

# ERRATA

## *Manual of Standard Practice* 29th Edition

The following information supersede the versions that appear in original publishings. Errata may already appear in the version you own. Updates and/or corrections have been made to the following pages:

### **DATE OF ISSUE**

#### **April 2018**

Chapter 7, pages 7-7, 7-11, 7-12, 7-17, 7-21

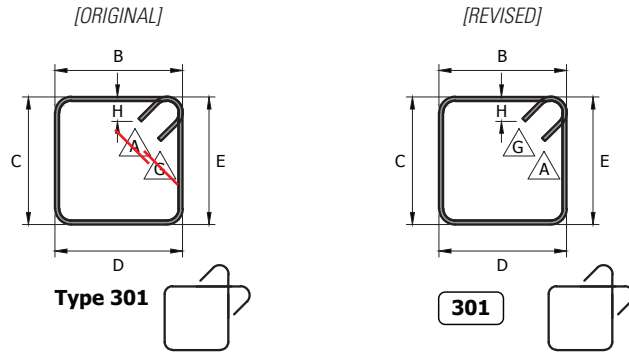
#### **November 2019**

Chapter 7; pages 7-7, 7-8, 7-22, 7-23

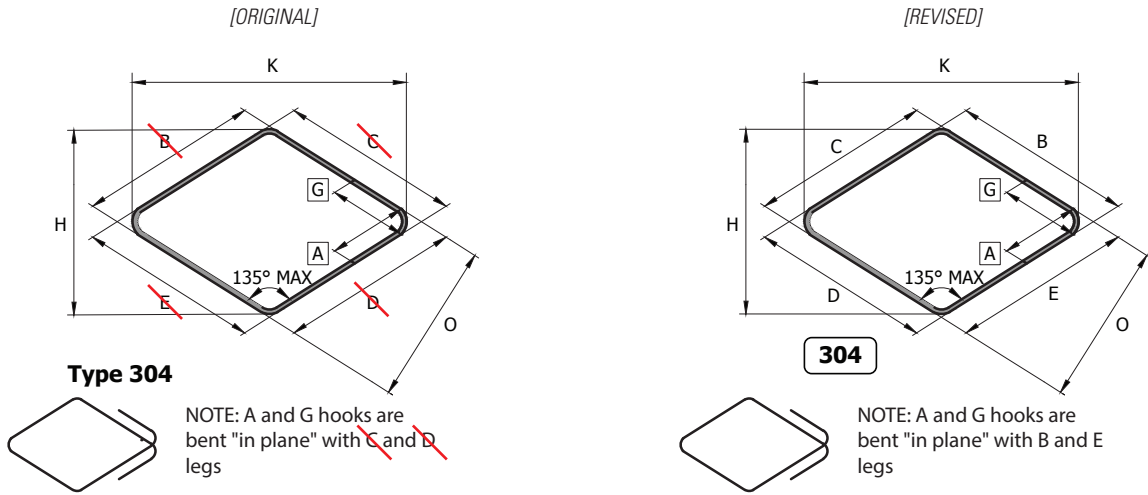
References to ASTM A967 and A380 requirements for cleaning stainless steel reinforcing bar processes were deleted; pages 7-28, 7-29, 8-1, D-1, G-15

**April 2018, Page 7-7**

- Shape 301; A & G hooks corrected



- Shape 304; B, C, D, and E legs corrected



**April 2018, Page 7-11**

- 135 degree hook data in Table 7-2 corrected

**135° Stirrup/Tie Hooks**

Stirrup & Tie Hooks	135°				
	Bar Size	D, (in.)	A or G, (ft-in)	H, (ft-in)**	Hook Length*
	#3	2"	4 1/2"	2 3/4"	4 1/4"
	#4	2 1/2"	5"	3"	4 3/4"
	#5	3 1/4"	6"	3 3/4"	6"
	#6	4 1/2"	<del>8 3/4"</del>	4 1/2"	7 3/4"
	#7	5 1/4"	<del>10"</del>	5 1/4"	8 3/4"
	#8	6"	<del>11 1/2"</del>	6"	10"

