

## **SHIBATAFENDERTEAM GROUP**

GERMANY | FRANCE | AMERICAS | ASIA

Marine Fenders & Products

16<sup>th</sup> Intermodal Africa 2016 – Mombasa, Kenya

Presented by: J. Richter



# SHIBATA**FENDER**TEAM

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1. ShibataFenderTeam Group
2. Products
3. Services





# SHIBATA**FENDER**TEAM

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## SHIBATAFENDERTEAM GROUP

### Headquarters

Hamburg, Germany

### Offices & Representatives

Lansdowne, USA

Paris, France

Kuala Lumpur, Malaysia

Extensive agent's network around the world

### Production

Rubber fender production in Japan and Malaysia

Own steel fabrication facilities in Germany

Foam Filled Fender production in Germany & USA





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## SHIBATAFENDERTEAM GROUP

Turnover ~ 50 million USD

Delivered projects > 2.800 worldwide since 2006

Project sizes > 5 million USD / project  
> 200 fender systems / project





## SHIBATAFENDERTEAM GROUP

### Achievements

ISO 9001  
ISO 14001

PIANC Type Approval  
for standard range



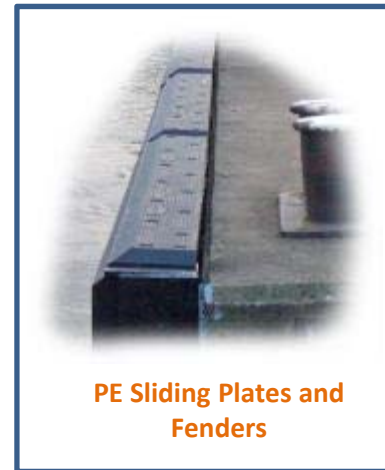


## Product Areas



Marine Fenders

- Fixed Fenders
- Foam Products
- Pneumatic Fenders
- Corner Fenders
- Rolling Fenders
- Extruded Fenders
- Komposite Fenders
- Tug Boat Fenders
- Special Solutions



