

HRC 555 Headed Bar Fabrication Tolerances



TECH NOTE

V1 9/17/19

Introduction:

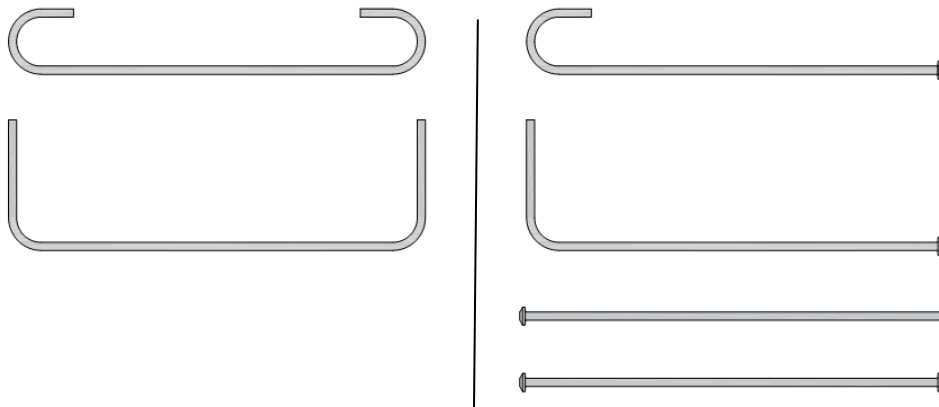
This document has been prepared to address questions related to fabrication tolerances for HRC 555 headed bars.

Background:

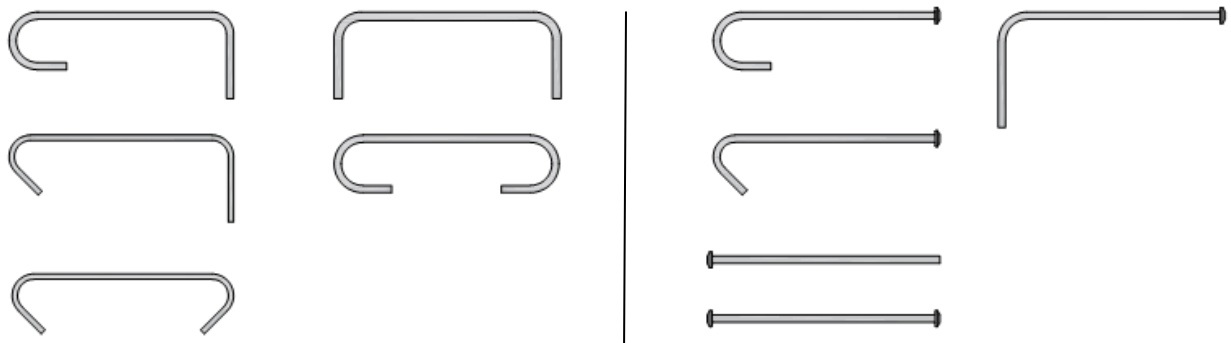
Standard fabrication tolerances are defined in the CRSI Publication “Manual of Standard Practice” and in the ACI 117 Standard “Specification for Tolerances for Concrete Construction and Materials and Commentary”. Although headed bar fabrication tolerances are not specifically described, knowing that heads replace hooks makes it easy to conclude what the tolerances should be.

Common Configurations of Headed Bars:

When headed bars are replacing standard hooks for bar sizes #4 through #18:



When headed bars are replacing stirrup / tie hooks for bar sizes #4 through #8:



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Standard Fabrication Tolerances for Headed Bars:

Fabrication tolerances for headed bars match those of the hooked bars they are replacing. ***When special tolerances are required, it should be discussed prior to fabrication, when headed bars are detailed and/or listed.***

TYPICAL FABRICATION TOLERANCES - STANDARD BENDING

Condition	Illustration	#3 - #11	#14	#18
Length of leg / dimension with standard hooks on one or both ends		± 1"	± 2 1/2"	± 3 1/2"
Length of leg / dimension with HRC 555 heads on one or both ends		± 1"	± 2 1/2"	± 3 1/2"

TYPICAL FABRICATION TOLERANCES - STIRRUP/TIE BENDING

Condition	Illustration	#3 - #5	#3 - #5	#6 - 8
Length of leg / dimension with standard hooks on one or both ends		Total Length < 12'-0"	Total length ≥ 12'-0"	
		± 1/2"	± 1"	± 1"
Length of leg / dimension with HRC 555 heads on one or both ends		± 1/2"	± 1"	± 1"

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Special Fabrication Tolerances for Headed Bars:

When special fabrication tolerances are required for headed bars, they should be discussed at the time the bars are detailed and/or listed. There are certain applications; precast, nuclear or safety related structures, etc., that may require much tighter tolerances than those described previously. It is common to see tolerance windows of no more than $\pm 1/4"$. For these applications, additional QC steps need to be taken to ensure that the finished products meet the requirements. **This may include having to saw cut bars prior to heading them and/or ordering bars directly from HRC.**