

ENG STEEL



SinüsPanel®

TrapezPanel®

ENG STEEL CONSTRUCTION LTD

IRDEN BUILD PANEL LTD

SINUS PANEL LTD

TRAPEZE PANEL LTD

RIBBED REINFORCEMENT CATALOG

CONTACT : +905319122965

**ADRESS : H.Q: Eyüp Sultan Mahallesi Kızılay Caddesi Damatris Life Sitesi C Blok No:71 Daire: 8 Kat: 4
Sancaktepe – İstanbul / TÜRKİYE**

WEBSITE : <https://www.engsteelcons.com/>

As IRDEN YAPI CONSTRUCTION LIMITED COMPANY. Produces Ribbed Rebar in diameters from 8 mm to 40 mm.

You can contact Export@irdenyapi.com for your requests for Standard and Grades of Ribbed Rebar that are not included in the table.



ENG STEEL



SinüsPanel®

TrapezPanel®



Country	Turkey	U.K	U.S.A	Germany	Israel	Italy
Standard	TS 708	BS 4449	ASTM A615/A615M ASTM A706/A706M	DIN 488	SI 4446	DM 14.02.2008
Quality	S420 B420C B500C	Grade 250 Grade 460 B500B B500C	Gr 40 Gr 60 Gr 75 Gr 80	Bst 420 S Bst 500 S B500B	S 400 S 400W S 500W	B450 C

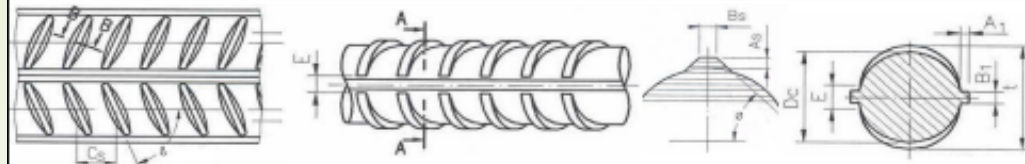
ENG STEEL



SinüsPanel®

TrapezPanel®

RIB GEOMETRY



DEFORMATION REQUIREMENTS

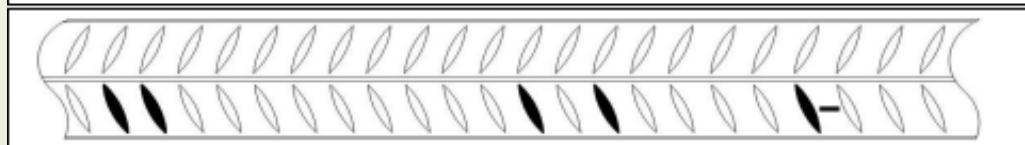
		8	10	12	14	16	18	20	22	24	25	26	28	30	32	40	EXPLANATIONS
Cross sectional area (mm ²)		50.3	78.5	113.0	154.0	201.0	254.4	314.0	380.0	452.2	491.0	531.0	616.0	706.5	804.0	1257.0	
Unit Weight (kg/m)	min	0.371	0.589	0.848	1.156	1.509	1.910	2.359	2.851	3.390	3.677	3.980	4.613	5.300	6.026	9.416	±6.0% ≤ 8mm ±4.5% > 8mm
	nom	0.395	0.617	0.888	1.210	1.580	2.000	2.470	2.985	3.550	3.850	4.168	4.830	5.550	6.310	9.860	
	max	0.419	0.645	0.928	1.264	1.651	2.090	2.581	3.119	3.710	4.023	4.356	5.047	5.800	6.594	10.304	
Transversal rib height	A _s min	0.24	0.30	0.36	0.42	0.48	0.54	0.60	0.66	0.72	0.75	0.78	0.84	0.90	0.96	1.20	(Table 8)
	max	1.20	1.50	1.80	2.10	2.40	2.70	3.00	3.30	3.60	3.75	3.90	4.20	4.50	4.80	6.00	
Transversal rib width	B _s min																
	max																
Transversal rib space	C _s min	3.20	4.00	4.80	5.60	6.40	7.20	8.00	8.80	9.60	10.00	10.40	11.20	12.00	12.80	16.00	(Table 8)
	max	9.60	12.00	14.40	16.80	19.20	21.60	24.00	26.40	28.80	30.00	31.20	33.60	36.00	38.40	48.00	
Rib-Tip distance	E min																(Sec. 7.4.2.2)
	max	3.14	3.93	4.71	5.50	6.28	7.07	7.85	8.64	9.42	9.82	10.21	11.00	11.78	12.57	15.71	
Longitudinal rib height	A ₁ min																(Sec. 7.4.2.3)
	max	1.20	1.50	1.80	2.10	2.40	2.70	3.00	3.30	3.60	3.75	3.90	4.20	4.50	4.80	6.00	
Longitudinal Rib Width	B ₁ min																
	max																
Rib slope	β min	35°	35°	35°	35°	35°	35°	35°	35°	35°	35°	35°	35°	35°	35°	35°	(Table 8)
	max	75°	75°	75°	75°	75°	75°	75°	75°	75°	75°	75°	75°	75°	75°	75°	
Rib angle	∅ min	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	(Sec. 7.4.2.2)
	max																
Rib Area (mm ²)	F _r min	0.040	0.040	0.040	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	(Table 9)
	max																
Diameter of mandrel for bend (mm)		5d	5d	5d	5d	5d	5d	5d	5d	5d	5d	5d	5d	5d	5d	5d	180° bend.
Diameter of mandrel for re-bend (mm)																	

