

**BS 5896:1980 Specification for High Tensile Steel  
Wire and Strand for the Prestressing of Concrete**

Nominal diameter (1)	Nominal tensile strength (1)(3)	Nominal 0.1% proof stress (2)(3)	Nominal cross-section (2)	Nominal mass (2)	Tolerance on			Specified characteristic breaking load (6)(7)	Specified characteristic 0.1% proof load (4)(6)(7)	Load at 1% elongation (4)(6)(7)	Min. elongation at max. load (4)(6)(7)	Ductility tests		Relaxation		
					Diameter	Cross-sectional area	Mass					Reverse bends	Initial load (% of actual breaking load)	Max relaxation after 1000h	Relax class 2	
mm	N/mm <sup>2</sup>	N/mm <sup>2</sup>	mm <sup>2</sup>	g/m	mm	mm <sup>2</sup>	g/m	kN	kN	kN		mm				
7	1670	1390	38.5	302	±0.05	±0.55	±4.3	64.3	53.4	54.7		4 for	20			
6	1670	1390	28.3	222	±0.05	±0.47	±3.7	47.3	39.3	40.2		smooth	15	For all		
6	1770	1470	28.3	222	±0.05	±0.47	±3.7	50.1	41.6	42.6	For all	wires	15	wires	For all	
5	1770	1470	19.6	154	±0.05	±0.39	±3.1	34.7	28.8	29.5	wires 3.5	15	60%	wires	For all	
4	1770	1470	12.6	98.9	±0.04	±0.25	±2.0	22.3	18.5	19.0	%	3 for indented wires	10	70%	wires	For all
													80%		For all	wires

CONstriction AT BREAK : FOR ALL WIRES: A DUCTILE BREAK VISIBLE TO THE NAKED EYE

(1) The nominal diameter and nominal tensile strength are for designation purposes only.

(2) The nominal 0.1% proof stress, nominal cross-section and nominal mass are for information only.

(3) The nominal tensile strength is calculated from the nominal cross-section and the specified characteristic breaking load.

(4) The specified characteristic 0.1% proof load is approximately 83% of the specified characteristic breaking load. By agreement, alternatively the characteristic load at 1% elongation may be specified, which is approximately 85% of the specified characteristic breaking load.

(5) The modulus of elasticity is to be taken as 205 + 10 kN/mm<sup>2</sup>, unless otherwise indicated by the manufacturer

(6) The maximum standard deviations are:

- tensile strength 55 N/mm<sup>2</sup>, or the equivalent value expressed as a load
- 0.1% proof stress 60 N/mm<sup>2</sup>, or the equivalent value expressed as a load.

(7) In view of the close tolerance on diameters and areas, specified characteristic loads have been specified rather than stresses

**NOMINAL DIMENSIONS OF INDENTATIONS**

Nominal wire	Depth a	Length	Pitch
mm	mm	mm	mm
5.0 or below	$0.12 \pm 0.05$	3.5	5.5
Over 5.0	$0.15 \pm 0.05$	5.0	8.0

