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| **Department:** | **Public Works** | **Area:** | **Roads** |  |
| **Subject:** | **Asphalt Recycling Unit 5003** |

**SAFEWORK PROCEDURE – ASPHALT RECYCLING UNIT 5003**

**Background:**

Newly acquired Bagela 7000F asphalt recycler to be used in the winter for pot holes, road crossings and other emergency repairs that should not be left until spring to pave and can provide hot-mix anytime it is not available from Hub City. It can produce up to 7 tons an hour and is portable.

**Hazards:**

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| * Burns
 | * Falling
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| * Being crushed
 | * Exposure to steam / smoke
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| * Flying asphalt
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**PPE Required:**

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| * Safety boots.
 | * Hearing protection.
 | * Gloves
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| * Eye protection.
 | * High visibility vest.
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**Pre Set-up:**

* Make sure recycler has both wheels chocked and is level
* Rear props are down and secure with pins
* To avoid fires, do not place the unit below overhead power lines, parts of buildings or trees
* Before operating, familiarize yourself fully with all parts of the machine and its functions
* Read the operation instructions
* Before starting, check if all protective guards, devices operating controls and safety devices are in place and in good working order
* Report to Shop and Foreman if any damage found or not working correctly
* Check fuel and oil for any leakage; check drive chain for drum
* Make sure there is enough small broken asphalt for your needs (football size)

**Procedure:**

* Start engine and bring it to full speed
* Engage the tumbler driving system

Burner Operation:

* Switch on the burner to Stage 2
* After two (2) minutes, set the switch into Stage 3
* The burner control process then works automatically!
* Fill the drum with material until a pressure of approximately 70 bar is shown at the hydraulic pump pressure gauge
* After approximately 10 minutes, the material inside the drum has achieved a temperature of 175o centigrade; the display will show 145o C
* Red flashing light comes on and signals the operator to recharge the material immediately
* If the temperature rises to 170o C in the display, the second nozzle of the burner will be switched off and the heating performance will drop to avoid excessive heat to the asphalt
* When temperature drops to 140o C, the second burner nozzle will be switched on and the burner fires with maximum performance.
* To avoid excessive smoke emission do not over fill the tumbler.

Discharging:

* Ensure the first batch of asphalt is discharged 10 minutes after start-up, red flashing light comes on!
* During continuous operation, keep the contents of the tumbler to a level corresponding to 70 bar on the hydraulic oil pressure gauge.
* If tumbler is overfilled (hydraulic pressure more than 70 bar) the burner efficiency drops dramatically, excessive smoke appears and the temperature in the display decreases suddenly
* When recycling dry milled material, adjust the charging grate of the drum so that a nearly constant temperature is maintained. If required, open or close the grate in intervals.

Stopping Operation:

* Switch off the burner (to Stage 1 – burner fan blowing)
* Make sure the tumbler is empty
* Stop the tumbler drive so that the outlet gate in the low position
* Leave the engine running and the burner fan blowing (burn switch on 1) until the tumbler has cooled down to 50o C then the recycler can be turned off

Work Interruption:

* If the work is to be interrupted for up to thirty minutes, discharge the tumbler to one third or half of its contents
* Close the discharge gate
* Keep the tumbler turning and the burner firing at low rate (first stage)
* If interruption is longer than thirty minutes, discharge the tumbler completely and switch off burner and engine.

Drum Cleaning:

* To make sure all asphalt lumps in the tumbler are thoroughly heated through, close the discharge gate and keep the contents tumbling for five (5) minutes at the first burner stage
* Open discharge gate and with the aid of the forward propping jack, lower the discharge end of the recycler to ensure complete discharge
* Remove anything trapped in the tumbler by fully opening the discharge gate and the grating manually
* Close the gate and grating, keep engine and burner fan running until the tumbler has cooled down to 50o C.
* Finally, switch off burner and engine and shut down the recycler.

Summary:

* Do not start burner unless the tumbler is turning
* To avoid excessive smoke emission, do not over fill the tumbler
* Operation of this recycler must be performed by a trained, competent operator.
* Always have two workers operate the recycler.
* Before reversing the tumbler, make sure it is revolving at slow speed.

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| **Revised:**  |  | **Approved by: Brian Denbigh**  |

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