

Cryogenic Storage Tank Project: Preliminary Selection Checklist

A practical starting point for LNG, liquid nitrogen (LIN) and liquid oxygen (LOX) projects. Use this checklist to organize early project inputs before sizing or vendor discussions. It is not a design specification or code-compliance check.

1. Define the duty

- Stored product and composition/purity requirements
- Required net usable storage capacity and operating inventory
- Receipt and withdrawal rates, peak demand and operating profile
- Expected storage duration, replenishment frequency and future capacity needs

2. Establish site and operating conditions

- Location, ambient temperature range, altitude and site constraints
- Seismic, wind, snow and geotechnical data available for the site
- Operating pressure range, design pressure basis and pressure-control philosophy
- Available utilities, power, drainage, access and hazardous-area constraints

3. Identify the storage concept

- Required containment philosophy and applicable project jurisdiction
- Flat-bottom or vessel configuration considerations, based on capacity and site
- Insulation concept, expected heat ingress and boil-off handling approach
- Foundations, settlement allowances, access and maintenance requirements

4. Plan connected systems

- Inlet/outlet, recirculation, cooldown and cooldown-return requirements
- Piping interfaces, isolation philosophy, relief and vent routing
- Boil-off gas destination, recovery or disposal requirements
- Instrumentation, alarms, shutdown functions and operating interfaces

5. Prepare for engineering review

- Applicable codes and standards confirmed by the project team, not assumed from this checklist
- Design life, inspection strategy, materials and corrosion environment
- Plot plan, battery limits, tie-in data and preliminary process documents
- Open assumptions, required studies, schedule and procurement milestones

Important limitation

A preliminary sizing tool or checklist cannot replace detailed engineering. Final dimensions, loads, pressure protection, materials, foundations, insulation and code compliance depend on the product, capacity, operating conditions, site data and governing requirements. Confirm the design basis with qualified project engineers.

Need a project-specific review? Send the completed checklist and available process/site data through the Cryoexpert contact form: <https://thecryoexpert.com/contact/>