



CHEMICAL ANCHOR RODS

ZINC, GALVANIZED & STAINLESS STEEL

KEY BENEFITS



ZINC PLATED

- Manufactured from low carbon steel

HOT DIP GALVANIZED

- Hot dip galvanizing is a thick zinc coating offering more corrosion protection
- Preferable for applications where exposed to the elements
- Use with over-tapped galvanized nuts

316 STAINLESS STEEL

- 316 Stainless Steel has molybdenum added which is an alloy drastically enhancing corrosion resistance, especially for more saline or chloride exposed environments. Often used in marine applications

SPECIFICATIONS - ZINC PLATED

The ASTM A307 specification covers carbon steel bolts and studs ranging from 1/4" through 4" diameter. This is your everyday, run of the mill bolt specification often manufactured using A36 round bar. There are three grades: A, B, and C*, which denote tensile strength, configuration, and application. Refer to the Mechanical Properties Chart for the subtle strength differences within each grade.

GRADES

Grade A	Headed bolts, threaded rods and bent bolts intended for general applications.
Grade B	Heavy hex bolts and studs intended for flanged joints in piping systems with cast iron flanges.
Grade C*	Nonheaded anchor bolts, either bent or straight, intended for structural anchorage purposes. The end of the grade C anchor bolt intended to project from the concrete will be painted green for identification purposes. Permanent marking is a supplemental requirement. *As of August 2007, Grade C has been replaced by specification F1554 Grade 36. We will continue supplying grade C, if required for the project.

ZINC PLATED ANCHOR RODS

MECHANICAL PROPERTIES

Grade	Tensile, ksi	Yield, min, ksi	Elong %, min
A	60 min	-	18
B	60 - 100	-	18
C*	58 - 80	36	23

CHEMICAL PROPERTIES

Element	Grade A	Grade B
Carbon, Max	0.29%	0.29%
Manganese, Max	1.20%	1.20%
Phosphorus, Max	0.04%	0.04%
Sulfur, Max	0.15%	0.15%



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ZINC PLATED ANCHOR RODS CONTINUED

PERFORMANCE DATA

Size	WGT / FT (lbs)	Max Rec Load (lbs)	
		600°F	750°F
1/4 - 20	0.12	240	210
3/8 - 16	0.29	610	540
1/2 - 13	0.54	1130	1010
5/8 - 11	0.83	1810	1610
3/4 - 10	1.25	2710	2420
7/8 - 9	1.70	3770	3360
1 - 8	2.23	4960	4420
1-1/8 - 7	2.81	6230	5560
1-1/4 - 7	3.54	8000	7140
1-1/2 - 6	5.12	11630	10370

TYPE 316 STAINLESS STEEL ANCHOR RODS

DIMENSIONAL INSPECTIONS

Size	Characteristic	Requirements	Results	S/S	Pass	Rej	Specification*1	Test Method [Device*2] (Sample Plan*3)
1/4-20 x 6ft	Nominal Length (in.)	71.9400 - 72.4800	72.2835 - 72.3228	9	9	0	IFI 136-2002	[MTP] (18)
	Major Diameter (in.)	0.2408 - 0.2489	0.24606 - 0.24724	9	9	0	ASME B1.1-2003	[MCR] (18)
	Functional Dia.	UNC 2A	PASSED	9	9	0	ASME B1.1-2003	[TRG] (18)
	Visual Appearance		PASSED	11	11	0	ASTM F788-13	(18)
3/8-16 x 6ft	Nominal Length (in.)	71.8800 - 72.4800	72.2441 - 72.2835	6	6	0	IFI 136-2002	[MTP] (18)
	Major Diameter (in.)	0.3643 - 0.3737	0.36811 - 0.36929	6	6	0	ASME B1.1-2003	[MCR] (18)
	Functional Dia.	UNC 2A	PASSED	6	6	0	ASME B1.1-2003	[TRG] (18)
	Visual Appearance		PASSED	7	7	0	ASTM F788-13	(18)
1/2-13 x 6ft	Nominal Length (in.)	71.8800 - 72.4800	72.2441 - 72.2835	5	5	0	IFI 136-2002	[MTP] (18)
	Major Diameter (in.)	0.4876 - 0.4985	0.49409 - 0.49528	5	5	0	ASME B1.1-2003	[MCR] (18)
	Functional Dia.	UNC 2A	PASSED	5	5	0	ASME B1.1-2003	[TRG] (18)
	Visual Appearance		PASSED	6	6	0	ASTM F788-13	(18)
5/8-11 x 6ft	Nominal Length (in.)	71.8800 - 72.4800	72.2835 - 72.3228	4	4	0	IFI 136-2002	[MTP] (18)
	Major Diameter (in.)	0.6112 - 0.6233	0.61417 - 0.61614	4	4	0	ASME B1.1-2003	[MCR] (18)
	Functional Dia.	UNC 2A	PASSED	4	4	0	ASME B1.1-2003	[TRG] (18)
	Visual Appearance		PASSED	5	5	0	ASTM F788-13	(18)
3/4-10 x 6ft	Nominal Length (in.)	71.8800 - 72.4800	72.2441 - 72.2835	4	4	0	IFI 136-2002	[MTP] (18)
	Major Diameter (in.)	0.7353 - 0.7482	0.74213 - 0.74409	4	4	0	ASME B1.1-2003	[MCR] (18)
	Functional Dia.	UNC 2A	PASSED	4	4	0	ASME B1.1-2003	[TRG] (18)
	Visual Appearance		PASSED	5	5	0	ASTM F788-13	(18)

