

ANNEX 4C

Equipment List and Associated Sound Power Level for Construction Activities (Unmitigated)

A. Expansion of STKSTW / Construction of TSTP

Type of PME	TM Code	No. of Units	SWL - dB(A)	On-time %	Barrier Correction - dB(A)	Corrected SWL - dB(A)	Total SWL - dB(A)
Breaker, excavator mounted	027	1	122	50%	0	119	122
Dump truck	067	1	117	50%	0	114	
Crane, mobile	048	1	112	75%	0	111	
Excavator	081	1	112	75%	0	111	
Generator, standard	101	2	108	100%	0	111	
Air compressor	001	2	100	100%	0	103	
Lorry with crane/grab	141	1	112	75%	0	111	
Water pump, submersible, electric	283	2	85	100%	0	88	
Concrete lorry mixer	044	1	109	50%	0	106	
Poker, vibratory (electric)	170	1	113	50%	0	110	

B. Construction of submarine outfall using HDD

Type of PME	TM Code	No. of Units	SWL - dB(A)	On-time %	Barrier Correction - dB(A)	Corrected SWL - dB(A)	Total SWL - dB(A)
Excavator	081	1	112	75%	0	111	120
Dump truck	067	1	117	75%	0	116	
Crane, mobile	048	1	112	75%	0	111	
Drilling rig	*	1	110	100%	0	110	
Generator, standard	101	2	108	100%	0	111	
Air compressor	001	2	100	100%	0	103	
Lorry with crane/grab	141	1	112	75%	0	111	
Water pump, submersible, electric	283	2	85	100%	0	88	
Drilling fluid mixer	*	1	90	100%	0	90	
Drilling fluid pump	*	1	105	100%	0	105	
Water / mud pump (electric)	281	4	88	100%	0	94	
Bentonite filtering plant	162	1	105	100%	0	105	

C. Construction of gravity sewers

Type of PME	TM Code	No. of Units	SWL - dB(A)	On-time %	Barrier Correction - dB(A)	Corrected SWL - dB(A)	Total SWL - dB(A)
Breaker, hand-held, mass > 10 kg and < 20 kg	024	1	108	50%	0	105	117
Excavator	081	1	112	50%	0	109	
Air compressor	003	1	104	100%	0	104	
Generator	101	1	108	100%	0	108	
Dump truck	067	1	117	50%	0	114	
Water pump, submersible, electric	283	1	85	100%	0	85	
Vibratory compactor	050	1	105	75%	0	104	
Road roller	185	1	108	75%	0	107	

D. Decommissioning of existing outfall / rising main

Type of PME	TM Code	No. of Units	SWL - dB(A)	On-time %	Barrier Correction - dB(A)	Corrected SWL - dB(A)	Total SWL - dB(A)
Water pump, submersible, electric	283	1	85	100%	0	85	112
Water jetting unit (diesel), silenced	*	1	94	75%	0	93	
Grout mixer	*	1	90	75%	0	89	
Grout pump	*	1	105	75%	0	104	
Lorry with crane/grab	141	1	112	50%	0	109	
Generator	101	1	108	100%	0	108	

E. Demolition of STKSPS

Type of PME	TM Code	No. of Units	SWL - dB(A)	On-time %	Barrier Correction - dB(A)	Corrected SWL - dB(A)	Total SWL - dB(A)
Breaker, excavator mounted	027	1	122	50%	0	119	121
Dump truck	067	1	117	50%	0	114	
Excavator	081	1	112	75%	0	111	

PME = Powered Mechanical Equipment

SWL = Sound Power Level

TM = Technical Memorandum on Noise from Construction Work other than Percussive Piling

* = Sound power levels of other commonly used PME (source: Guidance Notes for Licence Application in EPD website)

ANNEX 4C

Equipment List and Associated Sound Power Level for Construction Activities (Mitigated 1 - Use of Quiet Plant)

