

CEP Recommendation on approving mobile and containerized refuelling stations

The Clean Energy Partnership has recently recognised a growing interest in the development of mobile refuelling stations due to their flexibility.

As the current regulations and standards for HRS approval were developed with a focus on stationary installations, CEP identified an ambiguity in how the regulatory requirements are interpreted.

This document aims to provide some hints to address the topic, until a clearer statement can be achieved with the standards and regulation.

EU 2023/1804 mandates to apply EN17127 for publicly accessible hydrogen refuelling stations. EN 17127 requires the realisation of Site Acceptance Test (SAT) before opening to the public. Depending on the interpretation, this requirement could be applied strictly before every opening at a new site, which would result in tremendous and probably unnecessary costs and resource expenditure for operators and/or manufacturers.

The CEP first recommends that manufacturers and operators rely on third parties who have been trained by the CEP. ([find the list here](#)). They are able to evaluate the installations and locations case by case and to define adjustments in the SAT process in close collaboration with the manufacturers and operators.

To help this discussion CEP suggests the following points that can be used as guidelines:

At least for sites in Germany TRGS 751, chapter 5, tables A 3-1 and A 3-2 provides also additional guidance on requirements and configurations which need to be considered if not covered and proven otherwise. Please check if the content of this document can be adapted for sites in other European countries as well.

Initial approval at manufacturer or first customer site:

- A FAT report needs to be submitted for each generation or type of station and a SAT report for each station. The FAT is then valid for all installations of the same type. It is recommended to review the FAT tests to identify results that could be potentially affected by each relocation of the station and take appropriate measures.

Regarding the need to repeat a SAT after relocation, the following should be considered:

- What is the impact of the relocation on the station?
- Is there any hardware change (e.g., distance between dispenser and chiller or compressor), which could influence the results obtained in the SAT?
- Is there any change to the software or controls?
- Is there any influence on the interface and communication, due to the relocation?

This review will help to determine whether a SAT should be redone in full or only partially and could result in the following:

#3	this test only verifies the functionality of the sensors. This probably makes sense after each relocation, to make a quick check
#8	this is a function to detect a full vehicle. If the relocation hasn't influenced the function, this may not be needed to repeat each time
# 16 & 36a	is the non-com functionality and loss of communication impacted by the relocation? Can it be checked in a different way?

#18	is the abort function impacted by the relocation? Can the general state of the communication be checked in a different way?
#36b	if the relocation doesn't impact the control of non-com fuelling and no hardware or software is changed, this may not need any repetition.
#37 a & b	it might be considered to perform at least one fuelling with communication, to verify all functionalities and the proper fueling performance, before re-opening to the public.

- a list of SAT tests to be repeated
- a specific checklist, that confirms, the key features checked during the SAT remain unchanged
- whether the involvement of 3rd party is needed
- a regular retest e.g., annual/biannual, independently from relocations

Example of reflexions on different tests:

Last but not least, a risk assessment and possibly some H₂ quality measurements shall be made to guarantee, that the relocation is not impacting the H₂ quality delivered to the vehicle.

Contact

CEP is happily available for discussions and welcomes further ideas and counterproposals for the definition of a mobile station acceptance procedure guideline.

Clean Energy Partnership
 Dr. Marcus Merkel
marcus.merkel@cep.expert