Notes:

*1: Additional explanation: N/A.

*2: Device: [Mcr] Micrometer; [Mtm] Material Testing Machine; [Mtp] Measuring Tape; [Rht] Rockwell Hardness Tester; [Trg] Thread Ring Gauge.

*3: Sample Plan: (14) ASTM F1470-2012 MECHANICAL TEST (18) ASME B18.18-2017 CATEGORY 2.



CHEMICAL ANCHOR RODS
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TYPE 316 STAINLESS STEEL ANCHOR RODS CONTINUED

MECHANICAL PROPERTIES

Size	Characteristic	Requirements	Results	S/S	Pass	Rej	Test Method [Device ^{*2}] (Sample Plan ^{*3})
1/4-20 x 6ft	Core Hardness ^{*4} (HRBW)	MAX 96	95 - 96	9	9	0	ASTM F606/F606M-16 [RHT] (14)
	Tensile Strength (KSI)	MIN 75.0	118.9 - 125.1	3	3	0	ASTM F606/F606M-16 [MTM] (14)
	Yield Strength (0.2% offset) (KSI)	MIN 30.0	86.8 - 87.5	3	3	0	ASTM F606/F606M-16 [MTM] (14)
	Elongation (%)	MIN 30.0	30.6 - 33.5	3	3	0	ASTM F606/F606M-16 (14)
	Reduction of Area (%)	MIN 50.0	50.2 - 53.8	3	3	0	ASTM F606/F606M-16 (14)
3/8-16 x 6ft	Core Hardness ^{*4} (HRBW)	MAX 96	95 - 96	6	6	0	ASTM F606/F606M-16 [RHT] (14)
	Tensile Strength (KSI)	MIN 75.0	113.4 - 116.8	2	2	0	ASTM F606/F606M-16 [MTM] (14)
	Yield Strength (0.2% offset) (KSI)	MIN 30.0	80.8 - 81.7	2	2	0	ASTM F606/F606M-16 [MTM] (14)
	Elongation (%)	MIN 30.0	30.1 - 33.4	2	2	0	ASTM F606/F606M-16 (14)
	Reduction of Area (%)	MIN 50.0	50.2 - 53.6	2	2	0	ASTM F606/F606M-16 (14)
1/2-13 x 6ft	Core Hardness (HRBW)	MAX 96	95 - 96	5	5	0	ASTM F606/F606M-16 [RHT] (14)
	Tensile Strength (KSI)	MIN 75.0	110.5 - 111.9	2	2	0	ASTM F606/F606M-16 [MTM] (14)
	Yield Strength (0.2% offset) (KSI)	MIN 30.0	77.7 - 78.3	2	2	0	ASTM F606/F606M-16 [MTM] (14)
	Elongation (%)	MIN 30.0	30.4 - 33.5	2	2	0	ASTM F606/F606M-16 (14)
	Reduction of Area (%)	MIN 50.0	50.4 - 53.2	2	2	0	ASTM F606/F606M-16 (14)
5/8-11 x 6ft	Core Hardness (HRBW)	MAX 96	95 - 96	4	4	0	ASTM F606/F606M-16 [RHT] (14)
	Tensile Strength (KSI)	MIN 75.0	108.7 - 113.0	1	1	0	ASTM F606/F606M-16 [MTM] (14)
	Yield Strength (0.2% offset) (KSI)	MIN 30.0	78.4 - 79.1	1	1	0	ASTM F606/F606M-16 [MTM] (14)
	Elongation (%)	MIN 30.0	78.4 - 79.1	1	1	0	ASTM F606/F606M-16 (14)
	Reduction of Area (%)	MIN 50.0	50.2 - 53.6	1	1	0	ASTM F606/F606M-16 (14)
3/4-10 x 6ft	Core Hardness (HRBW)	MAX 96	95 - 96	4	4	0	ASTM F606/F606M-16 [RHT] (14)
	Tensile Strength (KSI)	MIN 75.0	105.8 - 106.7	1	1	0	ASTM F606/F606M-16 [MTM] (14)
	Yield Strength (0.2% offset) (KSI)	MIN 30.0	74.0 - 74.7	1	1	0	ASTM F606/F606M-16 [MTM] (14)
	Elongation (%)	MIN 30.0	30.1 - 33.4	1	1	0	ASTM F606/F606M-16 (14)
	Reduction of Area (%)	MIN 50.0	50.2 - 53.6	1	1	0	ASTM F606/F606M-16 (14)

