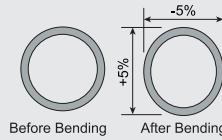


### Deformity Issues with Stock Bends

The process of bending **Pipe** and **Tube** results in unavoidable deformation.

In round sections, this causes some ovality in the bent sections of material that may result in a mismatch between the **Elbow** and stock, straight material. The deformation may be as much as +5% in the vertical dimension and -5% in the horizontal dimension.

This may be avoided by ordering **Elbows with Tangents** since the tangent sections will be unaffected by the bending process.



### 90° Elbow

These **Elbows** have no visible seam unless noted.

Pipe Size	OD	Wall Thick.	STEEL	GALVANIZED STEEL	ALUMINUM	STAINLESS
			STEEL	STEEL	ALUMINUM	STAINLESS
1.00"	.083"		<b>7806</b>			<b>7838</b>
1.00"	.120"				<b>7822</b>	
3/4"	1.05"	.113"	<b>154-1</b>		<b>164-1</b>	<b>174-1</b>
1.25"	.065"		<b>7856</b>			<b>7888T</b>
1.25"	.120"				<b>7872</b>	
1"	1.315"	.133"	<b>4507</b>		<b>4521</b>	<b>4535</b>
1.50"	.120"		<b>6906</b>		<b>6922</b>	<b>6938</b>
1 1/4"	1.66"	.140"	<b>4434*</b>	<b>G4434*</b>		
1 1/4"	1.66"	.140"	<b>4434-S</b>		<b>4444</b>	<b>4654</b>
1 1/2"	1.90"	.145"	<b>4464*</b>	<b>G4464*</b>		
1 1/2"	1.90"	.145"	<b>4464-S</b>		<b>4474</b>	<b>4684</b>

\* Denotes an **Elbow** with a seam.

### 90° Elbow with One 2" Tangent

Cut to order. Ship within 48 hours.

These **Elbows** have no visible seam.

Pipe Size	OD	Wall Thick.	STEEL	ALUMINUM	STAINLESS
			STEEL	ALUMINUM	STAINLESS
1.00"	.083"		<b>7807</b>		<b>7839</b>
3/4"	1.05"	.113"	<b>155-7</b>	<b>165-1</b>	<b>175-1</b>
1.25"	.065"		<b>7857</b>		<b>7889T</b>
1.25"	.120"			<b>7873</b>	
1"	1.315"	.133"	<b>4508</b>	<b>4522</b>	<b>4536</b>
1.50"	.120"		<b>6907</b>	<b>6923</b>	<b>6939</b>
1 1/4"	1.66"	.140"	<b>4635</b>	<b>4645</b>	<b>4655</b>
1 1/2"	1.90"	.145"	<b>4665</b>	<b>4675</b>	<b>4685</b>

### 90° Elbow with two 2" Tangents

These **Elbows** have no visible seam.

Pipe Size	OD	Wall Thick.	STEEL	ALUMINUM	STAINLESS
			STEEL	ALUMINUM	STAINLESS
1.00"	.083"		<b>7808</b>		<b>7840</b>
3/4"	1.05"	.113"	155-8		
1.25"	.065"		7858		7890T
1"	1.315"	.133"	<b>4509</b>		<b>4537</b>
1.50"	.120"		<b>6908</b>	<b>6924</b>	<b>6940</b>
1 1/4"	1.66"	.140"	<b>4723</b>	4728	<b>4656</b>
1 1/2"	1.90"	.145"	<b>4733</b>	<b>4738</b>	<b>4686</b>

### 125° Elbow

Cut to order. Ship within 48 hours.

These **Elbows** have no visible seam.

Pipe Size	OD	Wall Thick.	STEEL	ALUMINUM	STAINLESS
			STEEL	ALUMINUM	STAINLESS
1.00"	.083"		<b>7809</b>		
3/4"	1.05"	.113"	<b>156-7</b>	<b>166-1</b>	<b>176-1</b>
1"	1.315"	.133"	<b>4510</b>	<b>4524</b>	<b>4538</b>
1.50"	.120"		<b>6909</b>		
1 1/4"	1.66"	.140"	<b>4636</b>	<b>4646</b>	<b>4657</b>
1 1/2"	1.90"	.145"	<b>4666</b>	<b>4676</b>	<b>4687</b>

### 135° Elbow

Cut to order. Ship within 48 hours.

