

<b>Accredited Standards Committee H35</b>  <b>ALUMINUM and ALUMINUM ALLOYS</b>  <b>ANSI Accredited Standards Committee</b>	<b>Secretariat:</b>  <b>The Aluminum Association, Inc.</b> <b>1400 Crystal Drive, Suite 430</b> <b>Arlington, VA 22202</b>  <b>Telephone: (703) 358-2978</b> <b>e-mail: smuhamed@aluminum.org</b>
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**DATE:** November 8, 2023

**TO:** Chulhan Lee  
[chulhan.lee@seah.co.k](mailto:chulhan.lee@seah.co.k)

**FROM:** Sam Muhamed  
 Manager, Standards & Technology  
[smuhamed@aluminum.org](mailto:smuhamed@aluminum.org)

**SUBJECT:** Re: questionnaire about Appendix on ANSI H35.1

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Dear Chulhan Lee,

The question that you submitted was reviewed by our Technical Committee on Product Standards. Your question and our response to it are as follows:

**Your Question:**

The questionnaire is about the appendix on ANSI H35.1. When you see page 10 of ANSI H35.1, you can find the definition of "T\_511" and the sentence " these products may receive minor straightening after stretching to.....".

I want to ask what does the minor straightening mean in this sentence? I just want to know the meaning of minor. I wonder if it means straightening less than 1% to 3% permanent set or have other conditions.

For example, in my company, we have additional straightening by a roll straightening machine after stretching on a rod & bar. I don't know if this process is a violation or not when the rule is reflected.

Please let me know your technical opinion

**Our Response:**

ANSI H35.1 does not specify a range of values to which products fabricated to T\_511 temper may be straightened after stretching. The intent behind defining T\_511 as so is to indicate that products produced to T\_511 temper are not prohibited from undergoing a final straightening step to achieve tolerancing and dimensioning requirements. Permanent set imparted by this type of a corrective straightening step will

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typically be well below the permanent set permitted in the stretching process. The definition of T\_511 temper becomes clearer when compared to and contrasted with certain other definitions within and outside H35.1:

1. T\_510 “applies to extruded rod, bar, profiles (shapes) and tube and to drawn tube when stretched the indicated amounts after solution heat treatment or after cooling from an elevated temperature shaping process. These products receive no further straightening after stretching”. Therefore, T\_510 expressly prohibits straightening after stretching, differentiating it from T\_511.
2. *Aluminum Standards & Data* (AS&D) section 5 Terminology defines Straightening as a “Correcting operation of a drawn or extruded product, to fulfill the requirements concerning tolerances on form and dimensions.”

There are no other conditions in place that apply to the phrase “minor straightening” as used in the description of T\_511. It is intended to allow for a straightening processes, such as roller straightening, to help comply with dimensional tolerance requirements.

With best regards,



Sam Muhamed

cc: TCPS Members  
 ASC H35 Members  
 Dima Atiya – Baker & Hostetler  
 “Response Letters to Interpretation Questions” Folder