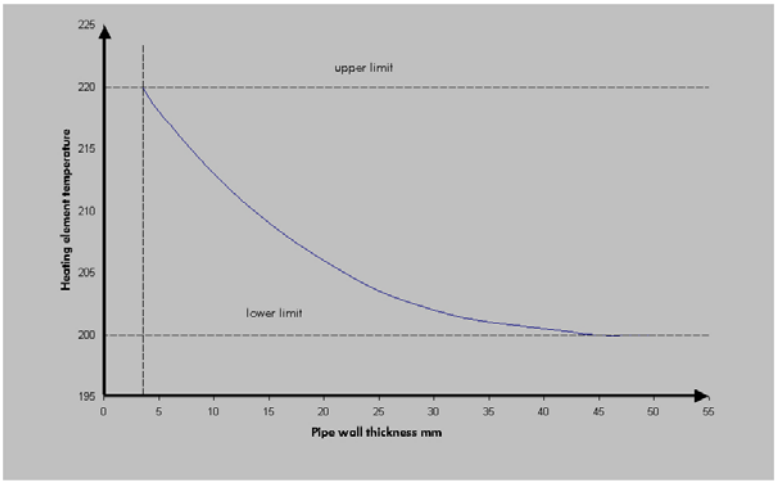
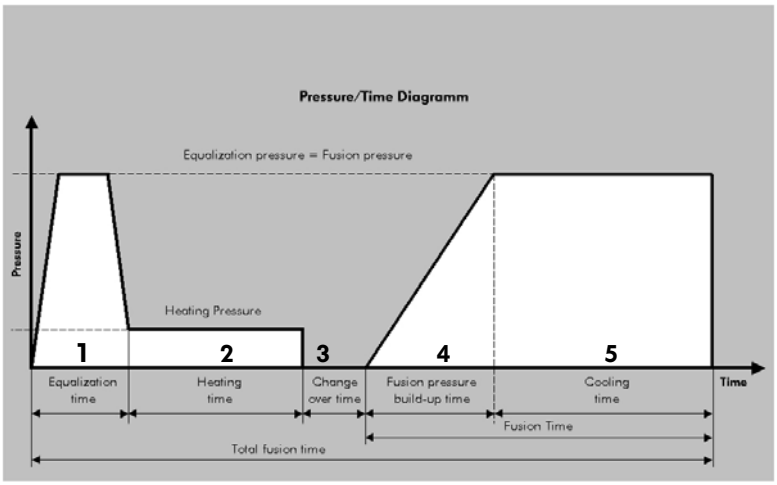
Curve for standard values for heater temperatures in relation to pipe wall thickness



Process steps for heating element butt fusion



Heating element butt fusion of HD-PE

Time/Pressure tables according to DVS 2207/1

	Pipe outer diameter		90	110	125	140	160	180	200	225	250	280	315
S 20 SDR 41	Wall thickness	mm	–	–	3.1	3.5	4.0	4.4	4.9	5.5	6.2	6.9	7.7
	Fusion surface	mm^2	–	–	1187	1500	1960	2427	3003	3792	4748	5919	7432
	Equalization/fusion pressure	bar	–	–	4	5	6	7	9	11	14	18	22
	Bead height	mm	–	–	0.5	0.5	0.5	0.5	1.0	1.0	1.0	1.0	1.5
	Heating pressure	bar	–	–	1	1	1	1	1	2	2	2	3
	Heat soak time	sec	–	–	31	35	40	44	49	55	62	69	77
	Change-over time	sec	–	–	5	5	5	5	5	5	6	6	6
	Pressure build-up time	sec	–	–	5	5	5	5	5	5	6	6	6
	Cooling time	min	–	–	5	5	5	5	7	8	9	10	11

	Pipe outer diameter		90	110	125	140	160	180	200	225	250	280	315
S 16 SDR 33	Wall thickness	mm	–	3.4	3.9	4.3	4.9	5.5	6.2	6.9	7.7	8.6	9.7
	Fusion surface	mm^2	–	1138	1484	1833	2387	3015	3775	4727	5861	7332	9303
	Equalization/fusion pressure	bar	–	3	4	5	7	9	11	14	17	22	27
	Bead height	mm	–	0.5	0.5	0.5	1.0	1.0	1.0	1.0	1.5	1.5	1.5
	Heating pressure	bar	–	1	1	1	1	1	1	2	2	3	4
	Heat soak time	sec	–	34	39	43	49	55	62	69	77	86	97
	Change-over time	sec	–	5	5	5	5	5	5	6	6	6	7
	Pressure build-up time	sec	–	5	5	5	5	5	6	6	6	6	7
	Cooling time	min	–	6	6	6	7	8	9	10	11	12	13

