

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.

Manufacturer	Walter Stauffenberg GmbH & Co. KG
Address	Im Ehrenfeld 4, Werdohl, 58791, Germany
Type	Compression Fittings
Description	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 08/2019, TYPES LL (very light gauge), L (light gauge) and S (heavy gauge)
Trade Name	Stauff Connect (24° compression fittings)- carbon steel
Application	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 ₂ systems. 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.

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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. 1 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

Appendix

RATINGS	Carbon Steel couplings	Pipe Outside Diameter	Maximum Nominal Pressure
		[mm]	PN 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
Carbon steel	-20 °C ¹ to +250 °C ² ¹ 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 ² 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

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%