



Company Profile

Metallicon Process Consulting (Pty) Ltd

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Directors: M.M. Valenta, B. Mulcahy

Vision

Metallicon Process Consulting's aim is to be the mineral processing industry's strategic partner of choice where expert metallurgical skills are required.

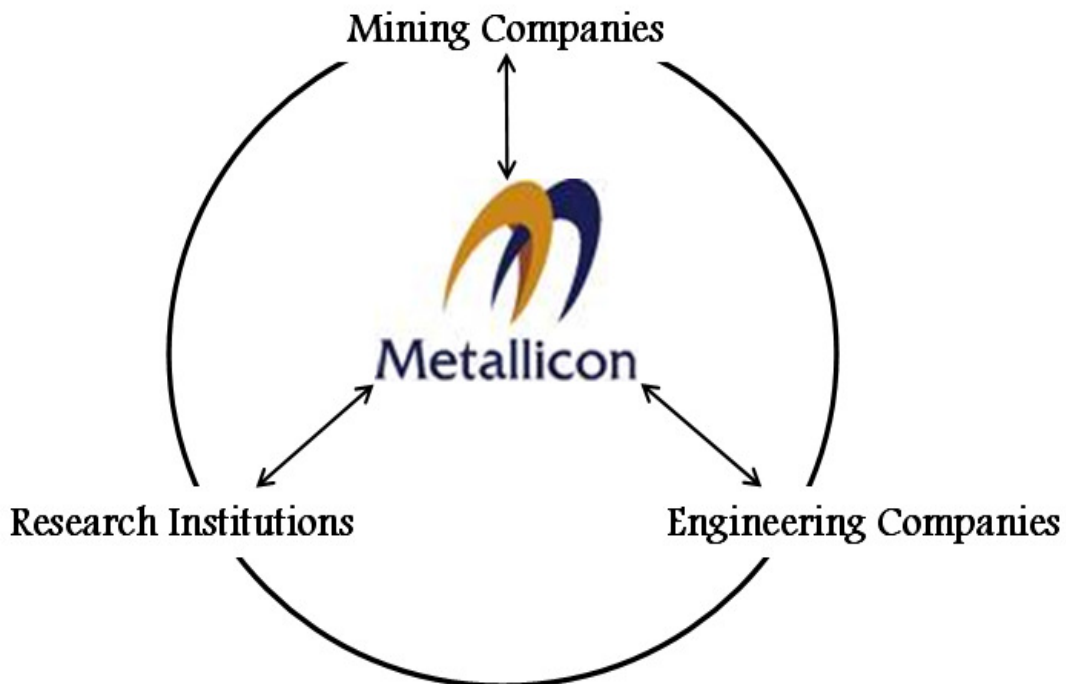
Mission

Metallicon's aim is based on strategic alliances with key role players in the mineral processing industry. Through strategic partnerships, the company aims to:

- ◆ Promote new ventures;
- ◆ Assist mining companies in achieving optimum design and maximum productivity;
- ◆ Support research and engineering companies in test work and process design.

Industry Positioning

Metallicon's intention is to remain totally independent of major firms in order to ensure unbiased and objective support to all players in the mineral processing industry. Strategic partnerships and alliances are formed on the basis that it would benefit all of Metallicon's clients. The company's position within the South African mining industry is illustrated below:



Company Background

Metallicon is a small, highly focused consulting company, established in 2005 by two metallurgical engineers with extensive experience in the mineral processing industry. The company was formed to satisfy a growing need for competent metallurgists in the operations optimisation and process design environment in the South African metallurgical industry. All our senior consultants held senior positions in multinational companies prior to joining Metallicon.

Metallicon initially concentrated on minerals processing projects but has grown to provide services to clients in the hydrometallurgical and pyrometallurgical fields. Initially consisting of two metallurgists the company has since grown to include specialist skills in process engineering and operational management.

The company is committed to the development of young metallurgists, and employs young qualified metallurgical engineers with the objective of training them on projects and on client operations. These graduate metallurgists provide the company with the ability to conduct sampling campaigns and to assist with commissioning of client operations.

Metallicon provides technically superior and advanced metallurgical services to the mineral processing industry. Current and prospective clients include mining companies, process engineering companies and research institutions.