A. Expansion of STKSTW / Construction of TSTP

Type of PME	TM Code	No. of Units	SWL - dB(A)	On-time %	Barrier Correction - dB(A)	Corrected SWL - dB(A)	Total SWL - dB(A)
Concrete crusher, excavator mounted	*	1	103	50%	0	100	112
Dump truck (5.5 tonne < gross vehicle weight < 38 tonne)	*	1	105	50%	0	102	
Crane, mobile	QPME EPD-00401	1	105	75%	0	104	
Excavator	QPME EPD-00773	1	103	75%	0	102	
Generator, silenced	102	2	100	100%	0	103	
Air compressor	001	2	100	100%	0	103	
Lorry (5.5 tonne < gross vehicle weight < 38 tonne)	*	1	105	75%	0	104	
Water pump, submersible, electric	283	2	85	100%	0	88	
Concrete lorry mixer	044	1	109	50%	0	106	
Poker, vibratory (electric)	*	1	102	50%	0	99	

B. Construction of submarine outfall using HDD

Type of PME	TM Code	No. of Units	SWL - dB(A)	On-time %	Barrier Correction - dB(A)	Corrected SWL - dB(A)	Total SWL - dB(A)
Excavator	QPME EPD-00773	1	103	75%	0	102	115
Dump truck (5.5 tonne < gross vehicle weight < 38 tonne)	*	1	105	75%	0	104	
Crane, mobile	QPME EPD-00401	1	105	75%	0	104	
Drilling rig	*	1	110	100%	0	110	
Generator, silenced	102	2	100	100%	0	103	
Air compressor	001	2	100	100%	0	103	
Lorry (5.5 tonne < gross vehicle weight < 38 tonne)	*	1	105	75%	0	104	
Water pump, submersible, electric	283	2	85	100%	0	88	
Drilling fluid mixer	*	1	90	100%	0	90	
Drilling fluid pump	*	1	105	100%	0	105	
Water / mud pump (electric)	281	4	88	100%	0	94	
Bentonite filtering plant	162	1	105	100%	0	105	

C. Construction of gravity sewers

Type of PME	TM Code	No. of Units	SWL - dB(A)	On-time %	Barrier Correction - dB(A)	Corrected SWL - dB(A)	Total SWL - dB(A)
Breaker, hand-held, mass > 10 kg and < 20 kg	024	1	108	50%	0	105	110
Excavator	QPME EPD-00773	1	103	50%	0	100	
Air compressor	001	1	100	100%	0	100	
Generator, silenced	102	1	100	100%	0	100	
Dump truck (5.5 tonne < gross vehicle weight < 38 tonne)	*	1	105	50%	0	102	
Water pump, submersible, electric	283	1	85	100%	0	85	
Vibratory compactor	QPME-EPD-00085	1	102	75%	0	101	
Road roller	QPME-EPD-00244	1	99	75%	0	98	

D. Decommissioning of existing outfall / rising main

Type of PME	TM Code	No. of Units	SWL - dB(A)	On-time %	Barrier Correction - dB(A)	Corrected SWL - dB(A)	Total SWL - dB(A)
Water pump, submersible, electric	283	1	85	100%	0	85	107
Water jetting unit (diesel), silenced	*	1	94	75%	0	93	
Grout mixer	*	1	90	75%	0	89	
Grout pump	*	1	105	75%	0	104	
Lorry (5.5 tonne < gross vehicle weight < 38 tonne)	*	1	105	50%	0	102	
Generator, silenced	102	1	100	100%	0	100	

E. Demolition of STKSPS

Type of PME	TM Code	No. of Units	SWL - dB(A)	On-time %	Barrier Correction - dB(A)	Corrected SWL - dB(A)	Total SWL - dB(A)
Concrete crusher, excavator mounted	*	1	103	50%	0	100	106
Dump truck (5.5 tonne < gross vehicle weight < 38 tonne)	*	1	105	50%	0	102	
Excavator	QPME EPD-00773	1	103	75%	0	102	

PME = Powered Mechanical Equipment

SWL = Sound Power Level

TM = Technical Memorandum on Noise from Construction Work other than Percussive Piling

* = Sound power levels of other commonly used PME (source: Guidance Notes for Licence Application in EPD website)

QPME = Quality Powered Mechanical Equipment

ANNEX 4C

Equipment List and Associated Sound Power Level for Construction Activities (Mitigated 2 - Use of Quiet Plant + Temporary Noise Barriers)

