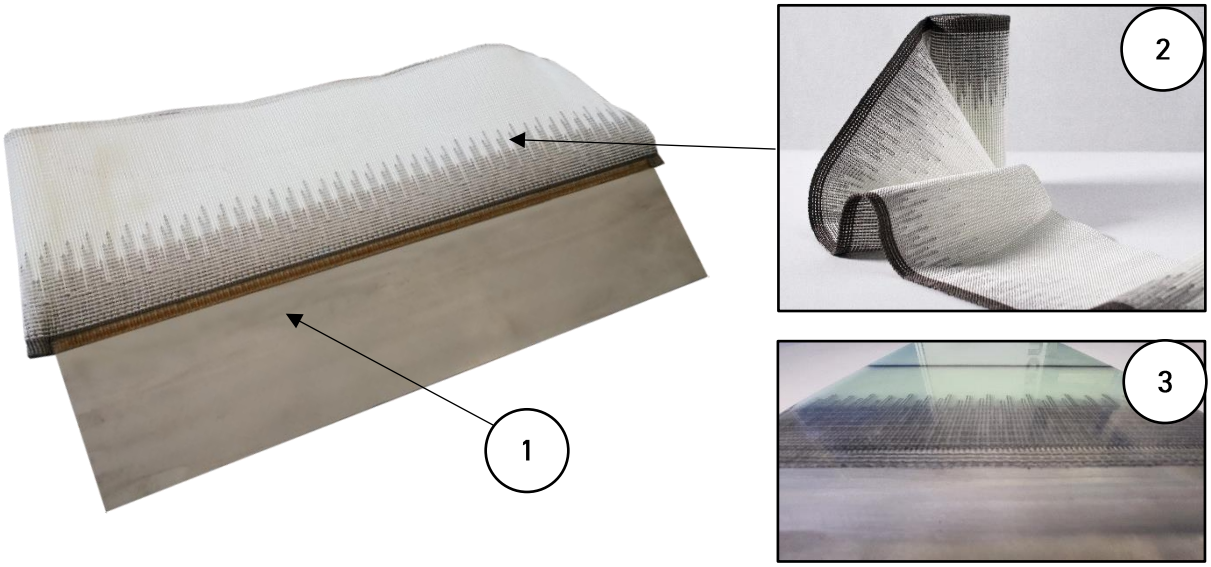
# TECHNICAL DATA SHEET

## FAUSST joining element

**Art.-Nr.:** BF2S2525 **Label:** FAUSST joining element

The FAUSST joining element is used to join glass fibre reinforced thermosets with steel. The joining elements are integrated into the manufacturing process of the fibre composite according to the application instructions and can then be joined to steel structures via the metal profile, including by welding, riveting or bolting.



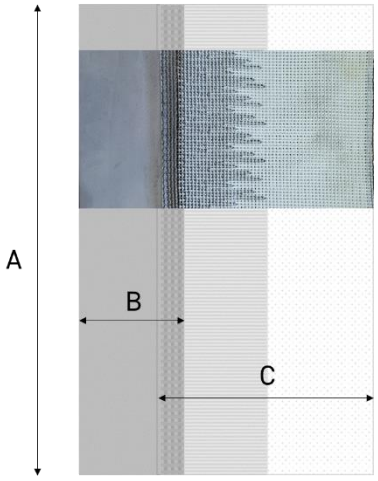

The BF2S2525 connecting element consists of a 3.0 mm thick flat profile (1). Different lengths and widths of the profile are available. Two layers of the hybrid FAUSST fabric are joined to the profile by means of roll seam resistance welding (2). After embedding in the FRP, the component can be joined via the metal profile (3).

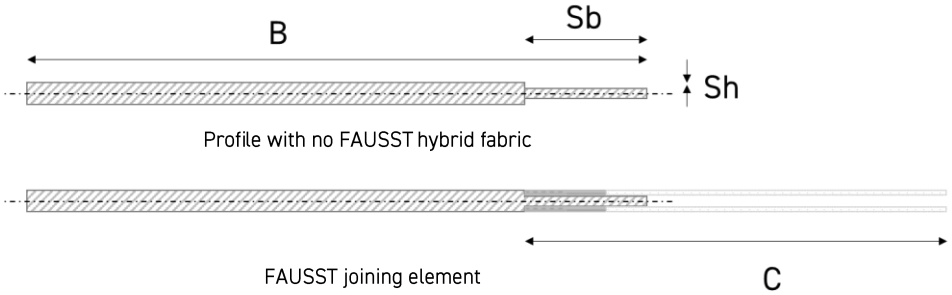
## Specification metal profile & FAUSST hybrid fabric

