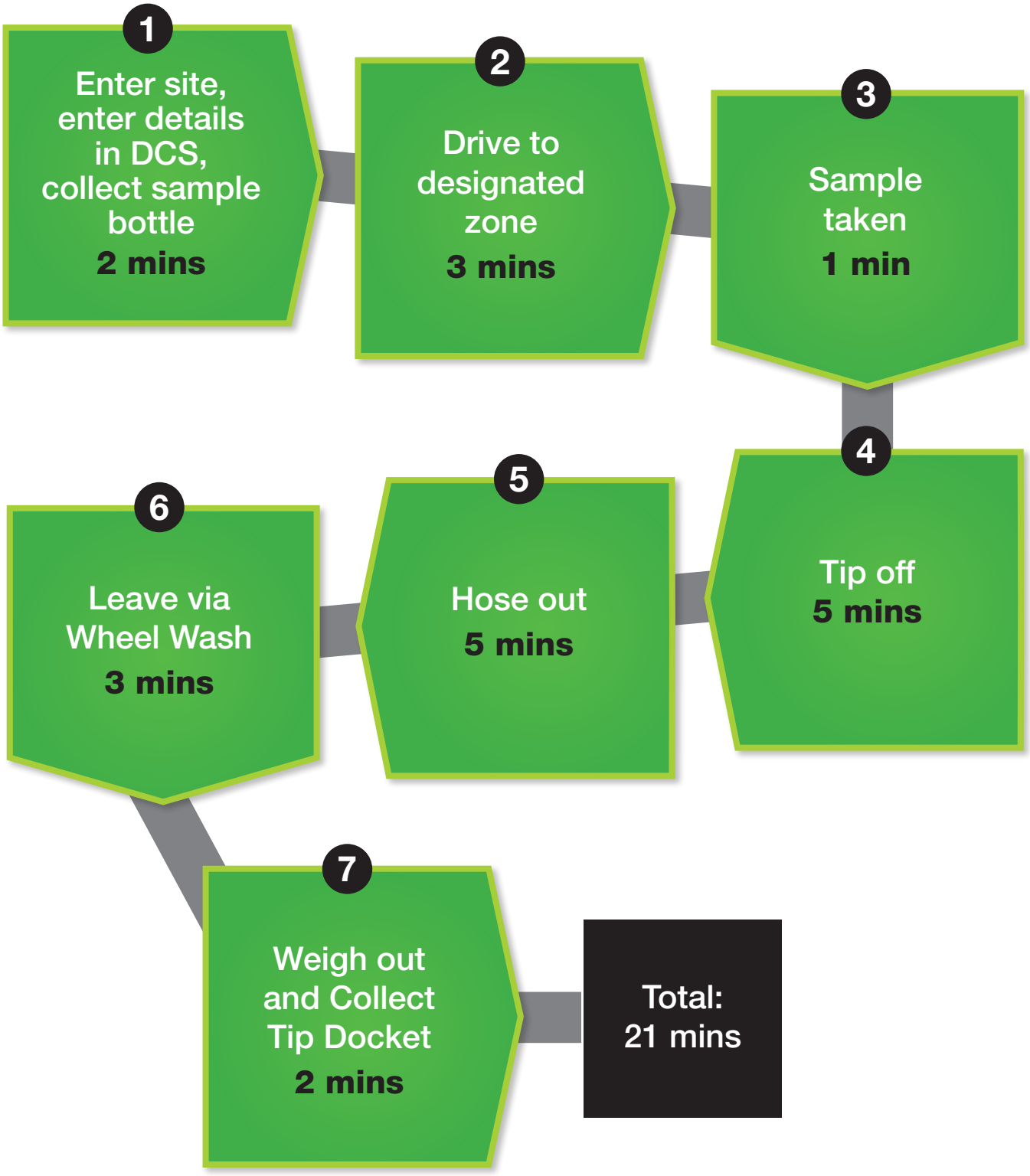
Appendix D: Tipping Procedures/Flow Diagrams

Bulk Recovery Solutions
www.bulkrecoverysolutions.com

NSW EPA APPROVED SITE Lic: 20797

TIPPING PROCEDURE
STORMWATER / GROUNDWATER

Classification report required prior to tipping.



This is based on 10 tonne Vac Truck loads for Liquids.
20 Tonne Tankers will take approximately 26-27 minutes.

Bulk Recovery Solutions
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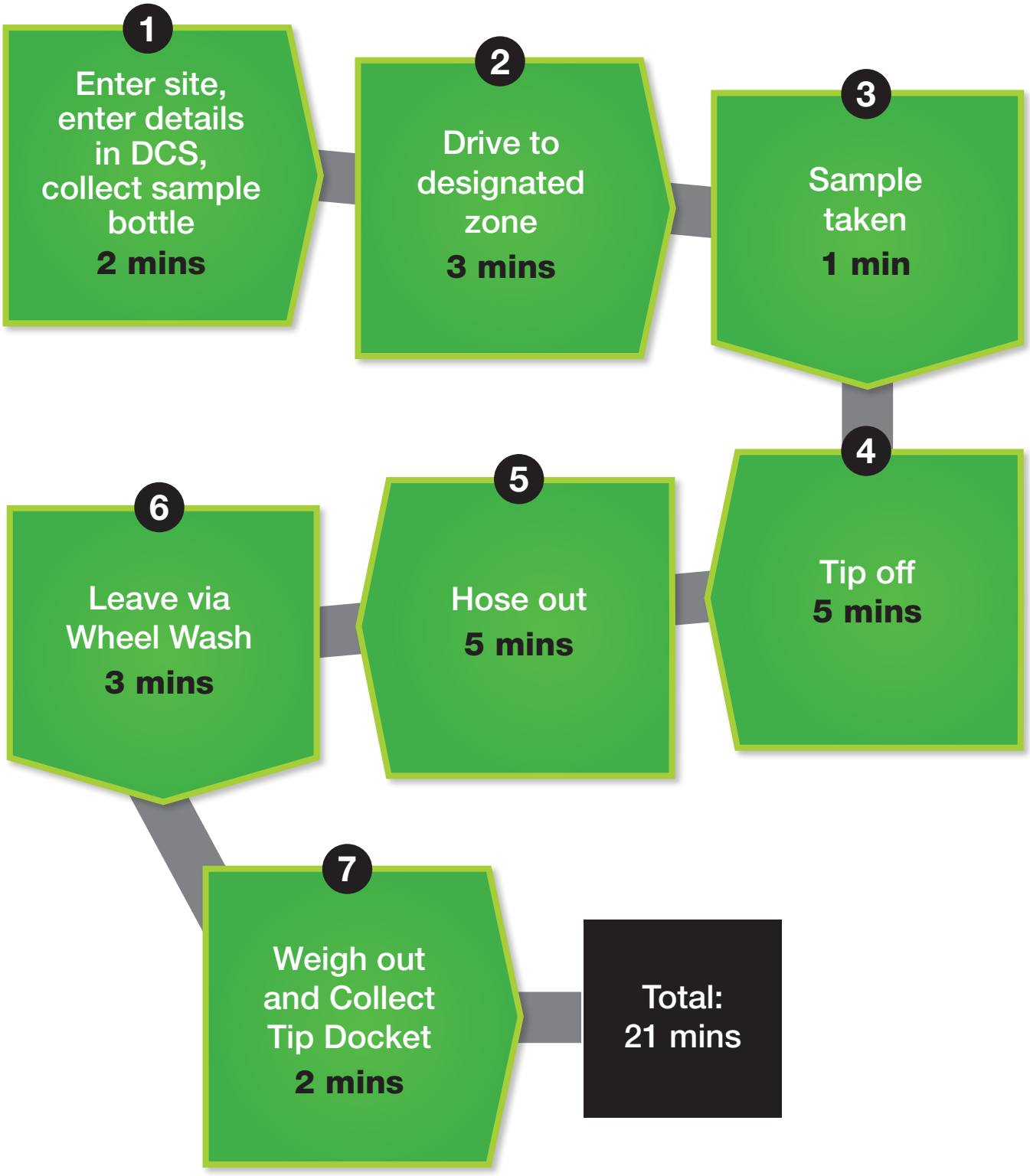
NSW EPA APPROVED SITE Lic: 20797

TIPPING PROCEDURE

DRILL MUD / NDD / CEMENT SLURRY

Classification report required prior to tipping.



This is based on 10 tonne Vac Truck loads for Liquids.
20 Tonne Tankers will take approximately 26-27 minutes.

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TIPPING PROCEDURE

SOILS / SANDS / GSW / SOLIDS

Classification report required prior to tipping.

1. Enter site, enter details in DCS, collect sample bottle **2 mins**
2. Visual inspection by weighbridge staff of top of load **5 mins**
3. Drive to designated zone **3 mins**
4. Tip off **5 mins**
5. Visual inspection by yard staff **5 mins**
6. Leave via Wheel Wash **3 mins**
7. Weigh out and Collect Tip Docket **2 mins**

Total: 25 mins

Truck and Dog tonnages will vary based on weight of material.

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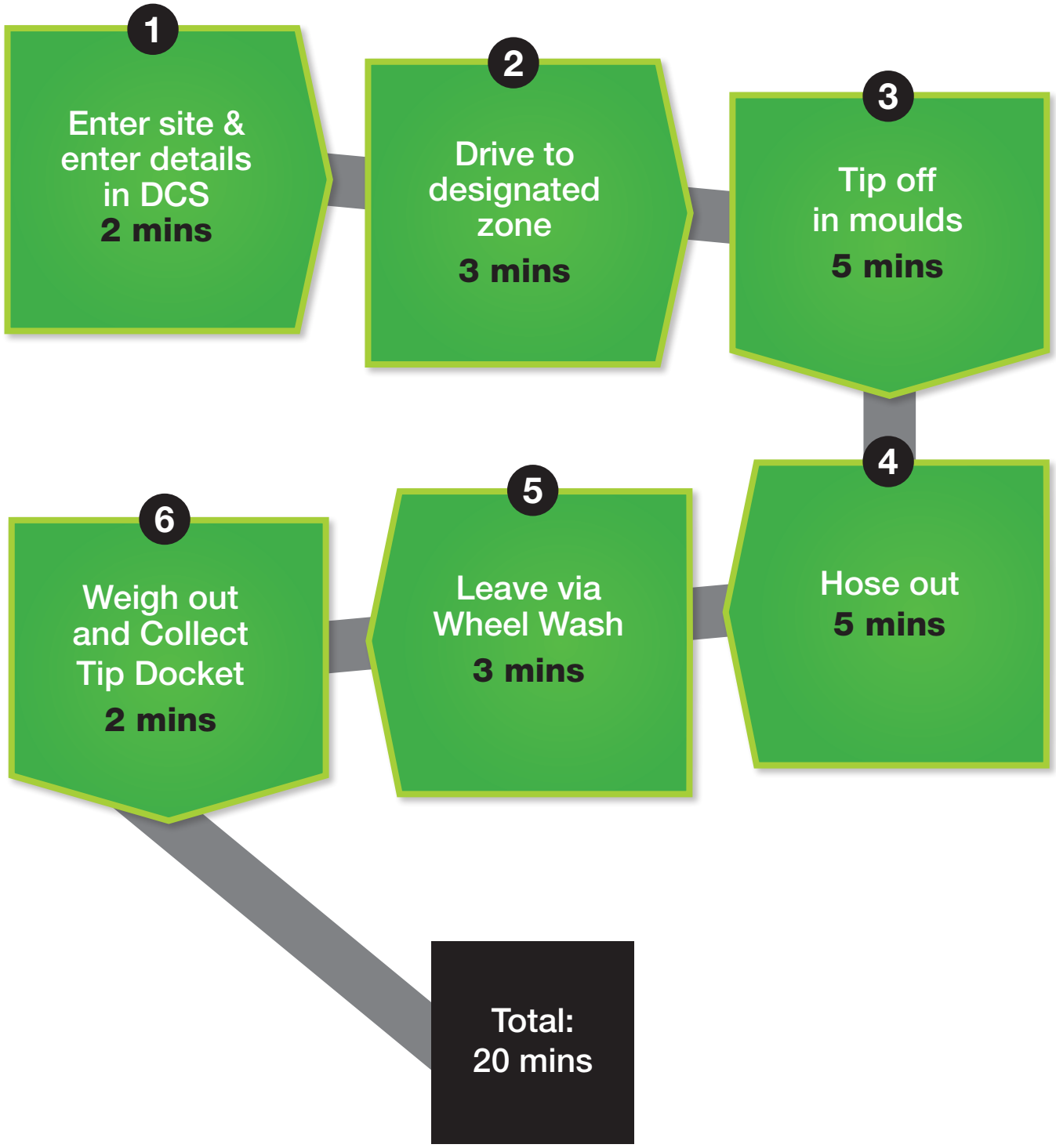
TIPPING PROCEDURE
CEMENT AGITATOR TRUCKS