**Notes:**  
 D = Finished bend diameter  
 All grades and coatings (except galvanized)

**135° Stirrup/Tie Hooks**

Stirrup & Tie Hooks	135°				
	Bar Size	D, (in.)	A or G, (ft-in)	H, (ft-in)**	Hook Length*
	#3	2"	4 1/2"	2 3/4"	4 1/4"
	#4	2 1/2"	5"	3"	4 3/4"
	#5	3 1/4"	6"	3 3/4"	6"
	#6	4 1/2"	8"	4 1/2"	7 3/4"
	#7	5 1/4"	9"	5 1/4"	8 3/4"
	#8	6"	10 1/2"	6"	10"

**Notes:**  
 D = Finished bend diameter  
 All grades and coatings (except galvanized)

**April 2018, Page 7-12**

- 135 degree hook data for Galvanized in Table 7-2 corrected

[ORIGINAL]

**135° Stirrup/Tie Hooks (Galvanized)\***

Stirrup & Tie Hooks	135°			
	Bar Size	D, (in.)	A or G, (ft-in)	H, (ft-in)**
#3	2 <sup>1</sup> / <sub>4</sub> "	<del>5"</del>	2 <sup>3</sup> / <sub>4</sub> "	4 <sup>1</sup> / <sub>2</sub> "
#4	3"	<del>5<sup>3</sup>/<sub>4</sub>"</del>	3"	5"
#5	3 <sup>3</sup> / <sub>4</sub> "	<del>7<sup>1</sup>/<sub>4</sub>"</del>	3 <sup>1</sup> / <sub>2</sub> "	6 <sup>1</sup> / <sub>4</sub> "
#6	4 <sup>1</sup> / <sub>2</sub> "	<del>8<sup>3</sup>/<sub>4</sub>"</del>	4 <sup>1</sup> / <sub>2</sub> "	7 <sup>3</sup> / <sub>4</sub> "
#7	7"	<del>11<sup>1</sup>/<sub>4</sub>"</del>	5 <sup>1</sup> / <sub>2</sub> "	9 <sup>3</sup> / <sub>4</sub> "
#8	8"	<del>12<sup>3</sup>/<sub>4</sub>"</del>	6 <sup>1</sup> / <sub>2</sub> "	11"

**Notes:**

D = Finished bend diameter

Galvanized only, all grades

\*Bend diameters larger than ACI 318 Code are shown with shading

[REVISED]

**135° Stirrup/Tie Hooks (Galvanized)\***

Stirrup & Tie Hooks	135°			
	Bar Size	D, (in.)	A or G, (ft-in)	H, (ft-in)**
#3	2 <sup>1</sup> / <sub>4</sub> "	4 <sup>1</sup> / <sub>2</sub> "	2 <sup>3</sup> / <sub>4</sub> "	4 <sup>1</sup> / <sub>2</sub> "
#4	3"	5"	3"	5"
#5	3 <sup>3</sup> / <sub>4</sub> "	6 <sup>1</sup> / <sub>2</sub> "	3 <sup>3</sup> / <sub>4</sub> "	6 <sup>1</sup> / <sub>4</sub> "
#6	4 <sup>1</sup> / <sub>2</sub> "	8"	4 <sup>1</sup> / <sub>2</sub> "	7 <sup>3</sup> / <sub>4</sub> "
#7	7"	10"	5 <sup>1</sup> / <sub>2</sub> "	9 <sup>3</sup> / <sub>4</sub> "
#8	8"	11 <sup>1</sup> / <sub>2</sub> "	6 <sup>1</sup> / <sub>2</sub> "	11"

**Notes:**

D = Finished bend diameter

Galvanized only, all grades

\*Bend diameters larger than ACI 318 Code are shown with shading

## April 2018, Page 7-17

- Table 7-4 revised due to specification change during publication layout

[ORIGINAL]

