STL SPRAYBOOTH TECHNOLOGY LIMITED	**Acoustic Information for Spraymate Booth with 710mm Impeller**

Site: IRG Wolverhampton	Project Ref: STL1404
By: Teodor Cristurean	Booth Type: STL Spraymate

The information given is to enable an evaluation of the calculated sound levels at the rear and front boundaries. The data from the spray booth extract ventilation system have been used as this is the predominant sound source.

Fan Impeller details

Impeller Type – Backward Curved
Fan Speed – 1400 rpm
Duty 26,000 m3/hr at 400Pa

Duct size

The duct used for the inlet and extract fan will be 630mm galvanised ducting. The inlet duct will terminate outside the back wall with a beard beak. The extract duct will exit the back wall and it will run up alongside the wall and it will terminate at 3m above the ridge.

Fan Acoustic Data

The fan curve shows a “A” decibel free outlet sound power level LW(A)8
Fan Sound Power Level = 98dB(A) LWA8

Sound Level calculated at Boundary

From the fan manufactures acoustic information the single level has been split across the octave band spectrum. Installation losses have been applied for the ducted system and terminal. Free field reduction has been applied for the different distances between the outlet with the front and rear boundaries

	Octave Band Mid-Frequency (Hz)								
	63	125	250	500	1k	2k	4k	8k	Total
"A" Weighted Front Boundary	13	28	25	22	33	28	22	12	36
"A" Weighted Rear Boundary	19	34	31	28	39	34	28	18	42

Resultant “A” Weighted Sound Level Free Field at Boundary

Front Boundary = 36 dB(A)
Rear Boundary = 42 dB(A)

Sound Evaluation at Boundary

Using information from the Centre for Hearing and Communication the resultant dB(A) levels can be compared with levels as a point of reference

10 dB(A) normal breathing
20 dB(A) whispering at 5 feet
30 dB(A) soft whisper
40 dB(A) quiet residential Area
50 dB(A) rainfall
60 dB(A) normal conversation
70 dB(A) Freeway Traffic

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The resultant sound levels at the boundary equates to a level that is similar to the background noise in a quiet residential area. The facility sits in a light industrial area that also backs onto a retail area. It can be established that the resultant sound emitted from the booth ventilation system is below the background level of the area. As a result there will be no noise impact at the properties boundaries.