



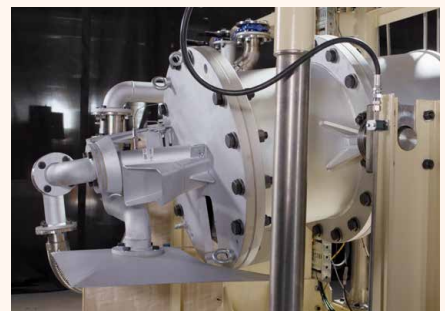
**How to get the most
from your ISASMELT™**

ISASMELT™

ISASMELT™ client services

Glencore Technology provides all ISASMELT™ technology licensees ongoing support to ensure successful operation of the furnace technology. Part of this support includes the offering of exclusive support on an annual/ongoing basis. The support can be extended to cover the entire copper smelting process if required.

Item	Y/N	Time required per annum
Annual Process Review* (site based), can include items like:		
• Review of Energy Efficiency and associated Cost Saving Opportunities		_____
• De-Bottlenecking Study		_____
• Emissions and Fume control		_____
• Furnace Chemistry Optimisation		_____
• Decarbonisation options and recommendations		_____
Annual Operational Review* (site based), can include items like:		
• Tapping Floor Review		_____
• Smelting KPI Assessment		_____
• CRO Refresher Training		_____
• Operator Field-based Refresher Training		_____
• Lance Operation and Control		_____
Annual Mechanical Review* (site based), can include items like:		
• Maintenance Planning Review		_____
• Lance Handling and Repair		_____
• Condition Monitoring		_____
• Equipment and Instrument Upgrades		_____
Ongoing Process/Operations Monitoring and/or Support		
• Daily/Weekly/Monthly		_____
• Remote-Based, with or without Site Visits		_____
• Includes Free Supply of Augmented Reality Glasses at Site		_____
• Only charged for the hours used		_____
Development or optimisation of tools (remote-based):		
• Production Planning Tool		_____
• Aisle Scheduling Tool		_____
• Process Advisor (Spec Change Calculator) Tool		_____
• KPI Calculation Tool		_____
• Launder Assay Correction Tool		_____
• Handheld XRF Correction Tool		_____
ISASMELT™ e-learning modules for operators, examples include:		
• Dip bar operation		_____
• Lance crane operation		_____
• Molten flow sampling and thickness testing		_____
• RHF operations		_____
Feed Evaluation Tool Development/Update/Refresher (MPE)		
• Site-based or remote		_____



Item	Y/N	Time required per annum
Flowsheet Model Development/Update/Refresher (HSC SIM)		
• Site-based or remote		
Metallurgist Training – topics defined by client; examples include:		
• Introduction to Smelting		
• Slag Chemistry		
• Other Copper Smelting Technologies		
• Long Campaigns with Refractory Management		
Maintenance Training – topics defined by client; examples include:		
• Spares Inventory and Rotables		
• Preventative Maintenance		
• Shutdown Planning		
• Project Management Review/Training		
Operator Training – topics defined by client; examples include:		
• CRO refresher training		
• Introduction to Smelting		
• Slag Chemistry		
• KPI Development		
Monthly Online ISASMELT™ Licensee sessions facilitated by GT:		
• Attendance and presentation		
• Attendance only		
Conference Paper Preparation/Assistance/Edit		
Operational/Maintenance/Process Secondment for Project Support		
Test work		
• Crucible-Scale Test Work		
• Pilot Plant Test Work		
• Slag Characterisation Test Work		
• Other:		
Refractory Optimisation Services		
• Brick quality inspection prior to shipment		
• Introductory training for site personnel		
• Supervision of refractory install		
• Refractory management (furnace integrity) during operation		
Major Shutdown and Planning/Rebrick/Restart Assistance, examples include:		
• Document review		
• Planning methodology review		
• Refractory and shutdown training		
• Site-based assistance		
Item	Y/N	Number
Consumables?		
• Cast Swirler Supply (MIM in particular)		
• Swirler Deformation Gauge		
• Front Tapping Block Supply		
• Rear Tapping Block Supply		
• Splash Block Supply		
• Roof Block Supply		
• Furnace Launderers Supply		
• Other:		
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*Can be done in parallel for a cohesive set of deliverables



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