



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **S-7990**

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

This Certificate is valid until **2016-06-30**.

Issued at **Høvik** on **2014-04-10**

DNV local station: **Bergen**

Approval Engineer: **Marcus Gustafsson**

for **Det Norske Veritas AS**

Erlend Moe
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.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

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, Armrest 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 Rearward* facing, for g_{coll} up to 3g;
 - 1 seater without belt.

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

- Fixation by 5mm 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 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/Table 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.

Type Approval documentation

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

- Assembly "Pacific Sleeper": drwg.no. 431/92-C 'Pacific 1400 Complete Assembly', dated 06.05.2012.
drwg.no. 502/87-G 'Complete Box Pacific 1400', dated 12.05.2012.
drwg.no. 602/10-E 'Front Row Box Assembly', dated 03.01.2012.
- Sidepanel: drwg.no. 502/85-F 'ABS Sidepanel Assembly Left', dated 12.05.2012.
drwg.no. 502/47-D 'Box Sidepanel Left', dated 30.04.2012.
drwg.no. 502/51-K 'HC Plate Left', dated 30.04.2012.
- Armrest: drwg.no. 431/87-H 'Armrest Assembly Right', dated 22.04.2012.
drwg.no. 431/23-A 'Sidecover Assy', dated 11.08.2009.
- Back: drwg.no. 502/72-E 'Rygg Sammenstilling Pacific 1400', dated 06.05.2012.
drwg.no. 100/12-C 'Ryggramme', dated 16.02.2009.
drwg.no. 502/50-I 'Back Panel', dated 30.04.2012.
drwg.no. 502/49-E 'Top Panel', dated 30.04.2012.
- Seat: drwg.no. 602/06-B 'Seat Complete Assembly', dated 09.11.2012.
drwg.no. 502/38-D 'Seat Complete Assy Pacific 1400', dated 06.05.2012.
drwg.no. 502/71-D 'Sete Sammenstilling Pacific 1400', dated 06.05.2012.
drwg.no. 110/13-C 'Seteramme', dated 17.02.2009.
- Profile back/seat: drwg.no. EKS 5243-A, dated 16.03.1990.
- Beam: drwg.no. 202/92-B 'Avstiver Sete Sammenstilling', dated 11.03.2009.
drwg.no. 402/58-A 'Supporttube', dated 22.04.2010.
- Rail, up to 3g: drwg.no. -, Profile SKMBT-C45413111515480, signed 27.03.01.
- Rail, over 3g: drwg.no. F38497, 'EKS 0265', dated 13.09.1989.
- Rail Fixation: drwg.no. 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 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