Certificate no.:
TAK00002ES

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Synthetic Fibres

with type designation(s)
Trosar® T70 dtex 1780 and dtex 2640

issued to
Avient Protective Materials B.V.
Geleen, Limburg, **Netherlands**

is found to comply with
OCIMF Mooring Equipment Guidelines (MEG4), Fourth Edition 2018 [test requirements]

Application:

Synthetic fibers for designated service in mooring lines in compliance with OCIMF MEG4.

Issued at **Hamburg** on **2024-10-31**
This Certificate is valid until **2029-10-30**.
DNV local unit: **Netherlands CMC**

for **DNV**

Approval Engineer: **Gisle Hersvik**

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

Trosar® T70 dtex 1780 and dtex 2640

Trosar® T70 is a multi-filament UHMWPE fibre grade with a density of 0.975 g/cm^3 (floats on water) and a typical elongation at break of 3.5%.

UHMWPE fiber: Ultra High Molecular Weight Polyethylene fiber, also referred to as High Modulus Polyethylene (HMPE) fiber

% of break force at 20°C:

Temperature [°C]	-20	0	20	40	60	80
T70, dtex 1780	110	108	100	94	84	67
T70, dtex 2640	110	108	100	94	84	67

Testing performed with basis in OCIMF MEG4, Appendix B: B8.5.9 Material break force at varied temperature

Application/Limitation

This Type Approval certificate is not valid for designs, components, equipment, systems or products which are subject to classification by DNV.

The approval covers the weight ranges stated above.

Any significant changes in design and / or quality of the material will render the approval invalid.

Manufactured by

Shandong ICD High Performance Fibre Co., Ltd., 016 Fenghuang South Rd, High Tech Zone, Laiwu City Shandong, 271100, People's Republic of China

DNV local station: Qingdao

Responsibility

The Company (stated on the front page of this Certificate) takes the responsibility that both design and production are in compliance with Rules, Standards and/or Regulations listed on page 1 of this certificate.

Type Approval documentation

Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**.

Marking of product

Product/package shall be marked with *manufacturer's name*, *place of production* and *type designation*.

The marking is to be carried out in such a way that it is visible, legible and indelible. The marking of product is to enable traceability to the DNV Type Approval Certificate.

Periodical assessment

The scope of the Periodical Assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.

Periodical assessments (for Certificate Retention / Certificate Renewal) shall be performed according to DNV-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.dnv.com

END OF CERTIFICATE