

# Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

<b>Manufacturer</b>	<b>Walter Stauffenberg GmbH &amp; Co. KG</b>
<b>Address</b>	Im Ehrenfeld 4, Werdohl, 58791, Germany
<b>Type</b>	Compression Fittings
<b>Description</b>	Carbon steel (C15, C22, C35, S235JR2 and 11SMnPb30K+C) high pressure 24° compression couplings with or without seals sensitive to heat as per Stauff Catalogue 02/2021, 24° Tube Fittings with Double Edge Cutting Ring - Metal (Carbon Steel) - Metal and Soft Sealing (Carbon and Stainless Steel); 24° Tube Fittings with Form System - Soft Sealing (Carbon and Stainless Steel)  TYPES LL (very light series, single edge cutting ring), L (light gauge) and S (heavy gauge)
<b>Trade Name</b>	Stauff Connect (24° compression fittings)
<b>Application</b>	For pressure pipes in the marine, offshore and industrial environment. <u>Restrictions</u> -Bulkhead couplings are not to be used on watertight bulkheads, gastight bulkheads and for "A", "B" fire class divisions. -Couplings with seals sensitive to heat are not acceptable in the following locations : 1. Starting/control air and CO <sub>2</sub> systems.

---

**Torsten Schroeder**

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

71 Fenchurch Street, London, EC3M 4BS, United Kingdom

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

---

## Type Approval Certificate

2. Inside machinery spaces of category A or accommodation spaces for:
  - a. Main lines of inert gas systems.
  - b. Pipe systems for flammable liquids including corresponding vent and sounding pipes.
3. Fire main, water spray and sprinkler systems or similar which are not always filled with water.

**Specified Standard** Lloyd's Register's Rules and Regulations for the Classification of Ships, 2020 and IACS P2 including wet fire endurance test for couplings sensitive to heat

**Other Conditions** The installation of the compression couplings is to be carried out in accordance with the instructions of the manufacturer.

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

**Previous Version:** 15/20081

The Design Appraisal Document HTS/ENS 33174-15, Issue No. 2 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

## Appendix

RATINGS	Steel couplings	Pipe Outside Diameter	Maximum Nominal Pressure PN
		[mm]	at 20 °C [bar]
	LL (very light gauge)	4 – 8	100
	L (light gauge)	6 – 10	500
		12 – 18	400
		22 – 42	250
	S (heavy gauge)	6 – 10	800
		12 – 16	630
		20 – 38	420

### Temperature Range

Temperature range depends on pressurized component and sealing ring materials:

Material	Temperature Range
----------	-------------------

Stainless Steel	-55°C to +400°C <sup>*1</sup>
-----------------	-------------------------------

Carbon Steel	-20 °C <sup>*2</sup> to +250 °C <sup>*3</sup>
--------------	---

<sup>\*1</sup> For service temperatures above 50°C the pressure reduction factors are to be observed,

<sup>\*2</sup> Environmental temperature down to -40 °C, Lowest medium temperature -20°C and lowest environmental temperature depending on soft seal material, refer to DIN 3859-1

<sup>\*3</sup> For service temperatures above 120°C, the pressure reduction factors are to be observed.

FPM	-25 °C to +200 °C
-----	-------------------

NBR	-30 °C to +100 °C (short term +120 °C)
-----	--

PTFE	-60°C to +200°C
------	-----------------

### Pressure Reduction Factors

At elevated temperatures, the maximum pressures are to be reduced according to following:

Carbon Steel					
Temperature	-20 to +120°C	+150°C	+175°C	+200°C	+250°C
Pressure Reduction	0%	-11%	-15%	-19%	-28%

Stainless Steel						
Temperature	-55 to 0°C	+50°C	+100°C	+200°C	+300°C	+400°C
Pressure Reduction	0%	-4,5%	-11%	-20%	-29%	-33%