

# TYPE APPROVAL CERTIFICATE

**This is to certify:**

**That the Seats**

with type designation(s)  
**Transit Jetset 3500 High**

Issued to  
**Georg Eknes Industrier AS**  
**EIKANGERVÅG, Norway**

is found to comply with  
**International Code of Safety for High-Speed Craft, 2000 - Annex 10**

**Application :**

**Passenger Seats for design level 1 and 2: gcoll up to 12g**

This Certificate is valid until **2019-06-30**.

Issued at **Høvik** on **2015-04-16**

DNV GL local station: **Bergen**

Approval Engineer: **Marcus Gustafsson**

for **DNV GL**

**Odd Arne Lyngstad**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Certificate No: **S-8651**  
File No: **499.50**  
Job Id: **262.1-019298-1**

## Product description

Passenger Seats of "Tip-up"-design mounted on legs/rails fixed to deck of craft.  
Number of legs depends on number of Seats and actual level of collision design acceleration.

Type designation:  
"Transit Jetset 3500 High"

Basic construction consist of: Back/Bottom, Beam, Legs and Floor Rails.  
Basic materials are aluminium-profiles/plate/casting and steel bolts/details.  
Upholstery consists of foams/fabrics composed of different types and quality.

## Application/Limitation

The approval covers *strength and mounting* of Seats according to '2000 HSC-Code':

- *Design level 1* as specified for collision acceleration/ $g_{coll}$  up to 3g.
- *Design level 2* as specified for collision acceleration/ $g_{coll}$  from 3 to 12g.

Seats are approved for the following conditions relative to the craft:

- For leg type 'G-foot 4bolts':
  - Forward facing and  $g_{coll}$  up to 12g;
  - maximum 4 Seats in row when placed on 2 legs without belt.
  - maximum 4 seats in row when placed on 4 legs with belt.

- Forward and Rearward facing, for  $g_{coll}$  up to 3g;
- maximum 4 Seats in row when placed on 2 legs.

Seats are to be mounted to deck as tested (ref. documentation overleaf):

- Fixation by 5mm rivets A2 spaced according drwg.no.421/01-A.

Deck structure of craft is *not* part of this approval, but is assumed separately approved.

Seat/Lap-belts are *not* required to be installed for *Design Level 1*.

Other mounting and  $g_{coll}$  may be accepted based on separate approval case by case.

## Approval conditions

Type Approval is issued based on Program 3-499.50-1 in DNV's Certification Note 2.9.  
The approval covers requirements to Seats/Tables in ch. 4.4, 4.5 and Appendix 10 of the "International Code of Safety for High-Speed Craft, 2000, 2008 edition", as referred in Pt.3 Ch.7 of DNV's: "Rules for Classification of High Speed, Light Craft and Naval Surface Craft" at date of issue.

The approval covers the strength of Seat and mounting with respect to collision only.

*Note: Restricted use of combustible materials according to HSC-Code sec.7.4.3 is not part of this approval.*

Any Seat/Lap-belts are assumed separately approved according to relevant standard.

Any changes which may influence the strength/safety of the Seat/Table, shall be reported for evaluating the need for revision of the approval.

Any additional equipment may be accepted based on documentation and/or survey prior to installation, showing that strength/safety will not be influenced.

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## Type Approval documentation

Seats/mounting is covered by the following main drawings/documents, reference:

- Assembly "Jetset" : draw.no. 081/09-F dated 27.9.92
- Back and Bottom : see Assembly drawings
- Bottom : drwg.no. 351/91-A, date 20.01.99
- Beam : drwg.no. EKS 0242, 'Hydro Al. Profiler', date 10.10.89
- Leg (G-foot 2/4bolt) : drwg.no. 411/76, 'G-foot', date 23.11.2004
- Rail (1-track) : drwg.no. EKS 0200, 'Norsk hydro', date 4.1.85
- Rail Fixation (1-track) : drwg.no.421/01-A, 'Sammenst.. 'G-foot 2/4bolts', date 11.5.2005

Materials used are specified/referred to in the drawings/documentation above.

Any Seat/Lap-belts are assumed separately approval according to relevant standard.

## Tests carried out

Dynamic test according to '2000 HSC-Code' Annex 10 section 3 was undertaken by Autoliv Sverige AB, reference:

- Report TO-11008568, project 90210, test T-11053365, 11053366 and 11053368 dated 2011-06-10;  
Covering forward tests of Seats mounted on typical aluminium deck panel.

Static test according to '2000 HSC-Code' Annex 10 section 2 was undertaken by Georg Eknes Industrier AS, reference:

- Procedure and Jig; drwg.no. 173/54, date 31.01.96
- Statische tester.... : document 340021, date 31.05.2006
- Skjema for reg...test (Leg/Rail): 'G-foot 4bolts'/drwg.no. 421/33-A, date 02.03.2006
- Test.."Tr. Jetset 3500" (Bottom/Back): drwg.no. 063/09 -08, -07, -10, -11, date 11.09.91
- Technical report Mongstad Test og Inspeksjon AS: M-52316, date 21.2.2001/18.6.2002.

*Note: Fire test of combustible materials in accordance with HSC-Code sec. 7.4.3 is not part of this approval.*

## Marking of product

Seats are to be marked with type/model-designation(s) and name of manufacturer.

*Note: MED-marking (acc. to Maritime Equipment Directives 96/98/EC) does not apply for strength of Seats,  
but applies to fire safety of combustible materials, which are not part of this approval.*

## Certificate retention survey

Det Norske Veritas may perform Certification Retention Surveys at any time during the validity period of this certificate. The arrangement is to be in accordance with scopes described in item 2.6.4 of Certification Note 2.9.

END OF CERTIFICATE