UDC 629.7.063 : 621.643.4.06 - 762

Ref. No. : ISO/R 1800-1971 (E)

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 1800

DIMENSIONS OF ELASTOMERIC TOROIDAL SEALING RINGS FOR AIRCRAFT

(INCH SERIES – CLASS 2 TOLERANCES)

1st EDITION

January 1971

For each individual country the only valid standard is the national standard of that country.

Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 1800, *Dimensions of elastomeric toroidal sealing rings for aircraft (Inch series – Class 2 tolerances)*, was drawn up by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, the Secretariat of which is held by the British Standards Instutution (BSI).

Work on this question led to the adoption of Draft ISO Recommendation No. 1800,which was circulated to all the ISO Member Bodies for enquiry in March 1969. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Belgium	Italy	Switzerland
Brazil	Netherlands	Turkey
Canada	New Zealand	U.A.R.
France	Peru	United Kingdom
Greece	South Africa, Rep. of	
Israel	Spain	

The following Member Body opposed the approval of the Draft :

U.S.S.R.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as an ISO RECOMMENDATION.

TABLE – Dimensions of elastomeric toroidal sealing rings (Inch series – Class 2 tolerances) *(continued)*

Ring size	φW mm max.	φW mm min.	φW in max.	φW in min.	φI mm max.	φI mm min.	φI in max.	φI in min.
210	3.632	3.429	0.143	0.135	18.90	18.39	0.744	0.724
211	↑	↑	↑	↑	20.47	19.96	0.806	0.786
212					22.07	21.56	0.869	0.849
213					23.65	23.14	0.931	0.911
214					25.25	24.74	0.994	0.974
215	3.632	3.429	0.143	0.135	26.82	26.31	1.056	1.036
216					28.47	27.86	1.121	1.097
217					30.05	29.44	1.183	1.159
218					31.65	31.04	1.264	1.222
219					33.22	32.61	1.308	1.284
220	3.632	3.429	0.143	0.135	34.82	32.21	1.371	1.347
221					36.40	35.79	1.433	1.409
222					38.07	37.31	1.499	1.469
223					41.25	40.49	1.624	1.594
224					44.42	43.66	1.749	1.719
225	3.632	3.429	0.143	0.135	47.68	46.76	1.877	1.841
226					50.85	49.94	2.002	1.966
227					54.03	53.11	2.127	2.091
228					57.25	56.24	2.254	2.214
229					60.43	59.41	2.379	2.339
230	3.632	3.429	0.143	0.135	63.60	62.59	2.504	2.464
231					66.78	65.76	2.629	2.589
232					70.05	68.83	2.758	2.710
233					73.23	72.01	2.883	2.835
234					76.40	75.18	3.008	2.960
235	3.632	3.429	0.143	0.135	79.58	78.36	3.133	3.085
236					82.75	81.53	3.258	3.210
237					85.93	84.71	3.383	3.335
238					89.10	87.88	3.508	3.460
239					92.38	90.96	3.637	3.581
240	3.632	3.429	0.143	0.135	95.55	94.13	3.762	3.706
241					98.73	97.31	3.887	3.831
242					101.90	100.48	4.012	3.956
243					105.08	103.66	4.137	4.081
244					108.31	106.78	4.264	4.204
245	3.632	3.429	0.143	0.135	111.48	109.96	4.389	4.329
246					114.66	113.13	4.514	4.454
247					117.83	116.31	4.639	4.579
248					121.01	119.48	4.764	4.704
249					124.31	122.53	4.894	4.824
250	3.632	3.429	0.143	0.135	127.48	125.70	5.019	4.949
251					130.66	128.88	5.144	5.074
252					133.83	132.05	5.269	5.199
253					137.01	135.23	5.394	5.324
254					140.18	138.40	5.519	5.449

ISO Recommendation | R 1800 | January 1971

DIMENSIONS OF ELASTOMERIC TOROIDAL SEALING RINGS FOR AIRCRAFT

(INCH SERIES – CLASS 2 TOLERANCES)

1. SCOPE

This ISO Recommendation states the dimensions and a method of designation for a range of elastomeric toroidal sealing rings in inch sizes with Class 2 tolerances for use in aircraft. It does not make reference to materials to be used for the rings. Rings with Class 1 tolerances are the subject of ISO Recommendation R 1078, *Dimensions of elastomeric toroidal sealing rings for aircraft (Inch series – Class 1 tolerances).*

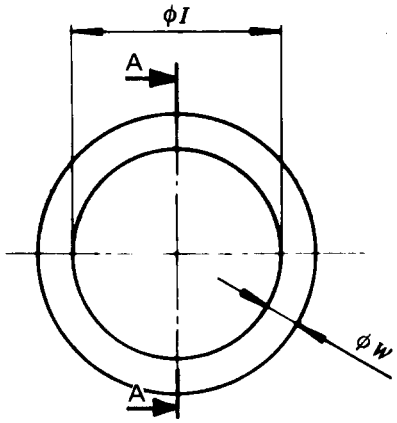
2. DIMENSIONS

The dimensions of toroidal sealing rings for aircraft should comply with the Table on the following pages.

