



## Torque Recommendations

### Tongue & Groove Torque

Although Trelleborg Sealing Solutions Chemical Transportation developed torque recommendations in cooperation with the tank car builders, it is important to always refer to the tank car builder's torque specifications as well. **If the two recommendations differ, be sure to follow the tank car builder's specifications.**

#### NOTES:

The torque recommendations below are for:

- Tongue and groove flanges acc. B16.5 class 300
- Stainless Steel and Carbon Steel flanges
- 1/8" or thinner PTFE and Aramid Fibre, and 1/16" or thinner Graphite gaskets
- To prevent over-compression when working with graphite gaskets, consider using a thinner than typical gasket.
- Consider decreasing the gasket thickness when using gaskets with a small compressed gasket width.
- For the purpose of the calculation used to generate the recommended torque values in the charts below:
- Lubrication with a coefficient of friction of 0.14 is assumed.
- The bolt's utilization factor of yield point (UFYP) should be between 15 and 65%. A reduced level is needed for small dimensions.

**DISCLAIMER:** The included tables are recommendations based on the above assumptions. If deviating from these assumptions, be sure to perform further calculations to determine the appropriate torque. The torque specifications do NOT guarantee the performance of the gasket and should only be used as guidelines.

# Torque Recommendations — Tongue & Groove Torque (continued)

Recommendations valid for bolt grades:

A193 B7 (104 ksi), A320 L7 (105 ksi), A320 B7 (105 ksi), A320 B8/B8M Class 2 (100-125 ksi), A193 B8/B8M Class 2 (100-125 ksi), others with similar yield strength

Class	Bolt Size	# Bolts	Torque	Torque	SP	SP	UFYP	Compressed Gasket Width
	(inch)		(ft*lbs)	(Nm)	(PSI)	(Mpa)	%	inch
300	1/2	4	20	27	14322	99	20	0.195
300	5/8	4	30	41	13553	93	15	0.195
300	5/8	4	50	68	14933	103	25	0.252
300	5/8	4	81	110	15717	108	40	0.305
300	3/4	4	125	169	14653	101	35	0.374
300	5/8	8	71	96	15074	104	35	0.376
300	3/4	8	89	121	14083	97	25	0.370
300	3/4	8	107	145	13577	94	30	0.374
300	3/4	8	197	267	15251	105	55	0.496
300	3/4	8	232	315	14784	102	65	0.506
300	7/8	12	345	468	15540	107	60	0.628
300	1	16	431	584	15935	110	50	0.744
300	1 1/8	20	489	663	15528	107	40	0.744

Recommended:  
<=1/16" gasket

A193 B5 AISI 501 (80 ksi), A320 B8/B8M Class 1 (75 ksi), A193 B8/B8M Class 1 (75 ksi), others with similar yield strength

Class	Bolt Size	# Bolts	Torque	Torque	SP	SP	UFYP	Compressed Gasket Width
	(inch)		(ft*lbs)	(Nm)	(PSI)	(Mpa)	%	inch
300	1/2	4	20	27	14322	99	26	0.195
300	5/8	4	30	41	13553	93	19	0.195
300	5/8	4	50	68	14933	103	32	0.252
300	5/8	4	81	110	15717	108	53	0.305
300	3/4	4	125	169	14653	101	46	0.374
300	5/8	8	71	96	15074	104	46	0.376
300	3/4	8	89	121	14083	97	33	0.370
300	3/4	8	107	145	13577	94	39	0.374
300	3/4	8	178	241	13768	95	65	0.496
300	3/4	8	178	241	11293	78	65	0.506
300	7/8	12	286	388	12860	89	65	0.628
300	1	16	431	584	15935	110	65	0.744
300	1 1/8	20	489	663	15528	107	52	0.744

Recommended:  
<=1/16" gasket