

# Guard-Rail Tubing

Independence Tube Guard-Rail tubing is made from an exclusive chemical composition to provide a tube with excellent compression qualities, torsion resistance, uniform tolerances plus pleasing appearance and high strength-to-weight ratio. The galvanized coated type tubing adheres to the additional stringent requirements as specified by the various domestic departments of transportation.

Guard-Rail is used for highway median barriers, bridge rail and guard rails, and is manufactured to the dimensional tolerances of ASTM A500.

## Chemical Composition

The chemical composition of this material will be in accordance with ASTM A242 Type 1 or A588.

## Mechanical Properties

Tested in accordance with the latest version of ASTM A370

**Yield Strength:** 50,000 min., psi

**Tensile Strength:** 62,000 min., psi

**Elongation in 2":** 21% min.



## Identification Marking

To simplify installation, repair, or service, all Independence Tube Guard-Rail is steel stamped on the outside of the tube. The tube is stamped with our heat identification code and logo within every 1.2 meters. The stamp is deep enough for identification after galvanizing.



Your *1st Choice* in Steel Tubular Products

Call your Account Representative for floor stock availability or go on-line at [www.independencetube.com](http://www.independencetube.com).

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## Available Size Range

Independence Tube is currently manufacturing Guard-Rail sizes from 3-1/2" square through 10" square and the standard rectangular sections. Wall thicknesses from 3/16" through 5/16". Inquire with your Independence Tube Representative for other available sizes.

| Tube Dimensions<br>[inches] |           | Tube Wall Thickness [inches] |       |       |
|-----------------------------|-----------|------------------------------|-------|-------|
|                             |           | 3/16                         | 1/4   | 5/16  |
| Square                      | Rectangle | Weight per foot [pounds]     |       |       |
| 3.5                         | 4 x 3     | 8.15                         | 10.51 | 12.70 |
|                             | 4.5 x 2.5 |                              |       |       |
|                             | 5 x 2     |                              |       |       |
| 4                           | 5 x 3     | 9.42                         | 12.21 | 14.83 |
|                             | 6 x 2     |                              |       |       |
| 5                           | 6 x 4     | 11.97                        | 15.62 | 19.08 |
|                             | 7 x 3     |                              |       |       |
| 6                           | 7 x 5     | 14.53                        | 19.02 | 23.34 |
|                             | 8 x 4     |                              |       |       |
| 7                           | 8 x 6     | 17.08                        | 22.42 | 27.59 |
|                             | 9 x 5     |                              |       |       |
|                             | 10 x 4    |                              |       |       |
| 8                           | 9 x 7     | 19.63                        | 25.82 | 31.84 |
|                             | 10 x 6    |                              |       |       |
|                             | 12 x 4    |                              |       |       |
| 9                           | 10 x 8    | 22.18                        | 29.23 | 36.10 |
|                             | 12 x 6    |                              |       |       |
| 10                          | 12 x 8    | 24.73                        | 32.63 | 40.35 |

## Outside Dimensions

| Largest Outside Dimension [inches] | Tolerance* |
|------------------------------------|------------|
| Over 2.5 to 3.5 inclusive          | ± 0.025"   |
| Over 3.5 to 5.5 inclusive          | ± 0.030"   |
| Over 5.5                           | ± 1 %      |

## Twist

| Longest Side [inches]     | Maximum Twist in 3 Feet |
|---------------------------|-------------------------|
| Over 2.5 to 4.0 inclusive | .075 in                 |

## General requirements for square and rectangular tubing

Tolerances for outside dimensions, wall thickness, squareness of sides, straightness, twist, and corner radii are in accordance with ASTM A500.

### Straightness:

025" times the number of feet of total length.

### Squareness of sides:

Deviation from 90° by ± 2° maximum.

### Radius of corners:

The radius of any outside corner shall not exceed 3.0 times the specified wall thickness.

### Wall thickness:

± 10% of nominal wall thickness, as measured at the center of the flat.

\* Tolerances include allowance for convexity or concavity. For rectangular tubing having a ratio of outside large to small flat dimension less than 1.5, and for square tubing, the tolerance on small flat dimension shall be identical to the large flat dimension tolerance. For rectangular tubing having a ratio of outside large to small flat dimension in the range of 1.5 to 3.0 inclusive, the tolerance on small flat dimension shall be 1.5 times the large flat dimension tolerance. For rectangular tubing having a ratio of outside large to small flat dimension greater than 3.0, the tolerance on small flat dimension shall be 2.0 times the large flat dimension tolerance.