DNV·GL

Certificate No:
TAS000004Y

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Seats

with type designation(s)
NS 800, NS 1000

Issued to
NorSap AS
KRISTIANSAND S, Norway

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

Application :

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

This Certificate is valid until **2019-09-13**.

Issued at **Høvik** on **2015-09-14**

for **DNV GL**

DNV GL local station: **Kristiansand S**

Approval Engineer: **Marcus Gustafsson**

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.

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Product description

Pilot/Crew Seat placed on pedestal fixed to the deck of the craft.

Type/model designation: "NS 800" and "NS 1000"

Basic construction consists of: Bottom/Back with upholstery and height adjustable pedestal.
Basic materials are aluminium-profiles/plates and steel bolts/details.
Seat-upholstery consists of foams/fabrics composed of different types and quality.

Application/Limitation

Type approval covers *strength* and *mounting* of Seat according to '2000 HSC-Code':
- *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:
NS 800: *Forward* facing from 500mm up to 870mm sitting height with seatbelt up to 9g
NS 1000: *Forward* facing from 500mm up to 960mm sitting height with seatbelt up to 9g

Seat is to be mounted to deck as tested (see documentation overleaf):

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

Lap/Seatbelts:
NS 800: 2 point belts as used during testing are to be installed.
NS 1000: 4 point belts as used during testing are to be installed.

This Type Approval covers all variations of the NorSap 800 and NorSap 1000, provided that the variations do not interfere with load carrying structure, or affects the chairs properties with respect to injury to the occupant in the event of a collision.

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 in ch.4.4, ch.4.5 and Appendix 10 of the "International Code of Safety for High-Speed Craft, 2000", 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 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

Seat/mounting is covered by the following main drawings/documents, references:
Materials used are specified/referred in drawings/documentation above.

Any Seat/Lap-belt is 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, reference:
- Test no: T-11088630, dated 2011-09-21
- Test no: T-11088630, dated 2011-09-22

Static test according to '2000 HSC-Code' Annex 10 section 2 was undertaken by NorSap, reference:
- DNV Survey Report no KRS-11-4106
- DNV Survey Report no KRS-11-4108

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.

Periodical assessment

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