

Haelok AG, Ruetistrasse 26, 8952 Schlieren

Schlieren, November 29, 2024

Declaration of Performance regarding the requirements of AGFW FW 449 regulations; Update 03

Ladies and Gentlemen

Haelok has tested its fittings in accordance with the applicable regulations FW 449 of the AGFW, dated February 2022. The first test report is from Q4/22. At the end of Q1/23 we received the test results for DN80 fittings. Tests with DN100 fittings, which are being optimized since February 2022, have been carried out and allow us to provide information.

We note that Haelok fittings made of galvanized steel 1.0570 (AISI 1024) and stainless steel 1.4404 (AISI 316L) of sizes DN25 to DN80 meet the requirements of the current FW 449, from February 2022, according to paragraph 6., with the values of Table A. 1 (see . Annex Table 1). Due to their design, with the exception of the repair fittings (SR), all DN25 - DN80 are 100% compliant with the FW449.

The critical tests in our understanding, which concern the cyclic tension-compression alternating load, were also carried out for the sizes DN40, DN50 and DN65 with the wall thicknesses according to EN 253 and passed the test.

For the size DN100, we can inform you on the basis of the test report no. A342/19 of the IMA Dresden of Q3/20 and the further tests carried out since then, that they comply to 100% in bending and torsion and perform at least 80% of the FW449 value, with the cyclic tensile compression test.

Andreas Bühler

CTO, Haelok AG

Appendix:

Table 1 & Table 2

Additional remarks on the repair fitting (SR)

Your contact:
Andreas Bühler
+41 43 501 45 61
andreas.buehler@haelok.com

Haelok AG
Ruetistrasse 26
8952 Schlieren
Schweiz

Appendix

Table 1. Approved values for Haelok THERMO fittings according to AGFW FW 449:2022

Size in DIN	Pipe \varnothing outer diame- ter	Wall thick- ness FW 449	Wall thick- ness EN 253	Compres- sion strength one-time	Tensile and compres- sion strength low cycle +-	Bending Moment 1 Point pul- sation 1000x	Torsion Moment pulsation 1000x
DN	Do	s/t	s				
	[mm]	[mm]	[mm]	[kN]	[kN]	[Nm]	[Nm]
15	21.3	2.0	2.0				
20	26.9	2.6	2.0				
25	33.7	2.6	2.3	60	30	400	40
32	42.4	3.2	2.6	93	47	600	90
40	48.3	3.2	2.6	107	54	1000	130
50	60.3	3.2	2.9	135	68	1400	250
65	76.1	3.2	2.9	172	86	1800	320
80	88.9	3.2	3.2	202	101	2400	500

Table 2 Approved values for Haelok THERMO fittings for DN100

Size in DIN	Pipe \varnothing outer diame- ter	Wall thick- ness FW 449	Wall thick- ness EN 253	Compres- sion strength one-time	Tensile and compres- sion strength low cycle +-	Bending Moment 1 Point pul- sation 1000x	Torsion Moment pulsation 1000x
DN	Do	s/t	s				
	[mm]	[mm]	[mm]	[kN]	[kN]	[Nm]	[Nm]
100	114.3	3.6	3.6	294	127	3500	1200

Additional remarks on the repair fitting (SR)

A. The repair fittings, type designation SR (e.g. HLK-12SR-XX-CC), do not come with a stop inside that the pipe touches when it is installed according to the installation instructions. All other types of fittings have a stop inside the body. Due to this construction difference, the repair fittings currently do not reach the maximum performance values of the SF in some tests.

B. If the SRs are installed in a newly laid pipeline, pipe pushed against pipe, they achieve the same performance values as the straight fitting (SF). To do this, if there is any uncertainty after inserting the pipes, it must be checked whether they are pushed against each other..

C. If the SR are not installed pipe against pipe (see B.), the connection may result weakened from commissioning of the system. This is due to the static pressure that arises from temperature difference during commissioning. This is tested in the FW449 by means of the static pressure test.

D. With regard to repair fittings (SR), we also note that in the repair context they are installed in systems that have not been installed in accordance with the values of our declaration of performance. This can lead to leaks due to increased mechanical load.

C. In high-temperature networks (> 100 degrees Celsius), we hear from customers that in house connections sometimes many more load changes can be expected than the equivalent of 1000 load changes according to which the FW449 has designed its tests.