Heating Element butt fusion of HD–PE

Time/Pressure table according to DVS 2207/1

	Pipe outer diameter		**90**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**
	Wall thickness	mm	–	4.2	4.8	5.4	6.2	6.9	7.7	8.6	9.6	10.7	12.1
	Fusion surface	mm^2	–	1396	1812	2283	2995	3752	4651	5846	7250	9052	11513
	Equalization/fusion pressure	bar	–	4	6	7	9	11	14	18	22	27	34
S 12.5	Bead height	mm	–	0.5	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	2.0
SDR 26	Heating pressure	bar	–	1	1	1	1	2	2	2	3	4	5
	Heat soak time	sec	–	42	48	54	62	69	77	86	96	107	121
	Change-over time	sec	–	5	5	5	6	6	6	7	7	8	8
	Pressure build-up time	sec	–	5	5	5	6	6	6	7	7	8	8
	Cooling time	min	–	5	7	7	9	10	11	12	13	15	16

	Pipe outer diameter		**90**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**
	Wall thickness	mm	4.1	5.0	5.7	6.4	7.3	8.2	9.1	10.3	11.4	12.8	14.4
	Fusion surface	mm^2	1106	1649	2136	2686	3502	4425	5457	6947	8545	10744	13598
	Equalization/fusion pressure	bar	3	5	6	8	10	13	16	20	25	32	40
S 10.5	Bead height	mm	0.5	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	2.0	2.0
SDR 22	Heating pressure	bar	1	1	1	1	1	2	2	3	3	4	5
	Heat soak time	sec	41	50	57	64	73	82	91	103	114	128	144
	Change-over time	sec	5	5	5	6	6	6	7	7	8	8	9
	Pressure build-up time	sec	5	5	5	5	6	6	7	7	8	8	9
	Cooling time	min	6	6	7	8	10	11	13	14	16	17	19

	Pipe outer diameter		**90**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**
	Wall thickness	mm	4.3	5.3	6.0	6.7	7.7	8.6	9.6	10.8	11.9	13.4	15.0
	Fusion surface	mm^2	1158	1743	2243	2806	3684	4631	5742	7267	8901	11222	14136
	Equalization/fusion pressure	bar	3	5	7	8	11	14	17	21	26	33	42
S 10	Bead height	mm	0.5	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	2.0	2.0
SDR 21	Heating pressure	bar	1	1	1	1	1	2	2	3	3	4	6
	Heat soak time	sec	43	53	60	67	77	86	96	108	119	134	150
	Change-over time	sec	5	5	5	6	6	6	7	8	8	8	9
	Pressure build-up time	sec	5	5	5	6	6	7	7	8	8	9	9
	Cooling time	min	6	7	8	10	10	12	13	15	16	18	19

Heating Element butt fusion of HD–PE

Time/Pressure table according to DVS 2207/1

	Pipe outer diameter		**90**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**
	Wall thickness	mm	5.1	6.3	7.1	8.0	9.1	10.2	11.4	12.8	14.2	15.9	17.9
	Fusion surface	mm^2	1360	2052	2629	3317	4314	5441	6754	8533	10518	13191	16706
	Equalization/fusion pressure	bar	4	6	8	10	13	16	20	26	31	39	49
S 8.3	Bead height	mm	1.0	1.0	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0
SDR 17.6	Heating pressure	bar	1	1	1	1	2	2	3	3	4	5	7
	Heat soak time	sec	51	63	71	80	91	102	114	128	142	159	179
	Change-over time	sec	5	6	6	6	7	7	8	8	9	9	10
	Pressure build-up time	sec	5	6	6	6	7	7	8	8	9	10	11
	Cooling time	min	7	9	10	11	13	14	16	17	19	20	23

