

# Flanging

## Standard and Upset Flanges

### Overview-

Flanging is a tubing modification that is often performed to facilitate the attachment of fittings to the tube by creating a mechanical stop at or near the end of the tube.

Flanges are created by forming material to 90-degrees from the outside diameter (OD) of the tube. In addition to helping facilitate the attachment of various fittings, flanges are also beneficial in increasing the tensile strength of overmolded components.

Zeus can perform multiple types of flanges, including standard flanges and upset flanges, depending on your application requirements. The type of flange performed is subject to the material from which the tube is constructed.



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### APPLICATIONS

- Vascular loading tools
- Mechanical stop for overmolding hubs and fittings

### CAPABILITIES AND SIZING

- Materials: PTFE, PEEK, PFA, FEP, ETFE, Nylons, Pebax®, and PE
- Tube IDs from 0.030" - 0.500" (0.762 mm - 12.700 mm)
- Tube Walls from 0.009" - 0.060" (0.229 mm - 1.524 mm)
- Flanges up to 3x the tube OD (depending on wall thickness and flange type)

### KEY PROPERTIES

- Resin-dependent temperatures up to 500 °F (260 °C)
- Class VI approved resins available
- Chemical resistance
- Lubricity, optical clarity, and flexibility vary, depending on resin



COEFFICIENT OF FRICTION



CHEMICAL RESISTANCE

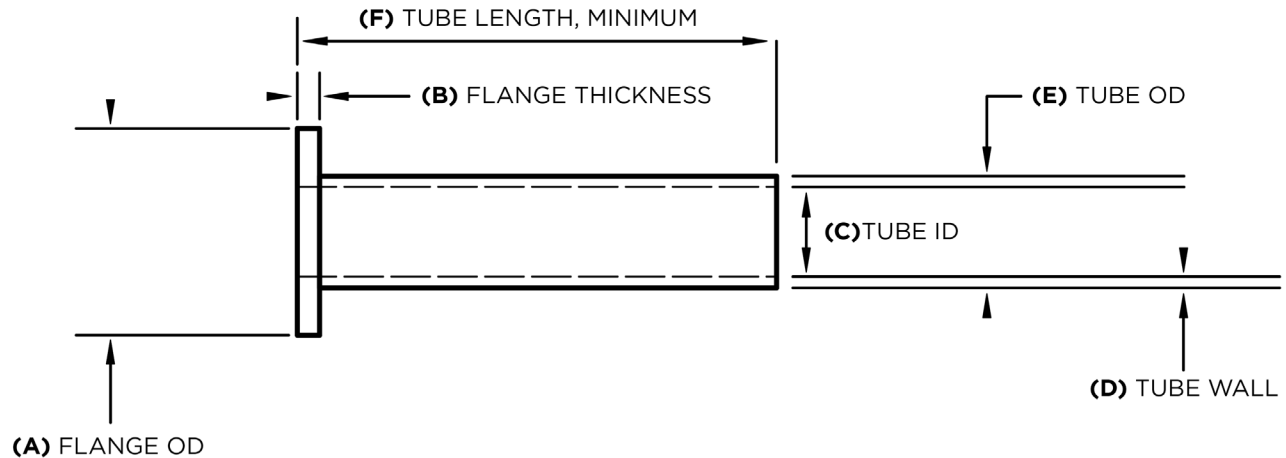


CONTINUOUS SERVICE TEMP



# Standard Flange

A flange is a round, rectangular, or square rim or collar at the end of a tube that can be used as a mechanical stop. Standard flanges are produced based on customer specifications, and the table below is a general capability guide.



