Deton Engineering – Risk Assessment

Deton Barring Tool

TABLE OF CONTENTS

1. Introduction to the Deton Group of Companies

Deton Engineering (Pty) Ltd., was established in 1973 by Hercules du Preez, the first product being the Hercules Jack for mining applications.

From this date, Deton Engineering has specialised in the production of products with safety and efficiency in mind, especially for applications in the Mining and Industrial industries. The Deton Group is continuously focussed on the monitoring and improvement of production, reduced downtime, improved safety, and the servicing and support of our products which has made Deton a leader in its field.

Within the Deton Group of Companies are the following companies whose processes are incorporated in our Quality Management System –

Deton Engineering (Pty) Ltd. – Deton Engineering manufactures Jacks, Rail Benders, Snatch Blocks, Pulleys, Hercules Jack and related products for the Mining and Industrial markets.

Wearresist SA (Pty) Ltd. – Wearresist manufactures, sells and applies a range of wear-resistant coatings, based upon a resin matrix with a 90% alumina content, targeted at the Mining and Industrial markets.

Ceramic Linings (Pty) Ltd. – Ceramic Linings manufacture and market alumina ceramic tiles for high abrasion, high impact and high temperature applications. The products compliment the Wearresist products and can be used in conjunction in such environments.

Cutlass Products (Pty) Ltd. – Cutlass manufacture and market a range of corrosion and abrasion resistant products, aimed at the general Industrial market.

Densit S.A. (Pty) Ltd. – Densit supplies and applies a range of branded wear-resistant products to the general industrial markets, under license from Densit Norway.

2. Details of Deton Engineering

This Risk Assessment refers to our Alberton based Head Office and Workshops, the details of which are –

6 Barium Street
Alrode Ext. 7
Alberton

P.O. Box 123920
Alrode
1450

Telephone: (011) 908-1922
E-mail: info@deton.co.za

Facsimile: (011) 864-5386
Website: www.deton.co.za

3. Scope of Quality Management System (SABS ISO 9001:2008)

The manufacture and repair of Hercules Jacks, Snatch Blocks, explosive boxes, mining equipment, rail benders, pipe splitters, railway rolling stock and re-railing equipment for mining, agriculture, postal and transport industries, the manufacture of corrosion-coating resins and wear-resistant linings, including the Cutlass range of epoxy products.

4. Risk Assessment Team

As a result of Deton Engineering's commitment to our customers, this Risk Assessment was conducted in order to ensure that all potential health, safety and related hazards are identified, the risks evaluated and controls implemented to ensure that the products are safe and without risk to our customers, as far as is reasonably practicable.

This Risk Assessment was compiled by the following team -

HP du Preez	Chairman
A du Preez	Managing Director
W Germishuizen	Sales & Marketing
I Gasa	Production Foreman
J Downward	Production & Operations
S Barley	Quality & Risk

5. Excerpt from Mine Safety Act (Act 29 of 1996)

Section 21 of the Mine Safety Act states the following -

21.(1) Any person who -

(a) designs, manufactures, repairs, imports or supplies any article for use at a mine must ensure, as far as reasonably practicable -

(i) that the article is safe and without risk to health and safety when used properly and

(ii) that it complies with all requirements in terms of this Act;

21.(2) Any person who bears a duty in terms of sub-section (1) is relieved of that duty to the extent that is reasonable in the circumstances , if -

(a) that person designs, manufactures, repairs, imports or supplies an article for or to another person; and

(b) that person provides a written undertaking to take specified steps sufficient to ensure, as far as reasonably practicable, that the article will be safe and without risk to health and safety when used properly and that it complies with all prescribed requirements

6. Scope of Risk Assessment

The scope of this Risk Assessment is limited to the Deton Engineering Barring Tools and their application in a mining environment.

The objective of this Risk Assessment is to, as far as is reasonably practicable -

- identify all potential health, safety and related risks that the Barring Tool could pose to the end-user
- measure the level of risk of the identified risks
- to recommend controls to alleviate or minimise the risks

The aim of this Risk Assessment is to provide end-users with detailed information that will permit them to use the Barring Tool in a manner that is safe and provide optimal utilisation.

Deton Engineering - Risk Assessment

Product:	Deton Barring Tool	Revision No.:	1	Page 7 of 11
Issue Date:	31 January 2011	Authorised:		

7. Format of Risk Assessment

The Risk Assessments are reflected in tabular format, with the specific aspects listed under the following main headings -

Potential Hazard - what could go wrong?
Consequences & Impact - what could happen if the instance occurred?
Recommendations & Controls - what measures are in place or should be taken?

The aspects are then rated in terms of -

Likelihood (What are the chances of the incident occurring, probability?)

LIKELIHOOD	Index Value	Result
Most likely	5	
Highly likely	4	
Likely	3	
Unlikely	2	
Highly unlikely	1	

Risk (What level of risk/element of danger would this incident expose you to?)

RISK	Index Value	Result
Very high risk	5	
High risk	4	
Medium risk	3	
Low risk	2	
Very low risk	1	

Severity (What could the severity of this incident be in terms of injuries, damage)?

