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**New Extremely Low Carbon Bainitic High-strength Steel Bar
Having Excellent Machinability and Toughness
Produced by TPCP Technology**

要旨

極低炭素ベイナイト組織と制御圧延による析出制御技術を組み合

Table 1 Chemical compositions of steels examined

(mass%)

Extremely low carbon bainitic steel	0.009	0.26	1.99	0.015	0.015	0.034	Tr.	Tr.	Nb, Ti, B
Conventional low alloy steel (SCM435)	0.34	0.22	0.80	0.016	0.014	0.026	1.08	0.21	—

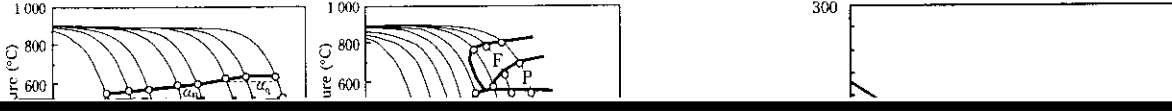
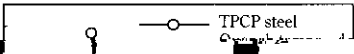


Table 3 Mechanical properties of the TPCP steel bar and the quench-tempered SCM435

TPCP steel	Surface*	730	840	87	26	74
	1/4D	708	818	87	25	72
	1/2D	689	813	85	22	66
Quench-tempered SCM435	Surface*	644	820	79	23	62
	1/4D	638	811	79	22	59
	1/2D	636	807	79	20	52

*15 mm inside from surface

1 500



○ TCP steel

Table 5 Conditions of maximum hardness test

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