| | Metal profile | Hybrid fabric | | |
|---|---|---|---|---|
| | | Steelyarn | Roving | Zwirn |
| Material | 1.4301 | 1.4301 | E-Glas | E-Glas |
| Fineness [tex] | - | 335 | 200 | 204 |
| Density [g/cm³] | 7,9 | 3,6 | | |
| Tear [N/Tee] | - | 25 | 80 | 130 |
| Grammage [g/m²] | - | 1170 ±10 | | |

## Joining element

| | |
|---|---|
| A [mm] | 50 – 3000 |
| B [mm] | 50 – 250 |
| C [mm] | 80 ± 1 |
| H [mm] | 3 ± 0,2 |
| Steps [-] | Top: 1 |
| | Buttom: 1 |
| Steps width Sb [mm] | 25 ± 0,2 |
| Steps height Sh [mm] | 0,75 ± 0,05 |



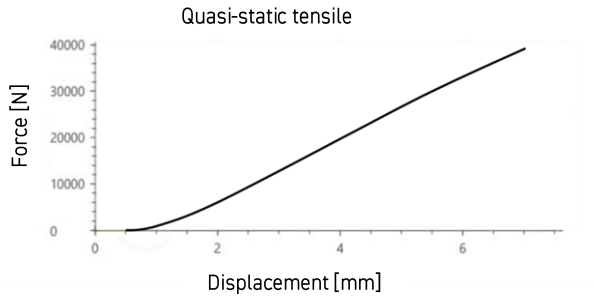



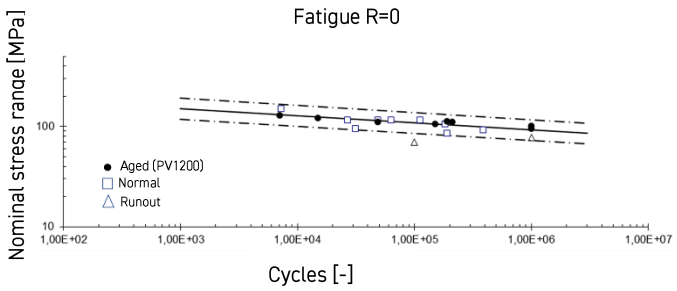
## Mechanical properties

To determine the following strength values, a joint profile was joined according to internal pWPS and embedded in a multilayer fibre composite test specimen by means of vacuum infusion. For the fibre composite, an E-glass UD scrim with 640g/m² grammage in the tension-compression direction and the EP resin Epikote Resin MGS RIMR426 with hardener Epikure Curing Agent MGS RIMH434 were used.

All values refer to the metal profile cross-section.

| | |
|---|---|
| Tensile strength [MPa] | 230 |
| Compression strength [MPa] | 150 |
| Fatigue cyclic loading $1*10^7$ [MPa] | 60 |




## Certification

- Approval in Principle (AiP) by classification society Bureau Veritas
- "Non-combustible" according to IMO MSC.307 FTP-Code 2010 and DIN EN 13501-1 [A1].
- PPV 1200 ageing (climate change test with -40°C - +80° for 1200 hours)

BUREAU VERITAS

**APPROVAL in PRINCIPLE**

At the request of:

**Hyconnect**

**BUREAU VERITAS MARINE & OFFSHORE SAS**, acting within the scope of its general conditions[1], declares hereunder that the design of the:

**FAUSST**

is **Approved in Principle**, with respect to the aim of the Classification as defined in Part A, chapter I of the latest edition of Bureau Veritas Rules for the Classification of Steel Ships and the conditions stated in ANNEX 1. The present Approval in Principle is referring to the general options chosen by the designer and is based on the documents listed in ANNEX 2.

The validity of this approval may have to be reconsidered, in case of any major modification likely to invalidate the principles shown on these documents. The Approval in Principle would become null and void should Bureau Veritas Marine & Offshore not be kept informed of such modifications.

