

# ETSO Workshop 2022 - Industry session -

**20th – 21st September 2022**

**EASA Direktion  
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# ETSO Cargo Items updates

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# ETSO Cargo Items updates

## → Summary

- Current cargo ETSOs
- Revision of ETSO-C90
- CS-ETSO Rulemaking outlook

# ETSO Cargo Items updates

## → Current cargo ETSOs

- ETSO-C90d\_A1 Cargo Pallets, Nets and Containers, CS-ETSO Amdt.11 (08/2016)
  - AIA NAS 3610, SAE AS36100, SAE AS36102
- ETSO-C172a Cargo Restraint Strap Assemblies, CS-ETSO Amdt.12 (12/2016)
  - SAE AS 5385C
- ETSO-C202 Cargo Stopper Devices, CS-ETSO Amdt.11 (08/2016)
  - SAE AS 6554
- ETSO-C203\_A1 Fire containment covers (FCC), CS-ETSO Amdt.13 (02/2018)
  - SAE AS 6453

# ETSO Cargo Items updates

- FAA issued the TSO-C90e in July/2021
  - With TSO-C90d effective for still 18 month
- Introducing:
  - Fire containment functionality
    - *SAE AS8992, Fire Resistance Container Design, Performance and Testing Requirements, dated October of 2020*
  - Environmental Qualification
    - Aging, ultra-violet (UV)-exposure, weathering
    - RTCA DO-160/EUROCAE ED-14
    - Environmental Degradation of Textiles

# ETSO Cargo Items updates

→ Flammability Requirements for ULDs and FRCs

→ Table 1 of TSO-C90e

**Table 1: Summary of Flammability Requirements for ULDs and FRCs**

	Ch. 1 Vertical Bunsen Burner Test (12 second test)	Ch. 2 45-Degree Bunsen Burner Test	Ch. 3 Horizontal Bunsen Burner Test (2.5 inches/minute burn rate criteria)
Article/Component:			
ULDs side panels, rigid doors, non-metallic pallets and ceiling	x	x	
ULD curtain-style doors	x		
ULD nets			x
ULD nets compatible with FCCs	x		
Non-metallic ULD pallets compatible with FCCs	x	x	

# ETSO Cargo Items updates

- ULDs, pallets and nets compatibility with Fire Containment Covers (FCC TSO-C203/ETSO-C203\_A1)
  - AS6453, “Fire Containment Cover – Design, Performance, and Testing Requirements”
  - Specific Marking
- Par.5a.(5)d *Identify functionality or performance contained in the article not evaluated under paragraph 3 of this TSO (defined as non-TSO functions).*
  - (1) *Description of the non-TSO function(s), such as performance specifications, failure condition classifications, software, hardware, and environmental qualification levels. Include a statement confirming that the non-TSO function(s) do not interfere with the article’s compliance with the requirements of paragraph 3.*

# ETSO Cargo Items updates

→ Par.5a.(5)d *Identify functionality or performance contained in the article not evaluated under paragraph 3 of this TSO (defined as non-TSO functions).*

Cont.

- (2) *Installation procedures and limitations sufficient to ensure that the non-TSO function(s) meets the declared functions and performance specification(s) described in paragraph 5.d.(1).*
- (3) *Instructions for continued performance applicable to the non-TSO function(s) described in paragraph 5.d.(1).*
- (4) *Interface requirements and applicable installation test procedures to ensure compliance with the non-TSO function(s) performance data defined in paragraph 5.d.(1).*
- (5) *Test plans, and analysis, as appropriate, to verify that the performance of the hosting TSO article is not affected by the non-TSO function(s).*



# ETSO Cargo Items updates

- CS-ETSO Amdt.18 regular update will include ETSO-C90e
  - Tentative schedule
  - Drafting phase ongoing
    - Fully harmonized with FAA TSO
  - Consolidate content Q1/2023
  - NPA Q2/2023
  - Final rule Q4/2023
- SAE AGE-2 Air Cargo Committee
- Next meeting hosted by EASA in Cologne
  - Save the date October 11<sup>th</sup> – 12<sup>th</sup>, 2022

# ETSO Cargo Items updates

Future objectives established in cooperation with the FAA:

- Development of a challenge fire (including batteries in the fire load) to test FRCs and FCCs
- Development of a new (E)TSO to standardize the incorporation of “active” components to standard ULDs (e.g. Temperature Controlled Container addressed by SAE AS6163)
- Development of a challenge fire and associated (E)TSO to address active fire suppression and detection within a fire resistant container or under a fire containment cover

Questions?  
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