David Jarvis
Panda Waste
Slane
Navan
Co. Meath

10th January 2013

Dear David,

Many thanks for your enquiry. Please find quotation to follow for trommel as requested. Please note the trommel length proposed is 6.5m as per your request. McDonald propose a length of min. 12m for this application (see efficiency detail below):

McDonald S610 Trommel, 6.5m long x 3m diameter

1.1 Input & throughput consideration:

Proposed Material type	:	MSW
Material Density Range	:	ca. 200-270 kg/m3
Material Size	:	90% passes 0-300mm
Capacity Tons per Hour	:	70 (depending on input material)
Capacity m3/h	:	80 m3/h (at 270 kg/m3)
Screening cut size	:	0-40mm
Required Efficiency	:	>92%

1.2 Trommel Description

Trommel Model		:	S610
Trommel Length	mm	:	6500
Screening Length	mm	:	5800
Trommel Diameter	mm	:	3000
Inclination		:	3 degrees
Trommel efficiency range		:	**65-70% (based on input above)**
Power		:	2 x 7.5 kW
Concrete load		:	110 kN per footprint

1.3 Trommel Specification

A. Support Structure
The support structure consists of main upright legs on the trommel upper body of channel iron tied across with beam members. Main legs are also tied across and length ways with channel irons.

B. Drum
The drum diameter is a 3 metres and the drum has a total length of 6.5 metres. The drum is sloped at an angle of 3 degrees. The inlet and outlet of the trommel are fitted with a 315mm long plate section, 6mm thick. Steel fabricated drum forms support for the screening media. Drum is mounted on 4 No. main support wheels. The main internal runners in the drum support the mesh panel as well as acting as 'lifters' within the drum. The height above the screening surface is approximately 80mm. In addition to the internal runners extra sets of lifters will be fitted within the trommel to assist the lifting of material within the screening drum.

C. Driving and Support Wheels
All wheels are 'HMC-BRAUER' type. The support wheels are single steel wheels. Wheels are fitted with taper roller type bearings.

D. Drive
The drive is a pair of DB Radicon foot mounted geared units (7.5kW CO type David Brown units or similar) consisting of a single 4 pole electric motor, inline gearbox reducing speed to required output speed on drum. Drives are mounted on fabricated support from main chassis. Driving speed on drum will be approx. 12-21 rpm and VSD's are fitted for vari-speed.

E. Screening Media & Efficiency
The trommel will be fitted with 8mm thick plate panels with 40mm aperture plates. Plates are bolted into position and removable should new wearing plate need to be fitted or should the aperature size be changed. This trommel is cutting at 40mm for the entire screening length of 6.5m long. The screening efficiency based on a cut of 40mm is shown in the Figure 1.0 below:

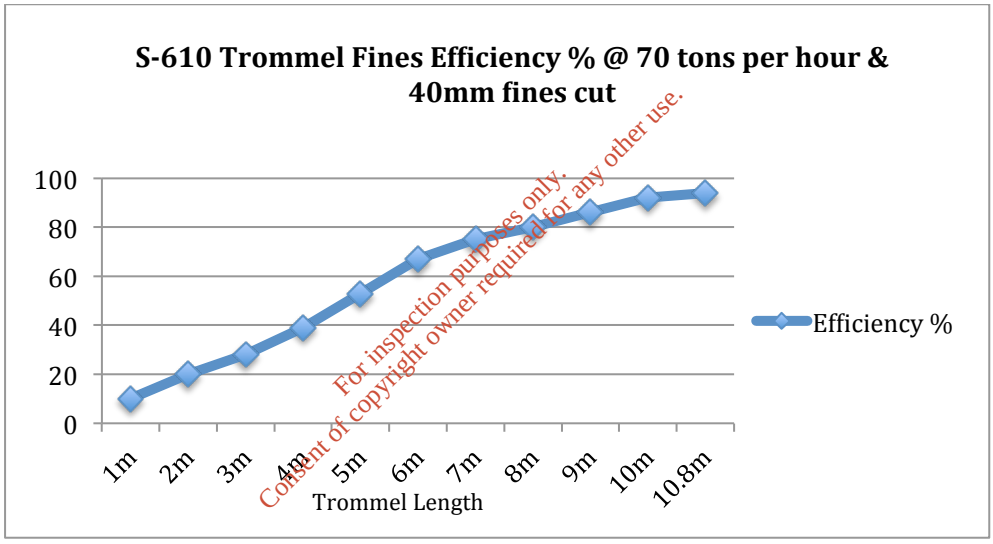

Figure 1.0 – trommel efficiency data by cut size – S610

F. Trommel efficiency by Density on infeed material

The efficiency of the trommel will also be impacted by the density variation of the incoming material. The increased in density of incoming materials, with the tonnage reminaing constant, will result in an increase in trommel efficiency. This is illustrated in 2.0 below:

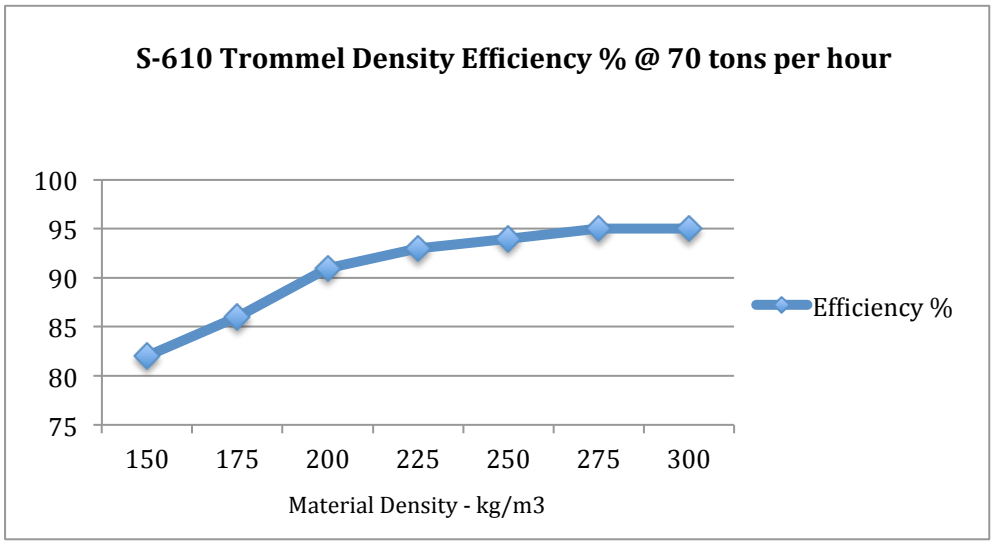

Figure 2.0 – trommel efficiency data by material density – S610

G. Manuals & CE certification

In accordance with the machinery directive (11/37/EC), the following documents will be submitted upon completion:

- A CE certificate of confirmity
- A complete user handbook
- List of capacities
- Machine handbook (including maintenance instructions)
- Lubrication Schedules

Ex works Price for Trommel detailed above - €56,820

Please note this price is ex works and excludes the following pending further detail:

- Access catwalks
- Fines chute
- Cleaning brushes
- Delivery to site
- Installation & Commissioning

The above items can be confirmed once the proposed layout is prepared.

Kind regards,

Alan Loughnane
McDonald International Ltd.