



Stowage InnoBags

***Transport of regular cargo in
passenger compartments***

25.06.2020

Proprietary

Stowage InnoBags

INNOVINT support and contact



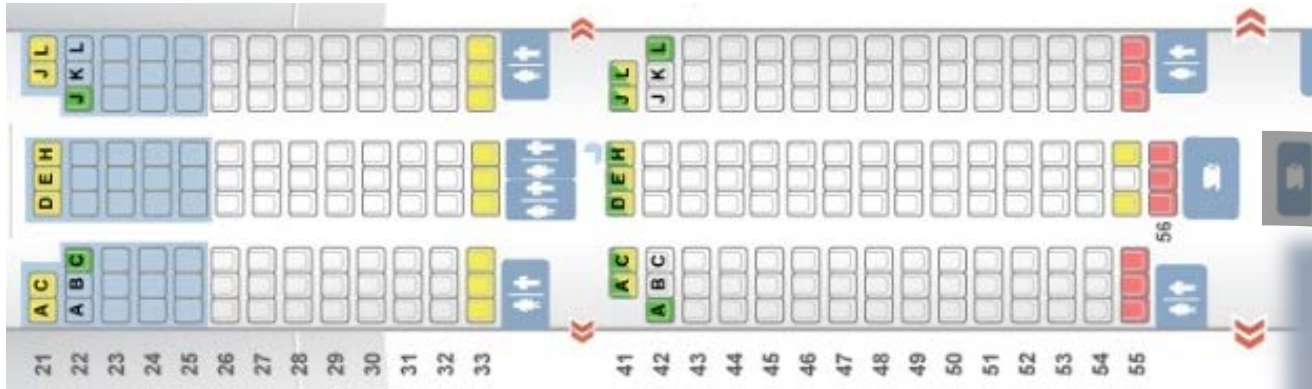
- **You provide the layout, we clarify and document it all!**
 - With INNOVINT partner DO Paustian Airtex GmbH we manage all details together with EASA/your NAA!

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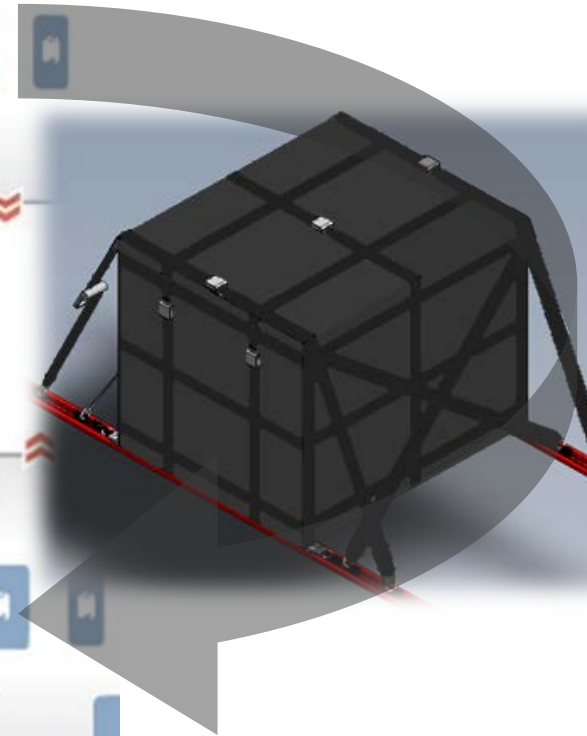
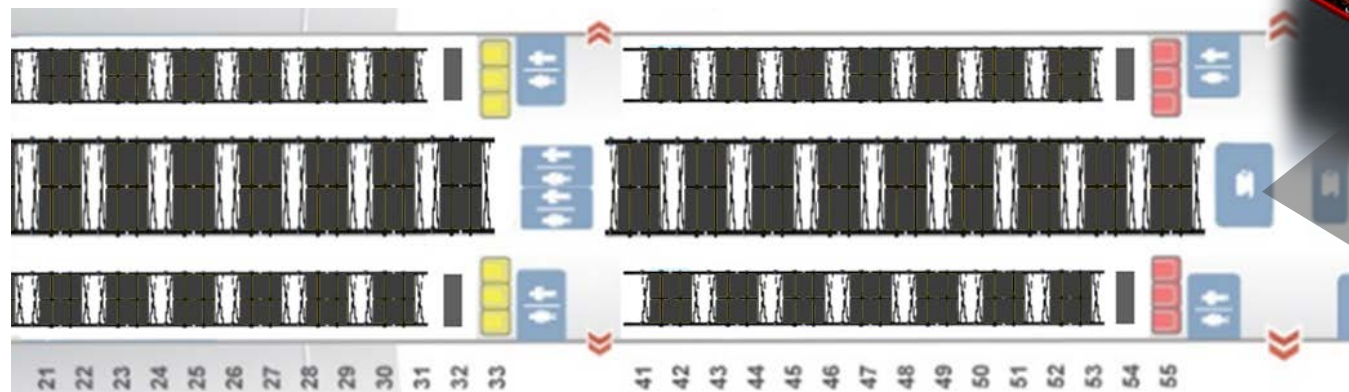
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Stowage InnoBags

