



# SSSI

Stressbar Steel Systems International

## STRESSBAR STEEL SYSTEMS INTERNATIONAL, INC.

SSSI CAISSON & PILE THREADED BAR MATERIAL

Made in the USA



***ENGINEERED SYSTEMS***

# INTRODUCTION

**#11 Gr. 80 SSSI Bar\***

**#20 Gr. 80 SSSI Bar\***

Entering a new era of construction and pushing the limits in building heights has revolutionized deep foundations in today's construction. Deep foundation construction is expected to continue to evolve in order to make high rise construction possible. The great achievements of Architects and Engineers in making it possible to construct taller and more slender structures, has made foundation construction and design an art, requiring high capacity caissons.

STRESSBAR STEEL SYSTEMS INTERNATIONAL (SSSI) provides high strength material for foundation applications such as piles and caissons fabricated with multiple high strength threaded bars in Grades 80. Our in-house engineers are knowledgeable in these areas and help provide each job with the best designs and options for construction. Our innovative products are guaranteed to meet the expanding demands of today's and tomorrow's engineering projects.

**SSSI can provide value engineering services to its customers.**



Above: 41<sup>st</sup> Avenue, Long Island City, NY  
Cover: Oceanwide Center, San Francisco California

\*: Shadow Imaging of actual Threaded Bar Sizes.

# SSSI- ADVANTAGES

*#32 Gr. 80 SSSI Bar\**

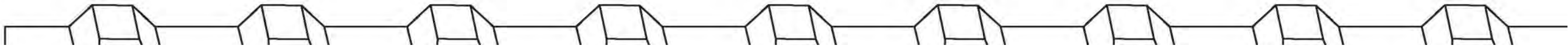
- The use of Grade 80 ksi threaded bars will reduce the amount of caissons needed to be installed.
- The use of larger diameter bars (such as our new #32) results in more steel area per given bore hole diameter while permitting the appropriate spacing between the bars for grout flowability. This results in larger caisson capacities in smaller drill hole diameters.
- Unlike caissons with inserted structural beam sections, multibar prefabricated cages can be ordered to custom lengths several days prior to field installation. Contractors pay for the neat quantities on specific ordered lengths.
- Multibar reinforcing bar cages can be prefabricated off-site in modular sections which can vary up to 100 feet in length. The uses of steel ring plates/centralizers allow the prefabricated sections to be shipped due to their rigidity. Bar alignment is made easy due to the engineered ring plates that allow the prefabricated sections to be coupled quickly in the field.



Above: Prefabricated Caisson cages in SSSI Warehouse

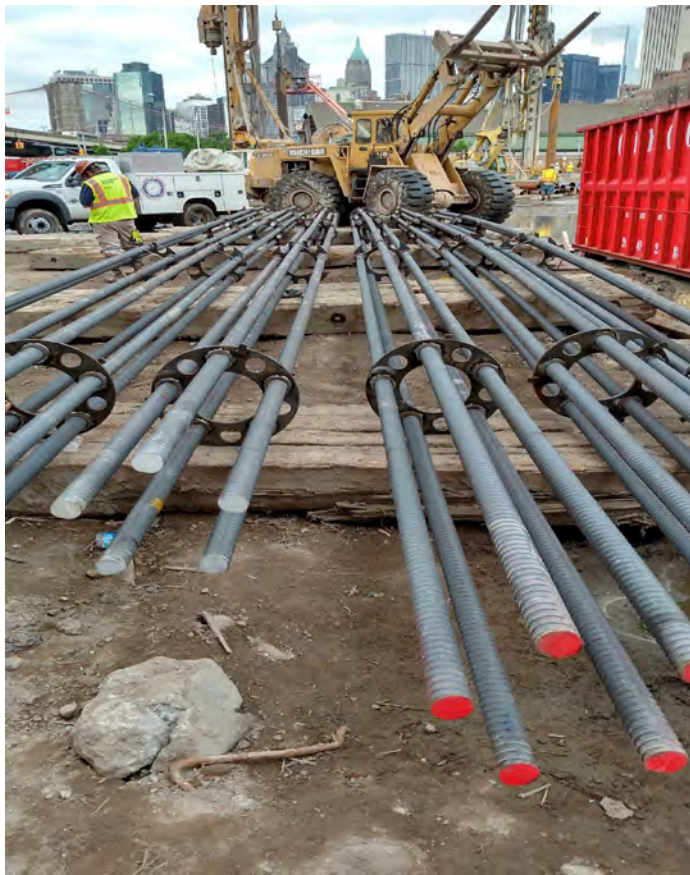
- The total length of the caisson is limitless. It is conceivable that a 200 foot or more caisson is possible simply by connecting with mechanical couplers the prefabricated bar sections at the construction site.
- Stressbar thread deformations are coarse and continuous throughout the bar. These threads are basically "Damage Proof" as compared to fine machined threaded ends on rebars by other suppliers.
- Field problems can be corrected easier since the threaded bars can be cut and coupled at any point along their lengths.

