

TYPE	Excavator - Large (20 Tonne +)
MAKE	Doosan
MODEL	DX225LC
PRICING GROUP NUMBER	339B
Report Number	15313 20190621-0949
Date	21-Jun-2019
Created By	Nic Mclennan
Assessor	Nic Mclennan
Assist. Assessor(s)	
Completed By	Nic Mclennan
Owner	AB Equipment Limited
Assessment Purpose	Hire
State	NZ



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SECTION 1 IMPORTANT INFORMATION

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This report pertains to this item of plant as it appeared on the day of inspection.

It is the responsibility of the hirer to conform with the instructions and information contained within this report. Any change in condition of this item of plant should be reported to the hire company immediately.

Any information relating to the standard features have been supplied via the manufacturer and should be used as a guide only until verified.

For further information regarding this report contact Online Safety Systems on 1300 72 88 52

SECTION 2 MACHINE DETAILS

MACHINE DETAILS		
- NOISE TEST RESULTS	1. Manufacturers specified noise level dBA	103dBA
	2. Ambient noise level dBA	
	3. Noise level - Operator position (high idle) dBA	73dBA
	4. Noise level - Operator position (low idle) dBA	
	5. Noise level LHS dBA @ m (high idle)	
	6. Noise level Front dBA @ m (high idle)	
	7. Noise level RHS dBA @ m (high idle)	
	8. Noise level Rear dBA @ m (high idle)	
BUCKET CAPACITIES	Standard bucket capacity, SAE rated (m3)	1.08
	Standard bucket width (mm)	1370
DIMENSIONS/WEIGHTS	Fuel Tank Capacity (Litres)	400
	Dig depth to cut 2.44 m level bottom (mm)	
	Digging depth (mm)	6670
	Dump height (mm)	7955
	Ground clearance (mm)	480
	Max depth of vertical wall (mm)	5350
	Operating weight (kg)	21,500
	Tailswing radius (mm)	2750
	Transport height (mm)	3005
ENGINE	Transport length (mm)	9485
	Width (mm)	2990
	Engine Displacement (Litres)	5890cc
	Engine Hours	
	Engine Make & Model	Doosan DL06
	Engine Number	
EXTRAS	Engine Power (kW@rpm)	116kW@1900rpm
	Number of Cylinders	6
HITCH	Spare spool for attachments? Yes/No	
	Quick Hitch Make	Geith
	Quick Hitch Model	QC80H1G3
HYDRAULICS	Quick Hitch Serial No.	
	Flow of main pumps (L/Min)	2x206.5
	Hydraulic Oil Reservoir Capacity (Litres)	330
	Pump Types	2 Variable displacement axial piston pumps
PLANT CLASSIFICATIONS	Relief valve pressure, main pumps (Bar)	343
	Class	Excavator
SAFETY STRUCTURES	Year	
	FOPS Compliance No.	ISO 10262 : 1998 (Level II) and SAE J1356
	FOPS Serial No.	
	ROPS Compliance No.	ISO 12117-2:2008
	ROPS Serial No.	

TRACKS	Track length on ground (mm)	3650
	Track pad width (mm)	600
TRANSMISSION	Speed (km/h)	5.5/ 3
WORK CAPABILITIES	Arm breakout (kgf)	12300
	Bucket breakout (kgf)	15200
	Gradeability - Degrees/(%)	70%
	Reach @ ground level (mm)	9630
EXTRAS	Air Conditioning	
	Bucket - 600mm	Trench Bucket
	Bucket - Tilt	

