

Prestressing Round Steel Bar

Specifications

Standards	Grade			Yield Point of Strength (N/mm ²) ^{*1}	Tensile Strength (N/mm ²) ^{*2}	Elongation (%) ^{*3}	Relaxation (%) ^{*4}
	Class	No.	Symbol				
JIS G 3109-2008	Class A	No. 2	SBPR 785 / 1030	785 MIN.	1030 MIN.	5 MIN.	4.0 MAX.
	Class B	No. 1	SBPR 930 / 1080	930 MIN.	1080 MIN.	5 MIN.	4.0 MAX.
		No. 2	SBPR 930 / 1180	930 MIN.	1180 MIN.	5 MIN.	4.0 MAX.
	Class C	No. 1	SBPR 1080 / 1230	1080 MIN.	1230 MIN.	5 MIN.	4.0 MAX.

Sumitomo's Special Standard is applied to steel bar for Dywidag System.
Note of Tension Test and Relaxation Test

- *1 Yield point or yield strength shall be determined by dividing load giving yield or load giving permanent elongation of 0.2 % by larger one, either the actual sectional area or nominal sectional area.
*2 Tensile strength shall be determined by dividing the maximum load during the test by actual sectional area or nominal sectional area.
*3 Elongation shall be measured after rupture and Gauge Length for elongation shall be of eight times of basic diameter in round bar.

- *4 Holding the test pieces at an appropriate distance at room temperature the load equivalent to 80% of the load resulting from multiplying min. value of yielding point or yielding strength specified in the table beyond by nominal sectional area shall be applied on the test piece for one minute and measuring the decreasing load shall be performed with holding distance of grips as is. Ratio in percent of the load thus obtained versus load ordinarily applied shall be determined as a value of the relaxation.

Dimension and Weight

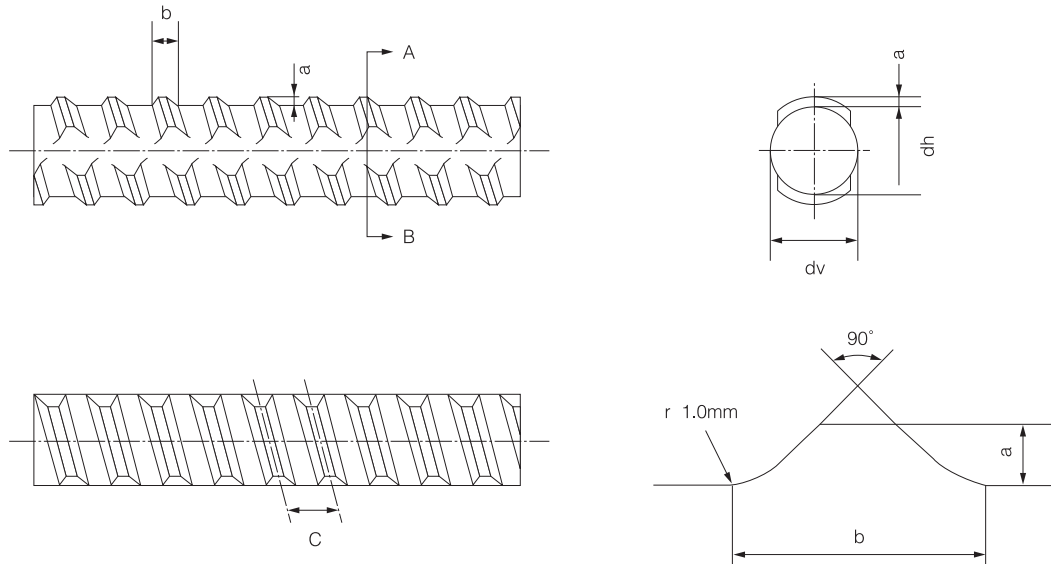
Nominal Diameter (mm)	Unthreaded Area				Treaded Area			
	Basic Diameter (mm)	Tolerance for Diameter (mm)	Nominal Sectional Area (mm ²)	Unit Weight (kg/m)	Major Diameter of Thread (mm)	Effective Diameter (Threaded Initially Dia.) (mm)	Core Diameter of Thread (mm)	Pitch (mm)
9.2	9.2	- 0.2 + side will not be prescribed	66.48	0.52	10.000	9.188	8.647	1.25
11	11.0		95.03	0.74	12.000	11.026	10.376	1.5
13	13.0		132.7	1.04	14.000	13.026	12.376	1.5
17	17.0		227.0	1.78	18.000	17.026	16.376	1.5
23	23.0	- 0.6 + side will not be prescribed	415.5	3.26	24.000	22.701	21.835	2.0
26	26.0		530.9	4.17	27.000	25.701	24.835	2.0
32	32.0		804.2	6.31	33.000	31.701	30.835	2.0
36	36.0		1018.0	7.99	38.000	36.051	34.752	3.0

<Note>

- (1) The tolerance for length of round bar and thread are -0mm and +10mm
(2) The tolerance for dimension of thread area except for length is smaller than 3rd grade of JIS B 0211

Threaded Steel Bar of DYWIDAG

Shape and Dimension of “Gewindestab” and “Epoxy-Gewinde”



Nominal Diameter (mm)	Unit Weight (kg/m)	Gewindestab						Epoxy-Gewinde	
		Basic Diameter		Dimension of Thread Rib				Basic Diameter (mm)	Thickness of Epoxy Coating (μm)
		dh (mm)	dv (mm)	Height a (mm)	Width b (mm)	Pitch c (mm)	Lead Angle α ($^\circ$)		
23.0	3.42	23.0	23.0	1.4	5.5	12.0	81	23.4	200
26.0	4.38	26.0	26.0	1.7	6.5	12.7	81	26.4	200
32.0	6.63	32.0	32.0	2.0	7.0	17.0	81	32.4	200
36.0	8.27	36.0	36.0	2.18	8.6	18.0	81	36.4	200

Mechanical Properties of “Gewindestab” and “Epoxy-Gewinde”

Nominal Diameter (mm)	Nominal Sectional Area (mm^2)	Symbol	Yield Strength		Tensile Strength		Elongation (%)	Relaxation (%)
			Min. Stress (N/mm^2)	Min. Load (kN)	Min. Stress (N/mm^2)	Min. Load (kN)		
23.0	415.5	SBPD 930/1080	930	386	1080	449	≥ 6	≤ 4.0
		SBPD 930/1180	930	386	1180	490	≥ 6	≤ 4.0
26.0	530.9	SBPD 930/1080	930	494	1080	573	≥ 6	≤ 4.0
		SBPD 930/1180	930	494	1180	626	≥ 6	≤ 4.0
32.0	804.2	SBPD 930/1080	930	748	1080	869	≥ 6	≤ 4.0
		SBPD 930/1180	930	748	1180	949	≥ 6	≤ 4.0
36.0	1018.0	SBPD 930/1080	930	947	1080	1099	≥ 6	≤ 4.0

<Note> Refer to Specification for Prestressing Round Steel Bar
950/1150 is also applicable