A. Expansion of STKSTW / Construction of TSTP

Type of PME	TM Code	No. of Units	SWL - dB(A)	On-time %	Barrier Correction - dB(A)	Corrected SWL - dB(A)	Total SWL - dB(A)
Concrete crusher, excavator mounted	*	1	103	50%	-5	95	107
Dump truck (5.5 tonne < gross vehicle weight < 38 tonne)	*	1	105	50%	-5	97	
Crane, mobile	QPME EPD-00401	1	105	75%	-5	99	
Excavator	QPME EPD-00773	1	103	75%	-5	97	
Generator, silenced	102	2	100	100%	-10	93	
Air compressor	001	2	100	100%	-10	93	
Lorry (5.5 tonne < gross vehicle weight < 38 tonne)	*	1	105	75%	-5	99	
Water pump, submersible, electric	283	2	85	100%	-10	78	
Concrete lorry mixer	044	1	109	50%	-5	101	
Poker, vibratory (electric)	*	1	102	50%	-5	94	

B. Construction of submarine outfall using HDD

Type of PME	TM Code	No. of Units	SWL - dB(A)	On-time %	Barrier Correction - dB(A)	Corrected SWL - dB(A)	Total SWL - dB(A)
Excavator	QPME EPD-00773	1	103	75%	-5	97	108
Dump truck (5.5 tonne < gross vehicle weight < 38 tonne)	*	1	105	75%	-5	99	
Crane, mobile	QPME EPD-00401	1	105	75%	-5	99	
Drilling rig	*	1	110	100%	-5	105	
Generator, silenced	102	2	100	100%	-10	93	
Air compressor	001	2	100	100%	-10	93	
Lorry (5.5 tonne < gross vehicle weight < 38 tonne)	*	1	105	75%	-5	99	
Water pump, submersible, electric	283	2	85	100%	-10	78	
Drilling fluid mixer	*	1	90	100%	-10	80	
Drilling fluid pump	*	1	105	100%	-10	95	
Water / mud pump (electric)	281	4	88	100%	-10	84	
Bentonite filtering plant	162	1	105	100%	-10	95	

C. Construction of gravity sewers

Type of PME	TM Code	No. of Units	SWL - dB(A)	On-time %	Barrier Correction - dB(A)	Corrected SWL - dB(A)	Total SWL - dB(A)
Breaker, hand-held, mass > 10 kg and < 20 kg	024	1	108	50%	-5	100	104
Excavator	QPME EPD-00773	1	103	50%	-5	95	
Air compressor	001	1	100	100%	-10	90	
Generator, silenced	102	1	100	100%	-10	90	
Dump truck (5.5 tonne < gross vehicle weight < 38 tonne)	*	1	105	50%	-5	97	
Water pump, submersible, electric	283	1	85	100%	-10	75	
Vibratory compactor	QPME-EPD-00085	1	102	75%	-5	96	
Road roller	QPME-EPD-00244	1	99	75%	-5	93	

D. Decommissioning of existing outfall / rising main

Type of PME	TM Code	No. of Units	SWL - dB(A)	On-time %	Barrier Correction - dB(A)	Corrected SWL - dB(A)	Total SWL - dB(A)
Water pump, submersible, electric	283	1	85	100%	0	85	107
Water jetting unit (diesel), silenced	*	1	94	75%	0	93	
Grout mixer	*	1	90	75%	0	89	
Grout pump	*	1	105	75%	0	104	
Lorry (5.5 tonne < gross vehicle weight < 38 tonne)	*	1	105	50%	0	102	
Generator, silenced	102	1	100	100%	0	100	

E. Demolition of STKSPS

Type of PME	TM Code	No. of Units	SWL - dB(A)	On-time %	Barrier Correction - dB(A)	Corrected SWL - dB(A)	Total SWL - dB(A)
Concrete crusher, excavator mounted	*	1	103	50%	0	100	106
Dump truck (5.5 tonne < gross vehicle weight < 38 tonne)	*	1	105	50%	0	102	
Excavator	QPME EPD-00773	1	103	75%	0	102	

PME = Powered Mechanical Equipment

SWL = Sound Power Level

TM = Technical Memorandum on Noise from Construction Work other than Percussive Piling

* = Sound power levels of other commonly used PME (source: Guidance Notes for Licence Application in EPD website)

QPME = Quality Powered Mechanical Equipment

ANNEX 4C

Table of Predicted (unmitigated and mitigated) Construction Noise Levels at Representative NSRs (Sheet 1 of 2)