	Pipe outer diameter		**90**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**
	Wall thickness	mm	5.4	6.6	7.4	8.3	9.5	10.7	11.9	13.4	14.8	16.6	18.7
	Fusion surface	mm^2	1435	2144	2734	3434	4491	5691	7032	8907	10935	13736	17406
	Equalization/fusion pressure	bar	4	6	8	10	13	17	21	26	32	40	51
S 8	Bead height	mm	1.0	1.0	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0
SDR 17	Heating pressure	bar	1	1	1	1	2	2	3	3	4	5	7
	Heat soak time	sec	54	66	74	83	95	107	119	134	148	166	187
	Change-over time	sec	5	6	6	6	7	7	8	8	8	9	10
	Pressure build-up time	sec	5	6	6	7	7	8	8	8	9	10	11
	Cooling time	min	8	9	10	12	13	14	16	18	19	21	24

	Pipe outer diameter		**90**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**
	Wall thickness	mm	6.7	8.1	9.2	10.3	11.8	13.3	14.7	16.6	18.4	20.6	23.2
	Fusion surface	mm^2	1753	2593	3347	4197	5494	6965	8557	10867	13387	16787	21267
	Equalization/fusion pressure	bar	5	8	10	12	16	20	25	32	39	49	63
S 6.3	Bead height	mm	1.0	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.5	2.5
SDR 13.6	Heating pressure	bar	1	1	1	2	2	3	3	4	5	7	8
	Heat soak time	sec	67	81	92	103	118	133	147	166	184	206	232
	Change-over time	sec	6	6	7	7	8	8	9	9	10	10	11
	Pressure build-up time	sec	6	6	7	7	8	9	10	10	11	11	11
	Cooling time	min	10	11	13	14	16	17	19	21	23	26	29

Heating Element butt fusion of HD–PE

Time/Pressure table according to DVS 2207/1

	Pipe outer diameter		**90**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**
	Wall thickness	mm	8.2	10.0	11.4	12.7	14.6	16.4	18.2	20.5	22.7	25.4	28.6
	Fusion surface	mm^2	2107	3141	4068	5078	6669	8429	10394	13170	16209	20315	25731
	Equalization/fusion pressure	bar	6	9	12	15	20	25	31	39	48	60	76
S 5	Bead height	mm	1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.5	2.5	2.5	3.0
SDR 11	Heating pressure	bar	1	1	2	2	3	3	4	5	6	8	10
	Heat soak time	sec	82	100	114	127	146	164	182	205	227	254	286
	Change-over time	sec	6	7	8	8	9	9	10	10	11	12	13
	Pressure build-up time	sec	6	7	8	8	9	10	11	12	13	14	15
	Cooling time	min	11	14	15	17	19	21	23	26	28	31	35

	Pipe outer diameter		**90**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**
	Wall thickness	mm	10.1	12.3	14.0	15.7	17.9	20.1	22.4	25.2	27.9	31.3	35.2
	Fusion surface	mm^2	2535	3775	4882	6130	7990	10096	12497	15817	19466	24454	30940
	Equalization/fusion pressure	bar	7	11	14	18	24	30	37	47	57	72	91
S 4	Bead height	mm	1.5	2.0	2.0	2.0	2.0	2.5	2.5	2.5	3.0	3.0	3.0
SDR 9	Heating pressure	bar	1	1	2	2	3	4	5	6	8	10	12
	Heat soak time	sec	101	123	140	157	179	201	224	252	279	313	352
	Change-over time	sec	7	8	8	9	10	10	11	12	13	14	15
	Pressure build-up time	sec	7	8	9	10	11	12	13	14	15	16	18
	Cooling time	min	14	16	18	20	22	25	28	31	34	38	43

	Pipe outer diameter		**90**	**110**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**
	Wall thickness	mm	12.3	15.1	17.1	19.2	21.9	24.6	27.4	30.8	34.2	38.3	43.1
	Fusion surface	mm^2	3002	4502	5796	7286	9501	12009	14856	18790	23185	29080	36814
	Equalization/fusion pressure	bar	9	13	17	21	28	35	44	55	68	86	108
S 3.2	Bead height	mm	2.0	2.0	2.0	2.5	2.5	2.5	3.0	3.0	3.0	3.5	3.5
SDR 7.4	Heating pressure	bar	1	2	2	3	4	5	6	7	9	11	14
	Heat soak time	sec	123	151	171	192	219	246	274	308	342	383	431
	Change-over time	sec	8	9	10	10	11	12	13	14	15	16	18
	Pressure build-up time	sec	8	9	10	11	12	13	14	16	18	19	22
	Cooling time	min	16	20	22	24	27	30	34	38	42	47	52