

Collections Systems

820-12

FIRE PROTECTION IN WASTEWATER TREATMENT AND COLLECTION FACILITIES

Δ Table 4.2.2 Collection Systems

Row ^a	Line ^a	Location and Function	Fire and Explosion Hazard	Ventilation ^b	Extent of Classified Location	NEC Hazardous Location Classification (All Class I, Group D)	Materials of Construction ^c	Fire Protection Measures
1		MATERIALS USED IN REHABILITATION, RECONSTRUCTION, OR SLIP-LINING OF SEWERS	N/A	N/A	N/A	N/A	In accordance with 8.3.5	N/A
2		INDUSTRIAL SEWER Sewer transporting industrial wastewater only (no sanitary wastewater)	Not included within the scope of this standard					
3		STORM SEWER Sewer transporting storm water only (no sanitary wastewater)	Possible ignition of flammable gases and floating flammable liquids	NNV	Inside of sewer	Division 2	In accordance with 8.3.5	NR
4		STORM WATER PUMPING STATION WET WELLS Liquid side of pumping station serving only a storm sewer system	Possible ignition of flammable gases and floating flammable liquids	NNV	Entire room or space	Division 2	NC, LC, or LFS	NR
5	a	STORM WATER PUMPING STATION DRY WELLS	Buildup of vapors from flammable or combustible liquids	D	Entire dry well	Division 2	NC, LC, or LFS	FE
	b	Dry side of a pumping station serving only a storm sewer system and physically separated from wet well		C	Entire dry well	Unclassified	NC, LC, or LFS	FE
6	a	FORCE MAIN	Buildup of vapors from flammable or combustible liquids	NNV	Areas within 0.9 m (3 ft) of Air Release Valve and Appurtenances	Division 2	NC, LC, or LFS	NR
	b	Air release valve			Areas beyond 0.9 m (3 ft) of Air Release Valve and Appurtenances	Unclassified	NC, LC, or LFS	NR
7		BUILDING SEWER (Lateral sewer or drain) Sewer serving a house or single building (plumbing)	Not included within the scope of this standard					
8		INDIVIDUAL RESIDENTIAL SEWER Sewer serving one or more individual residences with a total flow of not more than 1500 gallons per day (gpd)	N/A	NNV	Within enclosed space	Unclassified	NR	NR

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Δ Table 4.2.2 Continued

Row ^a	Line ^a	Location and Function	Fire and Explosion Hazard	Ventilation ^b	Extent of Classified Location	NEC Hazardous Location Classification (All Class I, Group D)	Materials of Construction ^c	Fire Protection Measures
9		INDIVIDUAL RESIDENTIAL PUMPING UNITS Pumping units serving one or more individual residences with a total flow of not more than 1500 gallons per day (gpd) (e.g., grinder pumps, septic tank effluent pumps, ejector pumps)	N/A	NNV	Within enclosed space	Unclassified	NR	NR
10	a	RESIDENTIAL SEWER	Possible ignition of flammable gases and floating flammable liquids	NNV	Within enclosed space	Division 2	In accordance with 8.3.5	NR
	b	Sewer transporting primarily residential wastewater		B	Within enclosed space	Unclassified	In accordance with 8.3.5	NR
11		OUTFALL SEWER Final discharge pipe from a treatment plant, transporting treated wastewater	N/A	NNV	N/A	Unclassified	NR	NR
12	a	SANITARY SEWER	Possible ignition of flammable gases and floating flammable liquids	NNV	Inside of sewer	Division 1	In accordance with 8.3.5	NR
	b	Sewer transporting domestic, commercial, and industrial wastewater		B	Inside of sewer	Division 2	In accordance with 8.3.5	NR
13	a	COMBINED SEWER	Possible ignition of flammable gases and floating flammable liquids	NNV	Inside of sewer	Division 1	In accordance with 8.3.5	NR
	b	Sewer transporting domestic, commercial, and industrial wastewater and storm water		B	Inside of sewer	Division 2	In accordance with 8.3.5	NR
14	a	WASTEWATER PUMPING STATION WET WELLS	Possible ignition of flammable gases and floating flammable liquids	A	Entire room or space	Division 1	NC, LC, or LFS	CGD required if mechanically ventilated or opens into a building interior
	b	Liquid side of a pumping station serving a sanitary sewer or combined system		B	Entire room or space	Division 2	NC, LC, or LFS	CGD (if enclosed)
15	a	BELOWGRADE OR PARTIALLY BELOWGRADE WASTEWATER PUMPING STATION DRY WELL	Buildup of vapors from flammable or combustible liquids	C	Entire space or room	Unclassified	NC, LC, or LFS	FE
	b	Pump room physically separated from wet well; pumping of wastewater from a sanitary or combined sewer system through closed pumps and pipes		D	Entire space or room	Division 2	NC, LC, or LFS	FE