## STANDARD FLANGE CAPABILITIES

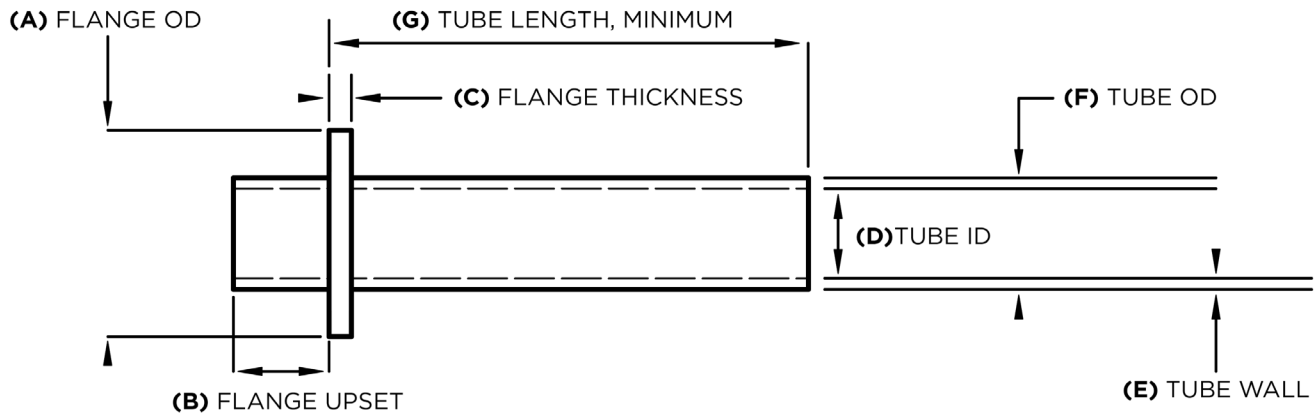
<b>Materials</b>	PTFE, PEEK, PFA, FEP, ETFE, Nylons, Pebax®, and PE
<b>Flange Shape</b>	PTFE - Round Only PEEK, PFA, FEP, ETFE, Nylons, Pebax®, PE - Round, Rectangular, and Square
<b>A.</b>	<b>Flange Outer Diameter (OD):</b> < 1.000" (< 25.400 mm)
<b>B.</b>	<b>Flange Thickness:</b> Varies by tube wall thickness
<b>C.</b>	<b>Tube ID:</b> 0.030" - 0.500" (0.762 mm - 12.700 mm)
<b>D.</b>	<b>Tube Wall Thickness:</b> 0.009" - 0.060" (0.229 mm - 1.524 mm)
<b>E.</b>	<b>Tube OD:</b> Tube OD is calculated based on Tube ID + 2x Tube Wall Thickness
<b>F.</b>	<b>Tube Length, Flange on One End:</b> Minimum 1.250" (Minimum 31.750 mm) Cut tolerance $\geq \pm 0.063"$ ( $\geq \pm 1.600$ mm) or secondary cut required <b>Tube Length, Flange on Both Ends:</b> Minimum 2.750" (Minimum 69.850 mm) Cut tolerance $\geq \pm 0.063"$ ( $\geq \pm 1.600$ mm) or secondary cut required

*Final measurements and tolerances are determined by material type and final design.*



# Upset Flange

An upset flange is created when a tube's diameter is increased (or "upset") near the end to create a round, thicker section that can be used as a mechanical stop. Upset flanges are produced based on customer specifications, and the table below is a general capability guide.



## UPSET FLANGE CAPABILITIES

<b>Materials</b>	PTFE, PEEK, PFA, FEP, ETFE, Nylons, Pebax®, and PE
<b>Flange Shape</b>	Round
<b>A.</b>	<b>Flange Outer Diameter (OD):</b> <1.000" (< 25.400 mm)
<b>B.</b>	<b>Flange Upset:</b> End of tube to the start of the flange <1.000" (<25.400 mm)
<b>C.</b>	<b>Flange Thickness:</b> Up to 2x Tube Wall Thickness reference measurement only
<b>D.</b>	<b>Tube ID:</b> 0.030" - 0.500" (0.762 mm - 12.700 mm)
<b>E.</b>	<b>Tube Wall:</b> 0.009" - 0.045" (0.229 mm - 1.143 mm)
<b>F.</b>	<b>Tube OD:</b> Tube OD is calculated based on Tube ID + 2x Tube Wall Thickness
<b>G.</b>	<b>Tube Length, Flange on One End:</b> Minimum 1.250" (Minimum 31.750 mm) Cut tolerance $\geq \pm 0.063"$ ( $\geq \pm 1.600$ mm) or secondary cut required <b>Tube Length, Flange on Both Ends:</b> Development only

*Final measurements and tolerances are determined by material type and final design.*