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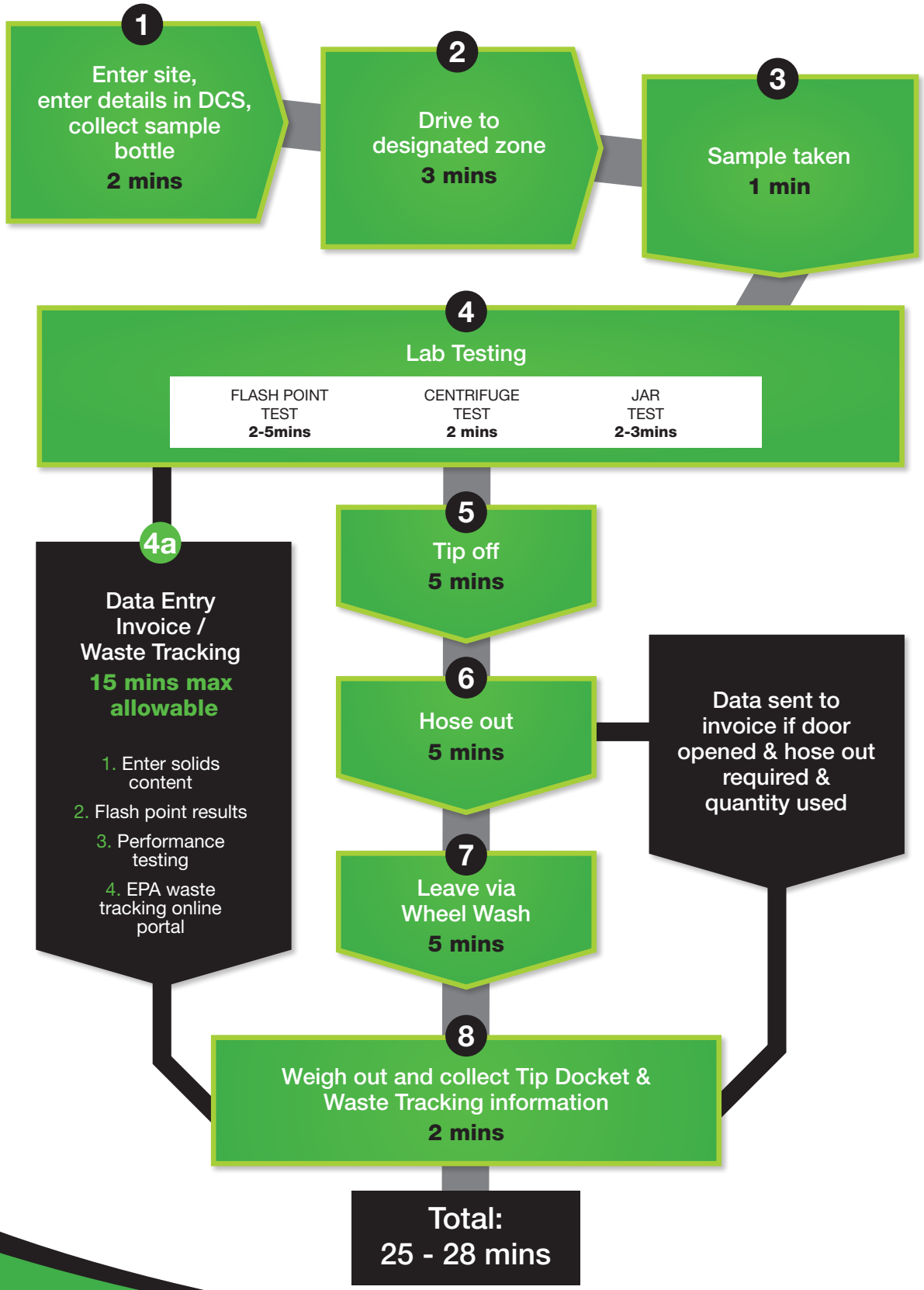
TIPPING PROCEDURE

J120 / FIREWATER

Classification report required prior to tipping.



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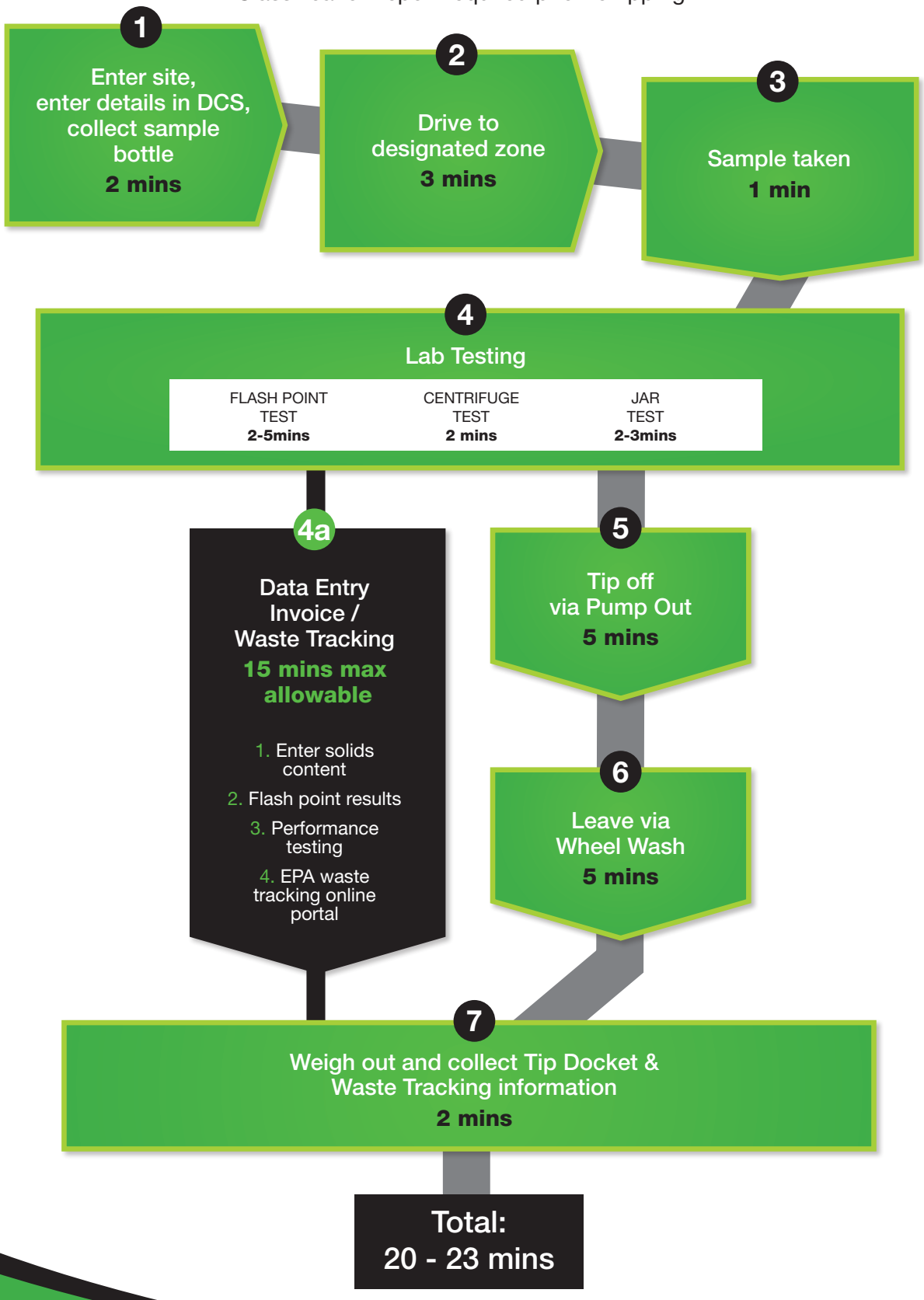
TIPPING PROCEDURE

A100 / B100 / C100 / N140 / Z180 / M250

Classification report required prior to tipping.



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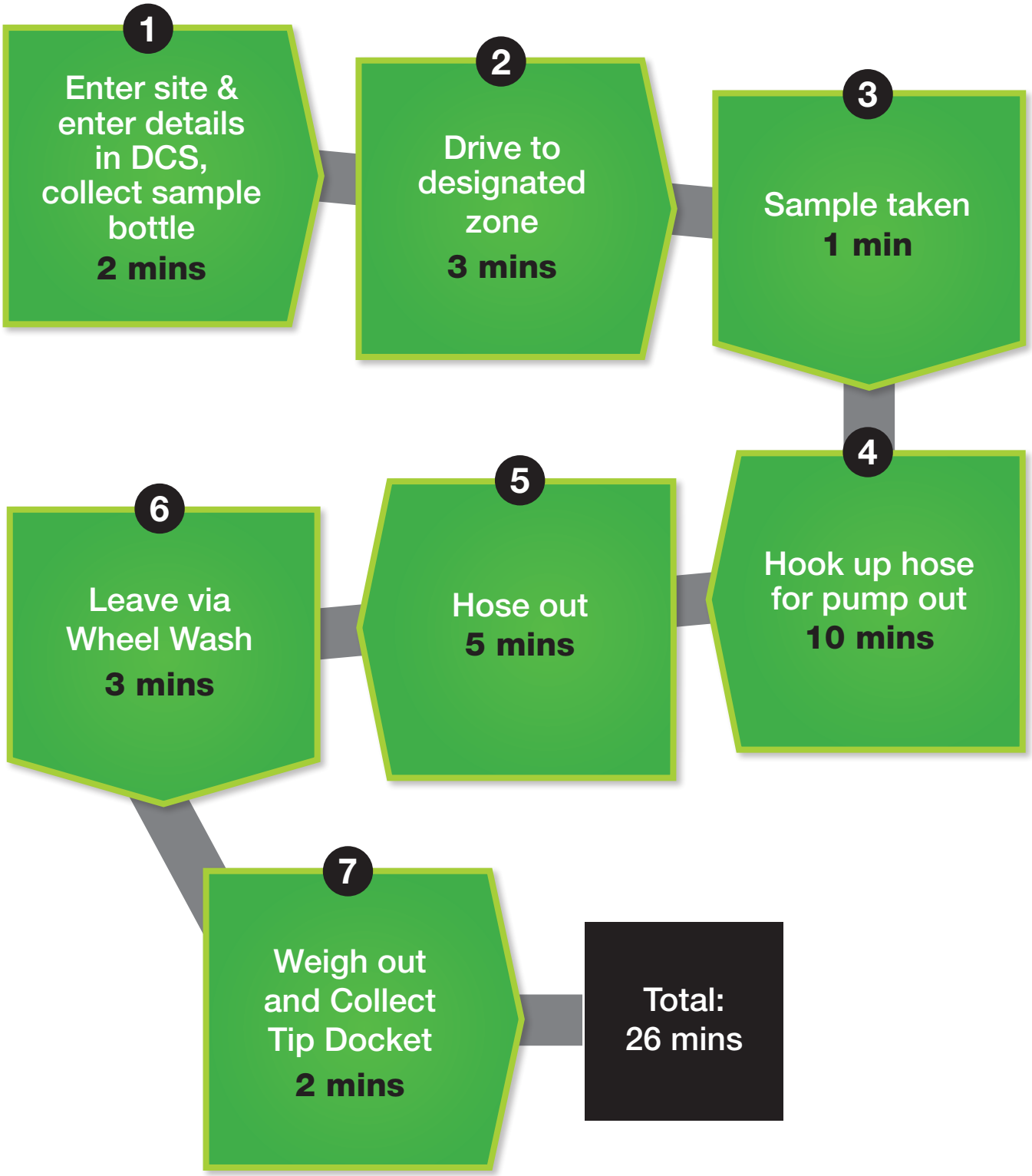
TIPPING PROCEDURE
SEWER WASTE



