

# Construction Noise Worksheets

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Construction Noise Levels (no shielding assumed)

Case Description: Al Larson Boat Shop Improvement Project, Construction Noise Levels

---- Receptor #1 ----		Baselines (dBA)			Land Use
Description	Daytime	Evening	Night		
Al Larson Marina	57		54	54 Residential	

  

Equipment Description	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)
Derrick Barge Crane Hoist		16		88
Concrete Mixer Truck		40		78.8
Dump Truck		40		76.5
Front End Loader		40		79.1
Compressor (air)		40		77.7
Generator		50		80.6
Barge Crane		85		88
Impact Pile Driver		20		101.3
Excavator		40		80.7
Grader		40	85	
Paver		50		77.2
Roller		20		80
Backhoe		40		77.6
Crane		16		80.6
Slurry Trenching Machine		50		80.4
Dozer		40		81.7
Pickup Truck		40		75

  

Equipment	Calculated (dBA)		Total (Ambient + Equipment)	Increase (Total — Ambient)
	Lmax	Leq	Leq	
Derrick Barge Crane Hoist	82	74	74.08	17.08
Concrete Mixer Truck	63.8	59.9	61.69	4.69
Dump Truck	61.5	57.5	60.26	3.26
Front End Loader	64.1	60.2	61.89	4.89
Compressor (air)	62.7	58.7	60.94	3.94
Generator	65.7	62.7	63.73	6.73
Barge Crane	73	72.3	72.42	15.42
Impact Pile Driver	86.3	79.3	79.32	22.32
Excavator	65.7	61.8	63.04	6.04
Grader	70	66.1	66.6	9.6
Paver	62.3	59.2	61.24	4.24
Roller	65	58	60.53	3.53
Backhoe	62.6	58.6	60.88	3.88
Crane	65.6	57.6	60.32	3.32
Slurry Trenching Machine	65.4	62.4	63.5	6.5
Dozer	66.7	62.7	63.73	6.73
Pickup Truck	60	56.1	59.58	2.58

Construction Noise Levels (no shielding assumed)

---- Receptor #2 ---- Description	Baselines (dBA)			Land Use
	Daytime	Evening	Night	
San Pedro	65		62	62 Residential

Equipment Description	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)
Derrick Barge Crane Hoist		16		88
Concrete Mixer Truck		40		78.8
Dump Truck		40		76.5
Front End Loader		40		79.1
Compressor (air)		40		77.7
Generator		50		80.6
Barge Crane		85		88
Impact Pile Driver		20		101.3
Excavator		40		80.7
Grader		40	85	
Paver		50		77.2
Roller		20		80
Backhoe		40		77.6
Crane		16		80.6
Slurry Trenching Machine		50		80.4
Dozer		40		81.7
Pickup Truck		40		75

Equipment	Calculated (dBA)		Total (Ambient + Equipment)	Increase (Total — Ambient)
	Lmax	Leq	Leq	
Derrick Barge Crane Hoist	49.9	42	65.02	0.02
Concrete Mixer Truck	40.7	36.8	65	0
Dump Truck	38.4	34.4	65	0
Front End Loader	41	37.1	65	0
Compressor (air)	39.6	35.6	65	0
Generator	42.6	39.6	65.01	0.01
Barge Crane	49.9	49.2	65.11	0.11
Impact Pile Driver	63.2	56.2	65.53	0.53
Excavator	42.6	38.7	65.01	0.01
Grader	46.9	43	65.02	0.02
Paver	39.2	36.1	65	0
Roller	41.9	34.9	65	0
Backhoe	39.5	35.5	65	0
Crane	42.5	34.5	65	0
Slurry Trenching Machine	42.3	39.3	65.01	0.01
Dozer	43.6	39.6	65.01	0.01
Pickup Truck	36.9	33	65	0

Construction Noise Levels (no shielding assumed)

---- Receptor #3 ---- Description	Baselines (dBA)			Land Use
	Daytime	Evening	Night	
Reservation Point	55	52		52 Residential

