

San Antonio Water System Standard Specifications for Construction

**ITEM NO. 301
REINFORCING STEEL**

- 301.1 DESCRIPTION:** This item shall provide for the furnishing and placing of bar reinforcing steel of the size and quantity designated for use in structures and other concrete items that require reinforcing steel as shown on the plans and in accordance with these specifications.
- 301.2 MATERIALS:** Reinforcing steel shall be grade 60 and all bar reinforcement shall be deformed, conforming to the requirements of Item No. 440, "Reinforcing Steel" of the TxDOT Standard Specifications. Reinforcing steel bars produced outside of the United States are acceptable if such bar reinforcement conforms to the requirements of the ASTM Specifications for the various designations of bars.
- 301.3 BENDING, TOLERANCES AND STORAGE:** Bending, tolerances and storage of reinforcing steel shall conform to Article 440.3, "Storage" in Item No. 440, "Reinforcing Steel" of TxDOT Standard Specifications.
- 301.4 SPLICES:** No splicing of bars, except when provided on the plans, will be permitted without approval of the Engineer.
- 301.5 PLACING REINFORCEMENT:** All steel reinforcing shall be accurately placed in the position shown on the plans and firmly held during the placing and setting of concrete. All reinforcement shall be free from dust, rust, mill scale, paint, oil, mortar or foreign material. Bars shall be tied at all intersections. Where spacing of bars in each direction is less than 12 inches, only alternate intersections need be tied. Distances from forms shall be maintained by means of stays, precast blocks, ties, hangers, metal chairs or other approved supports. Blocks for holding reinforcing bars from contact with the forms shall be precast concrete blocks of approved shape and dimensions or other equally suitable devices. The use of pebbles, pieces of broken stones or brick, metal pipe and wooden blocks shall not be permitted. Reinforcement in any sections shall be placed and then inspected and approved by the Inspector before the placing of concrete begins.
- 301.6 MEASUREMENT:** The measurement of quantities of bar reinforcing furnished and placed will be based on the calculated weight of the steel actually placed in accordance with the plans and these specifications with no allowance made for added bar lengths for splices nor for extra steel used when bars larger than those specified are substituted with the permission of the consulting engineer. Tie

San Antonio Water System Standard Specifications for Construction

wires and supporting devices will not be included in the calculated weights. The calculated weight of bar reinforcement will be determined using the theoretical bar weight set forth in Table No. 1 with no allowance for overrun or under runs:

301.7 PAYMENT: Reinforcing Steel measured, as provided above, will be paid for at the contract unit price bid per pound of "Reinforcing Steel," which price shall be full compensation for furnishing, bending, fabricating, welding and placing reinforcement; for all clips, blocks, metal spacers, ties, wire or other materials used for fastening reinforcement in place, and for all tools, labor, equipment and incidentals necessary to complete the work.

Payment for reinforcing in item which specifically includes the cost of reinforcement shall be paid for as provided in the specifications for those items.

Bar size number	Nominal diameter inches	Nominal Area square inches	Weight per linear foot (Lb/F)
2	0.250	0.05	0.167
3	0.375	0.11	0.376
4	0.500	0.20	0.668
5	0.625	0.31	1.043
6	0.750	0.44	1.502
7	0.875	0.60	2.044
8	1.000	0.79	2.670
9	1.128	1.00	3.400
10	1.270	1.27	4.303
11	1.410	1.56	5.313
14	1.693	2.25	7.65
18	2.257	4.00	13.60