

Scope of Application	Key European Regulations	Key International Regulations
Generation (Electrolysis)	PED 2014/68/EU (pressure equipment) ATEX 2014/34/EU (Ex safety) EN 17124 (H ₂ purity)	IEC 60079 (explosive atmospheres) ISO/TR 15916 (risk management) IEC 62282 (fuel cells)
Generation (Reforming with CCS)	PED 2014/68/EU (pressure equipment) Directive (EU) 2023/1791 (H ₂ -gas mixtures) Regulation (EU) 2021/1119 (decarbonization)	ASME B31.12 (piping) ISO 11114 (material compatibility)
Storage (Gaseous)	Regulation (EU) 2019/2144 (transportable equipment) EN ISO 16111 (cylinders) PED 2014/68/EU (pressure equipment)	ISO 16111 (cylinders) ASME Section VIII (vessels) NFPA 55 (EE.UU.)
Storage (Cryogenic)	PED 2014/68/EU (pressure equipment) EN 13458 (cryogenic vessels)	ISO 21011 (compressed gas equipment) ASME B31.12 (piping)
Transport (Pipelines)	EN 13480-3 («hydrogen-ready» pipelines) Regulation (UE) 2023/1804 (infrastructures)	ASME B31.12 ISO 14723 (subsea valves)
Transport (Land/Maritime)	ADR/RID (road/rail transport) Reglamento (UE) 2019/2144 (equipment)	ISO 11120 (large cylinders) CGA G-5.4 (EE.UU.) MARPOL (maritime)
Refueling (Stations)	EN ISO 19880-1 (general requirements) Regulation (EU) 2023/1804 (third-party access)	ISO 19880-3 (components) NFPA 2 (EE.UU.) SAE J2600 (protocols)
Industrial Applications	ATEX 2014/34/EU (Ex safety) REACH/CLP (chemicals) EN ISO 14687 (purity)	ISO 15916 (safety) IEC 60079 (Ex) API 6D (piping)
Hydrogen Vehicles	*UNECE R79 (fuel cell hydrogen vehicles) *UNECE R134 (high pressure H2 tanks)	SAE J2600 (vehicle refueling protocols) SAE J2719 (hydrogen quality specs) ISO 23273:2024 (comprehensive safety)
Comprehensive Safety	EN ISO 12100 (mechanical risks) EN ISO 15848 (fugitive emissions)	API 607 (fire resistance) ISO/TR 15916 ISO 23273:2024 (H2 vehicles) NFPA 2

Source: Own Elaboration

NOTE: This document reflects regulations current as of July 2025. For subsequent updates, please consult official sources (ISO, UNECE, EUR-Lex, etc.).