
ENVIRONMENTAL Fact Sheet



29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov

REM-36

2021

Applicable References for the Design of Piping Systems for Aboveground Storage Tank (AST) Systems for Generators (with or without Day Tanks)

The New Hampshire Department of Environmental Services (NHDES), in collaboration with the New Hampshire State Fire Marshal's Office (SFMO), provides the following as a summary of applicable rules and codes for the selection of materials to aid in the design and review of piping systems for the following Aboveground Storage Tank (AST) systems:

1. AST supplying Generators with a Day Tank.
2. AST supplying Generators without a Day Tank.

Notes and References:

- **Chapter Env-Or 300** (effective 2/7/2014) = Aboveground Storage Tank Facilities (NH Code of Admin. Rules).
- **NFPA 30** (2015) = Flammable and Combustible Liquids Code (National Fire Protection Association). (Env-Or 300 currently references the 2012 edition but is being revised to reflect RSA 153:1, VI-a, which currently references the 2015 edition.)
- **NFPA 37** (2015) = Standard for the Installation & Use of Stationary Combustion Engines & Gas Turbines (Env-Or 300 doesn't directly reference NFPA 37. Reference is from NFPA 110 7.9.1.1).
- **NFPA 110** (2013) = Standard for Emergency and Standby Power Systems.

***See Env-Or 303.01(c):** In the event that any of the applicable reference standards conflict with these rules or with each other, the most stringent requirement shall apply.

DISCLAIMER: This summary provides general information only and is not all inclusive. For complete regulatory information directly consult the applicable administrative rule or NFPA standard. Information contained in this document is current as of April 22, 2021. Statutory or regulatory changes that may occur after that date may cause part or all of the information to become invalid. If there are any questions concerning the current status of this information, please call us at [\(603\) 271-3899](tel:6032713899) or email us at ORCBWMD@des.nh.gov.

1. Installation: AST --> Day Tank --> Generator

| Location | Item | Applicable Rules & Codes | Additional Information |
|--|---------------------------------|--|------------------------|
| AST to Day Tank (Day Tank Filling) | Underground Piping | *Env-Or 305.05 NFPA 37 6.8.1 | A |
| | Aboveground Piping (outside) | *Env-Or 305.04(e) & (j) Env-Or 305.06(c) NFPA 37 6.8.1 NFPA 110 7.9.3.1 | B |
| | Aboveground Piping (inside) | *Env-Or 305.04(e) & (j) NFPA 37 6.8.1 NFPA 110 7.9.3.1 | B |
| | Pipe Joints | NFPA 37 6.8.1 [NFPA 30 27.5] | |
| | Valves & Fittings | NFPA 37 6.8.1 [NFPA 30 27.4.3] | D |
| | Pumps | Listed for use and installed per manufacturer | E |
| | Flex lines | NFPA 37 6.8.2.1 NFPA 110 7.9.3.2 | F |
| Day Tanks | Vent Pipe | NFPA 37 6.7 [NFPA 30 27.4.4.2] | G |
| Day Tank to Engine (Generator Supply) | Aboveground Piping | *Env-Or 305.04(e) & (j) NFPA 37 6.8.1 NFPA 110 7.9.3.1 | B |
| | Pipe Joints | NFPA 37 6.8.1 [NFPA 30 27.5] | C |
| | Valves & Fittings | NFPA 37 6.8.1 [NFPA 30 27.4.3] | D |
| | Flex lines | NFPA 37 6.8.2.1 NFPA 110 7.9.3.2 | F |

2. Installation: AST --> Generator (no day tank)

| Location | Item | Applicable Rules & Codes | Additional Information |
|---|---------------------------------|--|------------------------|
| AST to Generator (all piping is "supply") | Underground Piping | *Env-Or 305.05 NFPA 37 6.8.1 | A |
| | Aboveground Piping (outside) | *Env-Or 305.04(e) & (j) Env-Or 305.06(c) NFPA 37 6.8.1 NFPA 110 7.9.3.1 | B |
| | Aboveground Piping (inside) | *Env-Or 305.04(e) & (j) NFPA 37 6.8.1 NFPA 110 7.9.3.1 | B |
| | Pipe Joints | NFPA 37 6.8.1 [NFPA 30 27.5] | C |
| | Valves & Fittings | NFPA 37 6.8.1 [NFPA 30 27.4.3] | D |
| | Pumps | Listed for use and installed per manufacturer | E |
| | Flex lines | NFPA 37 6.8.2.1 NFPA 110 7.9.3.2 | F |

Additional Information:

| | |
|---|---|
| A | All underground piping to have secondary containment per Env-Or 305.05(b)(1). |
| | Use of piping materials allowable by NFPA 37 6.8.1 underground must also meet the requirements of Env-Or 305.05. |
| B | Metal piping is acceptable for use, within the limits of Env-Or 305.04(e) & (j) without needing to meet other requirements of NFPA 30 Chapter 27. |
| | Use of other than metal piping is not permitted by Env-Or 305.04(e), would require a waiver per Env-Or 310 and must meet the requirements of NFPA 30 Chapter 27. |
| C | Pipe Joints may be welded, flanged, threaded or mechanically attached. |
| | Pipe joint mechanical strength cannot rely on components that can cause joint failure during a fire. |
| | Friction Joints (e.g. band clamps) may be used as allowed in NFPA 30 27.5.3. |
| D | Metal (including brass/bronze) valves/fittings are acceptable for use without needing to meet other requirements of NFPA 30 27.4.3. |
| | Use of other than metal valves/fittings must meet the requirements of NFPA 30 27.4.3. |
| E | Pump to carry a listing for use with fuel being pumped. |
| | Pump to be installed per manufacturer instructions. |
| | Pump are not otherwise regulated. |
| F | Flex lines may be used between pumps and piping system as well as between generator engine and piping system. |
| | Connection of flex lines to piping system to be per NFPA 37 6.8.1 [NFPA 30 27.5]. |
| G | Atmospheric (normal) and Emergency vents to terminate outside the building per NFPA 37 6.1.1, except that where a day tank is located inside an unoccupied space (generator enclosure) the atmospheric vent is to terminate outside the enclosure but the emergency vent(s) may terminate inside the enclosure. |
| | Atmospheric vent should terminate 3 feet above any surface that is subject to snow/ice accumulations. |