# API 620 Annex N

## Installation of Pressure-Relieving Devices - Public Reference

A concise public-reference note focused on exact installation criteria for low-pressure tank pressure and vacuum relieving devices.

| Key numeric boundary | Public value / rule |
|---|---|
| API 620 tank pressure range | Low-pressure tanks with gas or vapor space not more than **15 psig** are within the base API 620 scope. |
| API 2000 coverage used with Annex N | API 2000 public scope covers venting for tanks from **full vacuum through 15 psig**. |
| Opening from tank to device | Diameter must be **at least equal to the inlet size** of the relieving device. |
| Outlet piping area | If discharge piping is fitted, its area must be **not less than the outlet area** of the relieving device. |
| Common discharge header | If one line discharges several devices, header area must be **not less than the aggregate outlet areas**. |

## How Annex N fits into the venting package

Annex N is about **installation**, not the primary sizing method for venting loads. API 2000 provides the public venting framework for tanks designed from vacuum to 15 psig, while Annex N preserves installation rules that remain important even when API 2000 is used for capacity calculations.

Publicly visible API 620 material also points users toward **API RP 520 Part II** for general installation practice of ASME-approved safety relief valves, with due consideration to the lower pressure range of low-pressure tanks.

## Exact installation requirements that matter in projects

| Installation point | Exact public requirement / practical reading |
|---|---|
| Accessibility | Relieving devices are to be **readily accessible for inspection** and **removable for repairs**. |
| Typical location | If not on the tank roof, install on vapor-space piping **as close to the tank as practicable**. |
| Atmospheric discharge height | Discharge should be at a **sufficient height to prevent chance ignition**; no one universal public height is given. |
| Tank opening to PRD inlet | The opening from the tank to the relieving device shall be **at least equal to the inlet size** of the device. |
| Discharge piping sizing | If discharge piping is fitted, its area must be **at least equal to the outlet area**; a common line must be **not less than the sum** of outlet areas. |
| Drainage | Provide an **open drain** so water or other liquid cannot accumulate on the discharge side. |
| Pipe supports | Support piping so **no undue stress** is transferred to the valve body. |
| Hazard direction | Open discharges should be oriented so the outflow is directed **away from the tank** and does not create a hazard to walkways, stairs, or platforms. |

## Pressure relief vs vacuum relief

The public material around Annex N distinguishes two installation logics: one for **pressure-relieving devices** and one for **vacuum-relieving devices**.

| Item | Pressure-relieving side | Vacuum-relieving side |
|---|---|---|
| Process function | Discharge vapor during filling, thermal expansion, upset, or emergency overpressure events. | Admit air, gas, or vapor to prevent wall collapse under vacuum conditions. |
| Line approach | Roof mounting is normal; if remote, use vapor-space piping close to the tank. | Use the most direct inflow path possible. |
| Upstream piping rule | Tank opening to device must be at least equal to PRD inlet size. | Public secondary text indicates **no pipework ahead of the inlet** apart from a weather cover. |
| Isolation valves | If used, keep locked or sealed open; restore normal position before leaving the installation. | Same locked/sealed-open discipline applies if valves are used for servicing. |
| Project consequence | Undersized shared discharge piping or poor supports can degrade PRD performance. | Restrictive inlet runs can cause excessive vacuum before air/gas reaches the tank. |

**Pressure relief device**

Roof mounting is the normal arrangement If remote, install on vapor-space piping as close to the tank as practicable Support discharge piping.Provide open drain where discharge piping is fitted

If one header serves several devices, header area >= sum of outlet areas

A useful engineering reading of Annex N is that the installation details are treated as **performance-critical geometry**, not secondary accessories. The tank opening, inlet path, outlet header area, drainage, and support arrangement can all alter whether the installed device can actually deliver the assumed capacity.

## Isolation valves and operational control

Publicly available secondary reproductions of Annex N preserve a strict isolation-valve rule: if stop valves are used between the relieving devices and the tank for servicing, they are to be **locked or sealed open**. If that condition is changed while the tank is in use, an **authorized person** must remain present until the normal relieving path is restored.

## What Annex N gives exactly - and what it does not

| Question | Public answer for Annex N work |
|---|---|
| Does Annex N give one universal discharge height? | No. The public text says only **sufficient height to prevent chance ignition**. Final height remains site-specific and hazard-specific. |
| Does Annex N replace API 2000 vent sizing? | No. API 2000 publicly covers venting requirements, selection, installation, and marking for tanks from vacuum to 15 psig; Annex N installation rules still need to be met. |
| Does one common discharge line need a special area check? | Yes. Publicly reproduced Annex N language requires an area **not less than the aggregate outlet areas** of the multiple devices. |
| Is there an exact upstream piping allowance for vacuum relief? | Public secondary text says vacuum-relief inflow should be as direct as possible and have **no upstream pipework except a weather cover**. |
| Is Annex N mainly about pressure set points? | No. It is mainly about **installation**: accessibility, device location, opening size, discharge piping, drainage, supports, and safe discharge direction. |

## Buyer / EPC review checklist

- Confirm the tank code route stays within **API 620 low-pressure scope** and that API 2000 is the basis for venting capacity where applicable.
- Check that the **tank opening to each PRD** is at least the PRD inlet size.
- Check that any **discharge line area** is at least the device outlet area, and common headers are at least the sum of outlet areas.
- Require an **open drain** on the discharge side where piping is fitted.
- Review support details so piping loads do not transfer undue stress to the valve body.
- Review open-discharge direction against nearby **walkways, stairs, and operating platforms**.
- For vacuum relief, keep the inflow path as direct as possible and avoid upstream piping restrictions.
- If isolation valves are included for maintenance, require a locked/sealed-open procedure and attendance rule in the operating instructions.

### Public source basis

This reference note uses API's public catalog and preview language for API 620 / Annex N and API 2000, plus publicly accessible reproductions of the 2002 Annex N wording in law.resource and secondary technical references. It is intended as a project-reference summary, not a substitute for the full purchased standard.