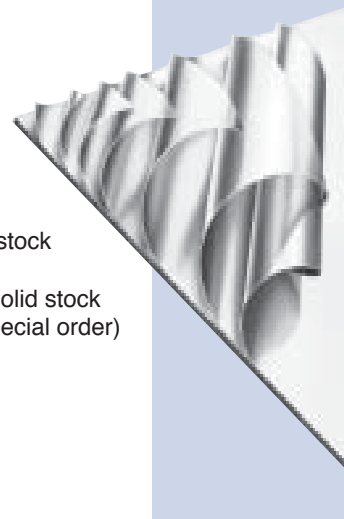




# LAMINATED METAL SHIM SPECIFICATIONS



## COMPOSITION

Laminations and Solid Stock

**Composition 1** — Aluminum 1100 or 5052

Aluminum 1100 (laminated stock) conforms to:  
 QQ-A-250/1 (raw material specification)  
 Temper H-19 (hardness specification)

Aluminum 5052 (laminated stock) conforms to:  
 QQ-A-250/8 (raw material specification)  
 Temper H19 (hardness specification)

Aluminum 5052 (solid stock), for use with 5052 laminates, conforms to:  
 QQ-A-250/8 (raw material specifications)  
 Temper H19 (hardness specification)

**Composition 2** — Brass

Brass (laminations, solid stock) conforms to:  
 Composition 2, of ASTM B36  
 (raw material specification)  
 Temper one-quarter hard to harder  
 (hardness specification)

**Composition 3** — Stainless Steel 302

Stainless steel (laminations)  
 Corrosion resisting steel conforms to:  
 ASM 5513, Class 302, Condition A  
 (raw material specification) or  
 Composition 302, Condition A  
 (raw material specification), or  
 304 for solid only - due to availability

**Composition 4** — Carbon Steel 1010

Carbon steel (laminations) conforms to:  
 QQ-S-698 (raw material specification)  
 Temper annealed or harder (hardness specification)

## SPECIFICATIONS

- AMS-DTL-22499
- AMS4013
- AMS5500
- BAC1534
- P103
- LAC07-605

Spirol is approved to produce parts to many other specifications.

Please inquire to see if we can meet your specifications.

## TYPES

- Type I** Standard sheet fully laminated
- Type II** Standard sheet one-half solid stock and one-half laminations
- Type III** Standard sheet three-fourths solid stock and one-fourth laminations (special order)

## CLASS

- Class 1** .002 inch laminations
- Class 2** .003 inch laminations

## STANDARD THICKNESS

Nominal Overall Thickness	Composition 1				Composition 2		Composition 3		Composition 4	
	Aluminum 1100	Aluminum 5052	Brass	Stainless Steel	Carbon Steel					
<b>Type 1</b>										
0.006										
0.010										
0.015/0.016										
0.020/0.021										
0.032/0.033										
0.040										
0.048										
0.062/0.063										
0.066										
0.078										
0.093/0.094										
0.100										
0.125										
0.156										
0.187										
0.190										
0.250										
<b>Type 2</b>										
0.048										
0.062										
0.094										

Other thicknesses and variations of laminates and solids available on special request.

Note: 5052 Aluminum is not available in .002 thickness.



Innovative fastening solutions.  
Lower assembly costs.



**Challenge Us!**

**SPIROL** Application Engineers will review your application needs and work with your design team to recommend the best solution. One way to start the process is to visit our **Optimal Application Engineering** portal at [www.SPIROL.com](http://www.SPIROL.com).

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