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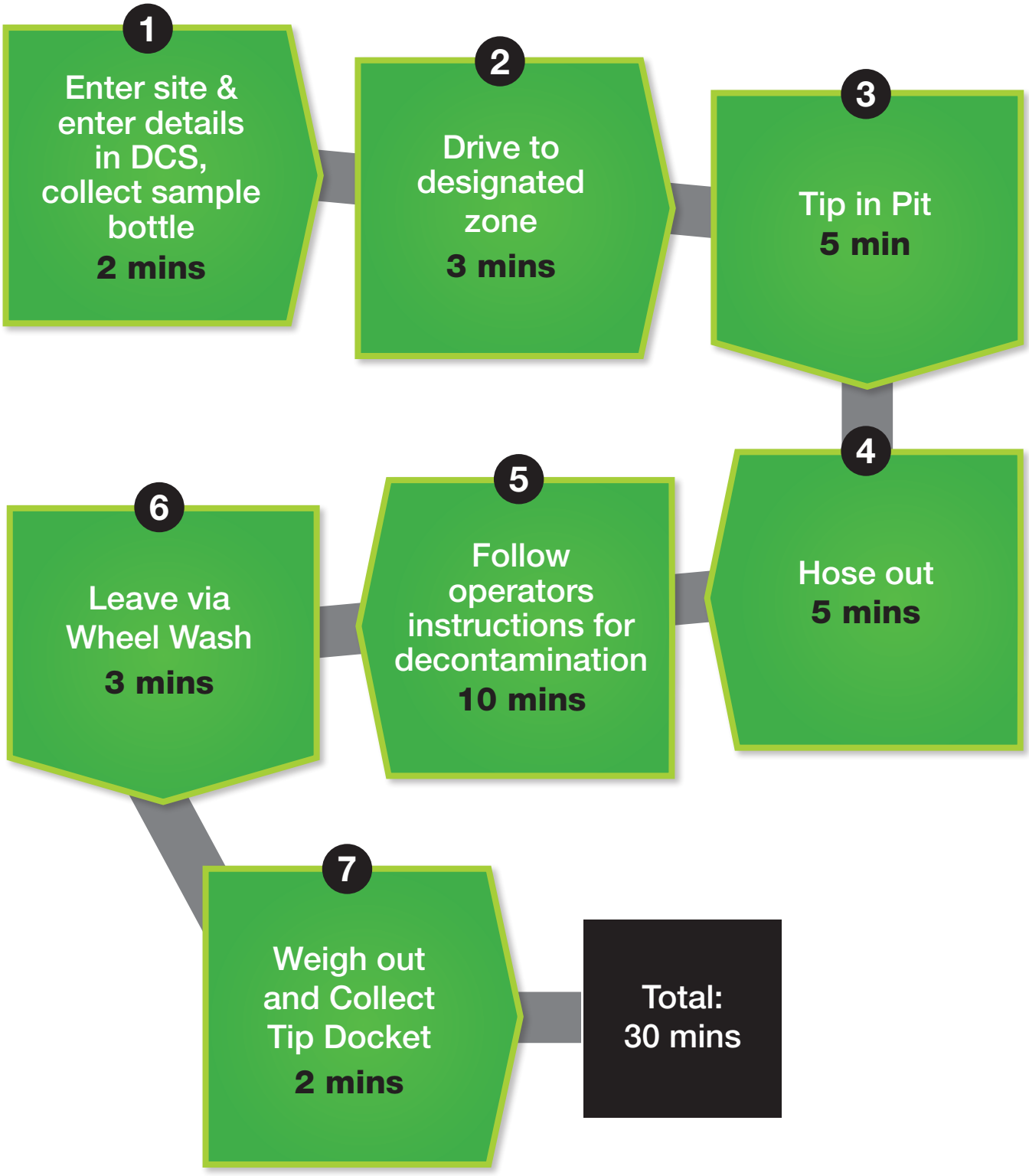
TIPPING PROCEDURE

ASBESTOS CONTAMINATED MUD / WATERS

Classification report required prior to tipping.



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NSW EPA APPROVED SITE Lic: 20797

TIPPING PROCEDURE

LEACHATE

Classification report required prior to tipping.

1. Enter site & enter details in DCS, collect sample bottle **2 mins**
2. Drive to designated zone **3 mins**
3. Sample taken **1 min**
4. Hook up hose for pump out **10 mins**
5. Hose out **5 mins**
6. Leave via Wheel Wash **3 mins**
7. Weigh out and Collect Tip Docket **2 mins**

Total: 26 mins

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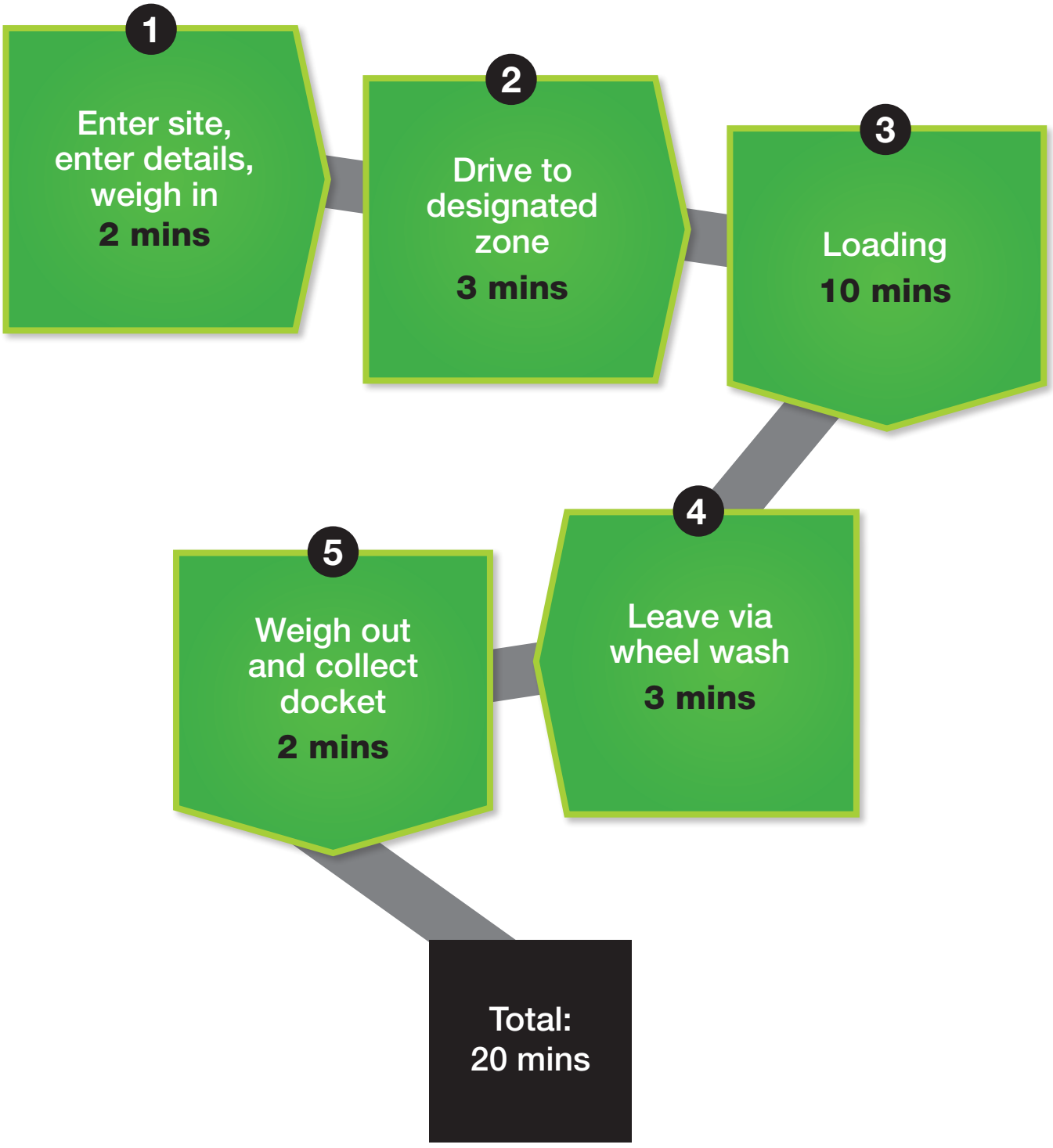
MATERIAL PICK UP PROCEDURES



Bulk Recovery Solutions - 16 Kerr Road, Ingleburn NSW
Processing of Asbestos Containing Liquid

Asbestos soils (Liquids non spadable)

Asbestos soils (Liquids non spadable): the sludge would undergo a quite simple process to turn material from Liquid to Solid using a solidification process. The solidification process is largely automated to improve the quality of the mixing and to increase the success with minimal rate of the blends as well as minimising contact with operators.

Site Delivery, Categorisation and Testing

The waste is delivered to the Site in a slurry form. The waste would be tested off-site at a NATA accredited facility prior to delivery (preferably at the point of origin/source), or tested on-site at the time of delivery to the Ingleburn Facility:

- If the waste has been tested off-site prior to delivery, it would be stored at the Ingleburn Facility within a sealed bin hook lift in the asbestos room in preparation for processing.

- If the waste is tested on-site at the time of delivery to the Ingleburn Facility, the waste stream would be stored within a separate sealed hook lift bin until the appropriate treatment method is determined all within the same room. The type of testing to be undertaken at the Site would typically be a “go/no go” or confirmation testing for quality assurance purposes. In the event that the waste has not been classified appropriately (due to insufficient or inadequate sampling or testing) prior to delivery to the Site, then confirmation testing would be undertaken at this time.

Storage and Treatment

Storage of the waste material received at the Site would depend on the consistency of the waste (for example, a non-liquid soil versus a liquid slurry), as follows:

- If the waste is soil (spadable) non liquid, it would not be accepted on site as it is considered as solid asbestos which is not permitted to be accepted on site.

- If the waste is a slurry (liquid), the water content would typically be high, addition of cement, lime or fly ash perlite or vermiculite is introduced during treatment of the waste. Waste received as a slurry would be stored in a pit within the Asbestos Treatment room of the Ingleburn Facility to facilitate the removal of any excess water. Once treated, the waste would then be transferred from the pit to a sealed bin hook lift using an excavator. Reagents, which would be either one or a combination of cement, lime or fly ash, perlite, vermiculite would be added to the waste via an auger feeder (from safe area side) into the treatment area side to immobilise the liquid content contained within the soil or sludge. The excavator would mechanically mix or agitate the waste with the reagent to transform the waste to a more stable and homogenous form making the product spadable. The chemical and physical properties of the waste would determine the type and quantity of reagents or additives required to treat the liquid component. It is envisaged that the reagents or additives to be used would largely consist of cement, lime,

fly ash, vermiculite, perlite or a combination. These reagents would be stored at the Ingleburn Facility in bulk bags in the store area in minimum quantities of approximately 20t.

The finished product of the batch is then sampled and sent for testing by accredited external contractors.

Please refer to SWMS Entry and decontamination documents for additional information as well as descriptive PI & D flow diagram labelled BRSLS-003.

Plant and Equipment

The described processing activity would require the use of the following indicative types of plant and equipment internal to room:

- Dedicated Excavator approx. 8T capacity manufacture model Kobelco SK55 or similar (See attached Brochure with Specifications) to be used solely for the process to avoid cross contamination
- Hook Lift Bins
- Auger

Construction Asbestos Room:

- ✓ Installation of exterior materials, including a concrete panel at the base of building, with cool room panel metal wall cladding above and walls with fast shut roller door allowing access into asbestos treatment room.
- ✓ Construction of treatment pit in room 100m^3, requiring the removal of concrete and excavation of soil, as well as concrete pour to form the pits.
- ✓ Construction of a catch drain along the extent of room doors leading outwards.
- ✓ Installation of suitable IP65 rating lighting, HEPA filter air filtration to suck out room under negative pressure to remove all airborne matter, misting systems to aid in supressing foreign airborne matter, flooring to be installed shall be food standards rating and radius beads throughout the room. This would require minor excavation to be built

1. Once the paperwork is confirmed and signed off, the weighbridge operator communicates via the 2-Way Radio with operator within building of asbestos treatment room
2. Truck is weighed on the weighbridge and proceeds to Asbestos Treatment Room. Once outside room driver calls processing operator via 2-way radio. A Signed document is confirmed noting the material type and quantity. Other details such as source of the materials, truck Rego, company, etc.… are kept with all other reports within the BRS record management system as per the EPA's record keeping requirements.

Asbestos Liquid Soil Delivery Instruction to Drivers & Passengers

- Ensure doors and windows are always closed and air conditioner is off or on recirculate mode.
- ensure that all PPE is on.

