

Tolerances
Rubber Products

1. SCOPE:

This specification covers established inch/pound manufacturing tolerances applicable to non-cellular rubber products ordered to inch/pound dimensions. These tolerances apply to all conditions, unless otherwise noted. The term "exclusive" applies only to the higher figure of the specified range.

2. SHEET AND STRIP:

2.1 Thickness:

Shall be as shown in Table 1.

TABLE 1 - Thickness Tolerances

Nominal Thickness (T) Inches	Tolerance, Inch Plus and Minus
Up to 0.031, excl	0.010
0.031 to 0.062, excl	0.012
0.062 to 0.125, excl	0.016
0.125 to 0.187, excl	0.020
0.187 to 0.375, excl	0.031
0.375 to 0.562, excl	0.047
0.562 to 0.750, excl	0.062
0.750 to 1.000, excl	0.094
1.000 and over	0.10T

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be reaffirmed, revised, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2004 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: custsvc@sae.org
http://www.sae.org

SAE WEB ADDRESS:

2.2 Width:

Shall be as shown in Table 2.

TABLE 2 - Width Tolerances

Nominal Width Inches	Tolerance, Inch Plus and Minus
Up to 36, excl 36 and over	As agreed upon 1

2.3 Length:

As agreed upon by purchaser and supplier.

3. EXTRUSIONS:

The tolerances in Table 3, Table 4, and Table 5 apply to width, height, and cross-sectional dimensions of extruded shapes and to any two of OD, ID, and wall thickness of tubing and tubular sections of other shapes.

3.1 Compounds Not Requiring Post-Curing:

3.1.1 Maximum Hardness Under 55 Durometer "A" or Equivalent: Shall be as shown in Table 3.

TABLE 3 - Tolerances

Nominal Dimension Inches	Tolerance, Inch Plus and Minus	Ovality, % (See 3.1.1.2)
Up to 0.100, incl (See 3.1.1.1)	0.016	10
Over 0.100 to 0.160, incl	0.020	15
Over 0.160 to 0.250, incl	0.025	15
Over 0.250 to 0.400, incl	0.030	15
Over 0.400 to 0.630, incl	0.040	15
Over 0.630 to 1.000, incl	0.050	15
Over 1.000	As agreed upon	15

3.1.1.1 In general, cross-section dimensions under 0.040 inch are impractical to extrude.

- 3.1.1.2 Ovality applies to tubing ordered in straight lengths with wall thickness of 0.063 inch and over and shall be computed from the difference between the minor and major axis diameter measurements, taken at the same transverse plane of the tube, expressed as a percentage of the nominal diameter.
- 3.1.2 Minimum Hardness 55 Durometer "A" and Over or Equivalent: Shall be as shown in Table 4.

TABLE 4 - Tolerances

Nominal Dimension Inches	Tolerance, Inch Plus and Minus	Ovality, % (See 3.1.1.2)
Up to 0.100, incl (See 3.1.1.1)	0.013	10
Over 0.100 to 0.160, incl	0.016	15
Over 0.160 to 0.250, incl	0.020	15
Over 0.250 to 0.400, incl	0.025	15
Over 0.400 to 0.630, incl	0.032	15
Over 0.630 to 1.000, incl	0.040	15
Over 1.000	As agreed upon	15

3.2 Post-Cured Compounds:

Shall be as shown in Table 5.

TABLE 5 - Tolerances

Nominal Dimension Inches	Tolerance, Inch Plus and Minus	Ovality, % (See 3.1.1.2)
Up to 0.100, incl	0.008	10
Over 0.100 to 0.160, incl	0.013	15
Over 0.160 to 0.250, incl	0.020	15
Over 0.250 to 0.400, incl	0.032	15
Over 0.400 to 0.630, incl	0.050	15
Over 0.630 to 1.000, incl	0.080	15
Over 1.000	As agreed upon	15

3.3 Length of Cut Lengths:

3.3.1 Maximum Hardness Under 55 Durometer "A" or Equivalent: Shall be as shown in Table 6.

TABLE 6 - Length Tolerances

Nominal Length Inches		Tolerance, Inch Plus and Minus
Up to	4.000, incl	0.080
Over	4.000 to 6.300, incl	0.100
Over	6.300 to 10.000, incl	0.125
Over	10.000 to 16.000, incl	0.160
Over	16.000 to 25.000, incl	0.200
Over	25.000 to 40.000, incl	0.250
Over	40.000 to 63.000, incl	0.315
Over	63.000 to 100.000, incl	0.400
Over	100.000 to 160.000, incl	0.500
Over	160.000	As agreed upon

3.3.2 Minimum Hardness 55 Durometer "A" and Over or Equivalent: Shall be as shown in Table 7.

TABLE 7 - Length Tolerances

Nominal Length Inches		Tolerance, Inch Plus and Minus
Up to	4.000, incl	0.063
Over	4.000 to 6.300, incl	0.080
Over	6.300 to 10.000, incl	0.100
Over	10.000 to 16.000, incl	0.125
Over	16.000 to 25.000, incl	0.160
Over	25.000 to 40.000, incl	0.200
Over	40.000 to 63.000, incl	0.250
Over	63.000 to 100.000, incl	0.315
Over	100.000 to 160.000, incl	0.400
Over	160.000	As agreed upon