



# Tolerance

How straight is straight enough? How flat is flat enough? Some products need to be manufactured to more exacting standards than others, and these standards should be mutually agreed upon prior to production. The specified, acceptable range of deviation from a given dimension is known as a tolerance.

Aluminum profiles can be extruded to very precise special tolerances, as well as accepted standard dimensional tolerances. Some engineers and designers call for geometric dimensioning and tolerancing, also referred to as geometrics. This has been described as a modern technical language with uniform meaning that can be used to specify the shape-related intricacies of a design, allowing for improved communications between the designer and the manufacturer.

Meeting tolerances ensures product performance and reduces the need for additional machining. Aluminum extrusion allows for the precision needed to produce the expected fit and function.

## **Tolerance Tables**

Standard dimensional tolerances for extrusion are explained with illustrated examples in the Extrusion Manual, available for purchase from the Aluminum Extruders Council ([www.aec.org](http://www.aec.org)). The Manual also contains information on geometric dimensioning and tolerancing.

Additional data on tolerances is available through the Aluminum Association, Inc. ([www.aluminum.org/bookstore](http://www.aluminum.org/bookstore)).