SECTION 3 RISK ANALYSIS / RISK EVALUATION

RISK ANALYSIS		CONSEQUENCE				
		1. INSIGNIFICANT Dealt with by in house first aid	2. MINOR Treated by medical professionals, hospital out patients	3. MODERATE Significant non permanent injury overnight hospital stay	4. MAJOR Extensive permanent injury eg. Loss of fingers, extended hospital stay	5. CATASTROPHIC Death, permanent disabling injury eg. Loss of hand, quadriplegia
LIKELIHOOD	A. Almost certain to occur in most circumstances	MEDIUM 8	HIGH 16	HIGH 18	CRITICAL 23	CRITICAL 25
	B. Likely to occur frequently	MEDIUM 7	MEDIUM 10	HIGH 17	HIGH 20	CRITICAL 24
	C. Possibly and likely to occur at sometime	LOW 3	MEDIUM 9	MEDIUM 12	HIGH 19	HIGH 22
	D. Unlikely to occur but could happen	LOW 2	LOW 5	MEDIUM 11	MEDIUM 14	HIGH 21
	E. May occur but only in rare circumstances	LOW 1	LOW 4	LOW 6	MEDIUM 13	MEDIUM 15

RISK EVALUATION	CRITICAL	Act immediately to mitigate risk. Implement risk treatment(s) in accordance with the risk treatment table below.
	HIGH	Act immediately to mitigate risk. Implement risk treatment(s) in accordance with the risk treatment table below. If the appropriate risk treatments are not immediately accessible establish interim risk treatment strategies. Permanent risk treatments must be implemented within one week.
	MEDIUM	Take reasonable steps to mitigate and monitor the risk. Implement risk treatment(s) in accordance with the risk treatment table below. Permanent risk treatments must be implemented within one month.
	LOW	Take reasonable steps to mitigate and monitor the risk. Implement risk treatment(s) in accordance with the risk treatment table below. Permanent risk treatments must be implemented within three months.

RISK TREATMENT	Selecting the most appropriate risk treatment option involves balancing the costs and efforts of implementation against the benefits derived, with regard to legal, regulatory and other requirements. <small>(source AS/NZS ISO 31000:2009)</small>	
	Eliminate	Eliminate the risk source.
	Substitute	Provide an alternative that is capable of performing the same task which is safer.
	Engineering	Provide or construct a physical barrier or guard.
	Administration	Develop policies, procedures, practices and guidelines in consultation with employees to mitigate the risk. Provide training, instruction and supervision about the risk source.
	Personal protective	Provide personal protective equipment to protect the individual from the risk source.





SECTION 4 RISK TREATMENTS REQUIRED








This section of the report pertains to hazards created by use of this item of plant which currently do not have risk treatments in place. The risk treatments recommended in this section have been developed based on relevant Australian Standards, health & safety legislation, the hierarchy of risk treatment in accordance with the guidelines set forth in AS/NZS ISO 31000 – Risk Management and various other sources. The recommended risk treatment measures must be developed, implemented and validated as effective prior to the operation, maintenance or testing of this item of plant. Treatments applied must be dated and initialled adjacent the recommendations. All operators must read and understand the entire contents of this section prior to operating this item of plant.






HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating	Time Frame	Due Date	Date Rectified	Initial
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SECTION 5 RISK TREATMENTS IN PLACE







This section of the report pertains to risk treatments currently in place on this item of plant. This section must be read in conjunction with the safety section of the manufacturers handbook. All operators must read and understand the entire contents of this section prior to operating this item of plant. These treatments or equivalent must remain in place at all times whilst this item of plant is in operation.








	HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
DELIVERY	 CRUSHING	HIGH 22	MEDIUM 15
	<p>Risk Treatments in Place: SWMS Loading/Unloading Ensure that all operators follow approved SWMS/SOP when loading and unloading this machine to and from a flat top truck or trailer, low loader or tilt tray.</p> <p>References: Work Health & Safety Act & Regulations-</p>		
OPERATION	 CRUSHING	HIGH 22	MEDIUM 15
	<p>Risk Treatments in Place: SWMS Load Restraint Ensure that all operators follow the approved SWMS/SOP when restraining this machine for transport.</p> <p>References: Work Health & Safety Act & Regulations-</p>		
	 INCORRECT OPERATION	CRITICAL 24	MEDIUM 15
<p>Risk Treatments in Place: Operator Competency Only persons who are qualified, trained and experienced and/or hold the relevant certification/license can operate this item of plant. If there is not a competent/licensed person available for operation of this item of plant then only persons who are supervised by a competent/licensed person can operate this item of plant.</p> <p>References: Work Health & Safety Act & Regulations-</p>			
OPERATION	 INCORRECT OPERATION	HIGH 22	MEDIUM 15
	<p>Risk Treatments in Place: Operation Handbook The manufacturer's operation handbook has been supplied for this item of plant.</p> <p>This handbook must be available at all times to all potential operators and supervisory staff. All potential operators must read and be familiar with this handbook prior to operating.</p> <p>A complete risk assessment/Job Safety Analysis must be undertaken covering all operating processes and environments associated with this item of plant. SWMS should be produced for specific tasks associated with use of this item of plant.</p>		







HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
 INCORRECT OPERATION	HIGH 22	MEDIUM 15
Risk Treatments in Place: Pre-op Checklist Excavator A pre-operation checklist is available for this Excavator. This checklist must be completed by all operators prior to operating this Excavator.		
References: Work Health & Safety Act & Regulations-		
 INCORRECT OPERATION	HIGH 22	MEDIUM 15
Risk Treatments in Place: SOP Excavator Safe Operation Procedures are available for this Excavator. The information in the Safe Operation Procedures must be followed at all times whilst operating this Excavator.		
References: Work Health & Safety Act & Regulations-		
 INCORRECT OPERATION	HIGH 22	MEDIUM 15
Risk Treatments in Place: Control Labels All controls including all levers, buttons, pedals, switches etc. are clearly labelled as to their purpose and method of operation. These labels must be maintained in a clean and serviceable condition at all times.		
References: AS/NZS4024.1905		
 CRUSHING	HIGH 22	MEDIUM 15
Risk Treatments in Place: Quick Hitch - Semi Auto This item of plant is fitted with a semi automatic hydraulic (quick) hitch which is fitted with a mechanical safety system.		
Hydraulic locking devices MUST not be relied upon as the only source of retention for attachments. Ensure that the mechanical safety system backing-up the hydraulic locking device is present and engaged at all times whilst this item of plant is in operation.		
If at any time this pin is not present then operation must cease until it is replaced.		
References: AS4772		
 POISONING, EXPLOSION, BURNS	HIGH 22	MEDIUM 15
Risk Treatments in Place: Tank ID Label The tank(s) on this item of plant have clear, legible label(s) identifying their contents, and if appropriate any necessary controls re: the contents. These must be present, clear and legible at all times. (this includes radiator, hydraulic and petrol/diesel tanks)		
References: Work Health & Safety Act & Regulations-		
 INCORRECT OPERATION, CRUSHING	HIGH 22	HIGH 21
Risk Treatments in Place: Boom Rated Capacity Label This item of plant has a rated capacity label fitted to each side of the boom. Ensure that these labels are clear and legible at all times whilst this item of plant is in operation. Operators must not exceed this rated capacity at any time during operation.		
References: AS1418.8		
 FIRE	HIGH 21	MEDIUM 15
Risk Treatments in Place: Fire Extinguisher This item of plant is fitted with an approved and maintained fire extinguisher. Fire extinguisher(s) must be present and fully functional at all times. They must be readily accessible to the operator. Regular inspections must also be carried out in accordance with the manufacturer's requirements and AS 1851 – 1995		







HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
 INCORRECT OPERATION, CRUSHING	HIGH 21	MEDIUM 15
<p>Risk Treatments in Place: Quick Hitch Information This hydraulic quick hitch has the following information marked upon it -</p> <ol style="list-style-type: none"> 1. A unique identification mark (serial number) 2. The manufacturer's name and model clearly and durably marked upon it 3. The maximum rated capacity clearly and durably marked upon it 4. The mass of the hitch clearly and durably marked upon it 5. The lift point capacity (kg) clearly and durably marked upon it <p>This information must be considered by all operators when assessing the suitability of the hitch for any task. Failure to consider and or comply with this information could lead to serious injury or death.</p> <p>References: AS4772</p>		
 COLLISION, STRIKING, CRUSHING	HIGH 19	MEDIUM 14
<p>Risk Treatments in Place: Tail Swing Label The rear of this item of plant has a hazard warning label re: general plant movement, tail swing, keep clear. It must be present and fully functional and serviceable at all times.</p> <p>References: ISO20474-</p>		
 CRUSHING	MEDIUM 15	MEDIUM 15
<p>Risk Treatments in Place: ROPS Label The warning label stating that the ROPS must not be damaged at any time (including cuts, drill holes and welds) must be present, clean and legible at all times.</p> <p>References: ISO3471</p>		
 BURNS, ENTANGLEMENT, SHEARING	MEDIUM 14	MEDIUM 13
<p>Risk Treatments in Place: Engine Guard Label The engine fan and alternator belts, pulleys and gears are guarded. These guards have clear legible hazard warning labels re do not open or remove guards while engine is running. These labels must be present, legible and easily seen at all times whilst this item of plant is in operation.</p> <p>References: AS1319- , AS/NZS4024.1201</p>		
 COLLISION, CRUSHING	MEDIUM 12	LOW 6
<p>Risk Treatments in Place: Warning Device (horn) This item of plant is fitted with a fully functional audible warning device such as a horn. This must be easily accessed by the operator, and easily identifiable by nearby pedestrians.</p> <p>All operators should ensure the warning devices are functional at the start of each shift, by completing pre-start checklists. Warning devices should operate automatically where appropriate (eg reversing)</p> <p>References: ISO7731, ISO9533</p>		







HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
 CRUSHING	CRITICAL 24	LOW 1
<p>Risk Treatments in Place: Closed Eye Lifting Point The lifting point fitted to this item of plant is the closed eye type. Hooks with or without latching devices must not be used as a lifting point at any time.</p> <p>References: AS1418.8</p>		
 STRIKING, BURNS	HIGH 22	MEDIUM 15
<p>Risk Treatments in Place: Hydraulic Hoses This item of plant has hydraulic hoses. These hoses must be inspected each day or before each use for wear and tear. If there are visible signs of wear immediate action must be taken to control the risk arising from this wear. These inspections must be documented.</p> <p>Hydraulic fluid at high pressure can penetrate the skin, never use any part of your body to check for leaks. If oil penetrates the skin seek medical advice immediately. Always use a piece of cardboard or similar to check for suspected leaks.</p> <p>Hydraulic pressure can be stored and is a hazard. Before disconnection or connection of hydraulic hoses complete the following steps -</p> <ol style="list-style-type: none"> 1. Stop engine 2. Keep all bystanders clear of the work area 3. Refer to operators manual as to methods to release pressure 4. Wait 5 minutes <p>References: AS2671, AS4024</p>		
 CRUSHING, NON COMPLIANCE	HIGH 22	MEDIUM 15
<p>Risk Treatments in Place: Control Lock out The primary operator controls are fitted with an isolation device which meets the following requirements -</p> <ol style="list-style-type: none"> a) Must be engaged to allow entry & exit of the machine b) Is not easily bypassed. <p>This device deactivates the primary operator controls. This must be employed during entry, exit and while performing maintenance on this item of plant. This device must be fully functional at all times whilst this item of plant is in operation.</p> <p>References: ISO10968</p>		
 STRIKING, ENTANGLEMENT, COLLISION, CRUSHING	HIGH 22	MEDIUM 15
<p>Risk Treatments in Place: Neutral Start This item of plant has neutral start control in place. It must be fully functional and serviceable at all times whilst this item of plant is in operation.</p> <p>References: AS4024.1603</p>		
 CRUSHING	HIGH 22	MEDIUM 15
<p>Risk Treatments in Place: Quick Hitch Controls The quick hitch operation control fitted with a device/method to prevent accidental operation. This device must be fully functional at all times whilst this item of plant is in operation.</p> <p>References: AS/NZS4024.1906, AS4772</p>		
 CRUSHING	HIGH 22	MEDIUM 15
<p>Risk Treatments in Place: Seat Belt This item of plant is fitted with an operator seat belt. This seat belt must be free from damage, and permanently and sturdily attached at all times whilst this item of plant is in operation. Operators must use this seat belt at all times during operation.</p> <p>References: ISO6683</p>		



HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
 CRUSHING	HIGH 22	MEDIUM 15
<p>Risk Treatments in Place: Seat Belt The operator seat belt fitted to this item of plant must be fully functional and serviceable at all times. (N.B. It must not be attached to the ROPS). Operator seat belts must be worn at all times whilst this item of plant is in operation.</p> <p>References: ISO6683</p>		
 CRUSHING	HIGH 22	MEDIUM 15
<p>Risk Treatments in Place: Quick Hitch Operation Alarm This item of plant is fitted with a quick hitch with a fully functional audible alarm fitted to the operator work area to alert the operator that the host machine is in the mode that allows for the controls to be operated to engage or disengage attachments.</p> <p>This alarm must be fully functional at all times whilst this item of plant is in operation.</p> <p>References: AS4772, ISO7731</p>		
 CRUSHING	HIGH 22	MEDIUM 15
<p>Risk Treatments in Place: Movement Awareness Alarm An automatic movement awareness alarm is fitted to this item of plant. This alarm is automatically activated when travel in any direction occurs. It must be fully functional and serviceable at all times whilst this item of plant is in operation.</p> <p>References: ISO7731, ISO9533</p>		
 CRUSHING	HIGH 22	MEDIUM 15
<p>Risk Treatments in Place: Quick Hitch - Fully Automatic This item of plant is fitted with a fully automatic hydraulic (quick) hitch (i.e. has hydraulically operated latch as primary retention device and remotely controlled safety device as back up) between the excavator arm and attachments.</p> <p>This safety device must meet all of the following criteria at all times prior and during operation -</p> <ol style="list-style-type: none"> 1. Is a mechanical device i.e. not just an indicating system/device 2. Must be intentionally disengaged to remove attachments 3. Is not the primary source of retention of attachments 4. Has means of verifying engagement of the primary retention device from the operator position and 5. Has means of verifying engagement of safety system from operator position <p>If any of these criteria are not met at any time then operation must cease.</p> <p>References: AS4772</p>		
 COLLISION, POOR VISIBILITY	HIGH 22	MEDIUM 15
<p>Risk Treatments in Place: Machine Lights This item of plant is fitted with self contained lighting. All of these lights must be fully functional and serviceable whilst this item of plant is in operation in areas of reduced light. If any of these lights stop working the operation must cease immediately and the faulty light be repaired before operation can continue in the areas of reduced light.</p> <p>References: ISO20474-</p>		
 ENTANGLEMENT	HIGH 22	MEDIUM 15
<p>Risk Treatments in Place: Engine Guards The engine fan and alternator belts, pulleys and gears are guarded. These guards must be present and fully functional and serviceable at all times whilst this item of plant is in operation.</p> <p>References: AS/NZS4024.1601</p>		