# CAISSON CAPACITY TABLE USING #32 BARS



							Caisson Reinforcement						
Recommended Design Load Capacity		Caising Properties			Rock Socket		Full Length Bars			Additional Bars in Rock Socket			Grout / Concrete Strength
Compression	Tension	Diameter	Wall Thickness	Grade	Diameter	Min. Length in Rock with 200 psi Bond Stress	Qty	Bar Size	Grade	Qty	Bar Size	Grade	Strength
300 Tons	280 Tons	9.625"	0.5"	80 ksi	8.5"	10'	1	#32	80 ksi	7	#7	80 ksi	8000 psi
500 Tons	280 Tons	13.375"	0.5"	80 ksi	12"	12'	1	#32	80 ksi	3	#20	80 ksi	8000 psi
1000 Tons	1000 Tons	16"	0.5"	80 ksi	14.5"	20'	4	#32	80 ksi	4	#14	80 ksi	8000 psi
1500 Tons	1400 Tons	22"	0.5"	50 ksi	20"	20'	5	#32	80 ksi	5	#18	80 ksi	8000 psi
2100 Tons	2000 Tons	24"	0.5"	50 ksi	22"	25'	8	#32	80 ksi	3	#24	80 ksi	8000 psi
2500 Tons	2300 Tons	30"	0.5"	50 ksi	28"	25'	8	#32	80 ksi	4	#24	80 ksi	8000 psi
2800 Tons	2700 Tons	30"	0.5"	50 ksi	28"	30'	10	#32	80 ksi	4	#24	80 ksi	8000 psi
3600 Tons	3300 Tons	36"	0.5"	45 ksi	34"	30'	12	#32	80 ksi	4	#24	80 ksi	8000 psi
4200 Tons	4100 Tons	36"	0.5"	45 ksi	34"	32'	15	#32	80 ksi	3	#32	80 ksi	8000 psi
5100 Tons	3800 Tons	48"	0.5"	45 ksi	45"	30'	14	#32	80 ksi	4	#32	80 ksi	8000 psi
6000 Tons	5200 Tons	48"	0.5"	45 ksi	45"	36'	19	#32	80 ksi	5	#32	80 ksi	8000 psi
6500 Tons	6100 Tons	48"	0.5"	45 ksi	45"	40'	22	#32	80 ksi	5	#32	80 ksi	8000 psi