- Following the traffic management plan. Reverse into the asbestos treatment room. The door is then shut to avoid any airborne matter escaping into the atmosphere. Misting systems are used to help aid this process.
- Following direction from Treatment Operator, unload in location as directed.
- Do not leave vehicle at all except in case of emergency.
- Once unloaded proceed to doorway, for operator to inspect vehicle and wash down as appropriate to ensure all material is washed off vehicle prior to leaving room.
- Once approved by Treatment Operator, Roller door is opened, and the driver is to proceed to the weighbridge via the wheel wash in accordance with the traffic management plan. The operator shall then weigh off and once Weighbridge Operator has recorded weight, proceed off site.

Curing and Disposal of Waste:

The time taken for treated waste material to cure (spadable) would depend on the nature and characteristics of the original materials including moisture and can range from 0.5 hours to a day. Prior to the disposal of any treated waste, BRS would engage a suitably qualified testing company to test the processed waste material to ensure it satisfies EPA criteria, and to classify the processed waste in accordance with the EPA's guidelines. This will be accompanied by a NATA accredited test certificate for Waste Tracking purposes.

Testing would typically include the following:

- Chemical characterisations and physical analysis of the waste to be disposed of with sample results and figures,
- Chemical analysis of the material by an accredited NATA testing laboratory,
- Waste Classification certification from a suitably qualified person.

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SAFE ENTRY INTO ASBESTOS ROOM

Part A – Job preliminaries describe the task and what is required to complete it.
Part B – Steps and hazards. Detailed description of task steps, hazards, controls and responsibilities.
Part C – User consultation showing the WMS is understood and personnel have been consulted.
Part D – Supporting risk matrix and instructions for completing a WMS.

PART A – JOB PRELIMINARIES

Activity/Task:
Upon entering the Asbestos soil treatment shed appropriate PPE must be worn to prevent potential contamination of employees.

The following PPE is required:


Personnel	**Authorised and Signed by:**	**Review date:**
All personnel except Drivers Drivers are not to exit the vehicle		(2 Years for WMS)

Equipment required:							**Maintenance/inspections required:**	**Permits and licenses required:**
   							• Daily check list	• Site induction • Asbestos awareness
ISO Wipes	Glen 20 Spray	Duct Tape	Towel					

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STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6	STEP 7
Entry into store room with minimum PPE as above	Collect required PPE from PPE room	Enter clean side of decontamination room	Remove work clothes, put on disposable PPE	Don resipirator	Fit gumboots and tape around boots and gloves	Enter treatment /Disposal shed

PART B – TASK DESCRIPTION

Step	Hazards	Risk	Control Measures and How They Are Implemented, and Monitored	Residual Risk	Responsible Person
Step 1 **Entry into store room with minimum PPE:** • Steel cap gum boots • Disposable underwear and socks • Disposable coveralls • Inner Gloves • Outer Gloves • Full face respirator and canisters **General Rules:** • Entry to asbestos room without this level of PPE is not permitted (drivers of closed cab vehicles excepted however they are not permitted to exit their cab and must have windows closed and air conditioning on recirculate • Exit from shed by personnel is only permitted through the personnel decontamination exit (unless exiting within a vehicle)	• Entry into room without correct PPE leading to personal injury or chemical contamination	8	• Site induction. Asbestos awareness • Buddy system • Daily check list	4	Site operator Project Manager
Step 2 **Collect Required PPE from PPE room** • Your respirator and a set of sealed canisters • Set of coveralls of appropriate size	• Entry into asbestos room without correct PPE leading to personal injury or chemical contamination	8	• Site induction. Asbestos awareness, Daily check list	4	Site operator Project Manager

Step	Hazards	Risk	Control Measures and How They Are Implemented, and Monitored	Residual Risk	Responsible Person
• Disposable underwear, socks, inner and outer gloves will be found in the clean entry of the decontamination trailer					
Step 3 **Enter clean side of decontamination** • With PPE in hand, enter the decontamination trailer only from the clean side	• Entry from incorrect side of decontamination presents risk of contaminating yourself	8	• Site induction. Asbestos awareness, Daily check list	4	Site operator Project Manager
Step 4 **Remove work clothes and put on disposable PPE** • Remove work clothes and place in one of the lockers provided • Your boots are to be placed on the ground and not within the locker with your work clothes • Put on disposable socks, underwear, inner gloves, outer gloves and coveralls (note, you may wear the socks and underwear you already have on, however these must then be disposed of during decontamination procedure and you must then take a new pair of socks and underwear to wear with your work clothes	• Placing boots in locker may contaminate your work clothes	8	• Site induction. Asbestos awareness, Daily check list	4	Site operator Project Manager
Step 5 **Don respirator** • Remove your respirator from the bag, wipe inside of respirator with ISO wipes and allow to dry • Check all components of mask to ensure it is fit for purpose • Dispose of ISO wipes to bin provided	• Incorrect donning of PPE may result in contamination	8	• Site induction. Asbestos awareness, Daily check list	4	Site operator Project Manager

Step	Hazards	Risk	Control Measures and How They Are Implemented, and Monitored	Residual Risk	Responsible Person
• Remove cartridges from packet and secure to respirator, dispose of packaging to bin provided • Fit mask so that it is secure yet comfortable and test seal by placing hands over canisters and breathing in • If air passes around mask seal then refit and test again • If you cannot obtain an adequate seal ask for supervisor to check mask and replace if necessary • Once mask if fitted and sealed appropriately, place the hood of the coveralls over your head.					
Step 6 **Fit gumboots and tape around boots and gloves** • Exit the decontamination room via the clean entry/exit and proceed to the boot wash area • Select your boots and put on • Tape your coverall legs to your boots ensuring they are secure, ensure to leave a tab turned over on itself to allow for ease of removal of tape • Tape your coverall sleeves to your gloves and ensure they are secure, ensure to leave a tab turned over on itself to allow for ease of removal of tape	• Incorrect donning of PPE may result in contamination	8	• Site induction. Asbestos awareness, Daily check list	4	Site operator Project Manager
Step 7 **Enter Asbestos treatment shed** • Make one last check to ensure PPE is fitted correctly and enter the treatment room	• Incorrect donning of PPE may result in contamination	8	• Site induction. Asbestos awareness, Daily check list	4	Site operator Project Manager
•	•		•		

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Key Acts. Regulations, Codes or relevant OHS Act for State or Territory:
Protection of the Environment Operations Act

BULK RECOVERY SOLUTIONS PTY LTD.

PART C – CONSULTATION and REVIEW

The WMS describes the controls for a class of hazards (Model Regulation 12) from this task, specific risks are assessed by the Operators through a Five X Five. Through the Five X Five the Operators confirm:

- They have read and reviewed this WMS and understand the task and risk controls.
- They have conducted a Step Back Five BY Five assessment to check for additional risks which may arise during the task onsite.
- They will follow this WMS and its controls.
- They will monitor and check the job whilst we work to ensure no other risks arise.

Name	Signature	Date	Name	Signature	Date

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PART D – INSTRUCTIONS

Preparing the WMS - This WMS is provided to provide safe methods of work in accordance with Bulk Recovery Solutions legal requirements. The WMS are provided as a safe means of work for generic classes of hazards in accordance with the Regulations. During development Operators and Staff are actively consulted. Further input and change is encouraged through the Issue Resolution and Investigation procedure.

Completing the WMS - Before starting work on this task ALL personnel MUST read the WMS.
Step Back Five BY Five assessment of the site risks MUST also be conducted and risk controls recorded. Attach Step Back Five BY Five to job paperwork.
WMS used must be recorded on the Client Worksheet or Bin Run Sheet whichever is applicable.
EACH Operator, visitor or person onsite is to read the WMS and Five BY Five and sign their name in on the Five X Five acknowledging their understanding, consultation and acceptance of the risks, necessary controls and their responsibilities. If necessary attach extra sheets
During the job risks are to be monitored and further Five BY Five's conducted as necessary to ensure all risks are controlled.

Conducting the risk assessment - For each hazard identified assess:

- **CONSEQUENCE** – How bad things could be if there is an accident/incident by reading from the left hand side of the matrix to determine if the consequence is HIGH, MODERATE or LOW, then
- **LIKELIHOOD** – Determine how likely is this accident/incident to occur by reading across the bottom. Is it ALMOST CERTAIN, POSSIBLE or RARE, then
- Join the two, where the consequence row and the likelihood column meet is the possible risk level. Use matrix below

Once risks are identified work out best way controlling risk to ensure no harm. If necessary stop the task until you are assured that the risk is acceptable.

Review and Retention - All WMS are progressively reviewed by the Manager.
Site specific WMS are to be reviewed regularly as required to control the risk, this is to be stated in Part 1.
WMS are to be retained for the duration of the project. If an incident occurs the WMS is to be retained in accordance with the Issue Resolution and Investigation Procedure.

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I3

CONSEQUENCE						
	5 CATASTROPHIC >$5m	MEDIUM 5	HIGH 10	HIGH 15	EXTREME 20	EXTREME 25
	4 MAJOR $500K-$5M	MEDIUM 4	MEDIUM 8	HIGH 12	HIGH 16	EXTREME 20
	3 MODERATE $50K-$500K	LOW 3	MEDIUM 6	MEDIUM 9	HIGH 12	HIGH 15
	2 MINOR $5K-$50K	LOW 2	MEDIUM 4	MEDIUM 6	MEDIUM 8	HIGH 10
	1 INSIGNIFICANT <$5K	NEGLIGIBLE 1	LOW 2	LOW 3	MEDIUM 4	MEDIUM 5
Based on HB436:2004 Risk Management Guidelines Sect 6		**1 RARE** - Has been known to occur in exceptional circumstances	**2 UNLIKELY** - Is conceivable but only in extremely unusual circumstances	**3 POSSIBLE** - Occurs in unusual circumstances	**4 LIKELY** - Occurs occasionally	**5 ALMOST CERTAIN** - Occurs regularly
		LIKELIHOOD				

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Asbestos Liquid Soil Delivery Instruction To Drivers & Passengers

Ensure doors and windows are closed at all times and air conditioner is off or on recirculate.

Following traffic management plan, reverse into the treatment shed.

Following direction from Treatment Operator, unload in location as directed.

Do not leave vehicle.

Once unloaded proceed to doorway, for operator to inspect vehicle and wash down as appropriate.

Once approved by Treatment Operator, Roller door is openend and proceed to weigh bridge according to traffic management plan.

Re-weigh, once Weighbridge Operator has recorded weight proceed off site.

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DECONTAMINATION FROM ASBESTOS ROOM

Part A – Job preliminaries describe the task and what is required to complete it.
Part B – Steps and hazards. Detailed description of task steps, hazards, controls and responsibilities.
Part C – User consultation showing the WMS is understood and personnel have been consulted.
Part D – Supporting risk matrix and instructions for completing a WMS.

PART A – JOB PRELIMINARIES

Activity/Task:
Entry and Exit from Asbestos Shed Personal decontamination must be undertaken each time employees leave the shed. Personal decontamination needs to be performed within the work area zone, where re-contamination cannot occur.