3. DESIGNATION

The sealing rings should be designated by the ring size numbers quoted in the Table on the following pages.

TABLE – Dimensions of elastomeric toroidal sealing rings (Inch series – Class 2 tolerances)



Section A-A

Ring size	ϕW				ϕI			
	mm		in		mm		in	
	max.	min.	max.	min.	max.	min.	max.	min.
001	1.092	0.940	0.043	0.037	0.89	0.58	0.035	0.023
002	1.346	1.194	0.053	0.047	1.22	0.91	0.048	0.036
003	1.600	1.448	0.063	0.057	1.57	1.27	0.062	0.050
004	1.854	1.702	0.073	0.067	1.93	1.63	0.076	0.064
005	1.854	1.702	0.073	0.067	2.72	2.41	0.107	0.095
006	↑	↑	↑	↑	3.05	2.74	0.120	0.108
007					3.84	3.53	0.151	0.139
008					4.62	4.32	0.182	0.170
009					5.44	5.13	0.214	0.202
010	1.854	1.702	0.073	0.067	6.25	5.89	0.246	0.232
011					7.82	7.47	0.308	0.294
012					9.42	9.07	0.371	0.357
013					11.00	10.64	0.433	0.419
014					12.60	12.24	0.496	0.482
015	1.854	1.702	0.073	0.067	14.17	13.82	0.558	0.544
016					15.82	15.37	0.623	0.605
017					17.40	16.94	0.685	0.667
018					19.00	18.54	0.748	0.730
019					20.57	20.12	0.810	0.792
020	1.854	1.702	0.073	0.067	22.17	21.72	0.873	0.855
021					23.75	23.29	0.935	0.917
022					25.37	24.87	0.999	0.979
023					26.95	26.44	1.061	1.041
024					28.55	28.04	1.124	1.104
025	1.854	1.702	0.073	0.067	30.15	29.59	1.187	1.165
026					31.75	31.19	1.250	1.228
027					33.32	32.77	1.312	1.290
028					34.98	34.32	1.377	1.351
029					38.15	37.49	1.502	1.476
030	1.854	1.702	0.073	0.067	41.33	40.67	1.627	1.601
031					44.55	43.79	1.754	1.724
032					47.73	46.96	1.879	1.849
033					50.98	50.06	2.007	1.971
034					54.15	53.24	2.132	2.096

TABLE – **Dimensions of elastomeric toroidal sealing rings (Inch series – Class 2 tolerances)** *(continued)*

Ring size	ϕW				ϕI			
	mm		in		mm		in	
	max.	min.	max.	min.	max.	min.	max.	min.
035	1.854	1.702	0.073	0.067	57.33	56.41	2.257	2.221
036					60.50	59.59	2.382	2.346
037					63.68	62.76	2.507	2.471
038					66.90	65.89	2.634	2.594
039					70.08	69.06	2.759	2.719
040	1.854	1.702	0.073	0.067	73.25	72.24	2.884	2.844
041					76.53	75.31	3.013	2.965
042					82.88	81.66	3.263	3.215
043					89.23	88.01	3.513	3.465
044					95.66	94.28	3.766	3.712
045	1.854	1.702	0.073	0.067	102.01	100.63	4.016	3.962
046					108.43	106.91	4.269	4.209
047					114.78	113.26	4.519	4.459
048					121.13	119.61	4.769	4.709
049					127.66	125.78	5.026	4.952
050	1.854	1.702	0.073	0.067	134.01	132.13	5.276	5.202
106	2.692	2.540	0.106	0.100	4.60	4.24	0.181	0.167
107					5.41	5.05	0.213	0.199
108					6.20	5.84	0.244	0.230
109					7.77	7.42	0.306	0.292
110	2.692	2.540	0.106	0.100	9.37	9.02	0.369	0.355
111					10.95	10.59	0.431	0.417
112					12.55	12.19	0.494	0.480
113					14.12	13.77	0.556	0.542
114					15.77	15.32	0.621	0.603
115	2.692	2.540	0.106	0.100	17.35	16.89	0.683	0.665
116					18.95	18.49	0.746	0.728
117					20.55	20.04	0.809	0.789
118					22.15	21.64	0.872	0.852
119					23.72	23.22	0.934	0.914
120	2.692	2.540	0.106	0.100	25.32	24.82	0.997	0.977
121					26.90	26.39	1.059	1.039
122					28.50	27.99	1.122	1.102
123					30.12	29.51	1.186	1.162
124					31.72	31.12	1.249	1.225
125	2.692	2.540	0.106	0.100	33.30	32.69	1.311	1.287
126					34.90	34.29	1.374	1.350
127					36.47	35.86	1.436	1.412
128					38.07	37.46	1.499	1.475
129					39.73	38.96	1.564	1.534
130	2.692	2.540	0.106	0.100	41.33	40.56	1.627	1.597
131					42.90	42.14	1.689	1.659
132					44.50	43.74	1.752	1.722
133					46.08	45.31	1.814	1.784
134					47.68	46.91	1.877	1.847

