Certificate No:
TAA000033A

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Antiglare Sunscreens

with type designation(s)
Sun Screen System TIANRUN

Issued to
Zhenjiang Tianrun Window Decoration Co., Ltd. Suzhou Branch
Suzhou, Jiangsu, China

is found to comply with
ISO 8468:2007 Ships and marine technology – Ship's bridge layout and associated equipment – Requirements and guidelines
DNV rules for classification – Ships

Application :

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

Issued at **Hamburg** on **2021-11-12**
This Certificate is valid until **2026-11-11**.
DNV local station: **Hamburg Lifting Appliances**

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

TRRS001 is a sunscreen 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. The operation is manually via a pull rope and a tension spring.

	Film type code			
%	Gold RS10R	Silver RS10R	Grey RS10R	Bronze RS 2R
Visible Light Transmission	5% - 15%			
Glare Reduction	min. 80%			
Total Energy Rejection	min. 60%			
UV Transmission	max. 5%			

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

Manufacturer of the films: Jiangsu Shuangxing Color Plastic New Materials Co., Ltd.

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 the procedure described in Class Programme DNV-CP-0338, Section 4.