



PMC LONE STAR



Gages, Calibration & Instruments

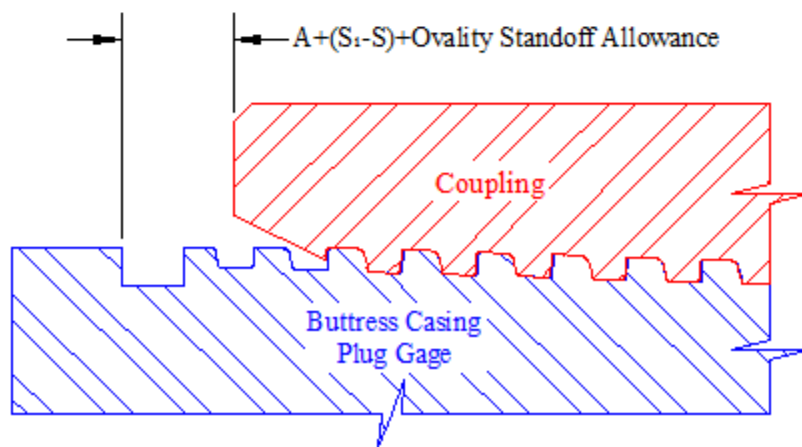
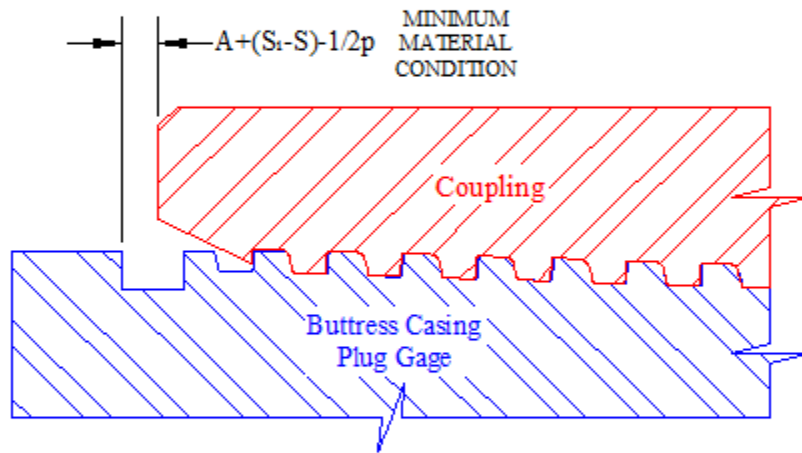
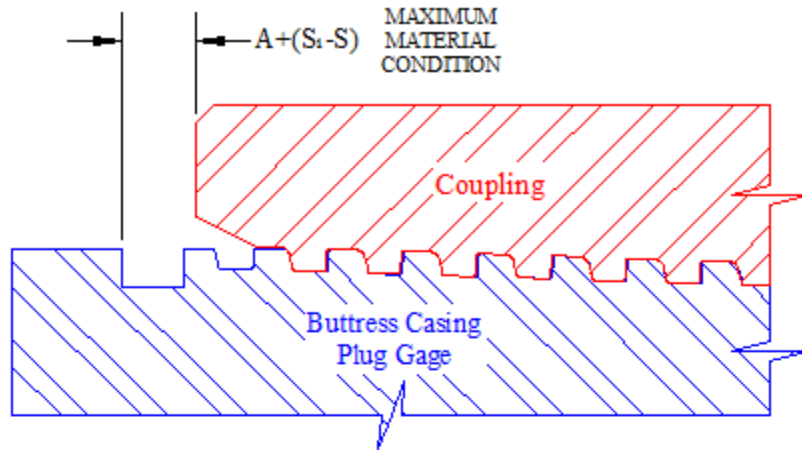
Buttress Casing Adjusted Plug Gage Standoff for Ovality

PMC Lone Star Technical Brief Doc. 111 Rev. A

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API Specification 5B 16th edition has added new requirements for inspecting ovality of Buttress Casing couplings using crest diameter gages such as the CDRP. This addition of crest diameter inspection to the specification changes the allowable standoff of plug gages used to inspect couplings for functional size. The presence of ovality in a coupling will cause the plug gage to standoff further. The revised specification acknowledges this effect on standoff and provides guidance on allowable standoff variation based on the amount of ovality present. The ovality standoff allowance is added to the maximum standoff as prescribed within the specification, the minimum standoff remains unchanged.