Table 7-4 ASTM A767 Minimum Finished Bend Diameters\*

Bar Size	Nominal Diameter	Minimum Finished Bend Diameter				Minimum Finished Bend Diameter			
		ASTM A767 – Grade 60 Galvanized				ASTM A767 – Grade 75 Galvanized			
		Standard		Stirrup/Tie		Standard		Stirrup/Tie	
#3	0.375	6	2.25	6	2.25	...	...	...	...
#4	0.500	6	3.00	6	3.00	...	...	...	...
#5	0.625	6	3.75	6	3.75	...	...	...	...
#6	0.750	6	4.50	6	4.50	6	4.50	6	4.50
#7	0.875	8	7.00	8	7.00	8	7.00	8	7.00
#8	1.000	8	8.00	8	8.00	8	8.00	8	8.00
#9	1.128	8	9.024	8	9.024	8	9.024	8	9.024
#10	1.270	8	10.16	8	10.16	8	10.16	8	10.16
#11	1.410	8	11.28	8	11.28	8	11.28	8	11.28
#14	1.693	10	16.93	10	16.93	10	16.93	10	16.93
#18	2.257	10	22.57	10	22.57	10	22.57	10	22.57
<b>Value</b>	<b>inches</b>	<b>bar dia.</b>	<b>inches</b>	<b>bar dia.</b>	<b>inches</b>	<b>bar dia.</b>	<b>inches</b>	<b>bar dia.</b>	<b>inches</b>

\*Bend diameters larger than ACI 318 Code are shown with shading

**Note:** This is the only ASTM specification that defines a minimum finished bend diameter for each bar size. All other specifications define the pin size for bend tests. Based on the values contained in ASTM A767, the standard hooks for certain bar sizes of galvanized bars are different than uncoated bars.

[REVISED]

Table 7-4 ASTM A767 Minimum Finished Bend Diameters\*

Bar Size	Nominal Diameter	Minimum Finished Bend Diameter			
		ASTM A767 – Grades 60, 75 and 80 Galvanized			
		Standard		Stirrup/Tie	
#3	0.375	6	2.25	6	2.25
#4	0.500	6	3.00	6	3.00
#5	0.625	6	3.75	6	3.75
#6	0.750	6	4.50	6	4.50
#7	0.875	8	7.00	8	7.00
#8	1.000	8	8.00	8	8.00
#9	1.128	8	9.024	8	9.024
#10	1.270	8	10.16	8	10.16
#11	1.410	8	11.28	8	11.28
#14	1.693	10	16.93	10	16.93
#18	2.257	10	22.57	10	22.57
<b>Value</b>	<b>inches</b>	<b>bar dia.</b>	<b>inches</b>	<b>bar dia.</b>	<b>inches</b>


\*Bend diameters larger than ACI 318 Code are shown with shading

**Note:** This is the only ASTM specification that defines a minimum finished bend diameter for each bar size. All other specifications define the pin size for bend tests. Based on the values contained in ASTM A767, the standard hooks for certain bar sizes of galvanized bars are different than uncoated bars.


**April 2018, Page 7-21**

- Round spiral diameter tolerance table corrected

[ORIGINAL]

Condition	Bar Size	≤18"	>18" ≤30"	>30" ≤48"	>48" ≤66"	>66" ≤84"	>84" ≤102"	>102"	
Round spiral diameter 	#3	<del>±1/2"</del>	±1/2"	Not Recommended					
	#4	±1/2"	±1/2"	+1", -0"	Not Recommended				
	#5	±1/2"	±1/2"	+1", -0"	+2", -0"	+3", -0"	+4", -0"	+5", -0"	
	#6	Not Available		±1/2"	+1", -0"	+2", -0"	+3", -0"	+4", -0"	+5", -0"
	#7	Not Available			+1", -0"	+2", -0"	+3", -0"	+4", -0"	+5", -0"
	#8	Not Available				+2", -0"	+3", -0"	+4", -0"	+5", -0"