PE Sliding Plates and Fenders



Accessories and Fixings



Bollards



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## Fender & Fender Systems

- SPC 800 Cone Fender Systems for Tema Bulk Terminal, Ghana





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## Fender & Fender Systems

- CSS 2000 Cell Fender System for Khalifa Port, Abu Dhabi, U.A.E







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## Fender & Fender Systems

- Special Element Fender FE 1000 x 1500 mm System for Odessa Port, Ukraine





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## Fender & Fender Systems

- FE Element Fender 750 x 1000 mm System for PetroPort Port, Sweden





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## Fender & Fender Systems

- SX Fender / SX-P 300 & 500 Fender for Port of Sochi, Russia





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## Fender & Fender Systems

- Ocean Guard Fenders OD 1700 x L 3000 mm for Gdansk, Poland





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## Fender & Fender Systems

- Mooring Buoys OD 4500 x H 3300 mm for Port of Mombasa, Kenya





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## Fender & Fender Systems

- Pneumatic Fenders OD 1350 x L 2500 mm for Hamburg, Germany





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## Fender & Fender Systems

- Cylindrical Fenders OD 1500 & 1200 mm for Container Terminal, Hamburg, Germany



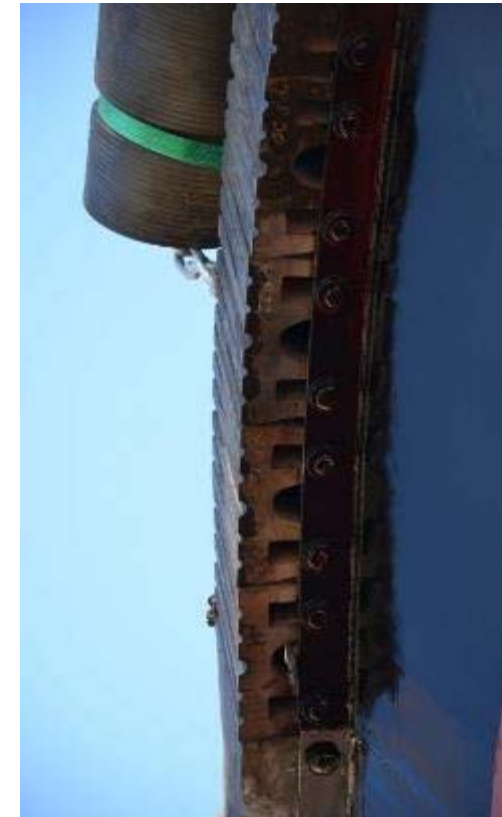


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## Fender & Fender Systems

### ➤ Tug Boat Fenders for Port Elizabeth, South Africa







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## Fender & Fender Systems

### ➤ Extruded Fenders





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## Other Products

### ➤ Sliding Fenders, Bollards & Ladders





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## **SFT** Services

For the design of a high performance, reliable and high quality fender system

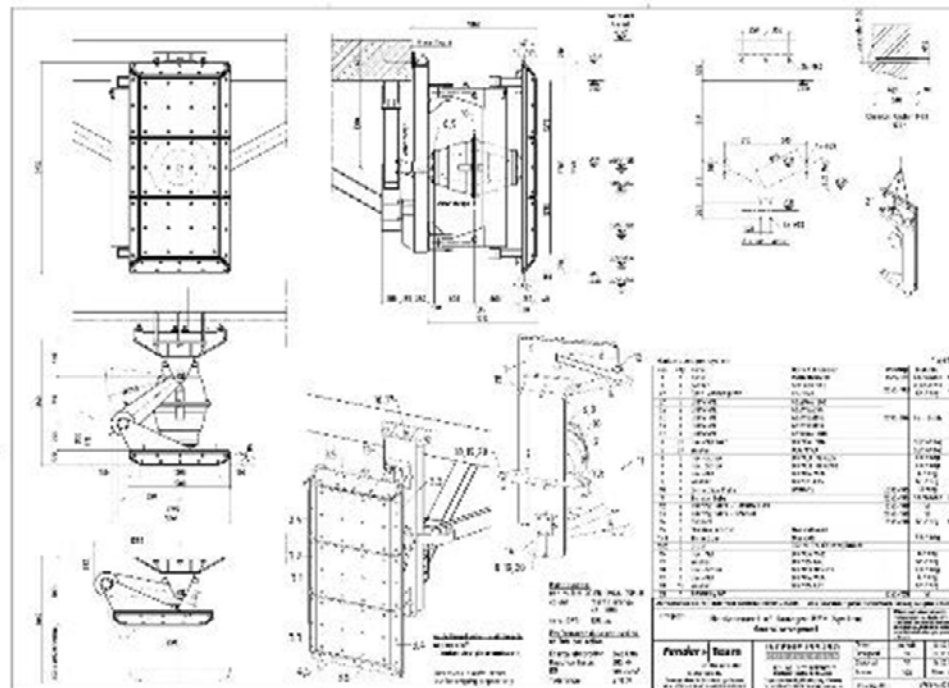






## SFT Services

### Detailed Drawings & Calculations



INGENIEURBÜRO  
ROSSBURGER

0120 Khalifa Port 1x CSS 2000 F4.8

page 1

#### Preamble:

This calculation considers the structural design and the capacity checks for the steel fender panels. Each panel consists of a closed steel box frame, H x W x T = 9350mm x 2760mm x 207mm, covered with 40mm UH-MW-PE pads. The panels are bevelled 300mm on to edge and 150mm on both sides. Each fender system is equipped with 1x CSS 2000 F4.8 rubber fender, 2x upper tension chains and 2x weight support chains. The fender system is to be assembled on a concrete quay wall. Final stand-off distance results in approximately 2250mm. Total number of fender systems is 54 pieces. Further details will be shown on respective drawings.

#### Notes:

Fender CSS 2000 F4.8 performance data:  
Max. Reaction force at 25.0 % and 52.5 % deflection  $F_{100} = 152,411 (1525 kN)$   
Max. Energy absorption at 52.5 % deflection  $E = 135,97 (1324 kNm)$

#### Partial safety factors for panel design:

Plate angle  $15^\circ$   $CF = 1.00$  (reaction force is constant under angular compression  $\leq 15^\circ$ )  
Velocity factor  $VF = 1.12$  (given by Fender supplier)  
Tolerance factor  $TF = 1.10$  (considering +/- 10% manufacturing tolerance)  
Temperature factor  $TF = 1.08$  (given by Fender supplier, based on low temperature  $1^\circ C$ )

Total Correction Factor:  $= 1.00 \times 1.12 \times 1.10 \times 1.08 = 1.33$   
 $\gamma = 1.60$  acc. to BS 5950-1:2000 table 2 for imposed load  
so  $\gamma = 1.60$  is applied on all internal forces and moments due to  $F_{100}$ .

Self weights of steel panel, PE and rubber will be neglected.

Chain design: FOS against MSL:  $\geq 3.0$ , chain loads based on  $F_{100}$ .

Shackle design: FOS against MSL:  $> 3.0$ , shackles loads based on  $F_{100}$ .

#### Materials:

Steel: S355 J2 (1.0563) for structural members and eye bolts, S315 J2 (1.0368) for all other members.

Thread bars: M16, Stainless Steel V4A (1.4404)

Balls and nuts: grade 8.8, 1kg

UH-MW-PE: D 1000, friction coefficient  $\mu=0.20$

PE-lining: welding studs, nuts, wearers Stainless Steel V4A (1.4404)



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## SFT Services

- In-house Fender Testing
- Installation Supervision
- After Sales Service





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## SFT Literature

- Product Catalogue
- Installation, Operation & Maintenance Manual (IOM)
- Design Manual



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**Thank you for your attention!**

**For more information visit us at**

**[www.shibata-fender.team](http://www.shibata-fender.team)**