Comprehensive overall concept



- Remove seats and install Stowage InnoBags



Stowage InnoBags Facts

➤ Design

- Extremely robust
- Build-in fire blocker
- Payload from 260kg to 500kg
- Bulky goods can be stowed properly
- Dimensions can be easily adapted

➤ Production

- Short Lead Time

➤ Installation

- Rapid Pax-to-Cargo conversion and vice versa

➤ Operation

- Transport regular cargo
- Significant increase of cargo capacity
- Short turnaround times
- Easy to handle



Patent pending

Stowage InnoBags

Fully compliant with EASA



➤ Special Conditions: Transportation of cargo in Passenger Compartments and Exemption to Article 2018/1139

- ✓ Smoke detection/ fire fighting
- ✓ Design solution fully supports compulsory cargo observers in cabin
- ✓ Materials fulfilling CS 25.853
- ✓ Emergency equipment allocation and re-allocation
- ✓ Cargo space allocation

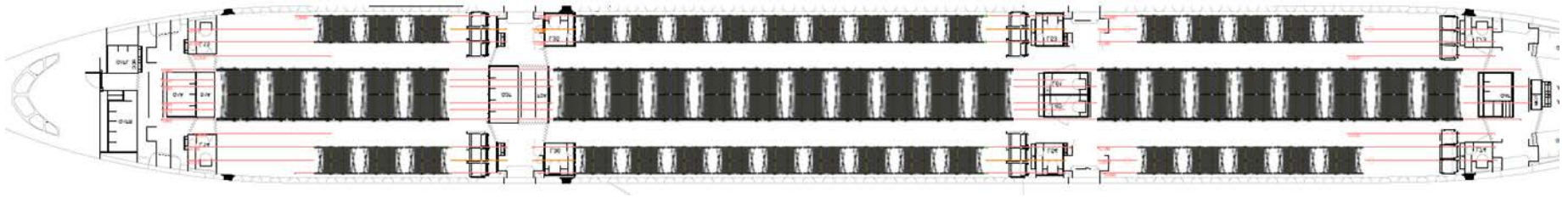
Line Item	EASA Requirements		Abstract	Compliance YES / NO	Statement, Reference, Comment
	Exemption to Article 2018/1139	Special Conditions to CS 25.855, Amdt. 24			
1		General Requirements		YES	
1.1	Exemption to Article 2018/1139 - Section 2.2		Limited number of crew members necessary; cargo restraint via seat tracks	✓	Crew members as cargo observers foreseen; design proposes to use cargo bags, which are restraint by installation on seat tracks, instead cabin seats
1.2	Exemption to Article 2018/1139 - Section 3.3, para (j)		No impediment of emergency equipment	✓	Cargo bags are arranged in such a way, that no access to emergency equipment is impeded; refer as well to line item 1.5
1.3	Exemption to Article 2018/1139 - Section 3.3, para (m)		Easy detection of smoke/fire, trained crew member in fire fighting', sufficient amount of fire fighting equipment	✓	Design facilitates swift detection of fire/smoke using additional smoke detectors; existing emergency equipment is being installed on mounting brackets in front of cargo observers
1.4	Exemption to Article 2018/1139 - Section 3.3, para (n)		Crew members must not share seat row with cargo, clear separation between cargo and crew, at least one vacant seat row between cargo and cabin crew	✓	Design concept of Innovint fully supports cargo observers are provided with own seat row, while having a clear separation from cargo to cargo observers, and maintaining best surveillance of cargo
1.5	Exemption to Article 2018/1139 - Section 3.3, para (p)		Cargo packing shall be able to equalise cabin pressure during flight	✓	Cargo bags are capable of equalising cabin pressure differential occurring in flight
1.6	Exemption to Article 2018/1139 - Section 3.3, para (q)		Smoke/fire detectors shall be maintained as per maintenance manual	✓	COTS smoke detectors and corresponding brackets are part of the overall package, which are independent from existing A/C infrastructure; shelf-life 10 years
1.7	Exemption to Article 2018/1139 - Section 3.3, para (v)		Cargo nets shall be approved by (E)TISO, deformation of nets shall not limit or impede access to emergency equipment/paths	✓	No cargo nets used. Innovint storage bags are stricter in restraining cargo compared to (E)TISO nets, thus are maintaining their shape and are tested with emergency landing, flight- and take-off loads
2		Design Requirements		YES	
2.1	Exemption to Article 2018/1139 - ANNEX I, Section 1.3, para (a)		No additional 9g barrier and smoke barrier required, cargo installation shall be restrained as per CS 25.561	✓	Storage bags are meeting requirements of CS 25.561. Innovint storage bags are tested with emergency landing, flight- and take-off loads
