

	SCOPE OF WORK	GENERATION
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Title: Maintenance, Repair, Calibration, Supply of Parts for EMCO Test Hardness Testers Located in Rosherville and Middleburg, On An As and When Required Basis for a Period of 3 Years.

Document Identifier: **240-161246413**

Alternative Reference Number:

Area of Applicability: **GENERATION**

Functional Area: **ENGINEERING**

Revision: **0**

Total Pages: **7**

Next Review Date: **January 2025**

Disclosure Classification: **Controlled Disclosure**

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1. Introduction

The Materials & Plant Integrity (M&PI) Department of the Generation Engineering Business Unit located in Rosherville, is the only metallurgical consulting group in Eskom. The Department is responsible for asset management which is required to provide Eskom with accurate information regarding the remaining life of plant components and solutions to material related problems to prevent/minimise catastrophic failures on both power generating plants and the Eskom grid. In order to provide this service to Eskom a properly functioning materials testing facility and maintained equipment are required to prepare and test metallurgical and mechanical samples.

Over the past few years, a range of laboratory equipment was purchased by RT&D laboratories (subsequently relinked to Generation Engineering), located in Rosherville (ERIC) and Middleburg, from various suppliers who hold agencies of the relevant original equipment manufacturers to provide a metallurgical and mechanical testing service to Eskom. These items are valuable tools critical to the business as they support failure investigations, component condition assessment and materials research.

The equipment used in these facilities is extremely sensitive and expensive, hence it is of paramount importance that qualified technicians and/or engineers calibrate, maintain, and repair the equipment as and when required. This includes the supply of the correct consumables suited for the equipment in question. This document seeks to procure laboratory technical services for the calibration, servicing, repair, and supply of consumables required for the operation of EMCOTEST hardness testers, at Eskom M&PI laboratories.

2. Supporting Clauses

2.1 Scope

2.1.1 Purpose

The purpose of the document is to define the scope of work for the servicing and maintenance of hardness testing machines used at Physical Metallurgy & Structural Integrity Section.

2.1.2 Applicability

This document shall only apply at Physical Metallurgy & Structural Integrity Section of Generation Engineering.

2.1.3 Effective date

This document shall be effective once authorised.

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2.2 Normative/Informative References

Not Applicable

2.2.1 Normative

Not Applicable

2.2.2 Informative

[1]32-1034 Eskom Procurement and Supply Chain Management Procedure

2.3 Definitions

Not applicable

2.4 Abbreviations

Abbreviation	Explanation
HV	Vickers Hardness
HRC	Rockwell C hardness
HB	Brinell hardness
SANAS	South Africa National Accreditation System

2.5 Roles and Responsibilities

Not Applicable

2.6 Process for Monitoring

The effectiveness of scope of work will be monitored through management review, meetings, self-assessments and internal audits.

2.7 Related/Supporting Documents

Not Applicable

3. Scope of work/Supply

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- i) One scheduled maintenance service annually for EMCOTEST hardness testers at the Rosherville metallurgical laboratory.
- ii) The supply of repair kits and parts needed for the above maintenance services and/or breakdowns, and related equipment consumables.
- iii) Annual calibration of the hardness testers as per ISO/SANAS requirements to ensure fully functional systems.
- iv) Troubleshooting

4. Specification of Products or Goods

4.1 Rosherville laboratories

- EMCOTEST M4C Hardness Tester
- EMCOTEST Dura Scan Hardness Tester

4.2 UNIVERSAL HARDNESS TESTER EMCOTEST:

4.2.1 SANAS Calibration of EMCO M4C750 (S/N: 927-11-09) Hardness Tester:

- @ Range HV 10, Low Medium and High
- @ Range HRC, Low Medium and High
- @ Range HBW 2.5 / 62.5 – NON-SANAS CALIBRATION at One Range

4.2.2 Maintenance Service Once A Year:

- Clean Machine (Clean & check mechanical moving parts & re-grease)

4.2.3 Wear & Tear / Replacement Parts:

- Indenter Vickers (Macro)
- Indenter Brinell
- Indenter Rockwell

4.2.4 Certified Hardness Blocks:

- Macro Vickers Low Medium & High HV10
- Brinell Low Medium and High
- Rockwell Low Medium and High

4.3 EMCO TEST DURA SCAN VICKERS HARDNESS TESTER

4.3.1 SANAS Calibration of the Dura scan 70 (S/N: 087) Hardness Tester:

- @ Range HV 10, Low Medium and High
- @ Range HV 1, Low Medium and High
- @ Range HV 0.3, Low Medium and High

4.3.2 Maintenance Service Once A Year

- Clean Machine

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- Clean & Check mechanical moving parts and re-grease
- 4.3.3 Wear & Tear / Replacement Parts:
 - Indenter Vickers (Micro)
 - 2.2.3 Repair of defects

- 4.3.4 Certified Hardness Blocks
 - Micro Vickers Low Medium & High HV1
 - Micro Vickers Low Medium and High HV0.3

4.3 Environmental Services

4.4 Certification

The service providers must be registered with SANAS for hardness testing/metrology.

4.5 Technical Skills

The service providers must:

- have employees or have access to employees with technical or related qualifications and having worked with hardness testing machines.
- include Curriculum Vitae for personnel per services within the company.
- note that where required by legislation, personnel who will render these services shall have valid professional registrations with respective professional bodies.
- note that all required personnel shall be competent with the required qualifications and have the required knowledge, training, and experience specific to the work, service or task.

4.6 Experience (Hardness Testing Machines)

The Service Provider shall provide at least one written reference letter on a customer's company letterhead stating the customer's past experience in dealing with the service provider in relation to and the maintenance, repair and calibration of hardness testers.

The service provider shall also provide an Agency letter from the OEMs of EMCOTEST manufacturer stating that the company holds the local agencies in south Africa for the equipment and consumable brands

5. Acceptance

This document has been seen and accepted by:

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Name	Designation
Mhakamuni Makamu	Senior Advisor
Dr Thobeka Pete	Chief Engineer
Felicia Ramela	Acting Section Manager

6. Revisions

Date	Rev.	Compiler	Remarks
July 2023	0	Mhakamuni Makamu	New document

7. Development Team

The following people were involved in the development of this document:

- Mhakamuni Makamu
- Dr Thobeka Pete
- Felicia Ramela

8. Acknowledgements

- None

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