Services

Metallicon's core competencies lie in technical support to the metallurgical industry, from minerals processing to hydro- and pyrometallurgy. In this regard, services available include:

- ◆ Process Design
 - Conducting Concept, Pre-feasibility and Feasibility studies for clients;
 - Management of test programmes;
 - Interpretation of test results and development of design criteria;
 - Process design on projects;
 - Operations planning including labour and project commissioning;
 - Acting as client representatives on projects.
- ◆ Process Optimisation
 - Conducting plant audits;
 - Identifying bottlenecks and problem areas;
 - Developing and managing test programmes;
 - Data mining and interpretation;
 - Designing solutions;
 - Hands-on plant implementation.
- ◆ Due-diligence and Peer Review
 - Conducting due-diligence exercises;
 - Performing a peer review function overseeing projects;

The team at Metallicon has operational and design experience in the fields of:

- ◆ Crushing and screening circuits (platinum group metals, gold, base metals, iron ore, andalusite);
- ◆ Mineral sizer circuits (base metals, coal, uranium);
- ◆ Comminution circuits (platinum group metals, gold, base metals, coal, chrome, uranium, industrial minerals);
- ◆ Dense medium and gravity concentrator plants (iron ore, chrome, coal, andalusite, diamonds, mineral sands);
- ◆ Flotation concentrators (platinum group metals, gold, uranium, base metals, fluorspar, phosphates);
- ◆ Leach circuits (platinum group metals, gold, base metals, uranium);
- ◆ Mineral sands mining, concentrating and beneficiating;
- ◆ Furnaces, converters and associated technologies (platinum group metals, base metals);
- ◆ Refineries (platinum group metals, gold, base metals, uranium).

Safety, Health and Environmental Policy

Metallicon is aligned with the safety, health and Environmental procedures, codes and policies of the government and industry and will ensure that SHE is a primary consideration in all our deliverables to Industry.

Contact Details

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Metallicon Clients and Projects

The following table summarises some of the projects that Metallicon has been involved in.



Clients	Commodity	Projects	Area
Anglo Platinum	PGM	Optimise PGM concentrators and implement "Two Concentrate" process.	RSA, Eastern Limb
	PGM	Development of fine grinding flow sheets and process design criteria.	RSA
	Chrome	Process design for 3 Chrome recovery spiral plants from UG2 tailings.	RSA, Eastern Limb & Western Limb
	PGM	PGM tailing re-treatment process design up to CBE.	RSA, Eastern Limb
Aquarius Platinum	PGM	De-bottlenecking study and process review of a 220 000 tpm PGM and chromite concentrator.	RSA, Western Limb
Ausenco	Chrome	Spiral and DMS plant design reviews.	RSA, Western Limb
Assore – Wonderstone	Pyrophyllite	Pyrophyllite Powder Plant Circuit	RSA, Ottosdal
Barrick Africa	PGM	PGM concentrator test work and process design review.	RSA, Western Limb
Confidential Client	Gold	Managing test programme and conceptual design of a gold refinery.	Mali
Confidential Client	Chrome	Chrome Industry Survey	RSA, Bushveld Complex
Confidential Client	Phosphate	Management of test programme at Mintek including laboratory and pilot plant milling and flotation	Congo
Confidential Client	Confidential	Review and benchmarking of all roll players in precious metal industry for potential investment.	RSA
Discovery Metals	Base Metals	Managing of the pre-feasibility and feasibility studies for a 250 000 tpm base metal concentrator.	Botswana
	Base Metals	Management of metallurgical test programme.	Botswana
	Copper, Nickel	Client representative for bankable feasibility study of a copper concentrator.	Botswana
Eastplats	PGM	Technical support and process optimisation of an 80 000tpm PGM concentrator.	RSA, Western Limb
	PGM	Pre-feasibility study of 150 000 tpm PGM concentrator.	RSA, Western Limb
	PGM	Client's representative on bankable feasibility study of a 180 000 tpm PGM concentrator.	RSA, Eastern Limb
E&PC	Chrome	Process design and equipment selection for a chrome plant.	RSA
First Uranium	Uranium	Competent person report on process plant design.	RSA, North West
	Uranium	Option study and pre-feasibility study on two uranium plants.	
	Uranium	Management of test programme.	
Global Splash	Gold	Gold plant metallurgical consulting.	Mozambique, Zimbabwe
Golden Falls Mining	Diamonds	Design review and optimisation of diamond plant.	RSA, Northern Cape
	Diamonds	Review of diamond plant metallurgical accounting.	RSA, Northern Cape
Graphit Kropfmuhl AG	Graphite	Concentrator optimization Concentrator pre-feasibility	Zimbabwe Mozambique
Green Team International	Copper	Managing test work and pre-feasibility study of copper concentrator.	Namibia
	Copper Cobalt	Owners team on a copper-cobalt concentrator and base metal refinery feasibility and design.	DRC
Hard Creek Nickel	Nickel	Review of historical test work.	Canada
Hernic Ferrochrome	Ferrochrome	Process, SHE and engineering audit on a 300 tph ferrochrome slag jigging plant.	RSA, Western Limb
Impala Platinum	PGM	Process audit and optimisation of PGM concentrator.	RSA, Western Limb
	PGM	Third party design review of a new concentrator.	RSA, Western Limb
K'enyuka Projects	Nickel	Review of Activox plant design and feasibility study.	Botswana
	Copper	Competent Persons Report (NI/43101) for copper concentrator.	Botswana
	Mineral Sands	Test work and feasibility study for heavy minerals concentrator.	RSA, West Coast
Kentz	Gold	Feasibility study of brownfields tailing treatment project for Harmony.	RSA, Mpumalanga
Lonplats	PGM	Monitoring of off-gas treatment plant on smelter.	RSA, Western Limb
	PGM	Commissioning and optimisation of NiSO ₄ circuit on a base metal refinery.	RSA, Western Limb
	PGM	Head of independent peer review for smelter, BMR and PMR expansion.	RSA, Western Limb
	PGM	Consultant on concentrator optimisation.	RSA, Western Limb
	Assay Laboratory	Time and motion study on assay laboratory.	RSA, Western Limb

