

Risk assessment – Using a Pudu CC1



STEP 1 – ASSESSMENT DETAILS

Method Statement Reference:	CCRM-083	FREQUENCY (TICK AS APPROPRIATE)				
Issue Number	01	Daily	Weekly	Monthly	Quarterly	Ad Hoc
Task:	Using a Pudu CC 1					
Date Completed:	24 September 2025	✓				
Employee consultation and involvement:	Dina Oliveira					
Re-Assessment Due*:	One year from the above date					
Method Statement Completed By:	Health & Safety Manager	Emergency Telephone Number:				
		020 7624 6330 / 111 / 999				

STEP 2 – PERSONNEL REQUIRED (DURING ACTIVITY)

Lone Worker	2 or More Persons	First Aider	Supervisor/Team Leader	Management
✓			✓	

STEP 3 – PROCEDURES TO BE CARRIED OUT (BEFORE STARTING WORK)

Read the appliance's user manual	Training and Knowledge Company safety Site -induction form: F039	Perform Visual safety check of equipment	Assess the foot fall of the area	Fit Other safety control implemented by us or the client	Check for visual damage	Place Warning Signs	Surface preparation/ remove loose items	Check machine is charged for use	Check the area to be cleaned for obstacles
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

STEP 4 – HAZARDS, PRODUCT AND PPE

Slips, Trips & Falls	Electric Shock	Fire Risk	Manual Handling	Harmful/Irritant	Eye Protection	Rubber Gloves	Sensible Work Shoes
							
✓	✓	✓	✓				✓

STEP 5 – PRODUCT USAGE - DO NOT USE CHEMICALS INSIDE THE ROBOT

Product Name	Product Usage	Product Type	Usage Dilution	Application / Equipment
NA	NA	NA	NA	Pudu CC1

STEP 6 – METHOD STATEMENT

SAFETY	METHOD	CARE OF EQUIPMENT
1. Only authorised operatives, trained in the procedure to carry out this task. 2. Put warning signs before commencing the task 3. Work to be undertaken only after visual safety check has been carried out 4. Do not park Pudu CC1 on ramps, slopes or flat surfaces that are not hard; 5. Do not use the robot at a temperature above 40°C or below 0°C. 6. Do not use it outdoors (e.g., on an open balcony) or on any rugged ground (e.g., stairs). 7. Do not push the robot backward when the power is on. 8. Do not expose the charger to rain; 9. Do not use Pudu CC1 on electrical sockets on the floor to avoid electric shocks; 10. Do not climb over Pudu CC1 11. Do not use/leave Pudu CC1 on stairs or work platforms; 12. Do not use the robot in a humid environment or on surfaces covered with fluid or gooeey stuff 13. Remove objects from the floor that could be accidentally pushed by the rotation of the brushes; keep hands and feet away from the rotation of the brushes; 14. Never wash the machine with direct or pressurized jets of water or with corrosive substances 15. Do not use flammable materials in the water tank 16. Do not use the charger if it is wet 17. Always charge the robot in a ventilated area, where the temperature does not exceed 30 °C 18. Inspect area of work and access 19. Put away any wire or other objects on the ground to prevent the robot from being tripped or entangled. 20. Look for any new warnings 21. Watch out for leakage and slip hazards- Report it if you see it as well as leaving a do not use sign. 22. Do not try and lift robot. 23. In the event of a fire, use a POWDER EXTINGUISHER. Do not use WATER 24. A maximum speed of 1.2 m/s (3.94 ft/s) is recommended for safe operation. 25. The maximum possible slope is 8° for the robot (non-cleaning state). To prevent any risks caused by backward slips, the robot should not be paused when moving uphill  26. The robot only supports cleaning on flat surfaces (in cleaning state), please DO NOT USE THE ROBOT for cleaning on slopes visible to the naked eye (greater than 3°).	METHOD 1. On arrival sign staff time sheet log book 2. Make sure Work area is clear for safe access and operation 3. Do not try and move robot manually 4. Inspect the access way route for the robot and remove loose items such as clothing or large items of rubbish. 5. Carry on the visual safety check as instructed on the H&S training and induction program 6. Place cleaning signs if the robot is leaving damp floors 7. Before cleaning the robot, put gloves on 8. If you have been trained to do so follow the maintenance guide and your training to clean the robot 9. Look out for faults with the robot such as leakage or an electrical smell.- Report to your line manager if you notice an abnormality immediately.	1. Only attempt maintenance of the Pudu CC1 if you have been fully trained to do so. 2. Clean the sensor and the bottom of the body with a microfiber cloth 3. Clean up dust box, water filter box, garbage box, and air filter sponge 4. Clean up the sweeping and scrubbing brush 5. Clean or replace the dust mop and clean the water absorption rake 6. Clean up the sewage tank 7. Clean the drain assembly of the roller brush plate (drain hole) 8. Clean up the sewage suction pipe