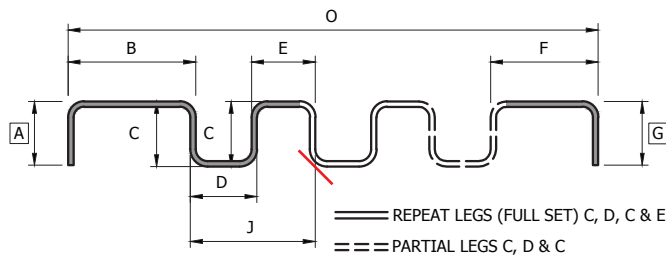
[REVISED]

Condition	Bar Size	≤18"	>18" ≤30"	>30" ≤48"	>48" ≤66"	>66" ≤84"	>84" ≤102"	>102"	
Round spiral diameter 	#3	±1/2"	±1/2"	Not Recommended					
	#4	±1/2"	±1/2"	+1", -0"	Not Recommended				
	#5	±1/2"	±1/2"	+1", -0"	+2", -0"	+3", -0"	+4", -0"	+5", -0"	
	#6	Not Available		±1/2"	+1", -0"	+2", -0"	+3", -0"	+4", -0"	+5", -0"
	#7	Not Available			+1", -0"	+2", -0"	+3", -0"	+4", -0"	+5", -0"
	#8	Not Available				+2", -0"	+3", -0"	+4", -0"	+5", -0"

**November 2019, Page 7-7**

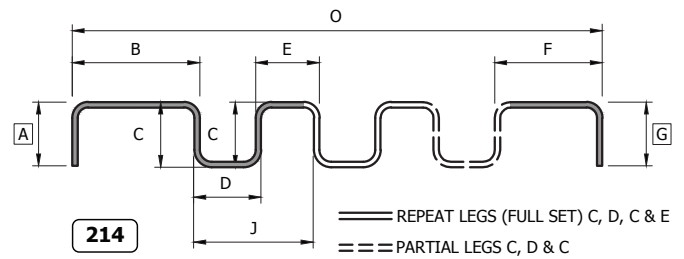
- "J" dimension should point to insided face of the right vertical leg

[ORIGINAL]



**Type 214**

[REVISED]



**November 2019, Page 7-8**

- Note #3 for typical bend shapes corrected

[ORIGINAL]

**Notes:**

1. All dimensions are out-to-out of bar except "A" and "G" on standard 180° and 135° hooks.
2. "J" dimension on 180° hooks to be shown only where necessary to restrict hook size.
3. Where "~~J~~" is not shown, "J" will be kept equal to or less than "H" on bend Types 103, 105, 115, 122 and 128. Where "J" can exceed "H," it should be shown.
4. "H" dimension for stirrup hooks to be shown only where necessary to fit within concrete.
5. Where bars are to be bent more accurately than standard fabricating tolerances permit, the affected bending dimensions should be individually identified as "Critical Dimensions".
6. For recommended diameter "D," of bends and hooks, see Tables 7-1 and 7-2.
7. Bend Series 200, 300 and 400 apply to bar sizes #3 through #8.
8. Unless otherwise noted, diameter "D" is the same for all bends and hooks on a bar (except for Bend Types 111, 113, 132, 133, 138 and 303).

[REVISED]

**Notes:**

1. All dimensions are out-to-out of bar except "A" and "G" on standard 180° and 135° hooks.
2. "J" dimension on 180° hooks to be shown only where necessary to restrict hook size.
3. Where "~~J~~ is not shown, "J" will be kept equal to or less than "H" on bend Types 103, 105, 115, 122 and 128. Where "J" can exceed "H," it should be shown.
4. "H" dimension for stirrup hooks to be shown only where necessary to fit within concrete.
5. Where bars are to be bent more accurately than standard fabricating tolerances permit, the affected bending dimensions should be individually identified as "Critical Dimensions".
6. For recommended diameter "D," of bends and hooks, see Tables 7-1 and 7-2.
7. Bend Series 200, 300 and 400 apply to bar sizes #3 through #8.
8. Unless otherwise noted, diameter "D" is the same for all bends and hooks on a bar (except for Bend Types 111, 113, 132, 133, 138 and 303).

