DNV·GL

Certificate No:
TAS00001WZ

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Seats

with type designation(s)
Transit Yacht 3000 High, Transit Yacht 3000 High +, Transit Yacht 7000, Transit Yacht 7000 Lux, Transit Yacht 7000 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

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Issued at **Høvik** on **2019-02-18**

This Certificate is valid until **2024-06-30**.
DNV GL local station: **Bergen**

Approval Engineer: **Espen Kultorp**

for **DNV GL**

Digitally Signed By: Adal, Christine
Location: DNV GL Høvik, Norway
Signing Date: 18.02.2019

Christine Adal
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.

Job Id: **262.1-028613-2**
Certificate No: **TAS00001WZ**

Product description

Passenger Seats of "*fixed"*-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 Yacht 3000 High" and "Transit Yacht 3000 High+",
"Transit Yacht 7000", "Transit Yacht 7000 Lux" and "Transit Yacht 7000 High".

Basic construction consists of: Back/Bottom, Beam, Legs and Floor Rails.
Basic materials are aluminium-profiles/plate/castings 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:*
- *Forward* facing ('G-foot 4 bolts') for 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

- *Rearward* facing ('G-foot 4 bolts') for g_{coll} up to 9g ("Transit Yacht 3000" high *not* accepted):
  - Maximum 4 seats in row when placed on 3 legs

- *Forward and Rearward* facing ('G-foot 4 bolts') 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 Class Programme DNVGL-CP-0140 "Passenger and crew seats".
The approval covers requirements to Seats in Ch.4.4, Ch.4.5 and Appendix 10 of the "International Code of Safety for High-Speed Craft, 2000", as referred to in DNV GL Rules for Classification of High Speed and Light Craft, Pt.3 Ch.7 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 2000 HSC Code 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.

Type Approval documentation

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

- Assembly "Yacht": drwg.no. 021/78-I, 421/29, 421/30, 421/31 and 131/88-E, dated 22.04.92, 6.2.2006, 06.02.2006, 06.02.2006 and 22.04.1992
- Back and Bottom: see Assembly drawings
- Bottom: drwg.no. 351/91-A, dated 20.01.1999
- Beam: drwg.no. EKS 0242, 'Hydro Al. Profiler', dated 10.10.1989
- Leg (G-foot 2/4 bolt): drwg.no. 411/76, 'G-foot', dated 23.11.2004
- Rail (1-track): drwg.no. EKS 0200, 'Norsk hydro', dated 04.01.1985
- Rail Fixation (1-track): drwg.no.421/01-A, 'Sammenst..G-foot 2/4bolts', dated 11.05.2005

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

Any Seat/Lap-belts are assumed separately approved 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 10.06.2011; Covering forward and rearward 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, dated 31.01.1996
- Statiske tester…. : document 340021, dated 31.05.2006
- Skjema for reg…test (Leg/Rail): 'G-foot 4 bolts'/drwg.no. 421/33-A, dated 02.03.2006
- Test.."Tr.3000/7000High" (Bottom/Back): drwg.113/70-69, 143/27-26-25, dated 30.06.1993/12.08.1994
- Technical report Mongstad Test og Inspeksjon AS: M-52316, dated 21.02.2001/18.06.2002.

Note: Fire test of combustible materials in accordance with 2000 HSC Code 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 2014/90/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

DNV GL may perform Certification Retention Surveys at any time during the validity period of this certificate. The arrangement is to be in accordance with scope described in DNVGL-CP-0338.

END OF CERTIFICATE