

TYPE EXAMINATION CERTIFICATE

This is to certify:

That the Steam Generator

with type designation(s)
Convotherm 4, Marine

Issued to

Convotherm-Elektrogeräte GmbH
Eglfing, Germany

is found to comply with
DNV GL rules for classification – Ships

Application :

Steam convection combination oven for commercial use.

Type:	Size:	Rated power input: (230V/400V/440V/480V)
Convotherm 4, Marine	6.10	10.9kW/11.0kW/9.2kW/10.9kW
	6.20	19.3kW/19.5kW/16.3kW/19.3kW
	10.10	19.3kW/19.5kW/16.3kW/19.3kW
	10.20	33.4kW/33.7kW/28.2kW/33.4kW
	12.20	33.4kW/33.7kW/28.2kW/33.4kW
	20.10	38.2kW/38.9kW/32.6kW/38.6kW
	20.20	66.4kW/67.3kW/56.3kW/66.8kW

Issued at **Hamburg** on **2017-02-27**

This Certificate is valid until **2022-02-26**.

DNV GL local station: **Augsburg**

for **DNV GL**

Approval Engineer: **Matthias Schmidt**

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Harald Pauli
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 Examination Certificate and not to the approval of equipment/systems installed.

Job Id:
Certificate No: **TAP00000NA**

Product description

Steam convection combination oven for commercial use.

Type C4eD _._ EB Marine	eD: easy dial	EB: electro boiler
Type C4eD _._ ES Marine	eD: easy dial	ES: electro injection
Type C4eT _._ EB Marine	eT: easy touch	EB: electro boiler
Type C4eT _._ ES Marine	eT: easy touch	ES: electro injection

RA: right hinged door

VT: disappearing door

Rated voltage	3~230V 50/60Hz, 3~400/440/480V 50/60Hz
Water supply	2 x G $\frac{3}{4}$ " permanent connection
Water pressure	150 – 600 kPa
Water drain	DN50 permanent connection (recommended), slope min. 5%
Material	1.4301 stainless steel
Degree of protection	IPX5
Angle of inclination during operation	max. 2°

For shipboard installation of the Marine Combi Steamer the following modifications have been carried out:

- mechanism of the door to prevent unintentional movement
- mounting set for fixing the adjustable feet of the Marine Combi Steamer to the underframe
- mounting set for fixing the underframe to the floor
- mounting set for fixing the stacked Marine Combi Steamer to each other
- slip-off protection for plates and tins

Application/Limitation

Applied rules and design codes:

- DNV GL Rules SHIP Pt.4 Ch.1 Sec.3, Table 3 'List, rolling, trim and pitch'

The construction of the Combi Steamer is based on the following standards:

- CAN/CSA-C22.2 No. 109-M1981 (reaffirmed 2009)
- DVGW W 540-VP (2010-08-01)
- EN 55014-1:2006/A2:2011
- EN 55014-2:1997/A2:2008
- EN 60335-1:2012
- EN 60335-2-42/A11:2012
- EN 61000-3-11:2000
- EN 61000-3-12:2011
- EN 62233:2008
- IEC 60335-1:2010
- IEC 60335-2-42/A1:2008
- IEC 62233:2005
- NSF/ANSI Standard 4
- UL 197
- ZEK 01.4-08

The Marine Combi Steamer is to be installed in closed areas.

It has been tested without requirements to cold, salt mist and vibrations.

This DNV GL type examination is based on the certificates (see type examination documentation) for onshore use. These Certificates are to be prolonged in due time to have always valid certificates available.

Type Examination documentation

[illegible]

Job Id:
Certificate No: **TAP00000NA**

[illegible]

- IEC CB Test Certificate DE 3 - 16718
- DVGW Cert Conformity Certificate – Registration No. AS-0625CP0175
- NSF International official listing
- TÜV Süd Certificate No. Z1A 14 02 18434 040

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- TÜV Süd EC-Statement of Compliance No. E6 14 09 18434 045
- UL Certificate No. 20140609-E360598

Tests carried out

Assessment of the manufacturer has been carried out according to the initial type examination assessment report Rev. No. 0 dd. 2017-02-08.

Tests have been carried out according to procedure 'Tests of steam convection oven' at the manufacturer's premises with date 2017-02-08.

Marking of product

For traceability to this type examination the products are at least to be marked with:

- a. Name and domicile of the manufacturer
- b. Manufacturer's type designation and serial number
- c. Year of manufacture
- d. Rated voltage
- e. Rated power input

Certificate Retention Survey

The objective of the periodical assessment is to verify that the conditions for the type examination (TE) have not been altered.

The main scope of the periodical assessment will normally include:

- verification of the TE applicant's production and quality system w.r.t ensuring continued consistent production of the TE products at the TE applicant's own premises and at other companies that are given the responsibility for manufacturing of the products
- review of the TE documentation and that this is still used as a basis for the production
- review of possible changes in the design, the materials and the performance of the product
- verification of the product marking

For retention of the TE certificate in its validity period the periodical assessment will be carried out bi-yearly.

Unscheduled assessments for retention of the certificate may be carried out when there is reason to believe that the TE applicant has not adhered to the obligations stipulated in the TE certificate.