Equipment Description	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)
Derrick Barge Crane Hoist		16		88
Concrete Mixer Truck		40		78.8
Dump Truck		40		76.5
Front End Loader		40		79.1
Compressor (air)		40		77.7
Generator		50		80.6
Barge Crane		85		88
Impact Pile Driver		20		101.3
Excavator		40		80.7
Grader		40	85	
Paver		50		77.2
Roller		20		80
Backhoe		40		77.6
Crane		16		80.6
Slurry Trenching Machine		50		80.4
Dozer		40		81.7
Pickup Truck		40		75

Equipment	Calculated (dBA)		Total (Ambient + Equipment)	Increase (Total — Ambient)
	Lmax	Leq	Leq	
Derrick Barge Crane Hoist	51.1	43.1	55.27	0.27
Concrete Mixer Truck	41.9	37.9	55.08	0.08
Dump Truck	39.5	35.6	55.04	0.04
Front End Loader	42.2	38.2	55.08	0.08
Compressor (air)	40.8	36.8	55.06	0.06
Generator	43.7	40.7	55.15	0.15
Barge Crane	51.1	50.4	56.29	1.29
Impact Pile Driver	64.4	57.4	59.37	4.37
Excavator	43.8	39.8	55.12	0.12
Grader	48.1	44.1	55.33	0.33
Paver	40.3	37.3	55.07	0.07
Roller	43.1	36.1	55.05	0.05
Backhoe	40.7	36.7	55.06	0.06
Crane	43.6	35.7	55.05	0.05
Slurry Trenching Machine	43.5	40.4	55.14	0.14
Dozer	44.8	40.8	55.16	0.16
Pickup Truck	38.1	34.1	55.03	0.03

Construction Noise Levels with Shielding

Case Description: Al Larson Boat Shop Improvement Project, Construction Noise Levels w/ Shielding

---- Receptor #1 ---- Description	Baselines (dBA)			Land Use
	Daytime	Evening	Night	
Al Larson Marina	57	54		54 Residential

  

Equipment Description	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Shielding (dBA)	
Derrick Barge Crane Hoist		16		88	100	3
Concrete Mixer Truck		40		78.8	280	3
Dump Truck		40		76.5	280	3
Front End Loader		40		79.1	280	3
Compressor (air)		40		77.7	280	3
Generator		50		80.6	280	3
Barge Crane		85		88	280	3
Impact Pile Driver		20		101.3	280	3
Excavator		40		80.7	280	3
Grader		40	85		280	3
Paver		50		77.2	280	3
Roller		20		80	280	3
Backhoe		40		77.6	280	3
Crane		16		80.6	280	3
Slurry Trenching Machine		50		80.4	280	3
Dozer		40		81.7	280	3
Pickup Truck		40		75	280	3

Equipment	Calculated (dBA)		Total (Ambient + Equipment)	Increase (Total — Ambient)
	Lmax	Leq	Leq	
Derrick Barge Crane Hoist	79	71	71.16	14.16
Concrete Mixer Truck	60.8	56.9	59.96	2.96
Dump Truck	58.5	54.5	58.93	1.93
Front End Loader	61.1	57.2	60.11	3.11
Compressor (air)	59.7	55.7	59.4	2.4
Generator	62.7	59.7	61.56	4.56
Barge Crane	70	69.3	69.54	12.54
Impact Pile Driver	83.3	76.3	76.35	19.35
Excavator	62.7	58.8	61	4
Grader	67	63.1	64.05	7.05
Paver	59.3	56.2	59.62	2.62
Roller	62	55	59.12	2.12
Backhoe	59.6	55.6	59.36	2.36
Crane	62.6	54.6	58.97	1.97
Slurry Trenching Machine	62.4	59.4	61.37	4.37
Dozer	63.7	59.7	61.56	4.56
Pickup Truck	57	53.1	58.48	1.48

Construction Noise Levels with Shielding

---- Receptor #2 ---- Description	Baselines (dBA)			Land Use
	Daytime	Evening	Night	
San Pedro	65	62		62 Residential

