

# Bulk Storage Checklist & Fire Safety Analysis

**Disclaimer:** This checklist is not intended to be a definitive or exhaustive listing of all statutes, safety rules, regulations or codes that may be applicable. It is intended as a general guideline for assisting licensees and stakeholders in complying with state statutes, the Commission's safety rules and adopted national and federal codes that are specific to a BULK STORAGE installation. The officially published statute, rule or code shall prevail in the event of a conflict with those referenced in the checklist. The checklist may be used to verify compliance prior to placing a facility in service or for routine maintenance audits to ensure continued compliance with applicable safety requirements.

<b>CONTAINER</b>		
<input type="checkbox"/>	Painting of container	9.141(a)(1)
<input type="checkbox"/>	Lettering of container	9.140(f)
<input type="checkbox"/>	Container inlet and outlet connections labeled vapor or liquid	5.9.8.5
<input type="checkbox"/>	Manufacturer's nameplate condition	9.129
<input type="checkbox"/>	AG container(s) installation (horizontal)	6.8.3
<input type="checkbox"/>	(Horizontal with attached supports)	6.8.3.3(a)
<input type="checkbox"/>	(Vertical)	6.8.4
<input type="checkbox"/>	UG container installation	6.8.6
<input type="checkbox"/>	Mounded container installation	6.8.6.3
<input type="checkbox"/>	Container distance requirements	6.4.1
<input type="checkbox"/>	Container protection (tampering/vehicular)	9.140(a)
<input type="checkbox"/>	(Fencing specification)	9.140(b)
<input type="checkbox"/>	(Guardrail specification)	9.140(d)
<input type="checkbox"/>	No covering over container or over transport loading or unloading areas	9.141(f)
<b>CONTAINER APPURTEANCES</b>		
<input type="checkbox"/>	All container appurtenances accessible	6.8.1.5
<input type="checkbox"/>	Pressure relief valve installation	6.9.2
<input type="checkbox"/>	Pressure gauge requirement > 2000 gal.	5.9.8.6
<input type="checkbox"/>	Temperature gauge requirement > 4000 gal.	5.9.4.3
<input type="checkbox"/>	Liquid level gauging devices	5.9.5
<input type="checkbox"/>	Container openings 1 1/4" or greater shall be equipped with pneumatic internal valve or double back check filler valve or positive shutoff valve in combination with back flow check valve or pneumatic ESV within 4 feet of existing positive shutoff valve on individual containers >4,000 gal and on all sites installed after Feb 1, 2006, with aggregate capacities > 4,001 gal. Exception: container openings exclusively serving stationary appliances or equipment may have excess flow valve and shutoff valve as close as practical to the container.	9.126(d)(1)
<input type="checkbox"/>	Container openings less than 1 1/4" shall be equipped with pneumatic internal valve or double back flow check filler valve or positive shutoff with excess flow valve or a backflow check valve	9.126(d)(2)
<input type="checkbox"/>	All internal valves pneumatically controlled	9.143(a)
<input type="checkbox"/>	Bulkhead guardrail protection installation	9.140(d)
<input type="checkbox"/>	3 feet between bulkhead and guardrail	9.140(d)(4)
<input type="checkbox"/>	The two guardrail end posts protecting the bulkhead shall be located 24" to 36" from, and at 45° angles to, the nearest corner of the bulkhead.	9.140(d)(4)
<input type="checkbox"/>	Stainless steel flex connectors between bulkhead and ESV's, maximum length 36"	9.143(b)(1)