SSSI GRADE 80 KSI. TABLE CALCULATED USING SSSI GRADE 75 KSI.  
BASED ON NYC BUILDING CODE 2014





# SSSI

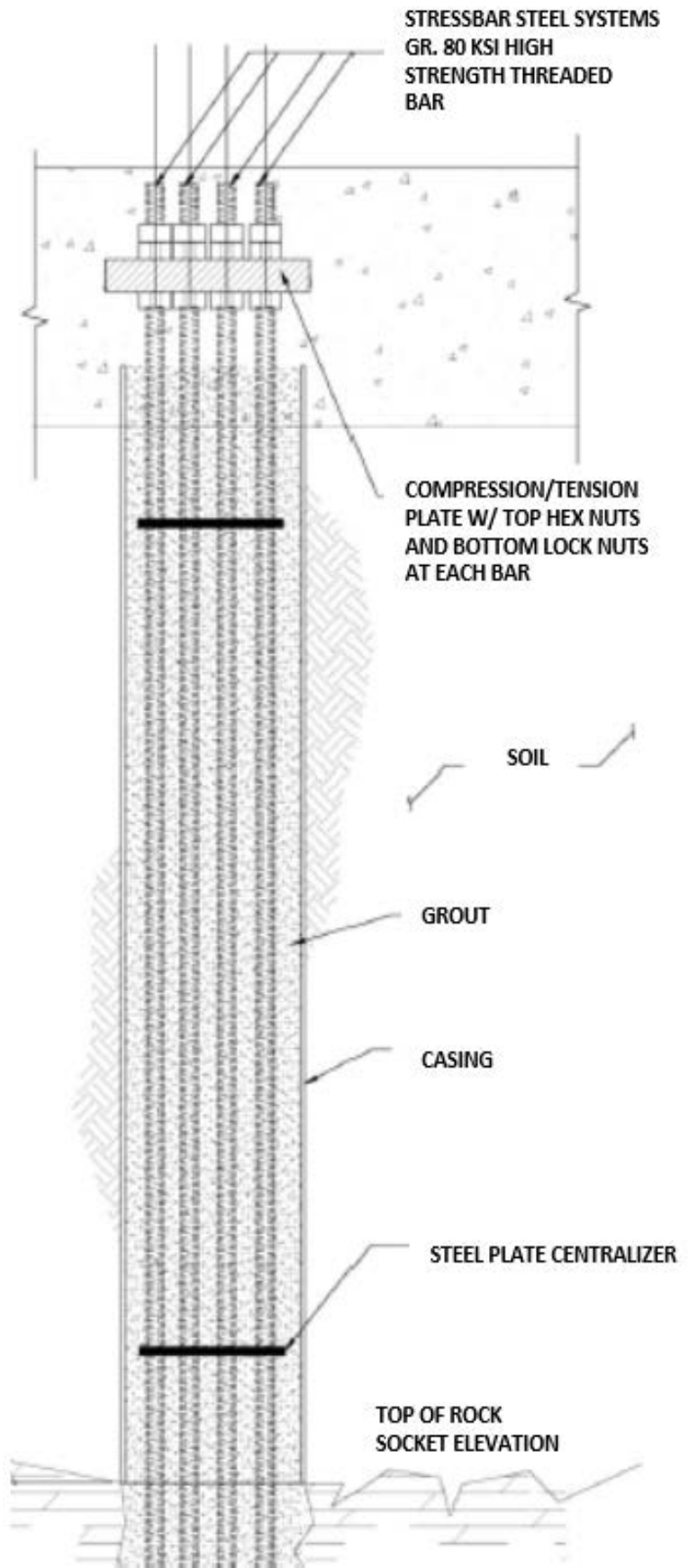
Stressbar Steel Systems International

## HOT-ROLLED THREADED BAR & ACCESSORIES

Grade 75/80 SSSI Part Number	Size #	Nominal Diameter		Maximum OD		Area		Weight		Yield Load		Ultimate Strength	
		[in]	[mm]	[in]	[mm]	[in <sup>2</sup> ]	[mm <sup>2</sup> ]	[lbs/ft]	[kg/m]	Kips	kN	Kips	kN
BR2280S	7	7/8	22	0.953	24.2	0.60	387	2.04	3.03	48	214	58	258
BR2580S	8	1	25	1.106	28.1	0.79	510	2.60	3.87	63	280	83	369
BR2880S	9	1 1/8	28	1.236	31.4	1.00	645	3.25	5.06	80	356	105	467
BR3280S	10	1 1/4	32	1.413	35.9	1.27	819	4.25	6.32	102	454	133	592
BR3680S	11	1 3/8	36	1.587	40.3	1.56	1006	5.37	8.00	125	556	163	725
BR4380S	14	1 3/4	43	1.886	47.9	2.25	1452	7.65	11.38	180	801	236	1050
BR5780S	18	2 1/4	57	2.465	62.6	4.00	2581	13.60	20.24	320	1423	420	1868
BR6380S	20	2 1/2	63	2.717	69.0	4.91	3168	16.71	24.65	393	1748	515	2291
BR7580S	24	3	75	3.209	81.5	6.85	4419	23.27	34.63	548	2438	719	3198
BR8980S	28	3 1/2	90	3.880	89.0	9.61	6200	32.70	48.66	769	3421	1009	4488
BR10080S	32	4	100	4.290	109.0	12.17	7852	41.40	61.61	974	4333	1278	5685

COUPLER				GRADE 75/80 KSI ITEMS			
Part No.	BAR SIZE			O.D		Length	
	No.	Inches	mm	Inches	mm	Inches	mm
C2280M	7	7/8"	22	1.50	38	4.33	110
C2580M	8	1"	25	1.77	45	4.53	115
C2880M	9	1-1/8"	28	1.89	48	4.92	125
C3280M	10	1-1/4"	32	2.24	57	5.51	140
C3680M	11	1-3/8"	36	2.50	63.5	5.91	150
C4380M	14	1-3/4"	43	2.99	76	7.62	193.5
C5780M	18	2-1/4"	57	3.74	95	8.66	220
C6380M	20	2-1/2"	63	4.02	102	10.24	260
C7580M	24	3"	75	4.49	114	11.81	300
C8980M	28	3-1/2"	89	5.00	127	13.39	340
C10080M	32	4"	100	5.51	140	15	380

FULL LOAD NUT				GRADE 75/80 KSI ITEMS			
Part No.	BAR SIZE			O.D		Length	
	No.	Inches	mm	Inches	mm	Inches	mm
RN2280M	7	7/8"	22	1.50	38	1.77	45
RN2580M	8	1"	25	1.77	45	1.97	50
RN2880M	9	1-1/8"	28	1.89	48	2.36	60
RN3280M	10	1-1/4"	32	2.24	57	2.56	65
RN3680M	11	1-3/8"	36	2.50	63.5	2.76	70
RN4380M	14	1-3/4"	43	2.99	76	3.74	95
RN5780M	18	2-1/4"	57	3.74	95	4.33	110
RN6380M	20	2-1/2"	63	4.02	102	4.53	115
RN7580M	24	3"	75	4.49	114	5.71	145
RN8980M	28	3-1/2"	89	5.24	133	6.69	170
RN10080M	32	4"	100	5.75	146	7.50	190.5



Above: (Left) Caisson cage installed and coupled on site. Kimmel Pavillion, NY, NY (Right) Engineered Drawing Courtesy of FNA Associates Inc.

# STRESSBAR STEEL SYSTEMS INTERNATIONAL, INC.

VALUE ENGINEERING CONCEPTS THAT HAVE REVOLUTIONIZED THE CONSTRUCTION INDUSTRY.



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