

Certificate Of Fire Approval

This is to certify that the product detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations and with the International Convention for the Safety of Life at Sea, (SOLAS), 1974, as amended, for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits etc.

Manufacturer	GL Yachtverglasung GmbH
Address	Ludwig Meyn Strasse 12, 25469, Halstenbek, Germany
Type	Window (A-60) (Standard Fire Test)
Description	A60 fire retardant glass for application in A60 steel bulkheads Type : "GLY-MarineCobondFR60®"
Trade Name	GLY-MarineCobondFR60®
Specified Standard	IMO Res. MSC.307(88) - (2010 FTP Code) Annex 1, Part 3

The attached Design Appraisal Document forms part of this certificate.

This certificate remains valid unless cancelled or revoked, provided the conditions in the attached Design Appraisal Document are complied with and the equipment remains satisfactory in service.

This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register of any modification or changes to the equipment in order to obtain a valid Certificate.



Torsten Radtke

Specialist to Lloyd's Register EMEA
A member of the Lloyd's Register group

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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LR2001739SF

This Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Test Report No. DMT-DO-53-108, dated 17th May 2019 from DMT GmbH & Co.KG, Hermann-Kemper-Straße 12a, 49762 Lathen, Germany.

Drawing GLY 002989

Drawing GLY-MarinecobondFR60

ISO 9001:2015 Certificate Pilington

ISO 9001:2015 Certificate Sedak

CONDITIONS OF CERTIFICATION

1. When fitted in a steel A-60 bulkhead: suitable for a fire risk on the internal side of the window
2. Maximum clear opening size: 3890 mm width x 1920 mm height
3. Window set of glass panes manufactured by GL-Yachtverglasung with the following dimensions: 4020 mm wide, 2000 mm high with overall thickness of 57.8 mm consist of (seen from fire risk side) : 2 x 8 mm thick thermally hardened glass type "Pyrostop TM60-20" with interlayer of fire protection gel from Manufacturer Pilkington Group Ltd. (22 mm in total thickness), 16 mm wide space between the glass panes filled with air and a 3rd layer of min 3 x 6mm floating glass with SGP interlayer between Glasses. Glass frame consisting of a 100 mm deep flat iron made of steel (thickness: 8 mm) and a flat iron made of steel (thickness: 10 mm) welded perpendicular to the Bulkhead. The window's frame is dedicated for welding to steel A60 class bulkhead without limitations of configuration
4. The glazing was adhered to the steel bulkhead from the outside by using the adhesive "SIKAFLEX®-296" and the booster "Sika® Booster 20W". On the exposed side the inner glazing was sealed towards the steel bulkhead by a circumferential sealing type "SIKAFLEX®-852 FR" with a thickness of 25.5 mm. On the unexposed side the glazing was sealed towards the steel-bulkhead with the sealing type "SIKAFLEX®-295 UV" by the Sika Deutschland GmbH (width: 25.5 mm). Manufacturer of all Sealings Sika Deutschland GmbH
5. Glass fitted in windows and side scuttles for external use should, in addition to the required fire resisting ability, as appropriate, be of toughened quality and suitable to satisfy the operational requirements of the location in which the glass is fitted
6. Type approval includes also windows of the same type with lesser dimensions in terms of height and width and the same or greater thickness of glass panels
7. Production items are to be manufactured in accordance with a quality control system which shall be maintained to ensure that items are of the same standard as the approved prototype
8. The Certificate holder is solely responsible for the products supplied under this Certificate and to ensure that their products, whether manufactured by themselves or their licensee manufacturers, if agreed by Lloyd's Register, are fully compliant with the relevant statutory regulations and Lloyd's Register Class Rules as applicable and designed and manufactured to the same quality and specifications as the prototype tested, including components that are designed and manufactured by third parties

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NOTES

1. Installation on board is to be according to the manufacturer's instructions.

PLACE OF PRODUCTION

Pilkington Deutschland AG
Hegestrasse 360
45966 Gladbeck
Germany

Sedak GmbH & Co KG
Einsteinring 1
86368 Gersthofen
Germany



Torsten Radtke
Senior Specialist Statutory Service
Lloyd's Register Marine
Hamburg Technical Support Office
Lloyd's Register EMEA

Supplementary Type Approval Terms and Conditions

This certificate and Design Appraisal Document relates to type approval, it certifies that the prototype(s) of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein, it does not mean or imply approval for any other use, nor approval of any products designed or manufactured otherwise than in strict conformity with the said prototype(s).