3/4” TPF Buttress Casing A = 1/2 Turn

4-1/2” Only

The basic standoff of a plug gage to a Buttress Casing Coupling is $A + 0 / -1/2p$

$A = 0.100$ (1/2 Turn)

$p = 0.200$ for all Buttress Casing

Min Standoff = $A - 1/2p = 0.000$

Max Standoff = $A + \text{Ovality Standoff Allowance} = 0.100 + \text{Ovality Standoff Allowance}$

3/4" TPF Buttress Casing A = 1/2 Turn (4-1/2" Only) Coupling Standoff			
Thread Ovality	Ovality Standoff Allowance	Min Plug Gage Standoff	Max Plug Gage Standoff
(in.)	(in.)	A - 1/2p	A + Ovality Standoff Allowance
(in.)	(in.)	(in.)	(in.)
0.001	0.008	0.000	0.108
0.002	0.016	0.000	0.116
0.003	0.024	0.000	0.124
0.004	0.032	0.000	0.132
0.005	0.040	0.000	0.140
0.006	0.048	0.000	0.148
0.007	0.056	0.000	0.156
0.008	0.064	0.000	0.164
0.009	0.072	0.000	0.172
0.010	0.080	0.000	0.180
0.011	0.088	0.000	0.188
0.012	0.096	0.000	0.196
0.013	0.104	0.000	0.204
0.014	0.112	0.000	0.212
0.015	0.120	0.000	0.220
0.016	0.128	0.000	0.228
0.017	0.136	0.000	0.236
0.018	0.144	0.000	0.244



3/4” TPF Buttress Casing A = 1 Turn

5” thru 13-3/8”

The basic standoff of a plug gage to a Buttress Casing Coupling is $A + 0 / -1/2p$

$A = 0.200$ (1 Turn)

$p = 0.200$ for all Buttress Casing

Min Standoff = $A - 1/2p = 0.100$

Max Standoff = $A + \text{Ovality Standoff Allowance} = 0.200 + \text{Ovality Standoff Allowance}$

3/4" TPF Buttress Casing A = 1 Turn (5" thru 13-3/8") Coupling Standoff			
Thread Ovality	Ovality Standoff Allowance	Min Plug Gage Standoff	Max Plug Gage Standoff
(in.)	(in.)	A - 1/2p	A + Ovality Standoff Allowance
(in.)	(in.)	(in.)	(in.)
0.001	0.008	0.100	0.208
0.002	0.016	0.100	0.216
0.003	0.024	0.100	0.224
0.004	0.032	0.100	0.232
0.005	0.040	0.100	0.240
0.006	0.048	0.100	0.248
0.007	0.056	0.100	0.256
0.008	0.064	0.100	0.264
0.009	0.072	0.100	0.272
0.010	0.080	0.100	0.280
0.011	0.088	0.100	0.288
0.012	0.096	0.100	0.296
0.013	0.104	0.100	0.304
0.014	0.112	0.100	0.312
0.015	0.120	0.100	0.320
0.016	0.128	0.100	0.328
0.017	0.136	0.100	0.336
0.018	0.144	0.100	0.344
0.019	0.152	0.100	0.352
0.020	0.160	0.100	0.360
0.021	0.168	0.100	0.368
0.022	0.176	0.100	0.376
0.023	0.184	0.100	0.384
0.024	0.192	0.100	0.392
0.025	0.200	0.100	0.400
0.026	0.208	0.100	0.408
0.027	0.216	0.100	0.416
0.028	0.224	0.100	0.424
0.029	0.232	0.100	0.432
0.030	0.240	0.100	0.440

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3/4" TPF Buttress Casing A = 1 Turn (5" thru 13-3/8") Coupling Standoff (Continued)			
Thread Ovality	Ovality Standoff Allowance	Min Plug Gage Standoff	Max Plug Gage Standoff
(in.)	(in.)	A - 1/2p	A + Ovality Standoff Allowance
(in.)	(in.)	(in.)	(in.)
0.031	0.248	0.100	0.448
0.032	0.256	0.100	0.456
0.033	0.264	0.100	0.464
0.034	0.272	0.100	0.472
0.035	0.280	0.100	0.480
0.036	0.288	0.100	0.488
0.037	0.296	0.100	0.496
0.038	0.304	0.100	0.504
0.037	0.295	0.100	0.495
0.040	0.320	0.100	0.520
0.041	0.328	0.100	0.528
0.042	0.336	0.100	0.536
0.043	0.344	0.100	0.544
0.044	0.352	0.100	0.552
0.045	0.360	0.100	0.560
0.046	0.368	0.100	0.568
0.047	0.376	0.100	0.576
0.048	0.384	0.100	0.584
0.049	0.392	0.100	0.592
0.050	0.400	0.100	0.600
0.051	0.408	0.100	0.608
0.052	0.416	0.100	0.616
0.053	0.424	0.100	0.624
0.054	0.432	0.100	0.632