SEVERITY	Index Value	Result
Extremely severe	5	
Quite severe	4	
Severe	3	
Not too severe	2	
Negligible	1	

From the above results, the "Risk Result" is tabulated as follows -

RISK RESULT = **LIKELIHOOD** x **RISK** x **SEVERITY**

7. Format of Risk Assessment (cont.)

The figure obtained (the Risk Result) is then classified as follows -

61 +	High risk requiring immediate corrective action
39 - 60	High risk requiring corrective action (identified in RED)
21 - 40	Substantial risk with corrective action needed
6 - 20	Possible risk, must be brought to people's attention
- 5	Risk tolerable

This is reflected as "RR" on the accompanying Risk Assessment Charts.

Deton Engineering - Risk Assessment

Product:	Deton Barring Tool	Revision No.:	1	Page 9 of 11
Issue Date:	31 January 2011	Authorised:		

8.1 Risk Assessment - Equipment Problems

ITEM	POTENTIAL HAZARD	CONSEQUENCES & IMPACT	RATINGS				RECOMMENDATIONS and CONTROLS
			L	R	S	RR	
1	Components of Barring Tool are damaged or missing	• Damage to Face and people – EFFICIENCY and/or INJURY/ DEATH	3	4	4	48	• Inspect Barring Tool prior to release to production, and again upon receipt from production • Train staff in the inspection of the Barring Tool • Stores to send faulty Barring Tool to Deton for repair
2	Bit cannot be removed	• Damage to Face, Barring Tool and people – EFFICIENCY and/or INJURY	3	3	3	27	• Staff to check Bit can be removed from Barring Tool as part of daily inspection prior to use • Train staff in the inspection of the Barring Tool • Stores to send faulty Barring Tool to Deton for repair
3	Percussion Head damaged	• Damage to Face, Barring Tool and people – EFFICIENCY and/or INJURY	2	3	3	18	• Staff to flush and clean Barring Tool following use • Staff to alert Supervision of faulty Barring Tool • Stores to send faulty Barring Tool to Deton for repair
4	Aluminium pipe is damaged or of incorrect length	• Damage to Face, Barring Tool and people – EFFICIENCY and/or INJURY	3	3	3	27	• Pipe to replaced with new component or component of correct length • Damaged pipe to be returned to

Deton Engineering - Risk Assessment

ITEM	POTENTIAL HAZARD	CONSEQUENCES & IMPACT	RATINGS				RECOMMENDATIONS and CONTROLS
			L	R	S	RR	
							Stores • Staff to inspect Barring Tool prior to use
5	Air Line Connector damaged/ missing	• Damage to Face, Barring Tool and people – EFFICIENCY and/or INJURY	3	3	3	27	• Items to be replaced/repaired prior to release for use • Staff to inspect Barring Tool prior to use
6	Valve damaged/missing	• Damage to Face, Barring Tool and people – EFFICIENCY and/or INJURY	3	3	3	27	• Items to be replaced/repaired prior to release for use • Staff to inspect Barring Tool prior to use

8.2 Risk Assessment – Operating Errors/Human Factors

ITEM	POTENTIAL HAZARD	CONSEQUENCES & IMPACT	RATINGS				RECOMMENDATIONS and CONTROLS
			L	R	S	RR	
1	Operation of Barring Tool by untrained/unauthorised personnel	• Damage to Face, Barring Tool and people – EFFICIENCY and/or INJURY/DEATH	3	4	4	48	• Ensure that access to Barring Tool is controlled to prevent unauthorised use • Only permit trained operators to operate Barring Tool
2	Incorrect or dangerous methods of using the Barring Tool	• Damage to Face, Barring Tool and people – EFFICIENCY and/or INJURY/DEATH	2	4	4	32	• Monitor use of Barring Tool to ensure operator is using tool correctly • Only permit trained users to operate Barring Tool

Deton Engineering - Risk Assessment

Product:	Deton Barring Tool	Revision No.:	1	Page 11 of 11
Issue Date:	31 January 2011	Authorised:		

ITEM	POTENTIAL HAZARD	CONSEQUENCES & IMPACT	RATINGS				RECOMMENDATIONS and CONTROLS
			L	R	S	RR	
3	Nil/poor preparation of Face & Roof prior to Barring	• Damage to Face, Roof, equipment and people – EFFICIENCY and/or INJURY/DEATH	1	4	4	16	• Ensure all Mine Regulations and Standards are complied to prior to use of Barring Tool • Supervised use of Barring Tool by trained operators
4	Barring Tool not inspected as per required Daily Inspections	• Damage to Face, Barring Tool and people – EFFICIENCY and/or INJURY/DEATH	2	4	4	32	• Ensure Barring Tool is inspected prior to use daily (check Bit, check Fittings, check Guards, check oil) • Ensure Barring Tool is cleaned following use • Ensure problems with Barring Tool are reported to Supervision, and tool segregated pending repair • Only permit trained operators to operate Barring Tool
5	Air Line faulty	• Damage to Face, Barring Tool and people – EFFICIENCY and/or INJURY/DEATH	3	4	4	48	• Check hose and connections prior to commencing of barring • Check hose is secured, and proper fittings used • Only permit trained operators to use Barring Tool