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Δ Table 4.2.2 Continued

Row ^a	Line ^a	Location and Function	Fire and Explosion Hazard	Ventilation ^b	Extent of Classified Location	NEC Hazardous Location Classification (All Class I, Group D)	Materials of Construction ^c	Fire Protection Measures
16		ABOVEGRADE WASTEWATER PUMPING STATION Pump room physically separated with no personnel access to wet well; pumping of wastewater from a sanitary or combined sewer system through closed pumps and pipes	N/A	NR	N/A	Unclassified	NC, LC, or LFS	FE
17	a	ABOVEGRADE WASTEWATER PUMPING STATION	Possible ignition of flammable gases and floating flammable liquids	A	Entire space or room	Division 1	NC	FE
	b	Pump room not physically separated from wet well; pumping of wastewater from a sanitary or combined sewer system through closed pumps and pipes		B	Entire space or room	Division 2	NC, LC, or LFS	FE
18	a	ODOR-CONTROL AND VENTILATION SYSTEMS SERVING CLASSIFIED LOCATIONS	Leakage and ignition of flammable gases and vapors	D	Entire area if enclosed	Division 2	NC, LC, or LFS	CGD and FAS
	b			C	Areas within 0.9 m (3 ft) of leakage sources such as fans, dampers, flexible connections, flanges, pressurized unwelded ductwork, and odor-control vessels	Division 2	NC, LC, or LFS	CGD and FAS
	c			C	Areas beyond 0.9 m (3 ft)	Unclassified	NC, LC, or LFS	CGD and FAS
	d			Not enclosed, open to the atmosphere	Areas within 0.9 m (3 ft) of leakage sources such as fans, dampers, flexible connections, flanges, pressurized unwelded ductwork, and odor-control vessels	Division 2	NC, LC, LFS	FE
	e			Not enclosed, open to the atmosphere	Areas beyond 0.9 m (3 ft)	Unclassified	NC, LC, LFS	FE
19	a	MAINTENANCE HOLES	Possible ignition of flammable gases and floating flammable liquids	NNV	Inside	Division 1	In accordance with 8.3.5	NR
	b	Access to sewer for personnel entry		B	Inside	Division 2	In accordance with 8.3.5	NR
20	a	JUNCTION CHAMBERS	Buildup of vapors from flammable or combustible liquids	NNV	Inside	Division 1	In accordance with 8.3.5	NR
	b	Structure where sewers intersect		B	Open and above grade or inside and ventilated	Division 2	In accordance with 8.3.5	NR