Equipment Description	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Shielding (dBA)
Derrick Barge Crane Hoist	16		88	4000	3
Concrete Mixer Truck	40		78.8	4000	3
Dump Truck	40		76.5	4000	3
Front End Loader	40		79.1	4000	3
Compressor (air)	40		77.7	4000	3
Generator	50		80.6	4000	3
Barge Crane	85		88	4000	3
Impact Pile Driver	20		101.3	4000	3
Excavator	40		80.7	4000	3
Grader	40	85		4000	3
Paver	50		77.2	4000	3
Roller	20		80	4000	3
Backhoe	40		77.6	4000	3
Crane	16		80.6	4000	3
Slurry Trenching Machine	50		80.4	4000	3
Dozer	40		81.7	4000	3
Pickup Truck	40		75	4000	3

Equipment	Calculated (dBA)		Total (Ambient + Equipment)	Increase (Total — Ambient)
	Lmax	Leq	Leq	
Derrick Barge Crane Hoist	46.9	39	65.01	0.01
Concrete Mixer Truck	37.7	33.8	65	0
Dump Truck	35.4	31.4	65	0
Front End Loader	38	34.1	65	0
Compressor (air)	36.6	32.6	65	0
Generator	39.6	36.6	65	0
Barge Crane	46.9	46.2	65.05	0.05
Impact Pile Driver	60.2	53.2	65.27	0.27
Excavator	39.6	35.7	65	0
Grader	43.9	40	65.01	0.01
Paver	36.2	33.1	65	0
Roller	38.9	31.9	65	0
Backhoe	36.5	32.5	65	0
Crane	39.5	31.5	65	0
Slurry Trenching Machine	39.3	36.3	65	0
Dozer	40.6	36.6	65	0
Pickup Truck	33.9	30	65	0

Construction Noise Levels with Shielding

---- Receptor #3 ----

Description	Baselines (dBA)			Land Use
	Daytime	Evening	Night	
Reservation Point	55	52		52 Residential

Equipment Description	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Shielding (dBA)	
Derrick Barge Crane Hoist	16			88	3500	3
Concrete Mixer Truck	40			78.8	3500	3
Dump Truck	40			76.5	3500	3
Front End Loader	40			79.1	3500	3
Compressor (air)	40			77.7	3500	3
Generator	50			80.6	3500	3
Barge Crane	85			88	3500	3
Impact Pile Driver	20			101.3	3500	3
Excavator	40			80.7	3500	3
Grader	40	85			3500	3
Paver	50			77.2	3500	3
Roller	20			80	3500	3
Backhoe	40			77.6	3500	3
Crane	16			80.6	3500	3
Slurry Trenching Machine	50			80.4	3500	3
Dozer	40			81.7	3500	3
Pickup Truck	40			75	3500	3

Equipment	Calculated (dBA)		Total (Ambient + Equipment)	Increase (Total — Ambient)
	Lmax	Leq	Leq	
Derrick Barge Crane Hoist	48.1	40.1	55.13	0.13
Concrete Mixer Truck	38.9	34.9	55.04	0.04
Dump Truck	36.5	32.6	55.02	0.02
Front End Loader	39.2	35.2	55.04	0.04
Compressor (air)	37.8	33.8	55.03	0.03
Generator	40.7	37.7	55.08	0.08
Barge Crane	48.1	47.4	55.69	0.69
Impact Pile Driver	61.4	54.4	57.72	2.72
Excavator	40.8	36.8	55.06	0.06
Grader	45.1	41.1	55.17	0.17
Paver	37.3	34.3	55.03	0.03
Roller	40.1	33.1	55.02	0.02
Backhoe	37.7	33.7	55.03	0.03
Crane	40.6	32.7	55.02	0.02
Slurry Trenching Machine	40.5	37.4	55.07	0.07
Dozer	41.8	37.8	55.08	0.08
Pickup Truck	35.1	31.1	55.01	0.01