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<b>EMERGENCY CONTROLS</b>	
<input type="checkbox"/>	24 hour emergency contact number
<input type="checkbox"/>	18 lb B-C fire extinguisher required
<input type="checkbox"/>	Sites installed after 2/1/01 shall have the ESVs and internal valves interconnected into one emergency shutoff location
<input type="checkbox"/>	Emergency shutoff location 25-100 feet from ESV in the path of egress from the ESV
<input type="checkbox"/>	Emergency shutoff location labeled (Propane Emergency Shutoff) and visible from point of transfer
<input type="checkbox"/>	ESVs and internal valves shall be kept in working order
<input type="checkbox"/>	Thermal (fire) actuation of internal valves where thermal element is within 5 feet of internal valve
<b>HOSES</b>	
<input type="checkbox"/>	Leaking or damaged hose shall be immediately repaired or removed from service
<input type="checkbox"/>	Hose continuously marked LP-GAS, PROPANE, 350 PSI WORKING PRESSURE and manufacturer's name or trademark
<input type="checkbox"/>	All internal valves equipped for remote closure and automatic shutoff using thermal actuation with thermal element within 5 feet of internal valve
<b>PIPING SYSTEM</b>	
<input type="checkbox"/>	Liquid LP gas piping design pressure
<input type="checkbox"/>	Piping materials
<input type="checkbox"/>	Tubing materials
<input type="checkbox"/>	Pipe fittings material
<input type="checkbox"/>	Pipe and fittings minimum design rating
<input type="checkbox"/>	Metallic pipe joining method requirements
<input type="checkbox"/>	Minimize the number of fittings used
<input type="checkbox"/>	Piping system protected with flexible connectors from expansion, contraction, jarring, vibration and settling.
<input type="checkbox"/>	Aboveground piping supported/protected
<input type="checkbox"/>	Flexible connectors > 3/4" stainless steel flex, maximum length 36"
<input type="checkbox"/>	Excess flow valve in pipe opening when piping size is reduced
<input type="checkbox"/>	Hydrostatic relief valve in closed sections of liquid piping (400-500 psig rating)
<b>BULKHEAD/ESVS</b>	
<input type="checkbox"/>	Vertical bulkhead required on all new sites installed after 2/1/01, and shall include pneumatic ESVs or back check flow valve on aggregate capacities > 4,001 gallons
<input type="checkbox"/>	Pneumatic ESVs within 4 feet of bulkhead and stainless-steel connector < 36" installed between bulkhead and ESVs
<input type="checkbox"/>	ESVs activate in the event of a pull-away
<input type="checkbox"/>	Vertical bulkhead required on all old sites by 2/1/03, and shall include pneumatic ESVs or back check flow valve on aggregate capacities > 4,001 gallons
<input type="checkbox"/>	Vertical bulkhead and ESV exception

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<input type="checkbox"/>	Bulkhead requirements	9.143(e)
<input type="checkbox"/>	Maximum of two transfer hoses per pipe riser	9.143(e)(2)
<input type="checkbox"/>	Liquid and vapor transfer hose ends capped	9.143(e)(3)
<input type="checkbox"/>	Bulkhead 10 feet from containers	9.143(e)(4)
<input type="checkbox"/>	Bulkhead construction requirements	9.143(e)(7)
<input type="checkbox"/>	12" pipe risers on bulkhead	9.143(e)(7)(E)(i)
<input type="checkbox"/>	Breakaway loading arm in lieu of 12" riser	9.143(e)(8)
<input type="checkbox"/>	Bulkhead exemption for sites > 4,001 gal pump/compressors	9.143(i)
<b>PUMP / COMPRESSORS</b>		
<input type="checkbox"/>	Pump installation	6.20.2
<input type="checkbox"/>	Stainless steel flex connectors connected to a pump, maximum length 36"	6.20.2.2
<input type="checkbox"/>	Compressor installation	6.20.3
<input type="checkbox"/>	Stainless steel flex connectors connected to a compressor, maximum length 36"	6.20.3.2
<input type="checkbox"/>	Electrical/lighting	
<b>ELECTRICAL/LIGHTING</b>		
<input type="checkbox"/>	Electrical requirements	6.25.2
<input type="checkbox"/>	Lighting required for night operations	6.21.5
<b>POINT OF TRANSFER</b>		
<input type="checkbox"/>	Distance requirements from the point of transfer	6.7.2
<b>MISCELLANEOUS</b>		
<input type="checkbox"/>	Form 500 required for installations that are > 10,000 gal aggregate capacity	9.101(c)(1)(a)
<input type="checkbox"/>	Documented annual testing of internal valves, ESVs, and backflow check valves	9.143(b)(4)
<input type="checkbox"/>	Corrosion protection of all metallic equipment and components that are buried or mounded	6.19.1
<input type="checkbox"/>	Combustible material (10 feet clearance)	6.5.3.3
<input type="checkbox"/>	20 feet from liquids with flash point < 200 degrees F	6.4.3.4
<input type="checkbox"/>	System piping designed to prevent debris from impeding action of valves and other components. Retroactive by 7/1/2011	6.21.2.5
<input type="checkbox"/>	Locks for valves on unfenced installations	6.21.4.2(D)
<input type="checkbox"/>	Maintenance	9.113