2.2	Exemption to Article 2018/1139 - ANNEX I, Section 1.3, para (b)	Special Conditions to CS25.855, Amdt. 24, Section 4, para (1) to (6)	Longitudinal aisle must not be impeded, must meet minimum width as per CS 25.815, effective fire fighting must be verified, floor proximity emergency escape marking shall not be obscured	✓	Design concept is fully compliant with requirements of CS 25.815 (maintaining min.aisle width); swift fire fighting is supported by readily available emergency equipment, fire blocking layer in each storage bag, and indication for fire fighting access cut
2.3	Exemption to Article 2018/1139 - ANNEX I, Section 1.3, para (e)	Special Conditions to CS25.855, Amdt. 24, Section 5, para (1) to (7)	Cargo Compartments: Max. Height: 127 cm (50"); max Vol.: 3.54m3 (125ft3) Lateral Access of Cargo Area: 38cm (15") Structural loading limits and allowances provided by the OEM not to exceed Must comply with CS 25.561(b), CS 25.789(a)	✓	Storage bags do not exceed any of the limitations; aircraft type related weight and balance, floor loading capacity, runnings loads, seat track constraints, etc. are considered
2.4	Exemption to Article 2018/1139 - ANNEX I, Section 1.4, para (a)	Special Conditions to CS25.855, Amdt. 24, Section 2, para (1), (2), (7), (8), (9), and Section 7, para (2)	Portable oxygen equipment required for inspecting crew members; materials shall meet CS 25.855, smoke and fire easily detectable and means provided to manually fight any fire, portable oxygen meeting CS 25.1439(b) and CS 25.1443(e)	✓	Existing emergency equipment is being relocated on emergency equipment brackets, which are located readily available in front of the cargo observers seat row on the seat tracks (brackets are part of design package); smoke detection in accordance with CS 25.858; Innovint storage bag material is tested per CS 25, §25.853a App. F Pt. I (a)(1)(i) (60 second vertical burn test)
2.5	Exemption to Article 2018/1139 - ANNEX I, Section 1.4, para (b)	Special Conditions to CS25.855, Amdt. 24, Section 2, para (1) to (9)	Appropriate protective garments/Fire fighting equipment	✓	Existing emergency equipment is being relocated on emergency equipment brackets (see line item 2.4); fire resistant garments, e.g. fire retardant gloves can be provided if not already available
2.6		Special Conditions to CS25.855, Amdt. 24, Section 5, para (1), (c), (d), (e), (f), (g), (h)	Shall meet CS 25.561(b), special factors per CS 25.619, fitting factors per CS 25.625, wear and tear per CS 25.561, frequent removal of interior structure per CM-S-002	✓	Interface loads, (E)TISO, structural degradation, form fitting factors, wear and tear; storage bags have an extremely robust design - see also line item 2.3
2.7		Special Conditions to CS25.855, Amdt. 24, Section 5, para (2), (a), (b)	Equalisation of delta pressure in cabin and operation of means of decompression shall not be obstructed	✓	Innovint storage bags are not considerably obstructing air flow in cabin during rapid decompression, see also line item 1.5
3		STC - Design Change Approval		YES	
3.1	Exemption to Article 2018/1139 - Section 5.2			✓	The cargo bag design can be certified on any large aeroplane on short notice, since all the mandatory design data, such as static tests, material tests (all materials meet CS25.853), etc. has been validated for sufficiency to support fast certification approval, if an operator wants to exceed its use of more than 8 months.
3.2	Exemption to Article 2018/1139 - ANNEX I, Section 2			✓	The conversion from cabin with passenger seating to cargo can be easily converted back into its previous state (storage bags and auxiliary equipment do not represent a permanent change to the layout of passenger accommodation)

