



## Dimensions and Tolerances

### Thickness: from 0,120 to 0,400 mm

#### Range:

0,12± 0,020 mm  
0,20± 0,30 mm  
0,30± 0,40 mm

#### Thickness tolerances:

**Single gauging:** +/-0,010 mm      **Average:** +/-0,008  
+/-0,015 mm      +/-0,010  
+/-0,025 mm      +/-0,020

### Width: from 20 to 1250 mm

From 20 to 200 mm  
From 200 to 350 mm  
From 350 to 600 mm  
From 600 to 1000 mm  
> 1000 mm

#### Width Tolerances:

+/-0,15 mm  
+/-0,30 mm  
+/- 0,50 mm  
+/- 0,70 mm  
+/- 1,00 mm

### Coil Dimensions

I.D.	Cardboard core	Steel core	O.D. (Max)	Typical O.D.
70mm	no	yes	1450 mm	1020-835-730-650-590
75mm	no	yes	1450 mm	1020-835-730-650-590
150 mm	yes	yes	1470 mm	1030-850-740-660-610
300 mm	yes	no	1500 mm	1075-900-800-730-680
400 mm	yes	no	1550 mm	1110-940-845-780-735

### Strips

**Camber:** 2mm/2m

**Surface:** typical mill-finish (Roughness Ra 0,15-0,30 µm)  
On request bright-finish (Roughness Ra <0,10 µm)

### Sheets

**Width:** from 500 to 1250 mm

**Tolerances:** -0/+0,6 mm

**Length:** from 450 to 1900 mm

**Tolerances:** <1000 mm  
from 1001 to 1200 mm  
from 1201 to 1500 mm  
>1500

Out of squareness: max 0,5 mm/1m

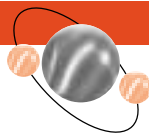
-0/+1,0 mm  
-0/+1,5 mm  
-0/+2,0 mm  
-0/+3,0 mm



## Typical alloys

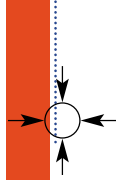
Chemical composition (according to A.A. designation) in percent maximum unless shown as a range or a minimum

Alloy	Fe %	Si %	Cu %	Mn %	Mg %	Zn %	Ti %	Others %		Al
								each	total	
3003	0,70	0,60	0,05-0,20	1,0-1,5	-	0,10	0,10	0,05	0,15	balance
3105	0,70	0,60	0,3	0,3-0,8	0,2-0,8	0,40	0,10	0,05	0,15	balance
3005	0,70	0,60	0,3	1,0-1,5	0,2-0,6	0,25	0,10	0,05	0,15	balance
3004	0,70	0,30	0,25	1,0-1,5	0,8-1,3	0,25	-	0,05	0,15	balance
5052	0,40	0,25	0,10	0,10	2,2-2,8	0,10	-	0,05	0,15	balance
8011	0,6-1,0	0,5-0,9	0,10	0,10	0,05	0,10	0,08	0,05	0,15	balance
8011S	0,6-1,0	0,5-0,9	0,20	0,10	0,10	0,10	0,08	0,05	0,15	balance



# Mechanical Properties

Merely as a Guide



Alloy	Temper	Rm (N/mm <sup>2</sup> )	Rp02 (N/mm <sup>2</sup> )	Elongation %	Earing* %	Typical Uses	H/D**	N. of drawing steps
3003	H32	116,7-147,1	>80	>4	1-2	Standard PP caps	0,76	1
"	H34	135,5-171,6	>108	>3	2-3	Standard PP caps	<0,76	1
"	H36	156,0-200,0	>137	>2	3-5	Standard PP caps	<0,60	1
3105	0	110,0-155,0	>85	>15	1	Standard PP caps	0,76	1
"	H32	130,0-170,0	>104	>4	1-2	Standard PP caps	0,76	1
"	H34	147,0-200,0	>120	>3	1-2	Aerated bev./Pharm.caps	0,76	1
"	H36	170,0-221,0	>150	>2	2-4	Highly aerated beverages	<0,57	1
3005	0	115,0-160,0	>90	>15	1-2	Standard PP caps	<0,70	1
"	H32	132,4-180,0	>117	>4	2-3	Standard PP caps	<0,70	1
"	H34	152,0-213,0	>137	>3	3-4	Aerated beverages	<0,60	1
"	H36	190,0-250,0	>166	>2	4-5	Highly aerated beverages/cans	<0,57	1
3004	H32	200,0-230,0	>190	>5	3-4	Cans	<0,70	1
"	H34	230,0-260,0	>210	>4	4-5	Cans	<0,60	1
"	H36	250,0-270,0	>230	>3	5-6	Cans/easy open	<0,40	1
5052	H32	210,0-260,0	>160	>5	2-3	Cans	<0,70	1
"	H34	235,0-280,0	>180	>4	3-4	Cans	<0,60	1
"	H36	255,0-305,0	>200	>3	4-5	Cans/easy open	< 0,40	1
8011	0	80,0-100,0	>50	>15	1	PP tear - off caps	<0,76	1
"	H32	98,0-127,5	>70	>5	0,5-1	PP extra deep caps	>1,30	2-3
"	H34	125,5-146,0	>90	>4	1,0-1,5	PP deep caps/pharm.caps	0,76	1
"	H36	135,0-150,0	>112	>2	1,0-2,5	Standard PP caps	>0,76	1
8011/S	0	85,0-105,0	>55	>15	1	PP tear - off caps	0,76	1
"	H32	105,0-137,0	>75	>5	0,5-1	PP extra deep caps	>1,30	2-3
"	H34	127,5-152,0	>95	>4	1,0-1,5	PP deep caps/pharm.caps	0,76	1
"	H36	135,0-166,7	>115	>2	1,0-2,5	Standard PP caps	>0,76	1

\* Tested on 31,5x24 mm

\*\* H/D: Height/Diameter ratio of the caps

Rigid Packaging



## Coating Properties

### Bottle Caps

**External:** Vinyl or epoxy coatings (any colour).  
**Internal:** Vinyl, vinyl modified or epoxy coatings.  
 According to the different type of sealing.

### Pharmaceutical Caps

FDA or BGA approved epoxy coating resistant to degreasing through trichloro-ethylene and sterilization in water vapour at 121°C for 30 minutes or in oven at 180°C for 90 minutes.  
**Standard colours:** transparent / gold / red / blue / green / brown / copper / yellow / pink, etc...

### Cans and easy open lids

FDA or BGA approved epoxy coating resistant to sterilization in water vapour at 121°C for 30 minutes and - on request - in acid (PH abt 4 with citric and tartaric acid) or basic environments (PH abt 9,5 with carbonate and phosphate).

### Coating code

LS39  
 LS39-8  
 LS39-5  
 LS79-1

### Type of coating

ADHESIVE  
 ADHESIVE  
 ADHESIVE  
 ADHESIVE

### Type of Sealing

By foaming of PVC plastisol or for the sticking of cork discs by means of egg albumen or "Sparkolin".  
 For caps to be lined with granulated PVC  
 Adhesive coating for PP caps.  
 For caps to be lined with polyethylene or polyethylene-copolymers