Copper brand registration on the LME

Melanie Wells established Metal Registration Limited in 2007, after working in the London Metal Exchange's Physical Operations Department for fifteen years. She recognised a need in the industry for an independent consultancy, to advise metal producers and refiners on brand registration procedures for global metals exchanges and markets.

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Melanie has helped numerous clients obtain Good Delivery accreditation on the LME, as well as The London Bullion Market Association, The London Platinum & Palladium Market, The Chicago Mercantile Exchange and The Shanghai Futures Exchange. She is also an Individual Member of the LME. Here Melanie sets out the benefits of registering a brand, the qualifying criteria, and the process for registering a Grade A copper cathode brand on the LME:

Obtaining LME brand registration should be seen as taking out a commercial insurance policy. Having a registered brand enables a producer, in times of market oversupply, to deliver any excess cathode into the LME's global network of approved warehouses in exchange for cash. The producer can be secure in the knowledge that it has a buyer of last resort for any surplus production or unsold inventory.

Registration has a distinct commercial benefit too, as brands approved as LME-deliverable tend to attract a premium over non-deliverable brands. LME accreditation also enhances a producer's marketing potential, as fabricators recognise that its cathode quality has passed the LME's stringent brand testing requirements.

Before any copper producer applies for registration, it is important to check that it satisfies the LME's non-technical and technical criteria.

Non-technical criteria

A producer's Grade A cathode must:

- Have been produced for at least 12 months prior to a registration application, and
- Have a minimum annual production of 15,000 metric tonnes.

Technical criteria

A producer must ensure that:

- Electrolytic refined or electro-won SX-EW cathodes comply with the LME's Special Contract Rules for Grade A Copper
- Production conforms chemically to the Grade A Chemical Specification, in accordance with one of three standards: BS EN 1978-1998 (Cu-Cath-1), entitled "Copper and Copper Alloys, Copper Cathodes"; Chinese Standard GB/T 467-2010, entitled "High Purity Copper Cathode (Cu-Cath-1)"; or American Standard ASTM B115-10, entitled "Electrolytic Copper Cathode (Cathode Grade 1)". For details, please visit this link: http://goo.gl/n1lXFD
- Cathode bundles are marked with a unique identifier. Bundles must not exceed four tonnes, be uniform, stable and each must be securely strapped to withstand many handling and transportation events. The LME does not stipulate a minimum piece-weight, meaning that registered cathodes can range from, for example, 40 kg to a maximum of 180 kg. Registered cathodes typically measure 1.0 metre square, though cathodes currently LME-approved range from 0.9 m to 1.3 m square.

Historically, the current Grade A BS EN chemical specification was adopted by the LME almost 30 years ago in 1986, replacing the High Grade Copper Contract that was introduced in 1981. Previously, material was deliverable under its Standard Copper Contract, which had been introduced as long ago as 1898, following the original Copper Contract specification from 1883.

Brand Listing Date	Brand Name	Producer Name
08/06/2005	HR	Pan Pacific Copper Co., Ltd.
07/07/2006	STERLITE T	Vedanta Limited
21/12/2006	ONSAN I	LS-Nikko Copper Inc.
21/12/2006	SUMIKO-S	Sumitomo Metal Mining Co Ltd
21/12/2006	CCCP	Corporacion Nacional del Cobre de Chile
25/04/2007	JCC	Jiangxi Copper Company Ltd.
09/05/2007	BIRLA COPPER II	Hindalco Industries Limited
10/10/2008	DJ-A	Daye Nonferrous Metals Co., Ltd
22/10/2008	SR-P	Pan Pacific Copper Co., Ltd.
22/10/2008	TAMANO-P	Pan Pacific Copper Co., Ltd.
17/12/2008	PSR ISABEL	Philippine Associated Smelting and Refining Corporation
17/12/2008	BCH	Boliden Harjavalta Oy
24/06/2009	PIRDOP	Aurubis Bulgaria AD
24/06/2009	SPENCE	Minera Spence S.A.
15/06/2010	UMMC	JSC Uralelektromed
08/12/2010	JNMC	Jinchuan Group Co., Ltd.
20/07/2011	XGC	YangGu Xiangguang Copper Co Ltd
28/09/2011	PDSS	Freeport-McMoRan Copper & Gold Inc.
19/12/2011	SEPON	Minerals and Metals Group (MMG)
01/06/2012	PD*GO	Freeport-McMoRan Copper & Gold Inc.
07/08/2013	UMMC II	JSC Uralelektromed
21/08/2013	XGC II	YangGu Xiangguang Copper Co Ltd
21/08/2013	PDMI	Freeport-McMoRan Copper & Gold Inc.
08/07/2014	JINXI	Dongying Jinxi Copper Co., Ltd
24/11/2014	CER	Mexicana de Cobre S.A. de C.V.
20/02/2015	CbM-P	Paranapanema S.A.
28/07/2015	TG-JL	Jinlong Copper Co., Ltd
26/08/2015	DJ-B	Daye Nonferrous Metals Co., Ltd
02/12/2015	NORILSK	JSC MMC Norilsk Nickel

