



1-800-426-9341



## Options for Romac Style "400" Fabricated Steel and "501" Products

Note the applicable options as they might apply to the desired coupling(s) when required.

### Fasteners

**Standard:** High strength low alloy steel.  
All nuts are heavy hex.

**Optional:**

- Zinc plated steel
- Hot dip galvanized steel <sup>1</sup>
- Type 316 stainless steel <sup>2</sup>
- Other \_\_\_\_\_
- Type 304 stainless steel

### Miscellaneous Options

- Insulating Boots (please specify if one or two boots are required)
- Manufacture per AWWA C219
- Other \_\_\_\_\_

<sup>1</sup> Hot dip galvanizing is not recommended because of thread interference.

<sup>2</sup> Threaded rod and nuts may be supplied for this item.

### Coatings and Linings <sup>3</sup>

**Standard:** Romac shopcoat will be applied to entire product unless specified.

**Optional:** Unless specified, entire product will be lined and coated with optional coating. Please note if lining and coating materials will be different.

- ROMACOTE Fusion Bonded Epoxy
- Fusion Bonded Epoxy per AWWA C213
- Liquid Epoxy per AWWA C210
- Other (Please supply all required specifications, such as material type and dry film thickness) \_\_\_\_\_

Note: Material to which any lining or coating is applied will be prepared per the manufacturer's instructions, as specified by the engineer, or per the applicable AWWA Standard.

<sup>3</sup> Coatings are applied to O.D. of product, linings are applied to parts of product that will be in contact with line content.

### Special Epoxy and Fusion Bonded Epoxy Information: AWWA Standards for . . .

**Linings/Coatings:** ROMACOTE **Fusion Bonded Epoxy** may be applied to most products Romac manufactures. The epoxy powder used will be compatible with potable water use and applied following the powder manufacturer's instructions. Unless otherwise specified, the thickness will be approximately 8-12 mils.

**Fusion Bonded Process:** Fusion bonded epoxy coatings are heat activated, chemically cured coating systems. The application method may be **Fluidized Bed, Electrostatic Spray** or **Air Spray** to preheated metal surfaces. The coating may be applied to non-heated metal using the **Electrostatic Spray** method, and post-cured or heated to achieve the fusion bonded coating.

**AWWA-C213-01:** This standard covers the specification and application of **Fusion Bonded Epoxy** systems to mechanical couplings, as well as steel water pipe (includes holiday testing). Sec. 4 of this standard applies to mechanical couplings. Minimum thickness is 12 mils on the exterior and 12 mils on the interior. Romac Customer Service must be informed if your specification is for adherence to this standard.

**AWWA-C210-97:** This standard covers the specifications and application of cold applied **Liquid Epoxy** linings and coatings. Minimum thickness is 16 mils, maximum is 25 mils. Special primers are required in most instances. Romac Customer Service must be informed if your specification is for adherence to this standard.

**AWWA-C-219-01, STANDARD FOR BOLTED, SLEEVE-TYPE COUPLINGS FOR PLAIN END PIPE:** This standard covers bolted sleeve type couplings, reducing or transition couplings, and flanged coupling adapters used to join plain end pipe.

**Indents for Coatings:** 8" to 10" indent for each pipe end covers most diameters. Special circumstances may require allowing for more "hold back" on the coatings.

Note: Romac reserves the right to refuse to apply a lining or coating that may be inconsistent with our product or good environmental practices. Extraordinary field conditions may arise where the above restrictions are not realistic. Contact your Romac representative to obtain an engineering evaluation of the specific condition.

### Recommended laying/angular deflection when using flexible couplings (in degrees)

NOMINAL PIPE SIZE	SLEEVE LENGTH		
	5"	7"	10"
2" to 14"	4°	4 1/2°	4 1/2°
16" to 24"	2°	4°	4 1/2°
26" to 36"	1 1/2°	3 1/2°	3 1/2°
38" to 42"	X	3°	3 1/2°
44" to 60"	X	2 1/2°	3°
60" to 100"	X	X	2 1/2°

Deflection (in degrees) is PER COUPLING. Use one half of these values for FC400 and FCA501.

In actual field conditions, slightly more deflection may be obtained, depending upon pressures, etc. Caution should be exercised when designing any deflection greater than this table shows.

**Expansion and Contraction:**

400 & 501 couplings will safely accommodate 3/8" in longitudinal movement. FC 400 & FCA 501 couplings will safely accommodate 3/16" in longitudinal movement.

### Recommended Gap Between Pipe Ends

Center Ring Length	Optimum Gap	Max. Gap W/Pipe Stops & No Pipe Movement
5"	1/4" - 1/2"	1"
7"	1/2" - 3/4"	2"
10"	1/2" - 1 1/4"	3 1/2"

### PIPE END TOLERANCE SPECIFICATIONS

NOMINAL PIPE SIZE	OD TOLERANCE		ROUNDNESS
	+	-	MIN / MAX <sup>1</sup>
14" to 22"	1/8"	1/16"	1/8"
24" to 36"	1/8"	1/16"	1/8"
38" to 72"	3/16"	1/16"	1/8"
73" to 96"	1/4"	1/16"	3/16"
120" plus	1/4"	1/16"	1/4"

<sup>1</sup> Out-of-roundness conditions are required to be correctable so that the difference between the minimum and maximum diameters is not greater than this dimension.



**WARNING:** Flexible couplings do not provide protection against possible pullout of pipe ends in unrestrained conditions.