

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 :****Pilot/crew 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 **2019-09-23**for **DNV GL**This Certificate is valid until **2024-09-22**.DNV GL local station: **Kristiansand S**Approval Engineer: **Per Annar Sandaune**

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: **262.1-032392-1**
Certificate No: **TAS000004Y**
Revision No: **1**

Product description

Pilot/crew seats placed on pedestal fixed to the deck of the craft.

Type/model designation:

- "NS 800"
- "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 the International Code of Safety for High-Speed Craft, 2000 (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:

- "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.

Any other arrangement/structure/mounting must be approved in each individual 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 2000 HSC Code, as referred to in DNV GL Rules for Classification of High Speed and Light Craft, Pt.3 Ch.7 at date of issue.

This Approval covers the strength of Seat and fastening with respect to collision only.

Note: Restricted use of combustible materials according to 2000 HSC Code Ch.7.4.3 is not part of this approval.

Any change which may influence the strength/safety of the Seat shall be reported in order to evaluate the need for further documentation/testing and revision of this approval.

Additional Seat fittings/equipment may be accepted based on documentation and/or survey prior to installation, showing the strength/safety of the Seat is not influenced.

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Type Approval documentation

Seats are covered by the following main drawings/documents with relevant references:
Construction:

NS 800:

"NS 800 Comfort model V-02": drwg.no. 6200, Rev. A-07
"Firkant topp NOR SAP 800 til Mod.2000A sammenstilling": drwg.no DEL-023, Rev. A-7
"NS800 Seat Frame Mod.2000A Assembly": drwg.no. DEL-123, Rev. 14
"NS 800 Comfort Column Mod.00A": drwg.no. DEL-437, Rev. A-07

NS 1000:

"NS 1000 Comfort Sitting height: 710/960 Assembly": drwg.no. 6010, Rev. 05
"NS 1000 Casted Square Top": drwg.no DEL-2011, Rev. 01
"Seat Frame NS 1000": drwg.no. DEL-084, Rev. A-10
"Telescopic Column NS 1000 (6010)": drwg.no. DEL-3651, Rev. 02

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

Tests carried out

Dynamic test according to the 2000 HSC Code – Annex 10, Ch.3 was undertaken by Autoliv:
- Test no: T-11088630, dated 2011-09-21
- Test no: T-11088630, dated 2011-09-22

Static test according to the 2000 HSC Code – Annex 10, Ch.2 was undertaken by NorSap:
- DNV Survey Report no KRS-11-4106
- DNV Survey Report no KRS-11-4108

Note: Fire test of combustible materials in accordance with the 2000 HSC Code – Ch.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 Directive 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

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.

This certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnvgl.com>

END OF CERTIFICATE