Table 1. LME approved Grade A copper cathode brands (2005 - 2015)

Application process

Once both non-technical and technical criteria have been met, LME registration can be applied for. The application process breaks down into three stages:

Stage One - Documentation

Initially, producers are asked to provide an information dossier, which must be submitted via an LME Member Company, giving details of financial, operational and technical aspects of their refinery operations. Once the LME is satisfied with the documentation provided, it will indicate that the producer should proceed to the next stage.

Stage Two - Sample Preparation

The LME requires that producers prepare a total of 1,800 tonnes for testing by three (from a current list of 22) nominated LME-approved fabricators, each receiving three test lots of 200 tonnes. In some cases, the LME may request that lots are randomly tested by one of its accredited samplers and assayers. The application then proceeds to the final testing stage.

Stage Three - Physical Testing

The nominated fabricators undertake separate evaluations on the test lots at their works, in accordance with two benchmarks, Standards BS EN 1978:1998 and BS EN 1977:2013 (Cu-ETP1 (CW003A), entitled "Copper and Copper Alloys" and "Copper Drawing Stock (Wire Rod)" respectively. Upon completion of their tests, the fabricators will submit to the LME detailed reports comprising test data, information on the physical appearance of the cathodes, comments on the testing process and finally, confirmation as to whether the cathodes complied with the minimum requirements.

The LME's Copper Committee, subject to receiving satisfactory test reports from each of the three fabricators, then issues a recommendation to the Executive Committee that the brand is listed. The LME issues a notice to Members, confirming the approval of the producer's brand and that it constitutes 'Good Delivery' against its Copper Grade A Contract, with immediate effect.

From beginning to end, the LME's brand registration procedure can be expected to take anything from nine months up to two years, even longer in some instances. The speed and cost of the application process is determined by a number of factors, including timeliness and completeness of paperwork, commercial terms with fabricators for testing, and preparation and shipment of test lots. Paperwork errors, omissions or substandard quality or bundles of test lots can lead to delay or outright rejection, so getting everything right is crucial.

There are currently 88 brands registered under the LME Grade A Contract, originating in 28 countries. Table 1 lists all Grade A brands registered on the LME over the last ten years, in chronological order.

Given the complexity of each exchange's requirements, producers come to Metal Registration for our extensive knowledge of these processes. Our ability to avoid costly and time-consuming errors and our long-established relationships with all stakeholders enables us to avoid the most common pitfalls. With producers often lacking in-house expertise and resource to draw on, engaging a dedicated consultancy helps to keeps the application process on track.

www.metalreg.com

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Future copper complexes

Presenting to the October 2015 ICSG Meetings, Dr. Gerardo R.F. Alvear F., Technology Manager - Smelting & Refining at Glencore Technology said in future we can expect additional smelting/refining capacity to meet demand via brownfield expansions in many cases. We will also see a return to smelters in integrated operations close to the mine site, concentrators and the sea. Complexity of concentrates will exert additional pressure on current technologies, as they were developed for different feed scenarios. Increasing environmental requirements will trigger the need to continue modernising smelters, with the next natural steps being replacing converting technology with continuous units. There will be increasing automation and process intensity in smelters and refineries. A near future project scenario would be:

- Large custom smelter (350 - 450 ktpy of Cu), continuing most likely to be in China and India with a single smelting unit, and more dedicated small to medium sized smelters to process complex concentrates.
- Oxygen smelting technology like TSL ISASMELT™, Mitsubishi or Outotec Flash.
- Converting: Continuous converting replacing Peirce-Smith Converters
- Full sulphur capture and potential for high sulphur streams processing
- Refinery adjacent to smelter
- Requirement for over 120 MW power (smelter & refinery).

Today's smelter technologies all fall within the range 11,720 ± 1,000 MJ/t Anode copper, a 40 per cent specific energy reduction since 1976.

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The refined copper market

Top 12 producers of refined copper in 3Q15 by country (t)

China	1,979,172
Chile	649,400
Japan	385,177
U.S.A.	283,200
Russia	218,400
India	197,278
DR Congo	193,800
Zambia	177,600
Germany	166,900
South Korea	150,900
Poland	144,000
Mexico/Spain	105,000

Source: WBMS