SSS Calculation at NSR SS11a | **Mitigated** | Barrier height (m)= 5.5

NSR	No. of	Ground Level	Hr	ASR
SS11a	Storey	mPD	m	
	2	15	4.5	B

Loco launch / Arrive **NIGHT** — Remark: plus 10log(2) is for converting of Leq(30min) to Leq(1hr).

	Segment	Hor D	Angle	SEL 15m	SEL NSR (for 30min no shield)	Leq NSR (At NSR, no shield)	Shield	Track Level mPD	Hb	Dsb	Dbr	Hs	D	P	A barrier	IL barrier	Wheel Squeal (dB)	Leq, night (At NSR, incl façade)		Shadow zone?
		m	Deg						m	m	m	m	m	m						
Loco	1	50	10	85	70.2	37.6	IMPD Bldg	15	9.35	42	8	3	50.0	1.8	15.0	15.0	0	25.6		Yes
	2a	50	6.9	85	68.6	36.0	Barrier	15	5.5	28	22	3	50.0	0.1	8.7	8.7	0	30.3		Yes
	2b	59	9	85	69.1	36.5	Barrier	15	5.5	37	22	3	59.0	0.1	7.7	7.7	6	37.7		Yes
	2c	85	33.9	85	73.2	40.6	Barrier	15	5.5	55	30	3	85.0	0.1	6.3	6.3	6	43.4		Yes
	3a	85	65.2	85	76.1	43.5	Loco Shed	15	9.45	53	32	3	85.0	0.8	15.0	15.0	0	31.5		Yes
	3b	85	8.9	85	67.4	34.8	Loco Shed	15	9.45	53	32	3	85.0	0.8	15.0	15.0	6	28.8		Yes

Remark: For legend of parameters and remark for equations, please refers to the bottom of spreadsheet "SS2".

At NSR, incl façade
Night time — Noise criteria

Leq Total	ASR	Leq, night	Status	Lmax 15m	Lmax Hor D	Lmax NSR	
44.9	B	50	OK	86	48	70.2	near track
				86	85	73.7	far track with curve
						73.7	Total

Legend:
Hr: Height of highest floor at receiver
Hor D: Horizontal distance
Angle: Angle of View
Hb: Height of barrier or shield
Dsb: Horizontal distance from noise source to barrier
Dbr: Horizontal distance from barrier to receiver
Hs: Height of noise source
D: Direct path
P: Path difference=Shielded path - D
A barrier: Barrier attenuation (dB)
IL barrier: Barrier loss (dB)

Remark for Equations:
(1): distance attenuation and angle of view adjustment.
plus 10log(2) is for one set of works train having a loco car at two ends.
(2): SEL conversion to Leq: Leq = SEL + 10 log V -35.6 ref: FTA Guidance Manual Table 5-2 Rail vehicle ;
plus 10log(2) is to convert Leq(30min) to Leq(1hr).
(3): Barrier effect, ref: FTA Guidance Manual, Table 6-9.
(4): To check whether the direct path ray is under shadow zone of shielding.
(5): Loco distance adjustment: 20 log (D1/D2) adjusted to point source.
(6): Direction correction factor for angle between shed exit direction to NSR or direction correction for roof louvre to NSR.
(7): general equation for calculating sound pressure from sound power in free field.