

Development of ULD Minimum Performance Standards



Definitions

- SAE standards are internationally recognized for their role in helping ensure the safety, quality, and effectiveness of products and services across the mobility engineering industry.
- ISO's main products are international standards. ISO also publishes technical reports, technical specifications, publicly available specifications, and guides
- A Technical Standard Order (TSO) is a minimum performance standard issued by the United States Federal Aviation Administration for specified materials, parts, processes, and appliances used on civil aircraft.



- A TSO is a minimum performance standard, it is not an operational requirement
- The TSO system enables
 - Airframer's to specify what they require on their aircraft
 - ULD OEM's to show that they meet a defined minimum performance standard
 - Airlines to be confident they are doing the right thing
- A TSO does not specify that any particular item shall be used for a particular function

Time lines of standards

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
General Purpose ULD	NAS 3610 Original	NAS 3610 Rev 1	NAS 3610 Rev 2		NAS 3610 Rev 3 & 4 TSO C90		NAS 3610 Rev 5		NAS 3610 Rev 6		
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	
General Purpose ULD	TSO C90a			Rev 7		TSO C90b		Rev 8&9			



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
ULD General Purpose	NAS 3610 Rev 10		TSO C90c							

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
General Purpose ULD						AS36100 Original	As36100 Rev A			
Active ULD						EASA issues first acceptance notice	FAA issues Notice N8150.4	FAA issues first approval		
Cargo Straps	SAE AS 5385 A	ISO 16049-1 Air Cargo Equipment restraint straps			SAE AS 5385 B	ISO 16049-2 Air Cargo Equipment restraint straps		SAE AS 5385C		
Fire Containment Cover									ISO Started work	

	2010	2011	2102	2013	2014	2015
General Purpose ULD			TSO C90d			
Active ULD		FAA request to SAE to develop new standard	SAE AS6163 in development		?Active ULD TSO?	
Cargo Straps		TSO C172	ETSO C172			
Fire Containment Covers			SAE AS 6453 in publication now (ISO 14186)	? FCC TSO ?		



Complexity

- TSO C90 b 2 Pages
- TSO C90 d 8 Pages
- TSO C172 6 Pages



Summary

- This industry appears to be well into a period of intense technical and regulatory development
- The industry is well advised to pay close attention to these developments as they will undoubtedly impact ULD operations
- Development of standards and regulations is a consultative process, airlines and ULD owners are welcome to participate.