

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Seats**

with type designation(s)

**Six-seater, Five-seater, Four-seater, Three-seater, Two-seater**

Issued to

**Khimaira Oy  
Kalanti, Finland**

is found to comply with

**International Code of Safety for High-Speed Craft, 2000 - Annex 10****Application :****Passenger seat for design level 1: gcoll up to 3g****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Høvik** on **2019-07-31**for **DNV GL**This Certificate is valid until **2024-07-30**.DNV GL local station: **Turku**Approval Engineer: **Espen Kultorp**

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**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.



## Product description

Passenger Seats of "Khimaira high-speed craft seat range"-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: "Six-seater", "Five-seater", "Four-seater", "Three-seater" and "Two-seater".

Basic construction consists of: Back/Bottom, Beam, Legs 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

Seats are approved for the following conditions relative to the craft:

- *Forward and Aftward* facing, for  $g_{coll}$  up to 3g:
  - o All types/models up to 6 seats in row when placed on 4 legs
  - o All types/models up to 5 seats in row when placed on 3 legs
  - o All types/models up to 2 seats in row when placed on 2 legs

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

- Fixation by M10x20 bolts spaced according drwg.no. 14039-16365-0005 "Four-Seater Khimaira" and 14039-16365-0104 "Bottom plate – Part"

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.

## Type Approval documentation

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 sec.7.4.3 is not part of this approval.*

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:

- **Assembly:** drwg.no. 14039-16365-0007 "Six-seater Khimaira" dated 23.08.2018  
drwg.no. 14039-16365-0006 "Five-seater Khimaira" dated 23.08.2018  
drwg.no. 14039-16365-0005 "Four-seater Khimaira" dated 22.08.2018  
drwg.no. 14039-16365-0004 "Three-seater Khimaira" dated 23.08.2018  
drwg.no. 14039-16365-0003 "Two-seater Khimaira seat range" dated 22.08.2018
- **Back and Bottom:** see Assembly drawings
- **Leg:** drwg.no. 14039-16365-0101, "Seat leg – Weld assembly" dated 13.08.2018  
drwg.no. 14039-16365-0104, "Bottom plate – Part" dated 13.08.2018
- **Rail:** drwg.no. 14039-16365-0105, "Aluminium profile – Part", dated 13.08.2018

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

## Tests carried out

Static test according to '2000 HSC Code' Annex 10 section 2 was undertaken by Comatec Oy, reference:

- Procedure and Jig: Report "Type testing procedure\_Khimaira" dated 20.08.2018 and drwg.no. 14039-16365-0265, dated 17.09.2018
- Test report: "HSC type examination test report\_Khimaira 2019" dated 16.05.2019

*Note: Fire test of combustible materials in accordance with 2000 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.*

## 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 scopes described in DNVGL-CP-0338.

END OF CERTIFICATE