EU Regulations (legally binding rules)

EU Directives (legally binding rules after adoption in EU Member states)

(Harmonized) Standards (voluntary adoption unless referred by EU legislation)

Guidelines, best practice, industrial standards (voluntary, assisting in implementation, providing rationale, etc.)

|---------------------------------------------------------------|--------------------------------------------|

For example:
- EN 1127-1:2019 Explosive atmospheres - Explosion prevention and protection - Part 1: Basic concepts and methodology
- IEC EN 60079 series on Explosive atmospheres

For example:
- EN 15001 series on Gas Infrastructure - Gas installation pipework
- EN 13458 series on Cryogenic vessels - Static vacuum insulated vessels

For example the Guidelines of the European Industrial Gas Association:
- EIGA IGC 100/11/E Hydrogen Cylinders and Transport Vessels
- EIGA IGC 121/14 Hydrogen Pipeline Systems
- EIGA IGC 06/19 Safety in Storage, Handling and Distribution of Liquid Hydrogen
Arrêté du 12 février 1998 relatif aux prescriptions générales applicables aux installations classées pour la protection de l'environnement soumises à déclaration sous la rubrique n° 4715 – "Regulation for the general prescription for installations / units falling under the "declaration procedure" for installations having between 100 kg and 1 T H₂ on the site"

The regulation is fixing the safety distances and general safety recommendations for installations / units having between 100 kg and 1 T hydrogen on the site (see above for the details). For installations having less than 100 kg on the site (storage and use), there is no regulation applicable. For installations having more than 1 T H₂ on the site, a specific environmental procedure with risk analysis and environmental impact analysis has to be performed.

UNECE GTR 13 - Phase 2
Extension to HDV and different type and geometry of on-board CHSS

Changes to the burst pressure if specific test criteria are met

New lifetime to address heavy duty cycles

Plus
- improved test performance in fire
- drop (impact), flaw and chemical attack to take into account conformable tanks.
- Specific storage crash tests
Are there still gaps?  
...for the scope of this workshop.

- Permitting processes for HRS or similar depend on local/national rules and authorities (see HyLaw).
- Similarly, the use of public transport infrastructure, such as tunnels, bridges, underpasses, public (multistore) parking places depend on local/national rules.
- However, TEN-T corridors are part of a common EU strategy and its ‘interoperability’ requirements may assist a EU wide approach to tunnels.
- Other aspects of European interoperability, such as connectors and refuelling are already partially covered, but will need more attention in the future.

- Are there example of HRS in Europe, with a storage falling under the Seveso directive?
- Which is the return of experience from incident and near miss at European HRS?
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