

Haelok AG, Ruetistrasse 26, 8952 Schlieren

Schlieren, December 8, 2022

Declaration of performance of the Haelok THERMO connectors in relation to the requirements of AGFW FW 449

Ladies and Gentlemen

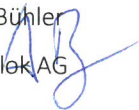
Haelok is testing its fittings in accordance to AGFW FW 449 regulations, which were published in February 2022. We would like to give you an intermediate status here. We expect the last results in Q1 2023 for sizes DN100. As early as 2020, Haelok tested some sizes of its fittings according to the FW449 work paper at the time. For this reason, we can also make statements on sizes that have yet to be tested to the actual values.

According to internal information from the testing institute on tests performed in 2022, we state that the Haelok fittings made of galvanized steel 1.0570 (AISI 1024) and stainless steel for sizes D25 to DN65 meet the requirements of the current FW 449 Feb 2022 according to chapter 6., with values according to Table A.1 (see Table 1 in the appendix).

We understand that the cyclic tension-compression load test is essential to district heating applications. Therefore these tests were also carried out for the sizes DN40, DN50 and DN65 with the wall thickness according to EN 253. With this in mind, we declare the press connectors up to DN65 to be 100% compliant with FW 449. This also applies to the wall thickness according to EN 253.

For the size DN100 and DN80, we can state at this point in time, according to the test report no. A342/19 of the IMA Dresden of October 20, 2020, that they withstand 70% of the cyclic tension-compression load according to the Table values A.1 of the current FW 449 as listed (see Table 2 in appendix).

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Appendix: Table 1 & Table 2

Appendix

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

Size in DIN	Pipe \varnothing outer diameter	Wall thickness FW 449	Wall thickness EN 253	Compression strength one-time	Tensile and compression strength low cycle +-	Bending Moment 1 Point pulsation 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

Table 2 Approved values for Haelok THERMO fittings for DN100 & DN80

Size in DIN	Pipe \varnothing outer diameter	Wall thickness	Wall thickness EN 253	Tensile and compression strength one-time	Tensile and compression strength low cycle +-
DN	Do	s/t	s		
	[mm]	[mm]	[mm]	[kN]	[kN]
80	88.9	3.2	3.2	140	70
100	114.3	3.6	3.6	204	102