Certificate No:
TAA00002ZG

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Antiglare Sunscreens

with type designation(s)
Sun Screen System SOLAFAR (OPALFILM))

Issued to
Shanghai Farquan Industrial Co., Ltd
,

is found to comply with
DNV GL rules for classification – Ships
ISO 8468

Application :

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

Issued at **Hamburg** on **2021-04-30**
This Certificate is valid until **2026-04-29**.
DNV local station: **Shanghai**

Approval Engineer: **Michael Oberländer**

for **DNV**

Jörg Kallies
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

SOLAFAR (OPALFILM) is a sun protection system with anti-glare roller screen films used as reflective shades for navigation bridge windows. It consists of an aluminium alloy frame and a multi-layer polyester composite film of following types:

	Film type code			
%	Silver Grey ST 10R	Bronce ST 10R	Gold ST 10R	Grey ST 2R
Visible Light Transmission	7.0	14.0	6.0	8.0
Glare Reduction	86.0	90.0	87.0	92.0
Total Energy Rejection	83.0	59.0	87.0	63.0
UV Transmission	<1.0	<1.0	<1.0	<1.0

The reflective shades fulfil the requirements of ISO 8468:2007 4.3.6, IMO MSC/Circ.982 5.1.1.2.6 and IACS Rec.95 B6.5.1

Application/Limitation

Approved as reflective shades for use on navigation bridge windows.

Type Approval documentation

Tests carried out

Functional tests including:

- Testing of colour distortion, true colour rendition, examination of glare and reflection.
- Examination demonstrating fitness for purpose for both screens and mountings when installed, including adaptability of the screens.
- Witnessing of working practices and procedures.

Marking of product

The product or its packing is to be marked with type designation and name of the manufacturer.

Periodical assessment

DNV's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Class Programme DNVGL-CP-0338, Section 4.
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