These **Elbows** have no visible seam.

Pipe Size	OD	Wall Thick.	STEEL	ALUMINUM	STAINLESS
			STEEL	ALUMINUM	STAINLESS
1.00"	.083"		<b>7810</b>		
3/4"	1.05"	.113"	<b>157-7</b>	<b>167-1</b>	<b>177-1</b>
1"	1.315"	.133"	<b>4511</b>	<b>4525</b>	<b>4539</b>
1.50"	.120"		<b>6910</b>		
1 1/4"	1.66"	.140"	<b>4637</b>	<b>4647</b>	<b>4658</b>
1 1/2"	1.90"	.145"	<b>4667</b>	<b>4677</b>	<b>4688</b>

### 145° Elbow

Cut to order. Ship within 48 hours.

These **Elbows** have no visible seam.

Pipe Size	OD	Wall Thick.	STEEL	ALUMINUM	STAINLESS
			STEEL	ALUMINUM	STAINLESS
1.00"	.083"		<b>7811</b>		
3/4"	1.05"	.113"	<b>158-1</b>	<b>168-1</b>	<b>178-1</b>
1"	1.315"	.133"	<b>4512</b>	<b>4526</b>	<b>4540</b>
1.50"	.120"		<b>6911</b>		
1 1/4"	1.66"	.140"	<b>4724</b>	<b>4729</b>	<b>4659</b>
1 1/2"	1.90"	.145"	<b>4734</b>	<b>4739</b>	<b>4689</b>

### 180° Elbow

These **Elbows** have no visible seam.

Pipe Size	OD	Wall Thick.	STEEL	ALUMINUM	STAINLESS
			STEEL	ALUMINUM	STAINLESS
1.00"	.083"		<b>7812</b>		<b>7844</b>
1.00"	.120"			<b>7828</b>	
3/4"	1.05"	.113"	<b>159-1</b>	<b>169-1</b>	<b>179-1</b>
1"	1.315"	.133"	<b>4513</b>	<b>4527</b>	<b>4541</b>
1.50"	.120"		<b>6912</b>	<b>6928</b>	<b>6944</b>
1 1/4"	1.66"	.140"	<b>4638</b>	<b>4648</b>	<b>4660</b>
1 1/2"	1.90"	.145"	<b>4668</b>	<b>4678</b>	<b>4690</b>

### 180° Elbow with Two 2" Tangents

These **Elbows** have no visible seam.

Pipe Size	OD	Wall Thick.	STEEL	ALUMINUM	STAINLESS
			STEEL	ALUMINUM	STAINLESS
1.00"	.083"		<b>7813<sup>B</sup></b>		<b>7845</b>
1.00"	.120"			<b>7829</b>	
3/4"	1.05"	.113"	<b>159-2<sup>B</sup></b>	<b>169-2</b>	<b>179-2</b>
1.25"	.065"		<b>7863<sup>B</sup></b>		
1.25"	.120"			<b>7879</b>	
1"	1.315"	.133"	<b>4514<sup>B</sup></b>	<b>4528<sup>B</sup></b>	<b>4542<sup>B</sup></b>
1.50"	.120"		<b>6913<sup>B</sup></b>	<b>6929<sup>B</sup></b>	<b>6945<sup>B</sup></b>
1 1/4"	1.66"	.140"	<b>4639<sup>B</sup></b>	<b>4649<sup>B</sup></b>	<b>4661<sup>B†</sup></b>
1 1/2"	1.90"	.145"	<b>4669<sup>B</sup></b>	<b>4679<sup>B</sup></b>	<b>4691<sup>B</sup></b>

<sup>B</sup> Available with two untrimmed tangents. Add a B at the end of the number when ordering.

<sup>†</sup> Available from stock in Type 316 alloy - order **4661B.316** - untrimmed

STANDARD PRODUCTS

RAILING SYSTEMS

TRADITIONAL RAILING

CUSTOM SERVICES

APPENDIX