TABLE – Dimensions of elastomeric toroidal sealing rings (Inch series – Class 2 tolerances) *(continued)*

Ring size	ϕW				ϕI			
	mm		in		mm		in	
	max.	min.	max.	min.	max.	min.	max.	min.
135	2.692	2.540	0.106	0.100	49.33	48.46	1.942	1.908
136	↓	↓	↓	↓	50.90	50.04	2.004	1.970
137	↓	↓	↓	↓	52.50	51.64	2.067	2.033
138	↓	↓	↓	↓	54.08	53.21	2.129	2.095
139	↓	↓	↓	↓	55.68	54.81	2.192	2.158
140	2.692	2.540	0.106	0.100	57.25	56.39	2.254	2.220
141	↓	↓	↓	↓	58.93	57.91	2.320	2.280
142	↓	↓	↓	↓	60.50	59.49	2.382	2.342
143	↓	↓	↓	↓	62.10	61.09	2.445	2.405
144	↓	↓	↓	↓	63.68	62.66	2.507	2.467
145	2.692	2.540	0.106	0.100	65.28	64.26	2.570	2.530
146	↓	↓	↓	↓	66.85	65.84	2.632	2.592
147	↓	↓	↓	↓	68.50	67.39	2.697	2.653
148	↓	↓	↓	↓	70.08	68.96	2.759	2.715
149	↓	↓	↓	↓	71.68	70.56	2.822	2.778
150	2.692	2.540	0.106	0.100	73.25	72.14	2.884	2.840
151	↓	↓	↓	↓	76.48	75.26	3.011	2.963
152	↓	↓	↓	↓	82.83	81.61	3.261	3.213
153	↓	↓	↓	↓	89.18	87.96	3.511	3.463
154	↓	↓	↓	↓	95.63	94.21	3.765	3.709
155	2.692	2.540	0.106	0.100	101.98	100.56	4.015	3.959
156	↓	↓	↓	↓	108.38	106.86	4.267	4.207
157	↓	↓	↓	↓	114.73	113.21	4.517	4.457
158	↓	↓	↓	↓	121.08	119.56	4.767	4.707
159	↓	↓	↓	↓	127.56	125.78	5.022	4.952
160	2.692	2.540	0.106	0.100	133.91	132.13	5.272	5.202
161	↓	↓	↓	↓	140.26	138.48	5.522	5.452
162	↓	↓	↓	↓	146.61	144.83	5.772	5.702
163	↓	↓	↓	↓	152.96	151.18	6.022	5.952
164	↓	↓	↓	↓	159.44	157.40	6.277	6.197
165	2.692	2.540	0.106	0.100	165.79	163.75	6.527	6.447
166	↓	↓	↓	↓	172.14	170.10	6.777	6.697
167	↓	↓	↓	↓	178.49	176.45	7.027	6.947
168	↓	↓	↓	↓	184.96	182.68	7.282	7.192
169	↓	↓	↓	↓	191.31	189.03	7.532	7.442
170	2.692	2.540	0.106	0.100	197.66	195.38	7.782	7.692
171	↓	↓	↓	↓	204.01	201.73	8.032	7.942
172	↓	↓	↓	↓	210.49	207.95	8.287	8.187
173	↓	↓	↓	↓	216.84	214.30	8.537	8.437
174	↓	↓	↓	↓	223.19	220.65	8.787	8.687
175	2.692	2.540	0.106	0.100	229.54	227.00	9.037	8.937
176	↓	↓	↓	↓	236.02	233.22	9.292	9.182
177	↓	↓	↓	↓	242.37	239.57	9.542	9.432
178	2.692	2.540	0.106	0.100	248.72	245.92	9.792	9.682