

## ANNEX A

### THREADING OF PIPE FOR AMERICAN NATIONAL STANDARD THREADED FLANGES<sup>1</sup>

The length of external taper threads in ASME B1.20.1 is sufficient to provide a satisfactory joint when assembled with corresponding internal taper threads in couplings and fittings. In this Standard, the length of internal thread in Class 150, Class 300, and Class 400 flanges also conforms to ASME B1.20.1.

In Class 600 and higher rated flanges, the length through the hub may exceed the length for internal threads in ASME B1.20.1. Where this occurs, the extended length of internal threads follows the taper of the standard taper threads. Therefore, the diameters of the extra threads are smaller than those shown in ASME B1.20.1.

When threaded flanges conforming to this Standard are assembled with threaded-end pipe, it is intended that the end of the pipe be reasonably close to the mating

surface of the flange. To meet this intent, the following requirements are imposed on the mating pipe and external thread:

(a) Pipe to be threaded into flanges of Class 600 or higher rating shall be Schedule 80 or heavier in wall thickness.

(b) The length of external effective thread on the pipe end shall be greater than specified in ASME B1.20.1. When tested with the standard ring gage, the pipe end shall project beyond the gage by the distance specified in Table A1, subject to a tolerance of one thread pitch as provided in ASME B1.20.1.

(c) The extra threads shall continue the taper specified in ASME B1.20.1, so that the pitch diameter of the thread at the pipe end is less than specified therein.

(d) It is recommended that power equipment be used to assemble threaded joints having longer than standard taper threads, in order to bring the pipe end close to the flange face.

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<sup>1</sup> This Annex is an integral part of ASME B16.5-2003, and is placed after the main text for convenience.

**Table A1 Projection of Threaded Pipe End Through a Ring Gage**

Class 150, 300, 400		Class 600			Class 900			Class 1500			Class 2500			
NPS	Number of Turns	Number of Turns	Projection		Number Of Turns	Projection		Number of Turns	Projection		Number of Turns	Projection		
			mm	in.		mm	in.		mm	in.		mm	in.	
1½	...	Use taper pipe thread per ASME B1.20.1 for these sizes	...	...	...	...	...	3½	6.4	0.25	7	12.7	0.50	
¾	...		...	...	...	...	...	5	9.5	0.38	7	12.7	0.50	
1	...		...	...	...	...	...	5	11.1	0.44	7½	16.5	0.65	
1¼	...		...	...	...	...	...	5	11.1	0.44	7½	16.5	0.65	
1½	...		...	...	...	...	...	5	11.1	0.44	7½	16.5	0.65	
2	...	Use taper pipe thread per ASME B1.20.1 for these sizes	...	...	...	...	11.1	5	11.1	0.44	7½	16.5	0.65	
2½	...		...	...	...	...	...	5	15.9	0.62	8	25.4	1.00	
3	...		1	3.2	0.12	3	9.5	0.38	6	19.0	0.75	10	31.8	1.25
3½	...		1	3.2	0.12	...	...	...	...	...	...	...	...	
4	...		1½	4.8	0.19	3½	11.1	0.44	6½	20.6	0.81	10½	33.3	1.31
5	...	Use taper pipe thread per ASME B1.20.1 for these sizes	1½	4.8	0.19	3½	11.1	0.44	6½	20.6	0.81	10½	33.3	1.31
6	...		1½	4.8	0.19	3½	11.1	0.44	7½	23.8	0.94	11½	36.5	1.44
8	...		2	6.4	0.25	4	12.7	0.50	8	25.4	1.00	14	44.5	1.75
10	...		3	9.5	0.38	5	15.9	0.62	9	28.4	1.12	16	50.8	2.00
12	...		3	9.5	0.38	5	15.9	0.62	10	31.8	1.25	19	60.3	2.38
14	...	Use taper pipe thread per ASME B1.20.1 for these sizes	3	9.5	0.38	6	19.0	0.75	...	...	...	...	...	...
16	...		3	9.5	0.38	6	19.0	0.75	...	...	...	...	...	...
18	...		3	9.5	0.38	6	19.0	0.75	...	...	...	...	...	...
20	...		3	9.5	0.38	6	19.0	0.75	...	...	...	...	...	...
24	...		3	9.5	0.38	6	19.0	0.75	...	...	...	...	...	...