The following PPE is required:
 Additional Equip: 2-way radios

Personnel	**Authorised and Signed by:**	**Review date:**
All personnel except Drivers Drivers are not to exit the vehicle	Tim Baillie	1.9.20

Equipment required:					**Maintenance/inspections required:**	**Permits and licenses required:**
					• Daily check list	• Site induction • Asbestos awareness
Spray bottle	cloth wipes	Duct tape	Asbestos Waste bags	Polythene plastic sheeting		

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STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6	STEP 7	STEP 8	STEP 9	STEP 10
Entry into shed via change room with minimum PPE  as above.	Decontamination is to be undertaken in the dedicated Change Room  	Layout and stand on plastic sheet, spray the outside of the coveralls and boots with a fine mist spray using the spray bottle	Pat down the outside of the overalls with wet wipe,	Placing wet wipe in disposable bag. Remove over shoes and wet wipe gum boots.	Peel of contaminated coveralls	Store any equipment to be used again, such as gumboots in dedicated area.  	plastic drop sheet and place it in the approved asbestos waste bag	Remove the disposable mask Reusable respirators should be wet wiped	Seal off full bin bags and dispose accordingly

Any

PART B – TASK DESCRIPTION

Step	Hazards	Risk	Control Measures and How They Are Implemented, and Monitored	Residual Risk	Responsible Person
• **Step 1** Enter into shed via change room with PPE: • Safety boots, boot covers • Disposable overalls • Dust mask/ respirator • Gloves • Safety glasses	• Entry into soil shed without correct PPE leading to personal injury/contamination	8	• Site induction, • Asbestos awareness, • Daily check list • Supervision	3	Supervisor
• **Step 2** All decontamination is to be undertaken in the dedicated Change Room. All tools required for decontamination should be kept in this area and away from any dust or debris during the course of work.	• Uncontrolled decontamination will lead to spread of contamination and	8	• Site induction. Asbestos awareness, Daily check list	4	Supervisor
• **Step 3** Before personal protective clothing and footwear worn are removed, workers are to spray the outside of the coveralls and boots with a fine mist spray using the spray bottle.	• Improper removal of coveralls resulting in cross contamination	8	• Site induction • Asbestos awareness, • Daily check list/toolbox • Supervision	4	Supervisor

Step	Hazards	Risk	Control Measures and How They Are Implemented, and Monitored	Residual Risk	Responsible Person
Note: On warmer days, workers should keep their coveralls fairly moist to suppress dust particles.					
• **Step 4** Fold a wipe into quarters and lightly spray the wipe using the spray bottle. Using this wet wipe, gentle pat down the outside of the overalls. Where there are two employees, they can help clean each other.	• Removal of overalls with loose material increases risk of contamination.	8	• Site induction. Asbestos awareness, Daily check list	4	Supervisor
• **Step 5** Once the coveralls have been completely wiped, dispose of the contaminated wipe by placing it inside an Asbestos waste bag. Once placed inside the bag, spray the inside of the bag to keep the wipe moist. Remove over shoes and wet wipe gum boots. Dispose of the wet wipe as above.	• Containment and controlled disposal minimises contamination.	8	• Site induction. Asbestos awareness, Daily check list	4	Supervisor
• **Step 6** Peel of contaminated coveralls by: • Undo the zipper • Remove the hood • Peel off the coveralls one arm at a time by gently pulling the coverall sleeve • Remove arm from the coverall sleeve • Once both arms are outside of the coveralls, gently roll the coveralls inside out from the waist down; tucking in the sleeves of the coveralls. • Carefully step out of the coveralls and ensure that the legs are inside out • Carefully bundle the inside out coveralls.	• Incorrect removal procedures may spread contamination.	8	Site induction. Asbestos awareness, Daily check list	4	Supervisor

BULK RECOVERY SOLUTIONS PTY LTD.

Step	Hazards	Risk	Control Measures and How They Are Implemented, and Monitored	Residual Risk	Responsible Person
• Once the coveralls have been removed, place the coveralls inside Waste Bag and lightly spray the inside of the bag to suppress any dust.					
• **Step 7** Place any equipment to be used again like gumboots in a dedicated area in the change room.	• Incorrect storage may lead to equipment being contaminated prior to use.	8	• Site induction. Asbestos awareness, Daily check list	4	Supervisor
• **Step 8** Fold up the plastic drop sheet and place it in the approved asbestos waste bag	• Increased contamination.	8	• Site induction. Asbestos awareness, Daily check list	4	Site operator Project Manager
• **Step 9** Remove the disposable mask only once all other items are safely in the approved asbestos bag. Reusable respirators should be wet wiped and placed inside the asbestos waste bag for reuse. Spray the inside of the bag once more once the disposable mask has been placed inside the Asbestos waste bag.	• Incorrect storage may lead to equipment being contaminated prior to use.	8	• Site induction. Asbestos awareness, Daily check list	4	Site operator Project Manager
• **Step 10** Twist the neck of the Asbestos bag whilst sealing the bag with duct tape Double bag the Asbestos waste and repeat step 8 Once the neck of the bag is fully taped bend it over on itself Tape the end until fully sealed.	• Uncontrolled release of contamination	8	• Site induction. Asbestos awareness, Daily check list	4	Site operator Project Manager

Key Acts. Regulations, Codes or relevant OHS Act for State or Territory:
Protection of the Environment Operations Act

BULK RECOVERY SOLUTIONS PTY LTD.

PART C – CONSULTATION AND REVIEW

The WMS describes the controls for a class of hazards (Model Regulation 12) from this task, specific risks are assessed by the Operators through a Five X Five. Through the Five X Five the Operators confirm:

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- They have conducted a Step Back Five BY Five assessment to check for additional risks which may arise during the task onsite.
- They will follow this WMS and its controls.
- They will monitor and check the job whilst we work to ensure no other risks arise.

Name	Signature	Date	Name	Signature	Date

BULK RECOVERY SOLUTIONS PTY LTD.

PART D – INSTRUCTIONS

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Conducting the risk assessment - For each hazard identified assess: • **CONSEQUENCE** – How bad things could be if there is an accident/incident by reading from the left hand side of the matrix to determine if the consequence is HIGH, MODERATE or LOW, then • **LIKELIHOOD** – Determine how likely is this accident/incident to occur by reading across the bottom. Is it ALMOST CERTAIN, POSSIBLE or RARE, then • Join the two, where the consequence row and the likelihood column meet is the possible risk level. Use matrix below Once risks are identified work out best way controlling risk to ensure no harm. If necessary stop the task until you are assured that the risk is acceptable.
Review and Retention - All WMS are progressively reviewed by the Manager. Site specific WMS are to be reviewed regularly as required to control the risk, this is to be stated in Part 1. WMS are to be retained for the duration of the project. If an incident occurs the WMS is to be retained in accordance with the Issue Resolution and Investigation Procedure.

CONSEQUENCE						
	5 CATASTROPHIC >$5m	MEDIUM 5	HIGH 10	HIGH 15	EXTREME 20	EXTREME 25
	4 MAJOR $500K-$5M	MEDIUM 4	MEDIUM 8	HIGH 12	HIGH 16	EXTREME 20
	3 MODERATE $50K-$500K	LOW 3	MEDIUM 6	MEDIUM 9	HIGH 12	HIGH 15
	2 MINOR $5K-$50K	LOW 2	MEDIUM 4	MEDIUM 6	MEDIUM 8	HIGH 10
	1 INSIGNIFICANT <$5K	NEGLIGIBLE 1	LOW 2	LOW 3	MEDIUM 4	MEDIUM 5
Based on HB436:2004 Risk Management Guidelines Sect 6		**1 RARE** - Has been known to occur in exceptional circumstances	**2 UNLIKELY** - Is conceivable but only in extremely unusual circumstances	**3 POSSIBLE** - Occurs in unusual circumstances	**4 LIKELY** - Occurs occasionally	**5 ALMOST CERTAIN** - Occurs regularly
		LIKELIHOOD				

Safety DataSheet
AUSPERL PERFLO

Issued 5 Feb 2020

1 | IDENTIFICATION

Product Name:	**AUSPERL PERFLO**
Other Names:	Perflo AP10; Perflo AP20; Perflo AP40; Perflo AP50; Perflo AP60; Perflo AP70; Perflo AP70S; Perflo AP80 & Perflo AP80S
Supplier:	Ausperl Pty Ltd
Physical Address:	64 Gow Street, Padstow, Sydney, New South Wales, Australia
Phone:	+61 2 8318 7824
24 hour Emergency:	+61 438 388 906
Fax:	+61 2 9791 1350

2 | HAZARDS IDENTIFICATION

Acute – Ingestion:	No adverse effects expected.
Acute – Eye:	Exposure to the dust may cause discomfort due to the particulate nature.
Acute – Skin:	Not expected to be a skin irritant.
Acute – Inhalation:	Inhalation of dust may result in respiratory irritation.

3 | COMPOSITION / INFO ON INGREDIENTS

Product Use:	Extender, flatting agent, filter aid, pesticide carrier, etc.
Description:	Perlite is essentially an amorphous, hydrated glassy volcanic rock of rhyolitic composition, consisting primarily of fused sodium potassium aluminium potassium silicate.

Ingredients:

Perlite ore:	93763-70-3; greater than 99.9%
Crystalline silica:	14464-46-1; less than 0.1%
Cristobalite quartz:	14808-60-1; less than 0.1%

4 | FIRST AID MEASURES

Ingestion:	Rinse mouth with water - give plenty of water to drink. If vomiting occurs give further water. Seek medical advice.
Eye:	Irrigate with copious quantities of water for 15 minutes. In all cases of eye contamination it is a sensible precaution to seek medical advice.
Skin:	Wash contaminated skin with plenty of soap and water. If irritation occurs seek medical advice. Remove victim from exposure - avoid becoming a casualty.
Inhalation:	Remove contaminated clothing and loosen remaining clothing. Patient to assume most comfortable position and kept at rest until fully recovered.
Advice to Doctor:	Treat symptomatically.

5 | FIRE FIGHTING MEASURES Perflo is a fully oxidized non-flammable mineral. It is non-combustible

6 | ACCIDENTAL SPILL/RELEASE MEASURES Use respirators suitable for nuisance dust & eye protection. Sweep up, but avoid generating dust.

7 | HANDLING AND STORAGE Not defined as a Dangerous Good. Store in a dry place. Avoid generating and inhaling dust. Keep containers closed when not in use.

AUSPERL PTY LTD

Tel: +61 2 8318 7824 ● Fax: +61 2 9791 1350 ● Email: info@ausperl.com.au
PO Box 381 Padstow, NSW 2211 ● 64 Gow Street, Padstow, NSW 2211 ACN: 605 415 816 ● ABN: 39 605 415 816 ● **www.ausperl.com**

Safety DataSheet
AUSPERL PERFLO

Issued 5 Feb 2020

8 | EXPOSURE CONTROLS/ PERSONAL PROTECTION

Exposure Limits:	**OSHA PEL -**	**ACGIH TLV**
	15 mg/m3	10 mg/m3
Other Exposure Info:	No value assigned for this specific material by the Occupational Health & Safety Administration.	
Engineering Controls:	Ensure ventilation is adequate to maintain air concentrations below exposure standard. Avoid generating and inhaling dust. Keep containers closed when not in use.	
Protective Equipment:	No specific safety equipment required. Preferable to avoid skin and eye contact and inhalation of dust. Wear overalls, safety glasses and impervious gloves. Avoid generating and inhaling dust. If dust exists, wear dust mask/respirator meeting the requirements of AS1715 and AS1716. Always wash hands before eating, drinking or using the toilet.	

9 | PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Off-white, odourless, free flowing powder
Melting Point:	Approx. 1250c
Boiling Point:	Not applicable
Vapor Pressure:	Not applicable
Specific Gravity:	200-250kg/m3
Flash Point:	Not applicable
Flamm. Limit LEL:	Not applicable
Explosion Data:	Not applicable

10 | STABILITY AND REACTIVITY

Stability:	Stable
Incompatibility:	None (reacts with hydrofluoric acid; soluble in HF)
Solubility:	Non soluble in water (H20)
Hazardous Polymerization:	Will not occur
Conditions to avoid:	None

11| TOXICOLOGICAL INFO

Inhaling crystalline silica-containing dust can aggravate upper respiratory conditions such as asthma or emphysema. Long term exposure to mineral dust which contains crystalline silica can cause the lung disease silicosis. A recent review by the International Agency for Research into Cancer of public literature on the carcinogenic risk of silica and silicates has concluded that there is limited evidence for the carcinogenicity of crystalline silica to humans.

12 | ECOLOGICAL INFO

Avoid contaminating waterways.

13 | DISPOSAL CONSIDERATIONS

Dispose in bulk or containerised according to local regulations. Normally approved for disposal at approved land waste sites.

14 | TRANSPORT INFO

Safe to be transported by sea, air or rail. Not defined as a Dangerous Good.

15 | REGULATORY INFO

Based on the information available it is not classified as hazardous.

16 | OTHER INFO

This safety data sheet and the information contained herein is provided for the sole purpose of enabling persons handling and using the product to do so with safety.

