

11X11H2B2MΦ, ЭИ962 - Steels of Blade for Steam and Gas Turbine Datasheet

Sheets and strips	B33	GOST 5582-75, TU 14-1-1222-74, TU 14-1-2150-77, TU 14-1-2476-78, TU 14-1-3219-81
Classification, nomenclature and general norms	B30	GOST 5632-72
Long and shaped rolled products	B32	GOST 5949-75, OST 1 90228-76, OST 1 90362-85, TU 14-1-2172-77, TU 14-11-245-88, TU 14-1-1271-75
Classification, nomenclature and general norms	IN 20	OST 1 90005-91
Blanks. Blanks. Slabs	B31	OST 3-1686-90, OST 1 90165-74, OST 1 90305-89, OST 1 90349-84, OST 1 90386-89
Metal forming. Forgings	B03	TU 14-1-1530-75, TU 14-1-2902-80, TU 14-1-2918-80
Welding and cutting of metals. Soldering, riveting	B05	TU 14-1-997-74, TU 14-1-997-2012

Chemical Composition

Standard	C	S	P	Mn	Cr	Si	Ni	Fe	Cu	V	Ti	Mo	W
TU 14-1-2918-80	0.09-0.13	≤0.015	≤0.03	≤0.6	10.5-12	≤0.6	1.5-1.8	Remainder	≤0.3	0.18-0.3	≤0.2	0.35-0.5	1.6-2
TU 14-1-2172-77	0.09-0.13	≤0.025	≤0.03	≤0.6	10.5-12	≤0.6	1.5-1.8	Remainder	≤0.3	0.18-0.3	≤0.2	0.35-0.5	1.6-2
TU 14-1-997-74	0.09-0.13	≤0.025	≤0.03	≤0.6	10.5-12	≤0.6	1.5-1.8	Remainder	≤0.2	0.18-0.3	-	0.35-0.5	1.6-2

Mechanical Properties

Section, mm	holiday t, °C	$s_T s_{0.2}$, MPa	σ_B , MPa	d5, %	y, %	kJ/m^2 , kJ/m^2	Brinell hardness, MPa	H.R.C.
Gradation of property indicators of finished heat-treated parts according to OST 1 90005-91								
-	-	-	830-1030	-	-	-	248-302	22-33
Welded rings according to OST 1 90349-84. Quenching from 1000-1020 °C in oil or air + Tempering at 540-590 °C								
-	-	≥833	≥981	≥12	≥50	≥588	310-388	-
-	-	-	≥882	≥7	-	-	-	-
Welded rings according to OST 1 90349-84. Quenching from 1000-1020 °C in oil or air + Tempering at 650-680 °C								
-	-	≥735	≥833	≥12	≥55	≥686	269-321	-
-	-	-	≥745	≥6	-	-	-	-
Solid rolled rings according to OST 1 90228-76. Normalization at 1000-1020 °C + Quenching in oil or air from 1000-1020 °C + Tempering at 540-590 °C								



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Section, mm	holiday t, °C	$s_T s_{0.2}$, MPa	σ_B , MPa	d5, %	y, %	kJ/m^2 , kJ/m^2	Brinell hardness, MPa	H.R.C.
	-	≥ 833	≥ 980	≥ 10	≥ 50	≥ 588	311-387	-
Hot rolled sheets (1.5-3.9 mm) and cold rolled sheets (0.7-3.9 mm) according to GOST 5582-75. Hardening in air from 1000-1150 °C + Tempering at 560-900 °C, cooling in air								
	-	-	≥ 880	≥ 10	-	-	-	-
Hot rolled sheets (1.5-3.9 mm) and cold rolled sheets (0.7-3.9 mm) according to GOST 5582-75. Annealing at 760-780 °C								
	-	-	≤ 830	≥ 22	-	-	-	-
Forgings TU 14-1-1530-75, TU 14-1-2902-80, TU 14-1-2918-80. Normalization at 1000-1020 °C + Quenching from 1000-1020 °C in oil or air + Tempering								
	640-680	≥ 735	≥ 830	≥ 12	≥ 55	≥ 680	269-321	-
	540-590	≥ 835	≥ 980	≥ 10	≥ 50	≥ 580	311-388	-
Hot rolled and forged rods according to TU 14-1-2172-77. Longitudinal samples. Normalization at 1000-1020 °C + Quenching in oil or in air from 1000-1020 °C + Tempering at 540-590 °C, air cooling								
	540-590	≥ 833	≥ 980	≥ 10	≥ 50	≥ 588	311-388	-
	640-680	≥ 735	≥ 833	≥ 12	≥ 55	≥ 686	269-320	-
Hot-rolled and forged long products according to GOST 5949-75. Normalization at 1000-1020 °C + Quenching in oil or air from 1000-1020 °C + Tempering								
	540-590	≥ 835	≥ 980	≥ 10	≥ 50	≥ 588	-	-
	640-680	≥ 735	≥ 835	≥ 12	≥ 55	≥ 686	-	-

Physical Properties**Heat Treatment****Welding Properties****Machining Properties****Similar or Equivalent Steel Grade**