Noise Sensitive Receivers	Construction Works Involved	Distance of NSR from Notional Point, m	Unmitigated Sound Power Level, dB(A)	Predicted Noise Level (unmitigated), dB(A)	Total Predicted Noise Level (unmitigated), dB(A)	Mitigated 1 Sound Power Level, dB(A)	Predicted Noise Level (Mitigated 1), dB(A)	Total Predicted Noise Level (Mitigated 1), dB(A)	Mitigated 2 Sound Power Level, dB(A)	Predicted Noise Level (Mitigated 2), dB(A)	Total Predicted Noise Level (Mitigated 2), dB(A)
NSR1	A. Expansion of STKSTW / Construction of TSTP	143	122	74	77	112	64	69	107	59	63
	B. Construction of submarine outfall using HDD	141	120	72		115	67		108	60	
	C. Construction of gravity sewers	165	117	68		110	61		104	55	
NSR2	A. Expansion of STKSTW / Construction of TSTP	150	122	73	77	112	63	70	107	58	64
	B. Construction of submarine outfall using HDD	164	120	71		115	66		108	59	
	C. Construction of gravity sewers	85	117	73		110	66		104	60	
NSR3	A. Expansion of STKSTW / Construction of TSTP	405	122	65	70	112	55	63	107	50	57
	B. Construction of submarine outfall using HDD	456	120	62		115	57		108	50	
	C. Construction of gravity sewers	163	117	68		110	61		104	55	
NSR4	A. Expansion of STKSTW / Construction of TSTP	170	122	72	77	112	62	70	107	57	64
	B. Construction of submarine outfall using HDD	214	120	68		115	63		108	56	
	C. Construction of gravity sewers	73	117	75		110	68		104	62	
NSR5	A. Expansion of STKSTW / Construction of TSTP	199	122	71	76	112	61	68	107	56	62
	B. Construction of submarine outfall using HDD	252	120	67		115	62		108	55	
	C. Construction of gravity sewers	87	117	73		110	66		104	60	
NSR6	A. Expansion of STKSTW / Construction of TSTP	195	122	71	88	112	61	81	107	56	75
	B. Construction of submarine outfall using HDD	252	120	67		115	62		108	55	
	C. Construction of gravity sewers	16	117	88		110	81		104	75	
NSR7	A. Expansion of STKSTW / Construction of TSTP	320	122	67	87	112	57	80	107	52	74
	B. Construction of submarine outfall using HDD	375	120	64		115	59		108	52	
	C. Construction of gravity sewers	18	117	87		110	80		104	74	
NSR8	A. Expansion of STKSTW / Construction of TSTP	395	122	65	88	112	55	81	107	50	75
	B. Construction of submarine outfall using HDD	452	120	62		115	57		108	50	
	C. Construction of gravity sewers	16	117	88		110	81		104	75	
NSR9	A. Expansion of STKSTW / Construction of TSTP	90	122	78	80	112	68	72	107	63	67
	B. Construction of submarine outfall using HDD	140	120	72		115	67		108	60	
	C. Construction of gravity sewers	70	117	75		110	68		104	62	

NOTES:

Mitigated 1 : Use of Quiet Equipment

Mitigated 2 : Use of Quiet Equipment + Temporary Noise Barrier

3 dB(A) façade correction has been included in the Predicted Noise Level

EIAO-TM daytime construction noise standards: residential premises 75 dB(A); educational institutions 70 dB(A), (65 dB(A) during examination)

ANNEX 4C

Table of Predicted (unmitigated and mitigated) Construction Noise Levels at Representative NSRs (Sheet 2 of 2)