New Zealand National Emergency 24 hour contact number is +64 275 618 525

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KOBELCO

SK45SRX-6/SK55SRX-6

MINI EXCAVATORS

SK45SRX
SK55SRX

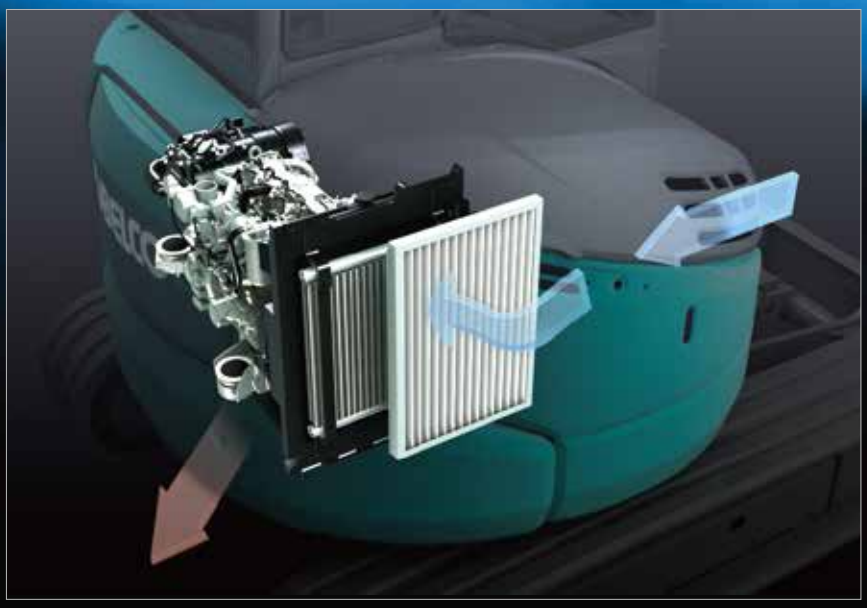
We Save You Fuel
Achieving a Low-Carbon Society

Full-Size Performance, Short-Radius Agility and Quiet Operation

COMPACT YET TOUGH MINI

Now KOBELCO has taken the next evolutionary step by packing even more digging power and practical performance features into the SK45SRX/SK55SRX while maintaining a short tail swing. The new Energy Conservation Mode saves even more fuel, and Kobelco's proprietary iNDr Cooling System ensures quiet operation, protection from dust, and easy maintenance. For greater operator comfort and safety, the rectangular cab design offers plenty of room and an unobstructed view. It all adds up to enhanced full-size performance, short-radius agility and a low-noise environment, with exceptional performance features and a full range of value-added functions.

iNDr Integrated Noise & Dust Reduction Cooling System



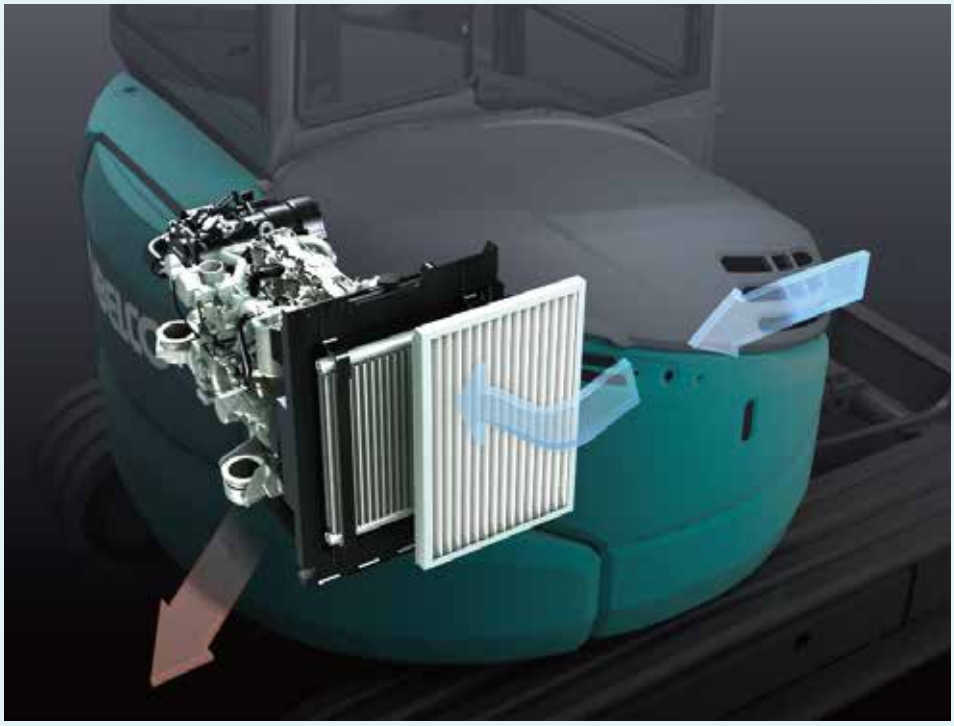
ENVIRONMENT

iNDr Cooling System

The Revolutionary Integrated Noise and Dust Reduction Cooling System

iNDr Integrated Noise & Dust Reduction Cooling System

The highly airtight engine compartment and the offset duct contribute to noise reduction. The iNDr filter fitted in front of the cooling system ensures easy cleaning. The iNDr system on the SK45SRX/SK55SRX features air intake at the front of the machine and air exhaust underneath. It functions in the same way as the iNDr System on the SR series machines.

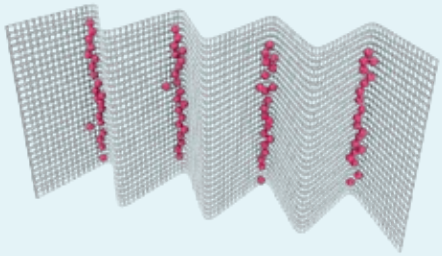


Visual Checking and Easy Cleaning

Because the iNDr filter removes dust from the intake air, cooling components stay dirt-free and do not require regular cleaning. The iNDr filter itself can be easily removed and cleaned without the use of tools.

iNDr Filter

The stainless-steel filter is extremely effective against dust, with 30-mesh wave-type screen that removes tiny dust particles from the intake air.



•30-mesh means that there are 30 holes formed by horizontal and vertical wires in every square inch of filter.

iNDr Filter Blocks Out Dust

Outside air goes directly from the intake duct through the iNDr filter for dust removal.

Ultimate Low Noise

KOBELCO's exclusive iNDr Cooling System delivers amazingly quiet operation. In fact, the SK45SRX/SK55SRX is 9 dB quieter than the previous models.

75 dB

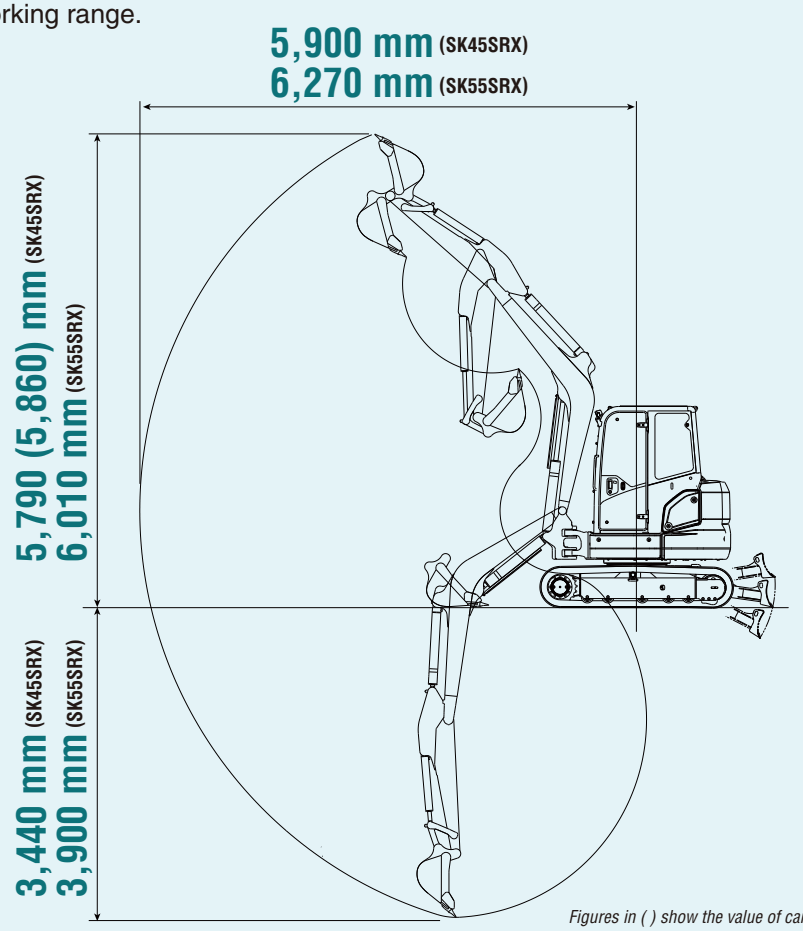
at 1 m backward from machine rearend and 1.5 m height from ground level.

PERFORMANCE

Compact, yet, Big Performance

Wide Working Range

A larger boom and arm are provided as standard equipment to ensure a wider working range.



Figures in ( ) show the value of canopy.

Short Tail Swing

The compact tail swing improves operating efficiency in limited space.

**Figure shows the value of SK45SRX/SK55SRX with add-on counterweight.*

Energy Conservation Mode

The SK45SRX/SK55SRX adapts S mode which enables 23 % less fuel consumption compared with H mode.

One Touch Deceleration

The SK45SRX/SK55SRX features one-touch deceleration. It allows easy switching to an idling state, reducing the fuel consumption while the machine is at rest.

Easy Transportability

With an overall height of 2,530 mm, the machine is designed for easy transport.

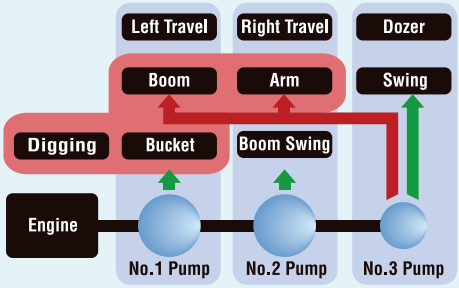
PERFORMANCE

Fast, Full-Powered Digging and Leveling

Powerful Digging Performance

Integrated-Flow Pump System

The instant the machine begins to dig. extra output from the third pump (which otherwise powers the swing and dozer circuit) is directed to the arm circuit and boom circuit (raise) for added power. This ensures fast and smooth arm and boom raising operation even under heavy loads.

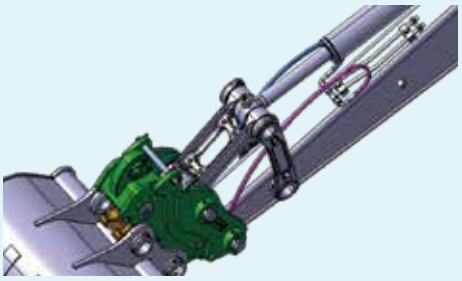


Large Capacity Engine

The large-capacity engine packs plenty power for outstanding hydraulic performance.

Easy Hydraulic Piping for Quick Hitch

Quick Hitch is available as option.
Piping for Quick Hitch is fitted as standard.



More Travel Power

Large Capacity Travel Torque

The large capacity travel torque enables the machine to perform spin turn in low mode even when the dozer is pushing a heavy load.

Automatic Two-Speed Travel

An automatic shift function ensures smoother, more efficient travel on worksite. When the High mode is selected, the travel system will automatically shift to Low mode whenever the load or climbing grades requires more power.

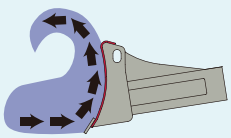
Travel Switch

The travel lever is fitted with a button for easy switching to H-Mode travel.

Powerful and Efficient Dozer Performance

Dozer-Blade Shape

KOBELCO's unique blade design solves this problem by forming the earth into an arc that always falls forward. Because this prevents earth from falling behind the blade, only "one pass" is needed.

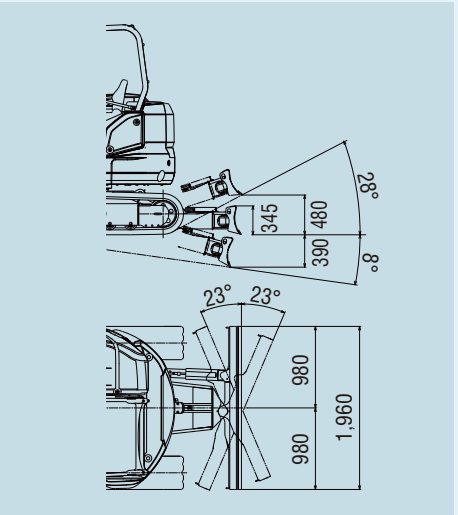


Hydraulic Pilot-Controlled Dozer Operation Lever

The dozer lever features hydraulic pilot control for precise handling.

Dozer-Blade Shape

Brand new from KOBELCO is a 4-way blade option available on the SK55SRX. Built-in the same durability as the standard blade, this 4-way option provides 23 to 25 degrees of left and right angle movement for clearing, grading and back-filling. The 4-way blade gives you better control for following changing terrain and helps eliminate the windrowing effect that can occur with standard dozer blades.



