified technicians

years in process refinement

### Cathode repairs that save money while improving operational results.

Our clients are often shocked to learn that 95% of the 'unrepairable' cathodes we see can actually be repaired to original standards.



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



**EPCM** 

1980

20k monthly capacity

100 employees

COBRA

1998 established

50k monthly capacity

800 employees

































# We apply decades of experience and insight to generate solutions that help our clients maximize productivity while reducing costs.

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



#### Our proven approach

#### Wash – don't buff

New cathodes sheets are damaged by buffing. We minimize damage by using a high-pressure wash system instead and buff only when required.

#### Strip copper in the CSM, not offsite

We support client CSMs around the world. We offer a free two-day, onsite assessment of CSMs.

#### Ensure a flat, rigid sheet

Our sophisticated equipment ensures cathodes meet original specs to optimize performance.

#### Use only the highest-quality edgestrips

With expertise in the full spectrum of edgestrips, we'll recommend which one is best for you to minimize life-cycle cost.

#### Technology agnostic

We have decades of expertise repairing cathodes produced by anyone, anywhere, at any time.

#### Restore 'unrepairable' cathodes

We can successfully repair 95% of the 'unrepairable' cathodes we view at client sites. We repair it once – and we repair it right the first time.

#### Project summary: European refinery client

Poor-quality repairs cost millions of dollars annually in lower current efficiency, poor plating quality and lower CSM throughput. Our repairs at a European refinery saved the client \$2 million USD. And that was just in the first year.

#### **Associated losses**

- · Difficult to strip copper
- Severely damaged or scrapped cathodes and copper
- · Higher-energy consumption
- · Lower current efficiency
- · Less copper production
- · Poor plating quality

Issue	Our solutions	Results & savings (nom. capacity 400 kt/a)
Damaged sheet	Precision mechanical straightening, sheet replacement	Performance 3% increase or 12 kt/a @ 100 \$/t Savings: \$1.2 million/a
Passive surface	Ultra-high pressure- wash, localized buffing	Availability 1% increase or 4 kt/a @ 100 \$/t Savings: \$0.4 million/a
Edgestrip replacement	Machined edgestrip – 5-year minimum life	Tankhouse edgestrip conversion 1% less B-grade copper @ 20 \$/t Savings: \$.4 million/a
Damaged weld	Cathode re-weld, raw material upgrade	Less scrap Repair 'unrepairable' cathodes Savings: \$0.2 – 0.4 million/a

Total Savings: \$2.0 - \$2.4 million

Since we started repairing cathodes with EPCM, we have been able to eliminate the purchase of new cathodes and we have increased profitability by over \$2 million through increased production.

We've been repairing our cathodes exclusively with The EPCM Group for 20 years. Their technology and resulting repairs are unsurpassed by anything else in the market.

South American SX – EW Tankhouse 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.

#### North America

EPCM Service & Supply info@epcm.com

#### South America

EPCM info@epcm.com Tecnologías COBRA info@tecnologiascobra.cl

**Europe, the Middle East, Africa and Asia** EPCM Europe info@epcm.com

By repairing our 20-year-old sheets, we have seen dramatic improvements in plating quality and stripability. EPCM has met all its commitments for us.

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.



