

Technical description of product

Type of product: carbon ribbed steel for concrete reinforcement with high values of fatigue strength.

Commodity code 7214 20 000 0 – bars from unalloyed steel with no downstream treatment except for hot rolling, having indentions, projections, grooves or other deformations obtained during rolling.

Description of the goods: thermo-mechanically strengthened, after reheating, weldable ribbed double-sided reinforcing bar №№ 8÷40 of steel grade B500B (where B – rebar, 500 – minimal value of physical or conditional yield strength; B – ductility class) according to British standard BS 4449:2005+A3:2016.

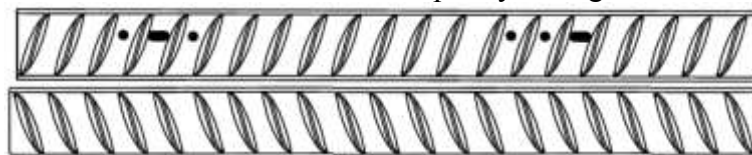
Technical characteristics:

Quality characteristics (chemical composition, mechanical properties, geometry sizes) of rebars B500B according to BS 4449:2005+A3:2016 are mainly equal to technical requirements of European standards (DIN 488, SFS 1300, NF A 35-080-1, SS 212540, NEN 6008 and BRL 0501, ČSN 42 0139, BDS 9252, SRPS EN 10080) and international standard ISO 6935-2, set for rebar B500B, however more severe requirements are set when putting rebars to fatigue strength testing vs. these standards.

Specification of mass concentration of carbon (C = max. 0,22 %), silicone (Si = max. 0,60 %), phosphorus (P = max. 0,050 %), sulfur (S = max. 0,050 %), copper (Cu = max. 0,80 %), nitrogen (N = max. 0,012 %) and carbon equivalent ($C_{eqv.}$ = max. 0,50 %) in chemical composition of reinforcing steel.

Rate setting for the following mechanical parameters of rebars: yield strength (Re) 500-650 N/mm²; tensile strength to yield strength ratio (Rm/Re) at least 1,08; total elongation at max. force (Agt) at least 5,0 %. Rebars must withstand bend tests 90° and reverse bend 20° after 90° bent rebars are aged. Relative transversal ribs area (f_R), being a determining criterion when assessing rebar with concrete bonding properties, for nominal diameters 8, 10 and 12 mm amounts at least 0,040, for nominal diameters 14-40 mm amounts at least 0,056.

Description of construction: hot rolled weldable steel ribbed rebars with controlled cooling and tempering of nominal diameters 8, 10, 12, 14, 16, 18, 20, 22, 25, 28, 32 and 40 mm used in construction to reinforce concrete. Reinforcing steel B500B is identified by two rows of inclined (transversal) sickle-shaped ribs with the same inclination angle to longitudinal axis of rebar and with no link to longitudinal rib. There is a rolled-on identification mark on reinforcing bars by a combination of dots and a dash on one side of rebar, given by certification authority 'CARES' (Great Britain) for producer OJSC "BSW - management company of "BMC" holding" (refer to Pic.). Rolled-on identification mark must begin with CARES mark, i.e. 'dot-dash-dot', 9 transversal ribs before the next dot specifies the country and one next transversal rib specifies plant No., then a 'dash' at the end of the mark so to specify steel grade 500.



Pic. – arrangement of transversal ribs and rolled-on identification mark on rebar B500B as per BS 4449:2005+A3:2016

Main customers: Duferco S.A. – UK market.