MAINTENANCE

Easy Daily Maintenance

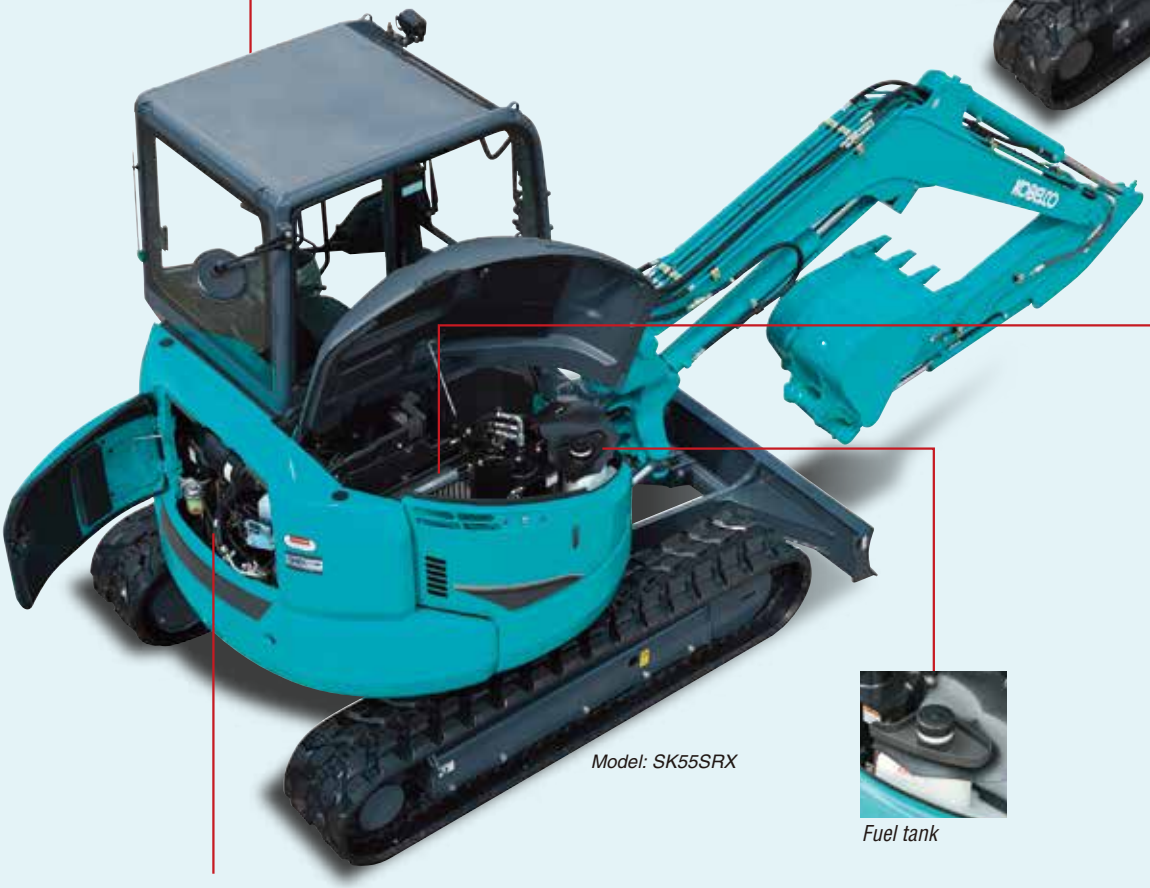
Start-up checks are essential for safe and reliable machine operation. All start-up checks can be performed at ground level, with an easy-to-understand layout and cover design that simplify access and save time.

Easy Access to Component Under the Seat

Two-piece floor mats for easy washing

Hour meter

Model: SK45SRX



Model: SK55SRX

Easy Access to Cooling Unit

Fuel tank

Easy Access to Engine Compartment

High-grade fuel filter

Pre fuel filter with built-in water separator

Air cleaner

COMFORT

Comfortable Work Environment

Spacious Work Environment

The newly designed, rectangular cab is over 820 mm wide, with optimized control layout for comfortable, easy operation. A greater window area further improves visibility. A clear view is provided at the rear, and there's also more floor space, with a seat that slides further to ensure plenty of leg room.

Easy Access

A wide-opening door and a left-hand tilting control console with safety lever that rises high, make it easy for operators to enter and exit the cab.

Work Light

Working light is mounted under the boom to protect from damage.

Skylight

Control Lever

Precise proportional controls (optional) are integrated into the joystick for ease of operation.

Pattern Changer

Pattern changer allows for increased utilization and flexibility to match operator preference.

Pattern Changer is standard fitting for Australia.
Another pattern changer is provided for New Zealand.

Color Liquid Crystal Monitor

The color liquid crystal monitor is fitted as standard. Operation data as well as the full range of machine-status data can readily be checked.

Maintenance

Working hours

Comfortable Operating Environment

Hammer for emergency exit

Climate control

The climate control system is located down and to the right of the seat, keeping the rear view clear.

Vents to send cooled air toward the operator if he desires.

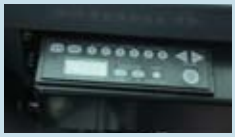
Opening/closing front window

The front window features gas damper cylinders for smooth and easy opening and closing.

Coat hook

Room light

Two-speaker FM/AM radio with station select (optional)



Operator Safety

Reliable Cab/Canopy Structure

The high-strength cab/canopy meets ROPS and TOP GUARD LEVEL 1 standards for greater operator safety.

RELIABILITY

Reliable Construction

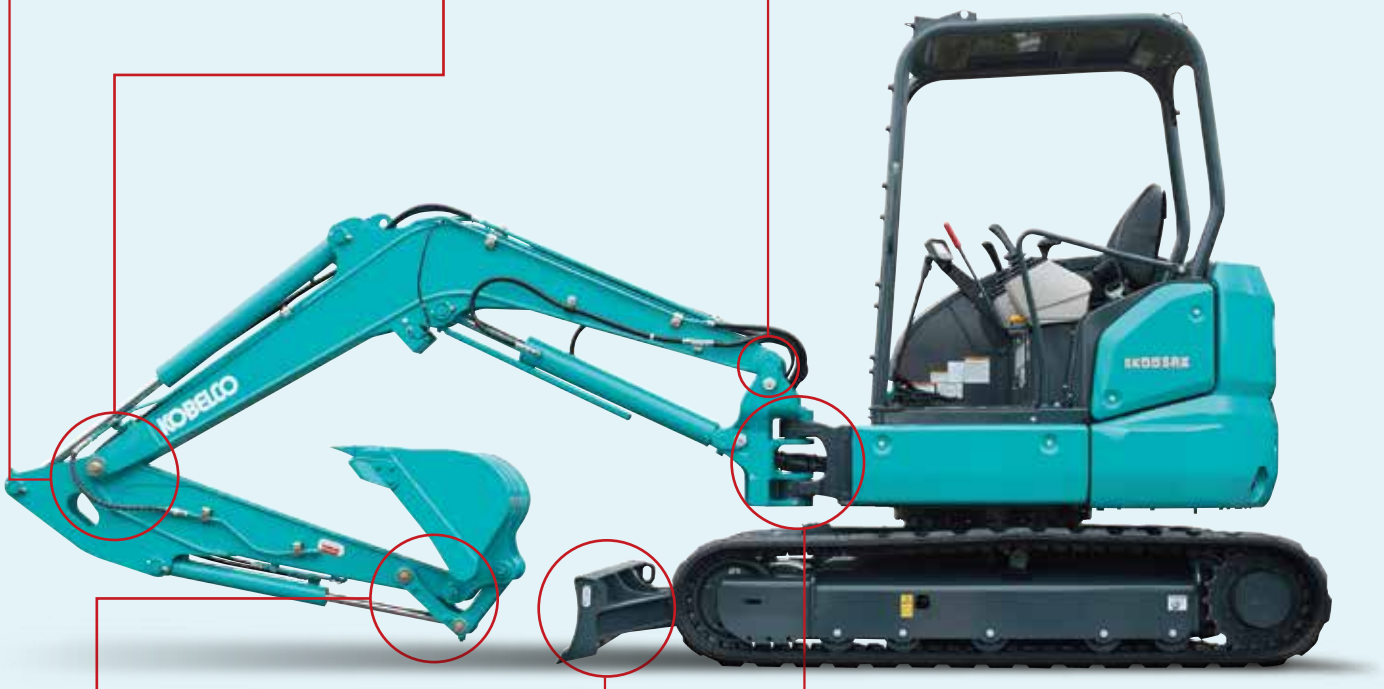
The boom, arm and swing bracket all have large cross-section segments for added attachment strength.

Strong boom and arm

Bolt-tightened pins firmly lock the boom and arm to prevent the boom top from opening laterally.

Forged boom top

Plate type pin



Bucket

Cast-iron idler link provides greater strength.

Dozer

Box construction dozer supports provide greater strength.

Swing bracket

Large, thick cast-iron swing bracket/front bracket.

Hydraulic piping

The hydraulic piping is housed inside the swing bracket.

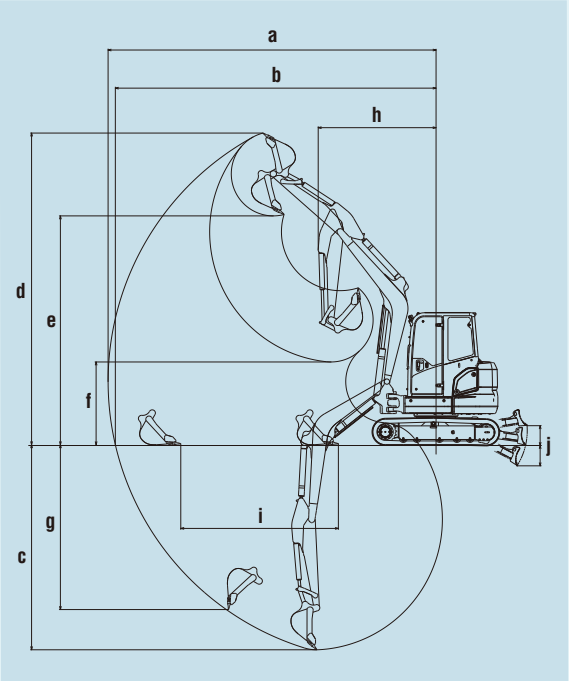
Accumulator for Emergency Attachment Lowering

An installed accumulator allows the attachment to be safety lowered to the ground using in-cab controls in the event of an unexpected engine shut-down and class leading smooth operation.

SPECIFICATIONS

MODEL			SK45SRX		SK55SRX	
Type			**SK45SRX-6**		**SK55SRX-6**	
Crawler Shoe			Rubber	Steel	Rubber	Steel
Machine Mass	Cab	kg	4,550	4,690	5,020	5,160
	Canopy	kg	4,430	4,580	4,900	5,040
Bucket Capacity		m^3	0.14		0.16	
Bucket Width (with side cutter)		mm	600		600	
Arm Length		m	1.55		1.69	
Bucket Digging Force		kN	35.2		35.2	
Arm Crowding Force		kN	20.9		24.6	
ENGINE						
Model			YANMAR 3TNV88-B			
Type			Water cooled, 4-cycle, 4-cylinder, direct injection, diesel engine			
Power Output	(ISO 9249)	kW/min^{-1}	28.3/2,400			
	(ISO 14396)	kW/min^{-1}	29.6/2,400			
Max.Torque	(ISO 9249)	$N{\cdot}m/min^{-1}$	131.1/1,400			
	(ISO 14396)	$N{\cdot}m/min^{-1}$	132.9/1,400			
Displacement		L	2.189			
Fuel Tank		L	75			
HYDRAULIC SYSTEM						
Pump			Two variable displacement pumps + One gear pump			
Max. Discharge Flow		L/min	2 x 49.9, 1 x 33.8			
Relief Valve Setting		MPa	23.0			
Hydraulic Oil Tank (system)		L	27.9 (57.7)			
TRAVEL SYSTEM						
Travel Motors			2 x axial-piston, two-step motors			
Parking Brake			Oil disc brake per motor			
Travel Speed (high/low)		km/h	4.0/2.3	3.7/2.1	4.0/2.3	3.7/2.1
Gradeability		% (degree)	58 (30)			
Drawbar Pulling Force	Cab	kN	55.2		54.9	
	Canopy	kN	55.2		54.9	
CRAWLER						
Shoe Width		mm	400			
Ground Pressure	Cab	kPa	26.1	27.7	28.7	30.4
	Canopy	kPa	25.4	27.0	28	29.7
DOZER BLADE						
Width x Height		mm	1,960 x 345			
SWING SYSTEM						
Swing Motor			Axial piston motor			
Parking Brake			Oil disc brake, hydraulic operated automatically			
Swing Speed		min^{-1}	8.8			
SIDE DIGGING MECHANISM						
Type			Boom swing			