MECHANICAL REQUIREMENTS

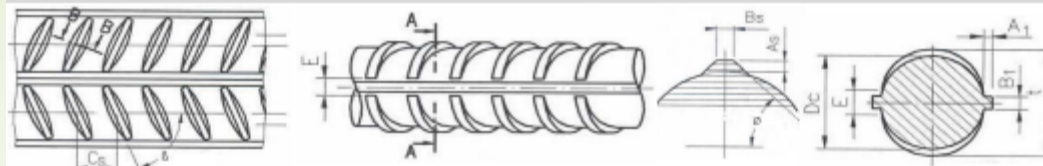
CHEMICAL REQUIREMENTS

		EXPLANATIONS				EXPLANATIONS								
Yield Strength	R _y MPa	min	420			C	min	Heat %	Product %	P	min	Heat %	Product %	
		max												
Tensile Strength	R _m MPa	min				e	max	22	24	e, s	max	50	55	
		max												
R _m / Re		min	1.15	Re act / Re nom < 1,30		Si	min			S	min			
		max	1.35											
Uniform elongation	A ₅ %	min	12.0			Mn	min			N	min			
		max												
Elongation to fracture	A ₅₇ %	min	7.5			Cu	min			Ce _{eq}	min			Ce _{eq} =C + Mn/5 + (Cr+Mo+V)/5 + (Ni+Cu)/15
		max												

MARKING



RIB GEOMETRY



DEFORMATION REQUIREMENTS

		8	10	12	14	16	18	20	22	24	25	26	28	30	32	40	EXPLANATIONS
Cross sectional area (mm ²)		50.3	78.5	113.0	153.9	201.0	254.5	314.0	380.1	452.4	491.0	530.9	615.8	706.9	804.0	1257.0	(Table: 8)
Unit Weight (kg/m)	min	0.371	0.589	0.848	1.154	1.51	1.91	2.36	2.85	3.39	3.68	3.98	4.62	5.30	6.03	9.42	±6.0% for 8 mm ±4.5% for more than 8 mm (Table: 7)
	nom	0.395	0.617	0.888	1.208	1.58	2.00	2.47	2.98	3.55	3.85	4.17	4.83	5.55	6.31	9.86	
	max	0.418	0.644	0.928	1.263	1.65	2.09	2.58	3.12	3.71	4.02	4.36	5.05	5.80	6.59	10.30	
Transversal rib height	A _s min	0.24	0.30	0.36	0.42	0.48	0.54	0.60	0.66	0.72	0.75	0.78	0.84	0.90	0.96	1.20	(Table: 8)
	max	1.20	1.50	1.80	2.10	2.40	2.70	3.00	3.30	3.60	3.75	3.90	4.20	4.50	4.80	6.00	
Transversal rib width	B _s min																
	max																
Transversal rib space	C _s min	3.20	4.00	4.80	5.60	6.40	7.20	8.00	8.80	9.60	10.00	10.40	11.20	12.00	12.80	16.00	(Table: 8)
	max	9.60	12.00	14.40	16.80	19.20	21.60	24.00	26.40	28.80	30.00	31.20	33.60	36.00	38.40	48.00	
Rib-Tip distance	E min																Sec.7.4.2.2
	max	3.1	3.9	4.7	5.5	6.3	7.1	7.9	8.6	9.4	9.8	10.2	11.0	11.8	12.6	15.7	
Longitudinal rib height	A ₁ min																Sec.7.4.2.3
	max	0.80	1.00	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.50	2.60	2.80	3.00	3.20	4.00	
Longitudinal Rib Width	B ₁ min																
	max																
Rib slope	β min	35°	35°	35°	35°	35°	35°	35°	35°	35°	35°	35°	35°	35°	35°	35°	(Table :8)
	max	75°	75°	75°	75°	75°	75°	75°	75°	75°	75°	75°	75°	75°	75°	75°	
Rib angle	∅ min	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	Sec.7.4.2.2
	max																
Rib Area (mm ²)	F _r min	0.040	0.040	0.040	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	(Table: 9)
	max																
Diameter of mandrel for bend (mm)		4d	4d	4d	4d	4d	7d	7d	7d	7d	7d	7d	7d	7d	7d	7d	≥90° bend, wait 60-75 min at 90-110°C. Cooling on air. ≥20° re-bend
Diameter of mandrel for re-bend (mm)		4d	4d	4d	4d	4d	7d	7d	7d	7d	7d	7d	7d	7d	7d	7d	

MECHANICAL REQUIREMENTS

CHEMICAL REQUIREMENTS

		EXPLANATIONS		EXPLANATIONS					
Yield Strength	R _e MPa	min	500	(Upper Yield Point)		Heat %	Product %	Heat %	Product %
		max	650						
Tensile Strength	R _m MPa	min		C	min	P	min		
		max		σ	max	22	24	σ	max
R _m / Re		min	1.08	Si	min	S	min		
		max		σ	max	0.0	0.0	max	50
Uniform elongation	A ₅ %	min		Mn	min	N	min		
		max		max	max	0.0	max	12	14
Elongation to fracture	A _{5f} %	min	5	Cu	min	C _{eq}	min		
		max		σ	max	80	85	σ	max

MARKING





ENG STEEL



SinüsPanel®

TrapezPanel®



ENG STEEL



SinüsPanel®

TrapezPanel®

ENG STEEL



SinüsPanel®

TrapezPanel®

THANK YOU

IF YOU WANT US TO MAKE YOUR PROJECTS THE FASTEST AND HIGHEST QUALITY, PLEASE CONTACT US

- **EXPORT : +905319122965 - +905332056592**
- **ADRESS : H.Q: Eyüp Sultan Mahallesi Kızılay Caddesi Damatris Life Sitesi C Blok No:71 Daire: 8 Kat: 4 Sancaktepe – İstanbul / TÜRKİYE**
- **WEBSITE : <https://www.engsteelcons.com/>**