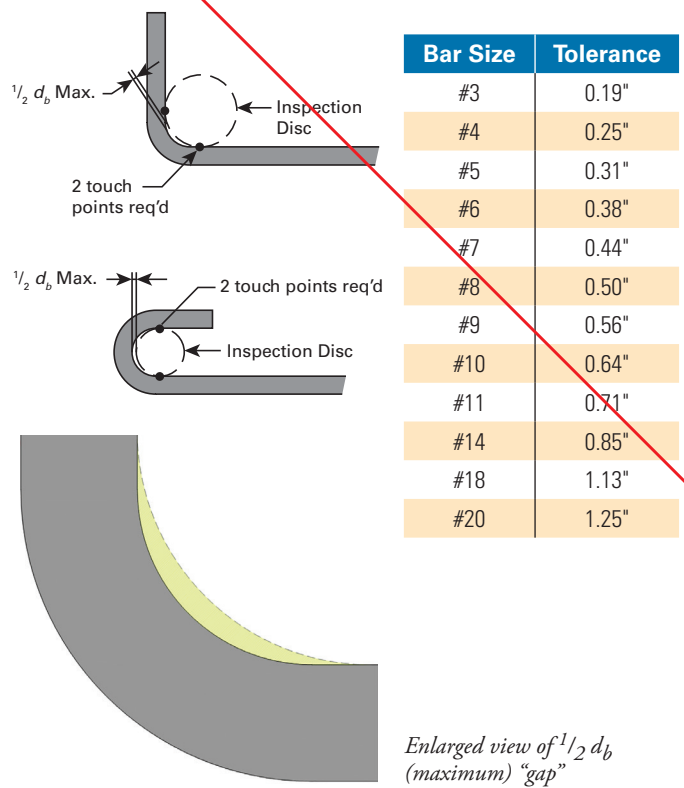
November 2019, Page 7-22

- Revised "7.7 Bend Curvature Tolerances" information

[ORIGINAL]

**7.7 Bend Curvature Tolerances**

Even when bars are bent properly to achieve a finished bend diameter that is equal to or larger than the minimum bend diameter required by ACI 318 Code, the bend may not be a perfect circle. When inspecting finished bends with a "disc-style" template (sized to match the finished bend diameter "D"), there may be a gap present, caused by a small variance in the curvature of the bend. The following sketch shows the recommended tolerances for bend curvature.



## November 2019, Page 7-22 (continued)

- Revised "7.7 Bend Curvature Tolerances" information

[REVISED]

**7.7 Bend Curvature**

Even when bars are bent properly to achieve a finished bend diameter that is equal to or larger than the minimum bend diameter required by ACI 318 Code, the bend may not be a perfect circle. These imperfections with bend diameter and the resulting variance in the curvature of the bend (out-of-roundness) can be attributed to a number of variables including, but not limited to:

1. Lack of perfect circularity / perfectly cylindrical surface with bending pins
2. Lack of perfect circularity / perfectly cylindrical with reinforcing bars
3. Wear on bending equipment
4. Bending equipment setup
5. Type of reinforcing bar being bent
6. Position of the reinforcing bar's rib with respect to the bending pin
7. Variance in the reinforcing bar's deformation height
8. Permissible angular deviation (see fabrication tolerances for more information)

If inspecting finished bends with a "disc-style" template (which must be sized to match the ACI minimum bend diameter), consider the following:

- If the bar is bent using the correct diameter, the disc should fit inside the bend.
- If the disc does not fit inside the bend, that indicates that the bend has been fabricated with a bend diameter smaller than the specified ACI minimum.
- If the disc fits, but a small gap is present, this gap is most likely caused by a small variance in the curvature of the bend as discussed above. As long as the finished bend diameter is equal to or larger than the minimum bend diameter required by ACI 318 Code, the gap shall not be cause for rejection.