WORKING RANGES

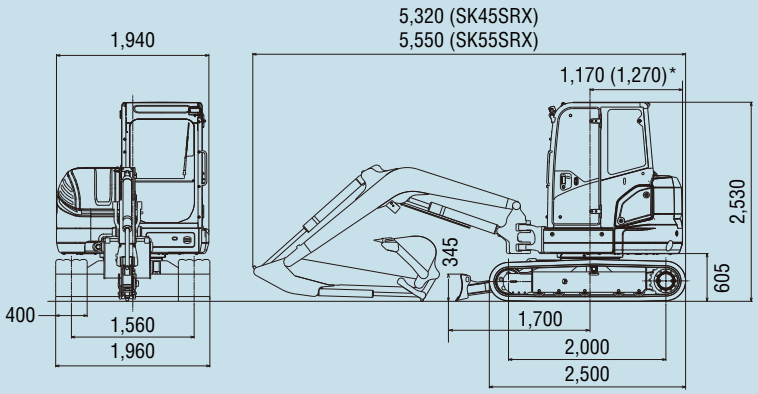


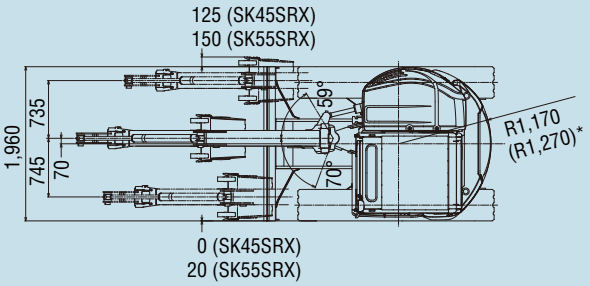
Unit: mm

MODEL	SK45SRX		SK55SRX
	Cab	Canopy	
Arm length	**1.55 m**		**1.69 m**
a- Max. digging reach	5,900		6,270
b- Max. digging reach at ground level	5,750		6,130
c- Max. digging depth	3,440		3,900
d- Max. digging height	5,790	5,860	6,010
e- Max. dumping clearance	4,190	4,260	4,420
f- Min. dumping clearance	1,550	1,610	1,590
g- Max. vertical wall digging depth	3,000		3,240
h- Min. swing radius at boom swing	2,410 1,990	2,360 1,920	2,250 1,900
i- Horizontal digging stroke at ground level	2,550		2,950
j- Dozer blade (height/depth)	465/335		465/335

GENERAL DIMENSIONS

Unit: mm





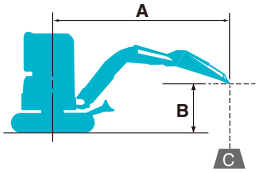
*Figures show the value of SK45SRX/SK55SRX with add-on counterweight.

OPTIONAL EQUIPMENT

• N&B (HCP*) piping	• Bolt-on Pad shoes (for steel shoes)	• BHL lever
• N&B (foot) piping + Rotating N&B (HCP*)	• Add-on counterweight (250 kg) + 100 mm tail swing radius	• Multi-control valve
• N&B (HCP*) piping + Rotating N&B (HCP*)	• Boom & arm holding valve	• Arm & bucket cylinder cover
• ROPS cab with air conditioner	• Wide range of buckets	• Front guard
• Radio (only for cab)	• Rear view mirror	• 12 V power source
• Steel shoe	• Rear under mirror	• Additional light for canopy spec.

*Hand Control Proportional

LIFTING CAPACITIES



Rating over front

Rating over side or 360 degrees

A: Reach from swing centerline to arm top
B: Arm top height above/below ground
C: Lifting capacities in kilograms
Shoe: Rubber shoe Dozer blade: Up
Relief valve setting: 23.0 MPa

SK45SRX Cab — Arm: 1.55 m, Bucket: Without, Rubber shoe: 400 mm

B \ A		1.0 m		2.0 m		3.0 m		4.0 m		5.0 m		At Max. Reach		Radius
4.0 m	kg											*860	840	3.96 m
3.0 m	kg					*1,170	*1,170	990	830			770	650	4.64 m
2.0 m	kg					1,520	1,240	960	800			680	570	4.97 m
1.0 m	kg					1,420	1,150	920	770	660	550	650	550	5.04 m
G. L.	kg			*1,390	*1,390	1,380	1,110	900	740			680	570	4.86 m
-1.0 m	kg	*2,010	*2,010	*2,700	2,170	1,380	1,110	890	740			780	650	4.40 m
-2.0 m	kg			2,970	2,230	1,410	1,140					1,110	920	3.50 m

SK45SRX Cab — Arm: 1.55 m, Bucket: Without, Rubber shoe: 400 mm Add-on Counterweight (250 kg)

B \ A		1.0 m		2.0 m		3.0 m		4.0 m		5.0 m		At Max. Reach		Radius
4.0 m	kg											*860	*860	3.96 m
3.0 m	kg					*1,170	*1,170	1,130	950			*780	750	4.64 m
2.0 m	kg					*1,720	1,420	1,100	920			780	660	4.97 m
1.0 m	kg					1,630	1,330	1,060	890	770	650	760	640	5.04 m
G. L.	kg			*1,390	*1,390	1,590	1,290	1,040	860			790	660	4.86 m
-1.0 m	kg	*2,010	*2,010	*2,700	2,500	1,590	1,290	1,030	860			910	760	4.40 m
-2.0 m	kg			*3,010	2,560	1,620	1,320					1,280	1,060	3.50 m

SK45SRX Canopy — Arm: 1.55 m, Bucket: Without, Rubber shoe: 400 mm

B \ A		1.0 m		2.0 m		3.0 m		4.0 m		5.0 m		At Max. Reach		Radius
4.0 m	kg											*860	820	3.96 m
3.0 m	kg					*1,170	*1,170	960	800			740	630	4.64 m
2.0 m	kg					1,470	1,200	930	780			650	550	4.97 m
1.0 m	kg					1,380	1,120	890	740	640	540	630	530	5.04 m
G. L.	kg			*1,390	*1,390	1,330	1,080	870	720			660	550	4.86 m
-1.0 m	kg	*2,010	*2,010	*2,700	2,100	1,330	1,080	860	710			760	630	4.40 m
-2.0 m	kg			2,870	2,160	1,360	1,100					1,080	890	3.50 m

SK45SRX Canopy — Arm: 1.55 m, Bucket: Without, Rubber shoe: 400 mm Add-on Counterweight (250 kg)

B \ A		1.0 m		2.0 m		3.0 m		4.0 m		5.0 m		At Max. Reach		Radius
4.0 m	kg											*860	*860	3.96 m
3.0 m	kg					*1,170	*1,170	1,100	930			*780	730	4.64 m
2.0 m	kg					1,680	1,380	1,070	900			760	640	4.97 m
1.0 m	kg					1,590	1,300	1,030	860	740	630	730	620	5.04 m
G. L.	kg			*1,390	*1,390	1,540	1,260	1,000	840			760	640	4.86 m
-1.0 m	kg	*2,010	*2,010	*2,700	2,440	1,540	1,250	1,000	840			880	740	4.40 m
-2.0 m	kg			*3,010	2,490	1,570	1,280					1,240	1,030	3.50 m

SK55SRX Cab — Arm: 1.69 m, Bucket: Without, Rubber shoe: 400 mm

B \ A		1.0 m		2.0 m		3.0 m		4.0 m		5.0 m		At Max. Reach		Radius
5.0 m	kg											*1,040	*1,040	3.38 m
4.0 m	kg							*930	*930			970	820	4.47 m
3.0 m	kg							*1,000	970	800	680	780	660	5.07 m
2.0 m	kg					*1,620	1,430	1,110	930	790	660	710	590	5.37 m
1.0 m	kg					1,630	1,320	1,070	880	770	640	680	570	5.43 m
G. L.	kg			*1,250	*1,250	1,580	1,270	1,030	850	760	630	700	590	5.27 m
-1.0 m	kg	*2,080	*2,080	*2,580	2,480	1,580	1,270	1,020	840			790	650	4.85 m
-2.0 m	kg	*3,210	*3,210	*3,360	2,530	1,600	1,290	1,050	860			1,020	840	4.09 m
-3.0 m	kg			*1,590	*1,590							*1,190	*1,190	2.52 m

SK55SRX Cab — Arm: 1.69 m, Bucket: Without, Rubber shoe: 400 mm Add-on Counterweight (250 kg)

B \ A		1.0 m		2.0 m		3.0 m		4.0 m		5.0 m		At Max. Reach		Radius
5.0 m	kg											*1,040	*1,040	3.38 m
4.0 m	kg							*930	*930			*1,000	920	4.47 m
3.0 m	kg							*1,000	*1,000	910	770	890	750	5.07 m
2.0 m	kg					*1,620	1,600	*1,220	1,050	890	760	800	680	5.37 m
1.0 m	kg					1,840	1,500	1,200	1,000	870	740	770	650	5.43 m
G. L.	kg			*1,250	*1,250	1,790	1,450	1,170	970	860	720	800	670	5.27 m
-1.0 m	kg	*2,080	*2,080	*2,580	*2,580	1,790	1,450	1,160	970			890	750	4.85 m
-2.0 m	kg	*3,210	*3,210	*3,360	2,860	1,810	1,470	1,180	990			1,150	960	4.09 m
-3.0 m	kg			*1,590	*1,590							*1,190	*1,190	2.52 m

SK55SRX Canopy — Arm: 1.69 m, Bucket: Without, Rubber shoe: 400 mm

B \ A		1.0 m		2.0 m		3.0 m		4.0 m		5.0 m		At Max. Reach		Radius
5.0 m	kg											*1,040	*1,040	3.38 m
4.0 m	kg							*930	*930			940	790	4.47 m
3.0 m	kg							*1,000	950	780	660	760	640	5.07 m
2.0 m	kg					*1,620	1,390	1,080	900	770	640	680	570	5.37 m
1.0 m	kg					1,590	1,280	1,030	860	750	620	660	550	5.43 m
G. L.	kg			*1,250	*1,250	1,530	1,240	1,000	830	730	610	680	570	5.27 m
-1.0 m	kg	*2,080	*2,080	*2,580	2,410	1,530	1,230	990	820			760	630	4.85 m
-2.0 m	kg	*3,210	*3,210	3,290	2,460	1,560	1,260	1,010	840			980	820	4.09 m
-3.0 m	kg			*1,590	*1,590							*1,190	*1,190	2.52 m

SK55SRX Canopy — Arm: 1.69 m, Bucket: Without, Rubber shoe: 400 mm Add-on Counterweight (250 kg)

B \ A		1.0 m		2.0 m		3.0 m		4.0 m		5.0 m		At Max. Reach		Radius
5.0 m	kg											*1,040	*1,040	3.38 m
4.0 m	kg							*930	*930			*1,000	900	4.47 m
3.0 m	kg							*1,000	*1,000	880	750	860	730	5.07 m
2.0 m	kg					*1,620	1,570	*1,220	1,020	870	740	780	660	5.37 m
1.0 m	kg					1,790	1,460	1,170	980	850	720	750	640	5.43 m
G. L.	kg			*1,250	*1,250	1,740	1,410	1,140	950	830	700	780	650	5.27 m
-1.0 m	kg	*2,080	*2,080	*2,580	*2,580	1,740	1,410	1,130	940			870	730	4.85 m
-2.0 m	kg	*3,210	*3,210	*3,360	2,790	1,770	1,430	1,150	960			1,120	930	4.09 m
-3.0 m	kg			*1,590	*1,590							*1,190	*1,190	2.52 m

Notes:

1. Do not attempt to lift or hold any load that is greater than these lift capacities at their specified lift point radius and heights. Weight of all accessories must be deducted from the above lift capacities.
2. Lift capacities are based on machine standing on level, firm, and uniform ground. User must make allowance for job conditions such as soft or uneven ground, out of level conditions, side loads, sudden stopping of loads, hazardous conditions, experience of personnel, etc.
3. Arm top defined as lift point.
4. The above lifting capacities are in compliance with ISO 10567. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. Lifting capacities marked with an asterisk (*) are limited by hydraulic capacity rather than tipping load.
5. Operator should be fully acquainted with the Operator's and Maintenance Instructions before operating this machine. Rules for safe operation of equipment should be adhered to at all times.
6. Lift capacities apply to only machine as originally manufactured and normally equipped by KOBELCO CONSTRUCTION MACHINERY CO., LTD.

Note: This catalog may contain attachments and optional equipment that are not available in your area. And it may contain photographs of machines with specifications that differ from those of machines sold in your areas. Please consult your nearest KOBELCO distributor for those items you require. Due to our policy of continuous product improvements all designs and specifications are subject to change without advance notice.

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