Prior to the classification and/or certification of a Unit, all relevant drawings, calculation notes, test reports and other documents required by the applicable Rules or necessary to address the technical requirements listed in ANNEX 3 are to be submitted for review, with the aim of issuing a Design Approval certificate.

Issued at Paris La Defense, on 23rd December 2021

Olivier CARTIER

Vice President, Technical Director

[1]: see overleaf

MPA Dresden

**Klassifizierungsbericht**

*Classification Report*

Klassifizierung des Brandverhaltens nach DIN EN 13501-1:2019-05
*fire classification acc. to DIN EN 13501-1:2019-05*

**Nr./No. 20211004/01**

Auftraggeber / *Sponsor*: Hyconnect GmbH, Hermann-Blohm-Straße 3/B18, 20457 Hamburg, Deutschland

Hersteller / *Manufacturer*: Hyconnect GmbH, Hermann-Blohm-Straße 3/B18, 20457 Hamburg, Deutschland

Produktname / *Product name*: FAUSST III

Erstellt von / *Prepared by*: MPA Dresden GmbH, Fuchsmühlenweg 6F, 09599 Freiberg, Deutschland

Akkreditierte Prüfstelle nach DIN EN ISO/IEC 17025
*Accredited testing laboratory acc. to DIN EN ISO/IEC 17025*
D-PL-17819-01-00

Nr. der benannten Stelle / *Notified Body No.*: 0767 / 0767

Ausgabe/Datum / *Issue/date*: 1. Ausgabe vom 21.04.2022 / *First issue dated 2022-04-21*

Berichtsumfang / *The report comprises*: 5 Seiten und 0 Anlagen / *5 pages and 0 annexes*

Hinweis / *Information*: Der Klassifizierungsbericht wurde zweisprachig (deutsch/englisch) erstellt. In Zweifelsfällen ist der deutsche Wortlaut maßgeblich.
*The classification report is produced bilingual (German and English). In case of doubt the German wording is valid.*

MPA Dresden

**Prüfbericht**

*Test report*

**Nr./No. 20211004/04**

Auftraggeber / *Sponsor*: Hyconnect GmbH, Hermann-Blohm-Straße 3/B18, 20457 Hamburg, Deutschland

Hersteller / *Manufacturer*: Hyconnect GmbH, Hermann-Blohm-Straße 3/B18, 20457 Hamburg, Deutschland

Produktname / *Product name*: FAUSST III

Inhalt / *Content*: Prüfung der Nichtbrennbarkeit gemäß IMO - Entschließung MSC.307 (88) - (FTP-Code 2010) Anlage 1 Teil 1
*Non-combustibility test according to IMO – resolution MSC.307 (88) - (FTP- Code 2010) annex 1 part 1*

Erstellt von / *Prepared by*: MPA Dresden GmbH, Fuchsmühlenweg 6 F, 09599 Freiberg, Deutschland

Akkreditierte Prüfstelle nach DIN EN ISO/IEC 17025
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D-PL-17819-01-00

Ausgabe/Datum / *Issue/date*: 1. Ausgabe vom 21.04.2022 / *First issue dated 2022-04-21*

Berichtsumfang / *This report comprises*: 6 Seiten und 1 Anlage / *6 pages and 1 annex*

Hinweis / *Information*: Der Prüfbericht wurde zweisprachig (deutsch/englisch) erstellt. In Zweifelsfällen ist der deutsche Wortlaut maßgeblich.
*The test report is produced bilingual (German and English). In case of doubt the German wording is valid.*

## Advantages

- FRP components weldable
- Metal profile can be reworked, drilled, screwed
- Safety in case of impact loads
- High load transmission
- No external materials (adhesives, etc.)
- Easy to integrate
- Non-destructively testable (ultrasound, thermography, etc.)

## Areas of application

The FAUSST joining element has a wide range of applications and is suitable for load-bearing and permanent connections. These include applications in the area of floor/roof constructions as well as wall elements with partly increased fire protection requirements. Ballistic protection can also be realised using FAUSST joining elements.

Suitable joining partners are fibre composites based on glass fibre fabrics and thermosets such as epoxy resins in vacuum infusion, RTM or hand laminate. The product is only suitable for experienced users in plastics processing. Preliminary tests on load-bearing elements under the respective conditions must be undertaken to ensure the appropriate quality assurance of the integration.

The connecting elements can be welded to each other and machined.