

Data sheet P 530

Revision 12

1. CHEMICAL COMPOSITION

„P530“ is a special nonmagnetic, austenitic Mn-Cr-N-steel with a Nickel-content of $\leq 2\%$.

C	Mn	Cr	Mo	N	Ni
max. 0,05	18,50-20,00	13,00-14,00	0,40-0,60	0,25-0,40	max. 2,00

2. MECHANICAL PROPERTIES

Following mechanical properties (tested at room temperature) are achieved by a special cold-working process over the full length of the collar:

Yield Strength (min.): 0,2%-offset method	OD less than 4"	120 ksi	830 N/mm ²
	OD 4" to 9 ¹ / ₄ "	110 ksi	760 N/mm ²
	OD 9 ¹ / ₂ " and larger	100 ksi	690 N/mm ²
Tensile Strength	OD less than 4"	130 ksi	900 N/mm ²
	OD 4" and larger	120 ksi	830 N/mm ²
Elongation (min.):		25%	25%
Reduction of area (min.):		50%	50%
Impact energy (min.):		90 ft.lb	122 J
Hardness Brinell: (min.):		260-350 HB	260-350 HB

3. MAGNETIC PROPERTIES Relative permeability: $\leq 1,001$.

4. CORROSION RESISTANCE

- Transgranular SCC: Prevented by special surface treatments (Hammer peening, roller burnishing, shot peening).
- Intergranular SCC: The occurrence of material sensitization is prevented by quenching after warmforging. Each collar is tested according to ASTM A 262, Pract.A and E, last edition.

5. NON-DESTRUCTIVE TESTING

- **Magnetic inspection:** Drill collars are 100% tested by a proprietary probe-testing process using a Förster Magnetomat 1.782. ("Hot Spot"-test). Magnetic permeability of each collar is certified with the printout of probe-testing.
- **Ultrasonic inspection:** Each collar is ultrasonically inspected over 100% of the volume according to ASTM E 114, last edition as a minimum level.

6. GALLING RESISTANCE

„P530“ is due to the chemical composition and the special coldworking process less susceptible to galling than Cr-Ni steels.

Non-Magnetic material optimized for MWD-collars and stabilizers (higher strength and endurance) is available on special request.
P530-Non-Magnetic Drill Collars meet all requirements of API Spec. 7.1, last edition.
All tests are carried out according to ASTM-Standards, last editions.
Prepared / released: B. Holper
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