Stowage InnoBags

Add. payload/volume

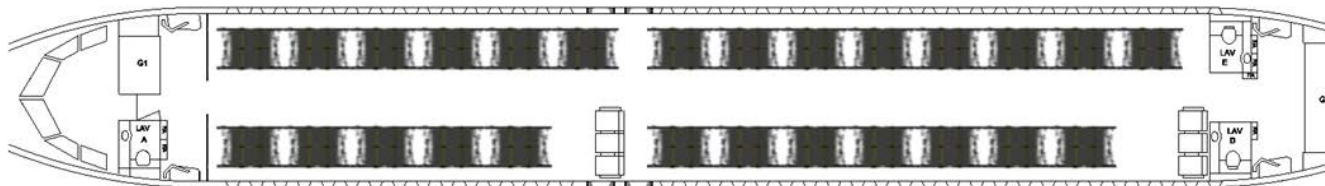
➤ A350-900

- Volume: 48m³
- Payload 20.340kg



➤ A320-200

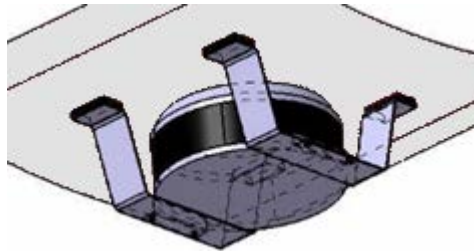
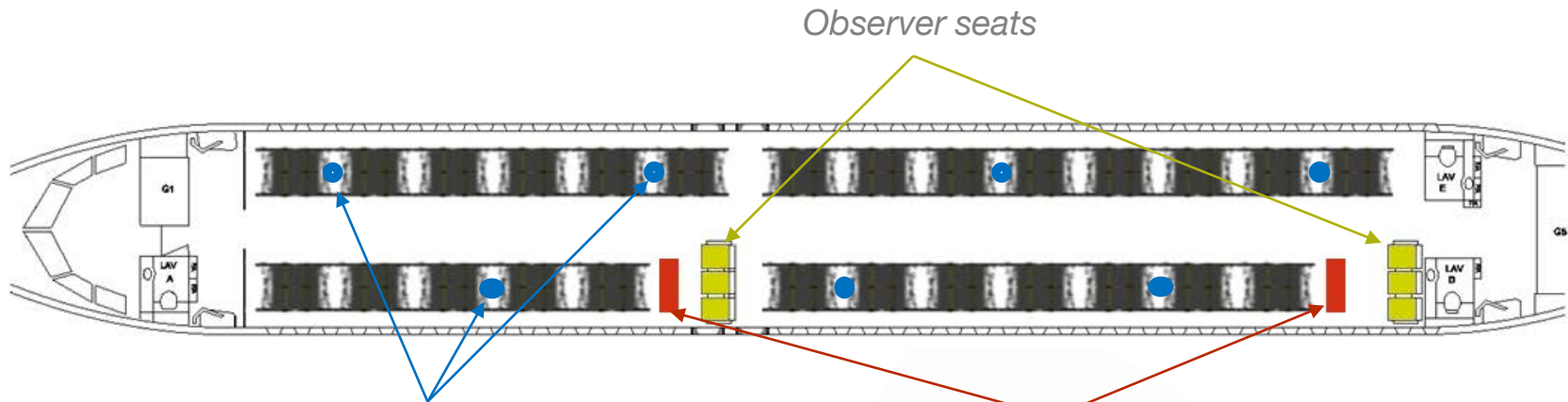
- Volume: 19m³
- Payload 6.500kg



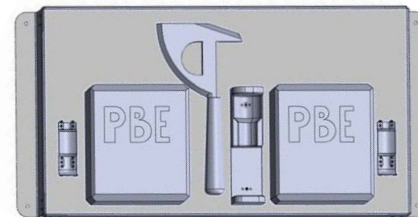
➤ Layouts for all A/C available!

Stowage InnoBags Concept Details

- Emergency Equipment readily available in front of observers



Smoke Detector mounted into bracket installed to PSU filler panel by means of rivet nuts



Mounting Bracket installed to seat tracks by standard studs

Proprietary Notes

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