HAZARD(S)		Prelim. Risk Rating	Residual Risk Rating
	INSTABILITY, TIP OVER, CRUSHING	HIGH 22	MEDIUM 15
<p>Risk Treatments in Place: Levelness Device This item of plant is fitted with a level indicator. This device indicates the "levelness" of the machine chassis. During operation operators must ensure the machine is within the manufacturers guidelines for levelness. The rated capacity chart fitted for lifting operations has a maximum level angle which must never be exceeded during lifting operations. This level indicator must be present and fully functional at all times whilst this item of plant is in operation.</p> <p>References: AS1418.8</p>			
	FALLING	HIGH 22	MEDIUM 15
<p>Risk Treatments in Place: Handrails All operator work platforms above 1.8 metres from the ground or nearest platform have an approved handrail. It must be present and fully functional and serviceable at all times. Handrails must meet the following requirements at all times whilst this item of plant is in operation -</p> <ol style="list-style-type: none"> 1. All handrails are at least 0.95m 2. All handrails have a mid rail 3. All sides and ends have a kick plate which is at least 100mm high <p>References: AS1657</p>			
	COLLISION	HIGH 22	MEDIUM 15
<p>Risk Treatments in Place: Beacon This item of plant is fitted with a safety beacon. This beacon must meet the following criteria at all times whilst this item of plant fitted is in operation -</p> <ul style="list-style-type: none"> - Is visible up to 200m in all directions (allowing for intermittent obstruction from the plant structure whilst the plant is in operation) - Is fitted in the most appropriate location on machine to maximise visibility without risking continual damage <p>NOTE: more than one beacon may be fitted to meet these criteria.</p> <p>References: ISO20474-</p>			
	OPERATIONAL MALFUNCTION	HIGH 22	LOW 2
<p>Risk Treatments in Place: Plant Modification The plant is in original condition.</p>			
	POOR VISIBILITY	HIGH 21	MEDIUM 15
<p>Risk Treatments in Place: Windscreen Wipers The windscreen wipers and washers fitted to this item of plant must be fully functional at all times.</p> <p>References: AS/NZS4024.1201</p>			
	CRUSHING	HIGH 21	MEDIUM 15
<p>Risk Treatments in Place: ROPS A Roll Over Protective Structure (ROPS) to ISO 3471, ISO 12117.1 or 2, AS 2294 or AS 4987 is fitted to this item of plant. A permanent label stating this standard must be attached to the structure at all times. This structure provides a safety envelope during a rollover. A warning label re: wearing of seat belts at all times whilst this item of plant is in operation and accordingly seat belts must be worn at all times during operation.</p> <p>References: AS2294, ISO3471</p>			
	CRUSHING	HIGH 21	LOW 5
<p>Risk Treatments in Place: FOPS Level II This item of plant is fitted with a level II Falling Objects Protective Structure (FOPS). This structure is designed to protect the operator from heavy falling objects (e.g. trees, rocks). Care should still be exercised when operating in an area with a risk of falling objects.</p> <p>References: AS2294, ISO3449, ISO10262</p>			

HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
 INCORRECT OPERATION	HIGH 20	MEDIUM 14
<p>Risk Treatments in Place: Intuitive Controls The controls fitted to this item of plant are orientated so that the movement of the control is consistent with the action of the machine e.g. moving a control lever to the left results in the machine turning to the left. This design feature must be maintained at all times whilst this item of plant is in operation.</p> <p>References: AS/NZS4024.1906</p>		
 STRAINS	HIGH 19	LOW 5
<p>Risk Treatments in Place: Controls Ergonomics All controls including all levers, buttons, pedals, switches etc, are placed near the operator work position and are easy to reach and operate during the execution of the operator's normal duties. This applies for all persons within the 95th percentile of the normal population distribution.</p> <p>References: AS/NZS4024.1901</p>		
 SLIPPING, INCORRECT OPERATION	HIGH 17	LOW 6
<p>Risk Treatments in Place: Control Levers/Pedals/Buttons All controls including all levers, buttons, pedals, switches etc. must be kept non-slip and free from damage at all times.</p> <p>References: AS/NZS4024.1901</p>		
 SLIPPING	MEDIUM 12	LOW 6
<p>Risk Treatments in Place: Operator Work Area Access/Egress Safe access and egress to the cabin/work area(s) must be maintained at all times whilst this item of plant is in operation. It must be non slip, free from damage, located at a height so as to not cause undue body stresses and strains with three points of contact available to personnel at all times.</p> <p>All personnel must -</p> <ol style="list-style-type: none"> 1. Always face the item of plant during access and egress. 2. Always maintain three points of contact during access and egress. 3. Never carry an object(s) in his/her hand(s) during access and egress. 4. Never jump off machine. <p>References: AS3868</p>		
 SLIPPING, FALLING	MEDIUM 12	LOW 6
<p>Risk Treatments in Place: Access/Egress Instruction Label An instruction label is fitted adjacent access/egress areas to advise all personnel of the following -</p> <ol style="list-style-type: none"> 1. Always face the item of plant during access and egress. 2. Always maintain three points of contact during access and egress. 3. Ensure the steps are clean. 4. Never jump off machine. <p>This label must be clear and legible at all times whilst this item of plant is in operation.</p> <p>References: ISO31000</p>		
 COLLISION, POOR VISIBILITY	MEDIUM 12	MEDIUM 11
<p>Risk Treatments in Place: Operator Mirrors The operator rear view mirrors fitted to this item of plant must be fully functional and kept clean at all times. There must always be at least one mirror on each side to provide rear vision to the operator to avoid striking bystanders and objects.</p> <p>References: ISO14401.1, AS/NZS4024.1201</p>		

HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
 SLIPPING, FALLING, TRIPPING	MEDIUM 12	LOW 6
<p>Risk Treatments in Place: Engine Bay Access Safe access and egress to the engine bay/work area(s) must be maintained at all times whilst this item of plant is in operation. It must be non slip, free from damage, located at a height so as to not cause undue body stresses and strains with three points of contact available to personnel at all times.</p> <p>All personnel must -</p> <ol style="list-style-type: none"> 1. Always face the item of plant during access and egress. 2. Always maintain three points of contact during access and egress. 3. Never carry an object(s) in his/her hand(s) during access and egress. 4. Never jump off machine. <p>References: AS3868</p>		
 ELECTRIC SHOCK, BURNS	MEDIUM 12	LOW 6
<p>Risk Treatments in Place: Battery Cover All batteries fitted to this item of plant are constrained to prevent displacement & fitted with a permanent sturdy cover which allows for ventilation. The constraint and cover must be present and fully functional and serviceable at all times whilst this item of plant is in operation.</p> <p>References: AS/NZS4024.1201</p>		
 SLIPPING, INCORRECT OPERATION	MEDIUM 9	LOW 4
<p>Risk Treatments in Place: Operator Floor All work area floors are non-slip and free from damage & debris.</p> <p>Floor area must remain non-slip and free from damage & debris, including rubbish, tools and other items, at all times whilst this item of plant is in use.</p> <p>References: AS/NZS4024.1201, ISO20474-</p>		
 STRAINS	MEDIUM 9	LOW 1
<p>Risk Treatments in Place: Operator Seat The operator seat fitted to this item of plant must remain free from damage and tears, and be permanently and securely fitted at all times.</p> <p>References: AS/NZS4024.1401 , ISO20474-</p>		
 HEAT STROKE, DEHYDRATION	MEDIUM 9	LOW 4
<p>Risk Treatments in Place: Air Conditioning This item of plant is fitted with an air conditioned cabin. This air conditioned cabin helps control the air quality and temperature for the operator and also provides shade from the sun. The air conditioner must be fully functional and serviceable at all times whilst this item of plant is in operation.</p> <p>References: ISO31000</p>		
 BURNS	MEDIUM 9	LOW 5
<p>Risk Treatments in Place: Exhaust The engine exhaust on this item of plant is fitted with a guard to prevent injury to any person and control the risk of initiating a fire. It must be present and fully functional and serviceable at all times whilst this item of plant is in operation.</p> <p>References: AS/NZS4024.1201</p>		

	HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
MAINTENANCE	 CURRENT OR PREVIOUS STRUCTURAL DAMAGE	CRITICAL 25	MEDIUM 15
	Risk Treatments in Place: Structural Integrity Regular checks for structural damage must be undertaken. Look for cracks in frames/chassis (current or repaired), bends or damage to structural components, etc.		
	 INCORRECT OPERATION	HIGH 22	MEDIUM 15
	Risk Treatments in Place: Maintenance Manual The manufacturer's maintenance manual(s) has been supplied for this item of plant These manual(s) must be available at all times to all users and maintenance staff of this item of plant. All users and maintenance staff must read and be familiar with these handbook(s) prior to maintaining or repairing this item of plant. A complete risk assessment/JSEA must be undertaken covering all inspection, maintenance, servicing and transportation requirements of this piece of plant prior to use. A full assessment of the competence of people using the book(s) must also be undertaken References: Work Health & Safety Act & Regulations-		
	 STRIKING, BURNS	HIGH 22	MEDIUM 15
	Risk Treatments in Place: Hydraulic Damage The hydraulic hoses to this item of plant are free from damage and protected against damage arising from contact with the plant structure. Ensure that hoses are free from damage and that protection is in place at all times whilst this item of plant is in operation. Inspection of the hydraulic hoses and protection system should be conducted regularly and documented as part of your plant safety programme. References: AS2671, AS4024, ISO4413		
	 CRUSHING	HIGH 22	MEDIUM 15
Risk Treatments in Place: ROPS Damage The Roll Over Protective Structure (ROPS) fitted to this item of plant must remain free from damage at all times whilst this item of plant is in operation. References: AS2294, ISO3471			
 OPERATIONAL MALFUNCTION	HIGH 22	LOW 2	
Risk Treatments in Place: Major Fluid Leaks This item of plant must remain free from leaks at all times whilst in operation (this includes engine, transmission, cooling system, air, fuel, drive line, wheel hubs, steering and hydraulics). Development of a major leak will require this item of plant to be stood-down until repaired. Minor leaks detected must be repaired within 1-14 days. References: ISO31000			
 OPERATIONAL MALFUNCTION	HIGH 21	MEDIUM 15	
Risk Treatments in Place: Service Records Service and maintenance records are available for this item of plant. These records must continue to be maintained and stored in a secure area as part of your plant safety management programme. This programme includes the undertaking of regular inspections concerning the general condition of the item of plant including (but not limited to) tyre condition, oil levels and wear and tear on critical items such as brakes and steering, etc. All OEM prescribed, scheduled and non scheduled maintenance must also be documented as part of these records and attended to within a risk management framework. References: Work Health & Safety Act & Regulations- Assessor Comments: On Request			

HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
 POOR VISIBILITY	MEDIUM 9	LOW 4
<p>Risk Treatments in Place: Windows & Screens Ensure the cabin/work area safety glass windows and screens are kept clean and free from cracks and other damage at all times whilst this item of plant is in use.</p> <p>References: ISO20474- , AS/NZS4024.1201</p>		
 COLLISION, INSTABILITY	MEDIUM 9	LOW 4
<p>Risk Treatments in Place: Tracks The tracks and track components must be inspected as part of a "pre start" checklist. These inspections must be documented as part of your plant safety programme.</p> <p>References: ISO20474-</p>		

SECTION 6 IMAGES AND NOTES

IMAGES

- No Images Available -

NOTES

- No Notes Available -

RISK MANAGEMENT REPORT

TYPE	Excavator - Large (20 Tonne +)	Report Number	15313 20190621-0949
MAKE	Doosan	Date	21-Jun-2019
MODEL	DX225LC	Created By	Nic McLennan
PRICING GROUP NUMBER	339B	Assessor	Nic McLennan
		Assist. Assessor(s)	
		Owner	AB Equipment Limited
		Assessment Purpose	Hire
		State	NZ

OPERATOR ACKNOWLEDGEMENT

I the undersigned acknowledge that I have read and understand the risk management report described above.

I also acknowledge that I have received a copy of this risk management report.

<u>DATE</u>	<u>NAME</u>	<u>COMPANY/POSITION</u>	<u>SIGNATURE</u>