A2 Risk assessment for the handling of armourstone at quarries or on site

The quarry operator, supplier and contractor should enforce stringent health and safety procedures applicable to the legislative instruments in the country in question. Handling and testing armourstone is a hazardous activity, due to the huge masses and heavy machinery involved. Appropriate risk assessment should be carried out.

This appendix includes a typical template for risk assessment and an example of a completed risk assessment. The example given is for loading armourstone onto a barge at the quarry's jetty loading facility. Hazard likelihood and severity of consequences are itemised and scored. The product of the hazard likelihood and associated consequence is the risk score associated with each hazard. Hazard mitigation controls are then assigned. New risk scores can then be quantified in the light of the controls to be implemented.

Risk assessments should be carried out for the separate activities identified as potentially hazardous. These activities could include for example, performing mass distribution tests and block integrity tests. The risk assessment process should be overseen by the person responsible for health and safety.

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RISK ASSESSMENT

Quarry/depot/site: _____ By whom: _____ Assisted by: _____

Location: _____ Activity: _____

Ref. No: _____

Assessment date: _____ Next review due: _____

Who might be harmed? Employees Nos. ☐ Contractors Nos. ☐ Visitors Nos. ☐ Young persons Nos. ☐ Public Nos. ☐ Others Nos. ☐

Ratings before existing controls implemented												Ratings after existing controls implemented
Hazard likelihood	5 Likely – 4 Probable – 3 Possible – 2 Remote – 1 Unlikely											Hazard likelihood
Severity consequences	Environment	5 Outside site		4 Whole site		3 Part of site		2 Immediate locality		1 Not significant		Severity consequences
	Healthy & Safety	5 Fatality		4 Major injury		3 Minor injury		2 First aid		1 No injury		
Risk score	25–16 First priority (immediate)		16–12 Second priority (3 months)		12–8 Third priority (1 year)		8–0 To be reviewed					Risk score
Haz. No.	List Hazards, then Risks				Control effectiveness: H – High, M – Medium, L – Low, A – Automatic system Existing Controls							

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Hazard No.	List risks not controlled adequately and what will be done	When (date)	By whom	Job card no.

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RISK ASSESSMENT

Quarry/depot/site: Glensanda **By whom:** Jon Derham **Assisted by:** Donald MacCallum

Location: Quarry 2 **Activity:** Loading armourstone on to barge at barge jetty

Ref. No: GL/RA/SG/SL032

Assessment date: 07/02/2005 **Next review due:** As per Q-Pulse

Who might be harmed?	Employees	Nos.	Contractors	Nos.	Visitors	Nos.	Young persons	Nos.	Public	Nos.	Others	Nos.
		6		0		0		0		0		0

Ratings before existing controls implemented											Ratings after existing controls implemented			
Hazard likelihood				5 Likely – 4 Probable – 3 Possible – 2 Remote – 1 Unlikely							Hazard likelihood			
	Severity consequences			Environment	5 Outside site	4 Whole site	3 Part of site	2 Immediate locality	1 Not significant		Severity consequences			
				Healthy & Safety	5 Fatality	4 Major injury	3 Minor injury	2 First aid	1 No injury					
		Risk score		25–16 First priority (immediate)		16–12 Second priority (3 months)		12–8 Third priority (1 year)		8–0 To be reviewed		Risk score		
			Haz. No.	List Hazards, then Risks				Control effectiveness: H – High, M – Medium, L – Low, A – Automatic system Existing Controls						
5	3	15	1	Stone on roadways/pedestrian trips, vehicle accident				Stone removed from working areas before and after operation			H	6	3	2
3	5	15	2	Loader operation/loader colliding with personnel and vehicles				Close road and post sentries to warn and exclude traffic			H	5	5	1
3	5	15	3	Restricted visibility from loader/loader colliding with pedestrian or vehicle				Close road and post sentries to warn and exclude traffic			H	5	5	1
5	3	15	4	Stone falling from loading shovel/stone hitting persons, stone creating hazard on roadway				Stone removed from working area after operation			M	6	3	2
5	3	15	5	Unnecessary traffic and personnel in area/increased risk of collision				Close road and post sentries to warn and exclude traffic			H	3	3	1
3	5	15	6	Road traffic/sentries hit by vehicles				Sentries wear hi viz and park Land Rovers in road			H	5	5	1
3	2	6	7	Loader reversing into parking area/colliding with parked vehicles				Ensure parking area sufficiently clear before starting operation			H	2	2	1
3	5	15	8	Personnel disembarking from personnel boats/personnel in path of loading shovel				Sentry to warn new arrivals on site of loader operation and control traffic			M	5	5	1
2	5	10	9	Weight of loader and cargo/loader capsizing barge				Barge crew member to direct loading operation			H	5	5	1
3	5	15	10	Restricted space on barge deck/unnecessary crew on deck crushed by loader				Only one crew member needed on deck to direct loading			M	10	5	2
3	5	15	11	Tide levels/high or low tide could make operation more dangerous				Postpone operation if necessary			M	3	1	3
3	5	15	12	Poor weather conditions, poor visibility/increased likelihood of collision				Postpone operation if necessary			M	3	1	3
				Environmental										
				No environment hazards identified										
				See page 2 for alternative considerations										
				See GL/SG216 for related procedure										

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Hazard No.	List risks not controlled adequately and what will be done	When (date)	By whom	Job card no.
All	Consider alternative of loading barge at armourstone jetty. This will reduce hazard of moving stone along roadways, but there will be increased hazard of loading and operating a second machine on barge deck.			
	Consider storing armourstone ready at the barge jetty if required for loading onto barge. However this will be an additional hazard if stored there for any length of time			