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Δ Table 4.2.2 Continued

Row ^a	Line ^a	Location and Function	Fire and Explosion Hazard	Ventilation ^b	Extent of Classified Location	NEC Hazardous Location Classification (All Class I, Group D)	Materials of Construction ^c	Fire Protection Measures
21		INVERTED SIPHONS Depressed section of gravity sewer	Possible ignition of flammable gases and floating flammable liquids	NNV	Interior of inlet and outlet structures	Division 1	NC	NR
22		CATCH BASINS (Curb inlet) Inlet where street water enters a storm or combined sewer	Buildup of vapors from flammable or combustible liquids	NNV	Enclosed space	Division 2	In accordance with 8.3.5	NR
23	a	RESIDENTIAL DIVERSION STRUCTURES	Buildup of vapors from flammable or combustible liquids	NNV	Enclosed space	Division 2	In accordance with Chapter 8	NR
	b	Enclosed structures where residential wastewater can be diverted		B	Enclosed space	Unclassified	In accordance with Chapter 8	NR
24	a	RESIDENTIAL BELOWGRADE VALVE VAULT	Possible ignition of gases and floating flammable liquids	NNV	Enclosed space	Division 2	In accordance with 8.3.5	NR
	b	With an exposed residential wastewater surface		B	Enclosed space	Unclassified	In accordance with 8.3.5	NR
25	a	RESIDENTIAL CONTROL STRUCTURES	Buildup of vapors from flammable or combustible liquids	A	Enclosed space	Division 2	In accordance with Chapter 8	NR
	b	Enclosed structures where residential wastewater flow is regulated		B	Enclosed space	Unclassified	In accordance with Chapter 8	NR
26	a	RESIDENTIAL BELOWGRADE METERING VAULT	Possible ignition of flammable gases and floating flammable liquids	NNV	Enclosed space	Division 2	In accordance with 8.3.5	NR
	b	With an exposed residential wastewater surface		B	Enclosed space	Unclassified	In accordance with 8.3.5	NR
27	a	DIVERSION STRUCTURES	Buildup of vapors from flammable or combustible liquids	NNV	Enclosed space	Division 1	In accordance with Chapter 8	NR
	b	Enclosed structures where wastewater can be diverted		B	Enclosed space	Division 2	In accordance with Chapter 8	NR
28		ABOVEGRADE VALVE VAULT Physically separated from the wet well; valves in vault in closed piping system	N/A	NR	N/A	Unclassified	NC, LC, or LFS	NR
29	a	BELOWGRADE VALVE VAULT	Buildup of vapors from flammable or combustible liquids	NNV	Enclosed space	Division 2	NC, LC, or LFS	NR
	b	Physically separated from the wet well and with closed piping system		C	Enclosed space	Unclassified	NC, LC, or LFS	NR
30	a	BELOWGRADE VALVE VAULT	Possible ignition of gases and floating flammable liquids	NNV	Enclosed space	Division 1	NC	NR
	b	With an exposed wastewater surface		B	Enclosed space	Division 2	NC, LC, or LFS	NR

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Δ Table 4.2.2 Continued

Row ^a	Line ^a	Location and Function	Fire and Explosion Hazard	Ventilation ^b	Extent of Classified Location	NEC Hazardous Location Classification (All Class I, Group D)	Materials of Construction ^c	Fire Protection Measures
91	a	CONTROL STRUCTURES	Buildup of vapors from flammable or combustible liquids	A	Enclosed space	Division 1	In accordance with Chapter 8	NR
	b	Enclosed structures where wastewater or storm water flow is regulated		B	Enclosed space	Division 2	In accordance with Chapter 8	NR
92	a	WASTEWATER HOLDING BASINS	Possible ignition of flammable gases and floating flammable liquids	A	Enclosed space	Division 1	NC	NR
	b	Enclosed structures temporarily holding untreated or partially treated wastewater		B	Enclosed space	Division 2	NC, LC, or LFS	NR
93		WASTEWATER HOLDING BASINS, LINED OR UNLINED Open structures holding storm water, combined wastewater, untreated or partially treated wastewater	NR	NR	NR	NR	NR	NR
94	a	BELOWGRADE METERING VAULT	Buildup of vapors from flammable or combustible liquids	NNV	Enclosed space	Division 2	NC, LC, or LFS	NR
	b	Physically separated from the wet well and with closed piping system		C	Enclosed space	Unclassified	NC, LC, or LFS	NR
95	a	BELOWGRADE METERING VAULT	Possible ignition of flammable gases and floating flammable liquids	NNV	Enclosed space	Division 1	NC	NR
	b	With an exposed wastewater surface		B	Enclosed space	Division 2	NC, LC, or LFS	NR
96		COARSE AND FINE SCREEN FACILITIES (See "Coarse and Fine Screen Facilities" in Table 5.2.2.)						

Note: The following codes are used in this table:

A: No ventilation or ventilated at less than 12 air changes per hour

B: Continuously ventilated at 12 changes per hour

C: Continuously ventilated at six air changes per hour

CGD: Combustible gas detection system

D: No ventilation or ventilated at less than six air changes per hour

FAS: Fire alarm system

FE: Portable fire extinguisher

LC: Limited-combustible material

LFS: Low flame spread index material

N/A: Not applicable

NC: Noncombustible material

NEC: In accordance with NFPA 70

NR: Not normally ventilated

NR: No requirement

^aThe "Row" and "Line" columns are used to refer to specific figures in A.4.2 and specific requirements for each location and function.

^bThis column indicates the ventilation requirements for processes. Additional ventilation requirements are provided in Chapter 9. Ventilation signaling and alarm requirements are provided in Chapter 7.

^cThis column indicates the materials of construction for processes. Materials of construction for buildings in which these processes are housed are in accordance with the applicable building code and construction requirements provided in Chapter 8.