Clients	Commodity	Projects	Area
Manhattan Corporation	Lead/Zinc	Independent review of lead / zinc concentrator design.	RSA, Northern Cape
	Coal	Investigating coal processing opportunities.	Ethiopia
Matomo Projects	PGM	Flow sheet verification and design checks for reagent facility.	RSA, Western Limb
	PGM	Design checks and commissioning input for a range of installations including pebble crushing, chrome and PGM processing plants.	RSA, Zimbabwe
Metanza	Chrome	Technical support on various Chrome & PGM recovery plants.	RSA
	PGM		RSA
	Vanadium	Conceptual design of vanadium project.	RSA, Eastern Limb
	Ferrochrome	Conceptual design of ferrochrome recovery plant.	RSA, Northern Cape
	Diamonds	Design review of diamond recovery plant.	RSA, Mpumalanga
	Coal	Design review of 200 ktpm metallurgical and thermal coal washing plant	RSA, Mpumalanga
	Coal	Design review of 200 ktpm export coal washing plant	RSA
	Various	Test work support on Rados XRF ore sorter.	RSA
Metorex	Chrome	Independent referee on chrome processing plant.	RSA, Western Limb
Murray and Roberts	Coal	Scoping study on 35Mtpa coal processing plants.	RSA, Limpopo
	Mineral Sands	Optimisation	RSA
Palabora Mining Company	Copper	Order of magnitude estimate for brownfields and greenfields life of mine extension.	RSA, Limpopo
	Copper	Review of historical test work and plant design.	RSA, Limpopo
	Copper	Technical plant audit.	RSA, Limpopo
Pan African Resources	PGM	PGM recovery from chrome plant tailings process design.	RSA, Western Limb
	PGM	Residue dump sampling and management of test work programme.	
Partners in Performance	PGM	Independent concentrator operations audit.	RSA, Western Limb
Platreef Resources – Ivanplats	PGM	Competent Person on Metallurgical Test Work and Design	RSA, Northern Limb
Rockwell Diamonds	Diamonds	Operations audit and optimization Process design of alluvial diamond plant.	RSA, Northern Cape
RSV	Copper	Competent persons report (JSE) on copper concentrator.	Botswana
SRK	Zinc	Due diligence on zinc operations.	Namibia, RSA - Northern Cape
Snowden	Graphite	Process design for a graphite	Mozambique
Standard Bank	Copper	Due diligence on copper project.	Zambia
Swakop Uranium	Uranium	Member of owners team on Husab Uranium project Feasibility Study and Bankable Feasibility Competent Person on metallurgy for NI43-101 reports Member on owners teams for project execution	Namibia
Sylvania Resources	Chrome/PGM	Process design of PGM and Chrome recovery plants from chrome tailings.	RSA
	Chrome/PGM	Technical assistance in commissioning of PGM recovery from chrome tailings plants.	RSA
	Chrome/PGM	Operation and management of PGM and Chrome recovery from chrome tailings plants.	RSA
Tantalus Rare Earths	Rare Earth Elements	Test work scope definition and test work management.	Madagascar
Xstrata Chrome	Chrome	Chrome from UG2 tailings process design criteria and process control review.	RSA, Western Limb
Xstrata Platinum	PGM	Design review on 250 000 tpm PGM concentrator.	RSA, Western Limb
	PGM	Concentrator operation review and optimisation.	RSA, Western Limb
	PGM	Mine and concentrator metallurgical accounting review and optimisation.	RSA, Western Limb
Zincore Metals	Zinc and Lead	Management of process design and metallurgical test work. Issuing of NI 43-101 metallurgical reports Process design Scoping Study and pre-feasibility study	Peru

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