DNV·GL

TYPE APPROVAL CERTIFICATE

Certificate No:
TAS00000GN
Revision No:
1

This is to certify:

That the Seats

with type designation(s)
Pacific Sleeper 1400

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: g coll up to 12g

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

This Certificate is valid until **2023-09-27**.
Issued at **Høvik** on **2018-09-28**

DNV GL local station: **Bergen**

Approval Engineer: **Espen Kultorp**

for **DNV GL**

Digitally Signed By:
Wallenborg, Marcus
Signing Date: fredag 28. september 2018

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: **262.1-016869-3**
Certificate No: **TAS00000GN**
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Product description

Passenger Seats of "*Reclining*"-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: "Pacific Sleeper 1400".

Basic construction consists of: Back/Bottom, Complete box, Armest assembly 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 '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, for g_{coll} up to 12g;
  - 1 seater with belt.
- *Rearward* facing, for g_{coll} up to 12g;
  - 1 seater without belt.
- *Forward and Aftward* facing, for g_{coll} up to 3g;
  - seater without belt.

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

- Fixation by 5 mm rivets A2 spaced according drwg.no.293/41-B.

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

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: 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 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 or safety of the Seat, 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:

Title	Drawing
Assembly "Pacific Sleeper"	431/92-C 'Pacific 1400 Complete Assembly', dated 06.05.2012
	502/87-G 'Complete Box Pacific 1400', dated 12.05.2012
	602/10-E 'Front Row Box Assembly', dated 03.01.2012
Sidepanel	502/85-F 'ABS Sidepanel Assembly Left', dated 12.05.2012
	502/47-D 'Box Sidepanel Left', dated 30.04.2012
	502/51-K 'HC Plate Left', dated 30.04.2012
Armrest	431/87-H 'Armrest Assembly Right', dated 22.04.2012
	431/23-A 'Sidecover Assy', dated 11.08.2009
Back	502/72-E 'Rygg Sammenstillning Pacific 1400', dated 06.05.2012
	100/12-C 'Ryggramme', dated 16.02.2009
	502/50-I 'Back Panel', dated 30.04.2012
	502/49-E 'Top Panel', dated 30.04.2012
Seat	602/06-B 'Seat Complete Assembly', dated 09.11.2012
	502/38-D 'Seat Complete Assy Pacific 1400', dated 06.05.2012
	502/71-D 'Sete Sammestillning Pacific 1400', dated 06.05.2012
	110/13-C 'Seteramme', dated 17.02.2009
Profile back/seat	EKS 5243-A, dated 16.03.1990
Beam	202/92-B 'Avstiver Sete Sammenstillning', dated 11.03.2009
	402/58-A 'Supporttube', dated 22.04.2010
Rail, up to 3g	-, Profile SKMBT-C45413111515480, signed 27.03.01
Rail, over 3g	F38497, 'EKS 0265 ', dated 13.09.1989
Rail Fixation	293/41-B, 'Installation Instructions', dated 20.11.2013

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-13212206, project 90210, test T-13286954 dated 11.10.2013;
  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:
- Static Seat Test - Pacific Sleeper 1400, drwg.no. 174/76-A, dated 20.03.2014.

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 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.

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Periodical assessment

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 scopes described in DNVGL-CP-0338.

END OF CERTIFICATE