

## Tolerances of Closed Cell Elastomeric Insulation

Unlike traditional mechanical insulation materials, such as open-cell fibrous (fiberglass) and rigid closed-cell (cellular glass, phenolic, polyisocyanurate), closed cell elastomeric foam insulation is flexible and comprised of many encapsulated spheres of air within a synthetic rubber base.

The manufacture of flexible elastomeric foam insulation (also known as rubber) must comply with *ASTM C534 Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form*.

ASTM C534 specifies “dimensional tolerances” for Type I Tubular and Type II Sheet materials. For tubes, tolerances are published for the inside diameter (ID), wall thickness, and length; for sheets, length, width, and thickness.

The manufacturing process for closed cell elastomeric insulation must be incredibly precise to meet ASTM’s tight tolerances. Producing a rubber-based product to specification, which is full of air, has been a challenge for rubber manufacturers since the 1950’s. However, due to technological advances and manufacturer subject matter experts fine-tuning their production processes, ASTM’s specifications can be achieved.

Aeroflex USA manufactures the AEROFLEX® brand of EPDM closed cell elastomeric insulation with a strict quality assurance process plus quality control procedures. All AEROFLEX product tolerances are manufactured and inspected based on a minimum (MIN), target, and maximum (MAX) tolerance range.

Since AEROFLEX tubes should never be stretched over a pipe, we strive to manufacture in the target to MAX range for both ID and wall thickness.

It’s important to note that even though C534 allows up to -1” tolerance on a 72” tube length (71” actual), AEROFLEX delivers 6-foot tubes to our customers so they can count on consistent coverage and value for their insulation projects.

When an insulation jacket is specified to be installed over AEROFLEX EPDM™ pipe insulation, we offer the following technical resources to assist with the accurate estimation and fabrication of jacketing materials:

[Outside Diameters for Jacketing AEROFLEX EPDM Pipe Insulation](#)

[Stretch-Outs for Jacketing AEROFLEX EPDM Pipe Insulation](#)

Source:

[https://www.astm.org/c0534\\_c0534m-20a.html](https://www.astm.org/c0534_c0534m-20a.html)