1" TPF Buttress Casing A = 7/8 Turns

16" thru 20"

The basic standoff of a plug gage to a Buttress Casing Coupling is $A + 0 / -1/2p$

$A = 0.175$ (7/8 Turns)

$p = 0.200$ for all Buttress Casing

Min Standoff = $A - 1/2p = 0.075$

Max Standoff = $A + \text{Ovality Standoff Allowance} = 0.175 + \text{Ovality Standoff Allowance}$

1" TPF Buttress Casing A = 7/8 Turns (16" thru 20") Coupling Standoff			
Thread Ovality	Ovality Standoff Allowance	Min Plug Gage Standoff	Max Plug Gage Standoff
(in.)	(in.)	A - 1/2p	A + Ovality Standoff Allowance
(in.)	(in.)	(in.)	(in.)
0.001	0.006	0.075	0.181
0.002	0.012	0.075	0.187
0.003	0.018	0.075	0.193
0.004	0.024	0.075	0.199
0.005	0.030	0.075	0.205
0.006	0.036	0.075	0.211
0.007	0.042	0.075	0.217
0.008	0.048	0.075	0.223
0.009	0.054	0.075	0.229
0.010	0.060	0.075	0.235
0.011	0.066	0.075	0.241
0.012	0.072	0.075	0.247
0.013	0.078	0.075	0.253
0.014	0.084	0.075	0.259
0.015	0.090	0.075	0.265
0.016	0.096	0.075	0.271
0.017	0.102	0.075	0.277
0.018	0.108	0.075	0.283
0.019	0.114	0.075	0.289
0.020	0.120	0.075	0.295
0.021	0.126	0.075	0.301
0.022	0.132	0.075	0.307
0.023	0.138	0.075	0.313
0.024	0.144	0.075	0.319
0.025	0.150	0.075	0.325
0.026	0.156	0.075	0.331
0.027	0.162	0.075	0.337
0.028	0.168	0.075	0.343
0.029	0.174	0.075	0.349
0.030	0.180	0.075	0.355
0.031	0.186	0.075	0.361
0.032	0.192	0.075	0.367

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1" TPF Buttress Casing A = 7/8 Turns (16" thru 20") Coupling Standoff (Continued)			
Thread Ovality (in.)	Ovality Standoff Allowance (in.)	Min Plug Gage Standoff	Max Plug Gage Standoff
		A - 1/2p (in.)	A + Ovality Standoff Allowance (in.)
0.033	0.198	0.075	0.373
0.034	0.204	0.075	0.379
0.035	0.210	0.075	0.385
0.036	0.216	0.075	0.391
0.037	0.222	0.075	0.397
0.038	0.228	0.075	0.403
0.039	0.234	0.075	0.409
0.040	0.240	0.075	0.415
0.041	0.246	0.075	0.421
0.042	0.252	0.075	0.427
0.043	0.258	0.075	0.433
0.044	0.264	0.075	0.439
0.045	0.270	0.075	0.445
0.046	0.276	0.075	0.451
0.047	0.282	0.075	0.457
0.048	0.288	0.075	0.463
0.049	0.294	0.075	0.469
0.050	0.300	0.075	0.475
0.051	0.306	0.075	0.481
0.052	0.312	0.075	0.487
0.053	0.318	0.075	0.493
0.054	0.324	0.075	0.499
0.055	0.330	0.075	0.505
0.056	0.336	0.075	0.511
0.057	0.342	0.075	0.517
0.058	0.348	0.075	0.523
0.059	0.354	0.075	0.529
0.060	0.360	0.075	0.535
0.061	0.366	0.075	0.541
0.062	0.372	0.075	0.547
0.063	0.378	0.075	0.553
0.064	0.384	0.075	0.559
0.065	0.390	0.075	0.565
0.066	0.396	0.075	0.571
0.067	0.402	0.075	0.577
0.068	0.408	0.075	0.583
0.069	0.414	0.075	0.589
0.070	0.420	0.075	0.595
0.071	0.426	0.075	0.601
0.072	0.432	0.075	0.607
0.073	0.438	0.075	0.613
0.074	0.444	0.075	0.619
0.075	0.450	0.075	0.625
0.076	0.456	0.075	0.631
0.077	0.462	0.075	0.637
0.078	0.468	0.075	0.643
0.079	0.474	0.075	0.649
0.080	0.480	0.075	0.655