

<p>Accredited Standards Committee H35</p> <p>ALUMINUM and ALUMINUM ALLOYS</p> <p>ANSI Accredited Standards Committee</p>	<p>Secretariat:</p> <p>The Aluminum Association, Inc. 1400 Crystal Drive, Suite 430 Arlington, VA 22202</p> <p>Telephone: (703) 358-2978 e-mail: jcowie@aluminum.org</p>
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DATE: June 19, 2019

TO: Chris Cerasani
Checkmate Tactical llc.
9669 S. Sylvester Ct.
Highlands Ranch CO.80129
720-989-7350

From: John Weritz
Vice President, Standards & Technology
jweritz@aluminum.org

RE: PS19-110 ANSI Interpretation Question on measuring twist in extruded shapes

Dear Mr. Cerasani,

The question that you submitted on May 30, 2019 was reviewed by our Technical Committee on Product Standards. The response is summarized as follows:

Your Question:

Attached please find the dimensional drawing for our extrusion.

We need to know what the tolerance is for twist over 46". Also what the dimensional tolerances are for the other areas.

Please let me know how we can properly verify and how to measure the tolerances for this part.

Below is the "standard" that the extruder says he is following. What we do not know is if that is a proper standard.

At 46" the quoted tolerance is $\pm .077$

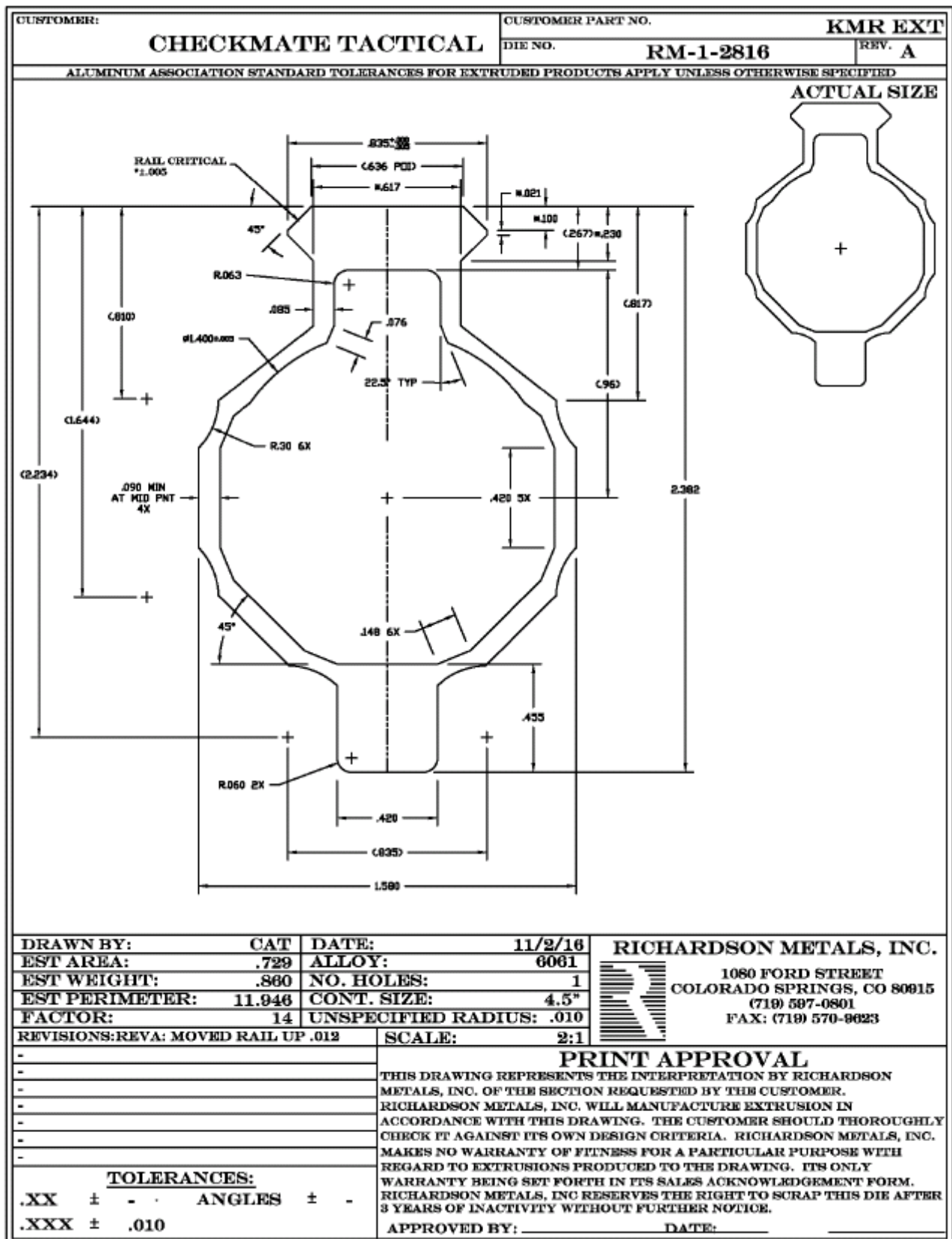
At 18" the tolerance would be $\pm .028$

18" goes into 46" 2.66 times and $2.66 \times .028 = \pm 0.0746$

so if we cut to length, we have slightly tighter tolerances than at the 46" length. Also, which is probably the issue here, at 46" we

hold one end flat and use a .077 feeler gauge at the opposite end. This doesn't catch twists along the length of the part.

I believe the temper to be T6.

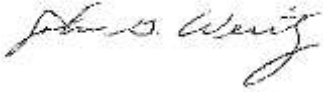


Our Response:

ANSI H35.2 Table 11.7 defines twist. Knowing that the part is made with a T6 Temper, the allowable twist tolerance is found using the row for Profiles for all tempers except TX510 and TX511 in Table 11.7. In this case, it looks like one repeatable method would be to rest the profile on JO blocks so that the R.060 and the point of the Picatinny rail were the points of contact. This would create a span of 2.282 inches. However, there is a loss of 0.060" because you cannot measure the twist in the radius on the edge. This makes the span 2.222 inches. The profile is in the 1.500-2.999 circle size so the twist allowance is 0.5

degrees per foot, Max 5 degrees. The calculations for the tolerance for twist for the lengths 46" and 18" are 0.072" and 0.028" respectively. The twist tolerance is applied to the profile in total length or any measured segment.

With best regards,

A handwritten signature in cursive script, appearing to read "John G. Weritz".

John G. Weritz

cc: TCPS Members
ASC H35 Members
Lee Simowitz – Baker & Hostetler
"Response Letter to ANSI Interpretation Questions" Folder