Notes:

*1: Additional explanation: N/A.

*2: Device: [Mcr] Micrometer; [Mtm] Material Testing Machine; [Mtp] Measuring Tape; [Rht] Rockwell Hardness Tester; [Trg] Thread Ring Gauge.

*3: Sample Plan: (14) ASTM F1470-2012 MECHANICAL TEST (18) ASME B18.18-2017 CATEGORY 2.



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TYPE 316 STAINLESS STEEL ANCHOR RODS CONTINUED

CHEMICAL COMPOSITION

Size	Heat No.	Material Source	Carbon (c)	Silicone (Si)	Manganese (Mn)	Phosphorus (P)	Sulfur (S)	Nickel (Ni)	Chromium (Cr)	Molybdenum (Mo)	Copper (Cu)	Nitrogen (N)
			x 100	x 100	x 100	x 1000	x 1000	x 100	x 100	x 100	x 100	x 100
1/4-20 x 6ft	5C434	Taiwan	4.3	32	117	30	5.4	1004	1626	205	25	305
3/8-16 x 6ft	4Z345	Taiwan	3.6	31	124	29	4.1	1002	1639	204	25	278
1/2-13 x 6ft	5B300	Taiwan	4.0	32	121	25	3.9	1004	1628	204	24	359
5/8-11 x 6ft	5C470	Taiwan	4.8	38	121	24	6.0	1004	1614	202	24	359
3/4-10 x 6ft	5F921	Taiwan	3.9	28	123	29	1.8	1000	1631	202	28	261

ORDERING INFORMATION

ZINC PLATED

PART #	SIZE	DESCRIPTION	QUANTITY / BOX
1SCMZ38418	3/8-16 x 4-1/8		25
1SCMZ38518	3/8-16 x 5-1/8	Anchor Rod Assembly with Nut & Washer	25
1SCMZ38638	3/8-16 x 6-3/8		25
1SCMZ12612	1/2-13 x 6-1/2		20
1SCMZ58712	5/8-11 x 7-1/2	Zinc	10
1SCMZ3410	3/4-10 x 10		5

HOT DIP GALVANIZED

PART #	SIZE	DESCRIPTION	QUANTITY / BOX
1SCMG38418	3/8-16 x 4-1/8		25
1SCMG38518	3/8-16 x 5-1/8	Anchor Rod Assembly with Nut & Washer	25
1SCMG38638	3/8-16 x 6-3/8		25
1SCMG12612	1/2-13 x 6-1/2		20
1SCMG58712	5/8-11 x 7-1/2	Hot Dip Galvanized	10
1SCMG3410	3/4-10 x 10		5

316 STAINLESS STEEL

PART #	SIZE	DESCRIPTION	QUANTITY / BOX
1SCMS438418	3/8-16 x 4-1/8		25
1SCMS438518	3/8-16 x 5-1/8	Anchor Rod Assembly with Nut & Washer	25
1SCMS438638	3/8-16 x 6-3/8		25
1SCMS412612	1/2-13 x 6-1/2		20
1SCMS458712	5/8-11 x 7-1/2	316 Stainless Steel	10
1SCMS43410	3/4-10 x 10		5