

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Fire Retardant Gelcoats and Topcoats**

with type designation(s)
**NORPOL® SVG X2 and NORPOL® SVG X3 (Gelcoats),
NORPOL® SVT X2 and NORPOL® SVT X3 (Topcoats)**

Issued to

**Polynt Composites Norway AS.
SANDEFJORD, Norway**

is found to comply with

**DNV GL class programme DNVGL-CP-0083 – Type approval – Polyester resin, vinylester resin,
gelcoat and topcoat****DNV GL rules for classification – High speed and light craft****DNV GL standard DNVGL-ST-0342 – Craft****Det Norske Veritas' Standards for Certification No. 2.20, Lifeboats and Rescue Boats, 2007****Application :****Fire retardant gelcoats and topcoats for use in marine vessels according to stated
Rules/Standards.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed
by DNV GL.**Issued at **Høvik** on **2018-06-25**This Certificate is valid until **2023-06-24**.for **DNV GL**DNV GL local station: **Sandefjord**Approval Engineer: **Gisle Hersvik**

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Rikard Törnqvist
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

Fire retardant gelcoat products based on POLYLITE® 270-000 polyester (an ISO/NPG glycol polyester resin);

Gelcoats: **NORPOL® SVG X2 and NORPOL® SVG X3**

Topcoats: **NORPOL® SVT X2 and NORPOL® SVT X3**

Gelcoats and topcoats are in general available in H (Hand/Brush application) and S (Spray application) versions.

The following properties have been verified by Type Testing of the resin:

Property	Test Method	POLYLITE® 270-000		
Fracture Elongation	ISO 527	3,4	%	msmv
Tensile Strength	ISO 527	62	MPa	msmv
Tensile Modulus	ISO 527	3150	MPa	msv
Water Absorption	ISO 62	76,3	mg	msmv (mean)
HDT	ISO 75 (Method A)	80,9	°C	msmv (mean)
Barcol Hardness	ASTM D2583	42	-	msv
Density	ISO 1675	1,05 - 1,10	g/cm ³	msv
Curing Procedure used for Type Testing		24 hrs at room temperature, 24 hrs at 60°C		

The following properties have been verified by Type Testing of the gelcoats:

Property	Test Method	SVG X2	SVG H X3		
Oxygen index	ASTM D2863	23	27	-	mean
Curing Procedure used for Type Testing		24 hrs at room temperature, 24 hrs at 60°C			

Legend:

mean: mean of Type Test results.

msv: manufacturer's specified value, verified to be within $\pm 10\%$ of mean of Type Test results.

msmv: manufacturer's specified minimum value, verified to be below mean - 2 x standard deviation of Type Test results.

Application/Limitation

Content of pigment in light coloured products can be higher than maximum stated in the DNV GL Rules.

Manufactured by

Reichhold AS, Øraveien 8/19, 1630 Gamle Fredrikstad, Norway

DNV GL local office: Sandefjord

Reichhold Srl, Via Romagnoli 23, 43056 San Polo di Torile (Parma), Italy

DNV GL local office: Milan

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

Job Id: **262.1-010074-6**
Certificate No: **TAK000018Z**

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 GL 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 Assessment to be performed after 2 and 3.5 years (Certificate Retention) and at renewal after 5 years (Certificate Renewal).

The main elements of the Periodical Assessment are to:

- Ensure that **Type Approval documentation** is available.
- Review design, materials, production process, and performance with respect to possible changes, in order to ensure compliance with **Type Approval documentation** and/or referenced material specifications.
- Ensure traceability between manufacturer's product marking and the DNV GL Type Approval Certificate.

END OF CERTIFICATE