Known Hazards

- 27. Risk of Fire
- 28. Risk of electric shocks
- 29. Dangerous Atmospheres for battery charging
- 30. Unprepared roadways or unsurfaced roads
- 31. Cuts and manual handling injuries when changing pads, pad drives, squeegees, etc.
- 32. Appliance tipping due to un-even floors
- 33. Collision with people walking past
- 34. Creating slip hazards if faulty

Monitoring and Reporting

- A visual check is to be completed every day before starting Machine. Use the machine ONLY IF the visual safety check is satisfactory.
- If abnormality or fault (s) are found, **place signage and report to your line manager**
- Reporting of any irregularity through e-mail along with phone call to head office and Supervisor/area manager

Plant and equipment

- Self charging Co-Botics machine

Battery Charging & safety information

Battery charging time is less than 2 hours.

- Do not charge your robot using non-original chargers. If the charger is damaged, replace it
- To maximize the efficiency and battery life of the robot, always keep the battery level above 10%.
- A battery level lower than 10% means that the robot will soon run out of power and needs to be charged as quickly as possible.
- A battery level lower than 2% means that the battery is under protection. In this case, the robot will be unable to perform tasks and must be charged before it can be used again.

SUPPORTING IMAGES – Spec

Feature	Description	
Model	CCBC01	
Operating voltage	DC 23 V ~ 29.2 V	
Power input	AC 100 V ~ 240 V, 50/60 Hz	
Power output	29.2 V, 15 A	
Battery capacity	50 Ah	
Charging time	< 3 h	
Cleaning capabilities	scrubbing: 5h; Sweeping+Vacuuming+Mopping: 5h	
	Carpet vacuuming: 4h; Silent mopping: 9h	
Weight	75 kg	165.35 pounds
Screen size	10.1-inch LCD screen	
Robot dimensions	629 x 552 x 695 mm	24.76 x 21.73 x 27.36 inches
Enclosure material	PC+ABS	
Navigation method	Integrated lidar and visual SLAM positioning	
Cruise speed	0.2 ~ 1.2 m/s	0.66-3.94 ft/s
Working noise	< 70 dB	
Max. climbing angle	8°	
Min. Path Clearance	70cm	27.56 inches
Max. surmountable height	20 mm	0.79 inch
Max. surmountable gap	35 mm	1.38 inches
Cleaning width (with side brush)	500 mm	19.69 inches
Cleaning efficiency	700-1000 m ² /h	7534.74-10763.92 ft ² /h
Dustbin capacity	2.5 L	
Water tank capacity	Solution tank: 15 L	
	Recovery tank: 15 L	
Operation system	Android	
Communication	4G, WIFI, Bluetooth supported, Lora(Optional)	
Mobile App	Supported	
Operation mode	Manual/Auto	
Auto charging & Auto adding / draining water	Supported (in conjunction with docking station)	
Optional function	Docking station/Charing station	
Working environment	Temperature: 1 to 40 °C (33.8 to 104 °F); RH: ≤ 85%	
Storage environment	Temperature: -20 to 60 °C (-4 to 140 °F); RH: ≤ 85%	
Working altitude	< 2000 m	6561.68 ft
Application scope	Terrazzo, marble, tiles, epoxy resin, sandstone, artificial stone, short-pile carpets, etc.	
IP rating	IPX4	