Noise Sensitive Receivers	Construction Works Involved	Distance of NSR from Notional Point, m	Unmitigated Sound Power Level, dB(A)	Predicted Noise Level (unmitigated), dB(A)	Total Predicted Noise Level (unmitigated), dB(A)	Mitigated 1 Sound Power Level, dB(A)	Predicted Noise Level (Mitigated 1), dB(A)	Total Predicted Noise Level (Mitigated 1), dB(A)	Mitigated 2 Sound Power Level, dB(A)	Predicted Noise Level (Mitigated 2), dB(A)	Total Predicted Noise Level (Mitigated 2), dB(A)
NSR1	D. Decommissioning of existing rising main (STKSTW)	143	112	64	67	107	59	62	107	59	62
	D. Decommissioning of existing rising main (STKSPS)	498	112	53		107	48				
	D. Decommissioning of existing outfall (STKSTW)	143	112	64		107	59				
NSR2	D. Decommissioning of existing rising main (STKSTW)	150	112	63	67	107	58	62	107	58	62
	D. Decommissioning of existing rising main (STKSPS)	414	112	55		107	50				
	D. Decommissioning of existing outfall (STKSTW)	150	112	63		107	58				
NSR3	D. Decommissioning of existing rising main (STKSTW)	405	112	55	64	107	50	59	107	50	59
	D. Decommissioning of existing rising main (STKSPS)	152	112	63		107	58				
	D. Decommissioning of existing outfall (STKSTW)	405	112	55		107	50				
NSR4	D. Decommissioning of existing rising main (STKSTW)	170	112	62	66	107	57	61	107	57	61
	D. Decommissioning of existing rising main (STKSPS)	268	112	58		107	53				
	D. Decommissioning of existing outfall (STKSTW)	170	112	62		107	57				
NSR5	D. Decommissioning of existing rising main (STKSTW)	199	112	61	66	107	56	61	107	56	61
	D. Decommissioning of existing rising main (STKSPS)	198	112	61		107	56				
	D. Decommissioning of existing outfall (STKSTW)	199	112	61		107	56				
NSR6	D. Decommissioning of existing rising main (STKSTW)	195	112	61	66	107	56	61	107	56	61
	D. Decommissioning of existing rising main (STKSPS)	180	112	62		107	57				
	D. Decommissioning of existing outfall (STKSTW)	195	112	61		107	56				
NSR7	D. Decommissioning of existing rising main (STKSTW)	320	112	57	72	107	52	67	107	52	67
	D. Decommissioning of existing rising main (STKSPS)	61	112	71		107	66				
	D. Decommissioning of existing outfall (STKSTW)	320	112	57		107	52				
NSR8	D. Decommissioning of existing rising main (STKSTW)	395	112	55	80	107	50	75	107	50	75
	D. Decommissioning of existing rising main (STKSPS)	23	112	80		107	75				
	D. Decommissioning of existing outfall (STKSTW)	395	112	55		107	50				
NSR9	D. Decommissioning of existing rising main (STKSTW)	76	112	69	73	107	64	68	107	64	68
	D. Decommissioning of existing rising main (STKSPS)	292	112	58		107	53				
	D. Decommissioning of existing outfall (STKSTW)	76	112	69		107	64				

Noise Sensitive Receivers	Construction Works Involved	Distance of NSR from Notional Point, m	Unmitigated Sound Power Level, dB(A)	Predicted Noise Level (unmitigated), dB(A)	Total Predicted Noise Level (unmitigated), dB(A)	Mitigated 1 Sound Power Level, dB(A)	Predicted Noise Level (Mitigated 1), dB(A)	Total Predicted Noise Level (Mitigated 1), dB(A)	Mitigated 2 Sound Power Level, dB(A)	Predicted Noise Level (Mitigated 2), dB(A)	Total Predicted Noise Level (Mitigated 2), dB(A)
NSR1	E. Demolition of STKSPS	498	121	62	62	106	47	47	106	47	47
NSR2	E. Demolition of STKSPS	414	121	64	64	106	49	49	106	49	49
NSR3	E. Demolition of STKSPS	152	121	72	72	106	57	57	106	57	57
NSR4	E. Demolition of STKSPS	268	121	67	67	106	52	52	106	52	52
NSR5	E. Demolition of STKSPS	198	121	70	70	106	55	55	106	55	55
NSR6	D. Demolition of STKSPS	180	121	71	71	106	56	56	106	56	56
NSR7	E. Demolition of STKSPS	61	121	80	80	106	65	65	106	65	65
NSR8	E. Demolition of STKSPS	23	121	89	89	106	74	74	106	74	74
NSR9	E. Demolition of STKSPS	290	121	67	67	106	52	52	106	52	52

NOTES:

Mitigated 1 : Use of Quiet Equipment

Mitigated 2 : Use of Quiet Equipment + Temporary Noise Barrier

3 dB(A) façade correction has been included in the Predicted Noise Level

EIAO-TM daytime construction noise standards: residential premises 75 dB(A); educational institutions 70 dB(A), (65 dB(A) during examination)