



# Stainless Steel Technical Data Overview



## Invaritex

### Product Description

InvariTex is a reflective, uniformly textured stainless steel finish designed for use in architectural applications. It is suitable for use in high traffic areas like elevators and entryways. Excellent finish consistency results in panel-to-panel matching. Since InvariTex has no coatings to deteriorate, it will last indefinitely with little maintenance.

### Grade Selection

The long-term performance of InvariTex is dependent on proper grade selection. In most environments, Type 304 will be sufficient to prevent corrosion. In normal seacoast applications, Type 316 should be specified.

If parts are to be welded, the low carbon versions of these grades (304L/316L) should be used. Highlights of chemical analyses and properties appear in Table I. Severe environments such as seacoast atmospheres subjected to salt water spray and chemical plants will require different alloys, subject to application review.

### Pounds Per Piece

Thickness (in.) x Width (in.) x Length (in.) x .292

### Available Sizes

Please refer to Table II. Coils and cut lengths up to 240" are available.

### Typical Surface Characteristics

Spectral Gloss @ 85° ..... 95  
 Ra ..... 130  
 Peak count per square inch ..... 300

Table I	304/304L	316/316L	
<b>CHEMICAL ANALYSIS</b>			
Nickel	8%	10%	
Chromium	18%	16%	
Molybdenum		2%	
<b>TYPICAL MECHANICAL PROPERTIES</b>			
Yield Strength (psi)	30,000	25,000	
Tensile Strength (psi)	75,000	70,000	
Elongation in 2 inches	40%	40%	
Hardness (Rockwell B)	92	95	
<b>PHYSICAL PROPERTIES</b>			
Density (lb./cu. in.)	.292	.292	
Modulus of Elasticity in Tension (x 10 <sup>6</sup> lb./sq. in.)	28.0	28.0	
Mean Coefficient of Thermal Expansion per °F (x 10 <sup>-6</sup> )	32 - 212°F	9.6	8.9
	32 - 600°F	9.9	9.0
	32 - 1000°F	10.2	9.7
Melting Point Range °F	2,550-2,650	2,500-2,550	

Table II	Size Range (inches)				
	WIDTH				
<b>THICKNESS</b>	.75 - 18	>18 - <24	24 - 36	>36 - 49	>49 - 60
.1251 - .1874					
.078 - .1250					
.0291-.078	•	•	•	•	
.0178-.029	•	•	•	•	
.015-.0177	•	•	•	•	



## **Fabrication**

InvariTex is readily welded or soldered. A grade of welding wire more noble than the work piece should be used. While formation of a heat tint scale can be avoided in lighter gauges through use of shield gasses, care must be taken to remove this scale through chemical means.

Flux residue must be thoroughly removed after soldering. Since InvariTex has some directionality, it is necessary to orient panels in relation to the rolling direction. We recommend panels be fabricated to maintain orientation of the original sheet alignment.

## **Fire Resistance**

Since stainless steel is dimensionally stable up to 2000°F, InvariTex provides an added measure of protection in the event of a fire.

## **Flatness**

InvariTex is supplied to AISI (American Iron & Steel Institute) standard commercial allowances.

## **Installation**

InvariTex is supplied with a high-grade UV resistant protective plastic covering designed to withstand the elements for several weeks. However, it is advisable to remove this material promptly after installation to prevent adhesive residue from remaining on the stainless steel finish.

While this product's appearance is very uniform, it should be noted, however, that any metallic surface, even a painted one, is sensitive to misalignment of panels on differing planes. Care should be taken to ensure installation within reasonable tolerances in order to get the full benefit of this material's homogeneous appearance.

After installation is completed, any rust stains from tools or construction debris must be removed.

## **Maintenance**

Designed to be essentially maintenance free, InvariTex will last for decades without requiring attention. It may, however, be appropriate to clean the surface to maintain its original appearance. Specific stainless steel agents are available on the market. Any detergent/ammonia solution can be effective for general cleaning. A sodium carbonate paste can be applied with a warm water rinse to address stains. Severe stains can be removed with tri-sodium phosphate and caustic soda solutions. More tenacious contaminants, like adhesive residue will respond to pure acetone. Chloride-containing products must be avoided. Areas where incidental debris can collect, such as gutters, must be cleaned on a regular basis. For more information, please refer to "Cleaning Stainless Steel Finishes" in the Resource section of our website at [www.metalresources.net](http://www.metalresources.net).

## **Environmental Impact**

Stainless steel is 80% recycled and is extremely stable at ambient temperatures. Further, without VOC emissions, which are inherent in coated products, InvariTex is an environmentally sensible solution.

## **Warranty**

For warranty information, please contact a representative.