STEP 7 – RISK ASSESSMENT (Likelihood X Severity = Risk)

CATEGORY	HAZARD	POTENTIAL HARM	LIKELIHOOD	Severity	Risk Before Controls	Risk After Controls	COMMENTS
Operation of equipment	Fire, / Shortcut /electric shocks	Burns, shock,	2	5	10	5	• Employees are trained on the safe used of the Pudu CC1 • Weekly electrical safety inspection in place and documented by site supervisor and annually by area manager • Visual inspection is in place before the operation • Supervision is in place before and during the operation • Reporting procedures are in place. • Thermal protection is in place • Operators are aware not to charge close to metal objects • User needs to read and understand the user manual • An operative without training cannot touch the Robot • Self-charging- Employees do not have to plug in the robot manually
Machine preparation / operation	Slip, trips and falls due to uneven or slippery surfaces or obstacles on the floor	Back injury /bruises/cuts Machinery damage	3	4	12	4	• Visual check of the area • Competent supervision of the robot is in place • Employees cleaning the robot must follow the manual and be trained • Reporting in place to watch for leakage from the machine • Communication with the building management for the storage area arrangements • Good housekeeping for the machinery storage area
Manual Handling	Heavy objects/bending	Back injuries	3	3	9	3	• Staff are to avoid manually moving the robot. • Robot is programmed to move via phone app • Staff training • Toolbox programme • Component supervision • Site induction
Battery charging	Accidental short circuit, overcharging, submerge in water	Burns, fire, shocks Damage to property	2	5	10	5	• Only trained operatives allow to use the machinery • Operatives are not allowed to dismount battery or compartments • Robot cannot be charged or handled near sources of heat, flames or sparks • Robot has smart technology to stop overcharging • Visual check before commencing in place • Operatives trained and instructed on the use of electric equipment • Toolbox program in place • Supervision and reporting of incidents • Original charger • Not to charge close to metal objects or liquids • Self-charging in dock

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Manual handling moving parts	Contact with moving parts and locks when operating the machine and cleaning the machine	Crushing, shearing, cutting entanglement, impact,	2	2	4	2	• Induction and training in place • Manual handling toolbox • Staff trained on the Reporting of dangerous occurrences and accidents • Staff are aware they aren't allowed to move the robot themselves and can only report to the Supervisor / Area manager • Employees trained to move the robot have been trained on correct manual handling techniques
Collision with the robot	Direct contact with robot	Risk of falling over and injuring themselves	3	3	9	3	• Robot has built-in sensors • Robot used in open spaces and is easy to see • Robot used in the evening when the building is almost empty (After working hours)
OVERALL RISK RATING BEFORE CONTROL: 9.0			Very Low	Low	Medium	High	
					✓		
			Very Low	Low	Medium	High	
			✓				
OVERALL RISK RATING AFTER CONTROL: 3.7							
LIKELIHOOD 1. IMPROBABLE OCCURRENCE 2. REMOTED OCCURRENCE 3. REASONABLY PROBABLE OCCURRENCE 4. VERY LIKELY OCCURRENCE 5. ALMOST CERTAIN OCCURRENCE		SEVERITY 1. SLIGHT: NO INJURY or Injury requiring first Aid treatment 2. MINOR: INJURY requiring medical treatment with absence from 3 days to 3 weeks 3. MODERATE: Injury illness resulting in temporary disability (eg. fractures) and absence over 3 weeks 4. SERIOUS: Severe injury or permanent disability (e.g loss of limb, sight) property and equipment damage 5. MAJOR: Immdiate danger exist, capable of causing death, loss or damage on a wide scale and serious business disruption (e.g. Explosion, fire, structural damage, etc.)					INTERPRETATION 4 and below very Low risk = No further action, but ensure controls are maintained an review 5 to 8 Low risk = Risk Can be tolerated or for only short term. Plan introduction of meassures with a define time period 9 to 15 Medium Risk = Planned and introduce further control measures to mitigate the risk within a time scale 16 and Above = Stop activity and immediate action