

Items for Roll Shop & Mills

Sl#	Plant	Item	Required Annual Quantity	Rate / Value converted to INR
1	SSP	Finishin Stand CVC Work Roll	42 Nos	8,70,21,000.00
2	SSP	Roughing Mill Adamite Work Roll	8 Nos	2,51,14,000.00
3	SSP	Backup Roll for RM & Finish Stand (Forged Roll)	2 Nos	187.54
4	SSP	Vertical Edger Roll	2 Nos	45.74
5	SSP	2 Row Taper Roller Bearing for Edger Roll	2 Nos	30.63
6	SSP	4 Row Taper Roller Bearing for Roughing Mill Work Roll	2 Nos	28.68
7	SSP	4Row And 2 Row Taper Roller Bearing for Steckel Mill Work Roll	SET (4 + 2 Nos	26.85
8	ISP	BD Roll for all section of USM	20	30,56,286.70
9	ISP	UR STAND IPE-450 BEAM ROLL	6	14,08,439.31
10	ISP	UR STAND IPE-500 BEAM	6	14,90,303.39
11	ISP	UR STAND VERTICAL ROLL VRR 342 mm	26	1,50,243.35
12	ISP	UF STAND VERTICAL ROLL VFR 342 mm.	40	1,50,242.25
13	ISP	UF STAND IPE-400 BEAM ROLL	20	13,08,075.18
14	ISP	UR STAND IPE-300 BEAM ROLL	4	10,67,982.21
15	ISP	UR STAND IPE-400 BEAM ROLL	6	11,56,690.88
16	ISP	UR STAND IPE-600 BEAM ROLL	6	14,07,154.32
17	ISP	UF STAND IPE-300 BEAM	26	11,56,690.88
18	ISP	UF STAND IPE-450 BEAM	8	12,18,948.30
19	ISP	UF STAND IPE-500 BEAM	16	12,47,777.57
20	ISP	UF STAND IPE-600 BEAM	14	15,41,043.59
21	ISP	Tungsten Carbide Rings	994	avg. 95000/-
22	ISP	Titanium Carbide Rollers	300	avg. 5000/-
23	ISP	Engraving tools	Avg.300 nos.	5000/-
24	ISP	Straightner Roll	36 nos	
25	BSL	Finishing Work Roll - (Hi.Cr.)	48	29,23,166
26	BSL	Finishing Work Roll - (ICDP)	120	19,25,000
27	BSL	Finishing Work Roll - (EN.CR)	48	20,12,792
28	BSL	Roughing Work Roll (FS) R3-5	24	76,82,819
29	BSL	Roughing Work Roll (Hi.Cr.)	20	61,00,000
30	BSL	CRM - I WORK ROLL (1.7%)	20	20,00,000
31	BSL	CRM - II WORK ROLL (1.7%)	20	20,00,000
32	BSL	Roughing Work Roll (Hi.Cr.) Forged Steel	15	

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33	BSL	EDGER (MOD.) R3-5	10	20,79,532
34	BSL	RR2	6	1,08,75,035
35	BSL	E2 EDGER	6	65,43,746
36	BSL	HSM BACK-UP ROLL (3%)	10	2,22,79,494
37	BSL	CRM - I WORK ROLL (3%)	52	23,19,640
38	BSL	CRM - I BACK-UP ROLL (3%)	8	1,62,87,583
39	BSL	CRM - II WORK ROLL (3%)	52	20,13,516
40	BSL	CRM-II B/UP ROLL (3%)	8	86,38,706
41	BSL	CRM - II BACK-UP ROLL (SPM-II)	2	86,39,274
42	BSL	PL-TCM WORK ROLL	90	16,16,204
43	BSL	PL-TCM INTERMEDIATE ROLL	20	28,79,758
44	BSL	PL-TCM BACK UP ROLL	10	73,44,784
45	BSL	SPM - 3 WORK ROLL (TYPE - I)	15	15,18,684
46	BSL	SPM - 3 WORK ROLL (TYPE - II)	10	23,31,171
47	BSL	SPM - 3 BACK UP ROLL	6	78,29,304
48	BSL	HDGL WORK ROLL (TYPE - I)	4	15,90,870
49	BSL	HDGL WORK ROLL (TYPE - II)	4	25,08,836
50	BSL	HDGL BACK-UP ROLL	2	73,44,784
51	RSP	CHOCK ASSY, TOP BACK-UP,DWN:8.504227.A. TOP BACK-UP CHOCK ASSEMBLY 1 SET = 1 ASSEMBLY UNIT(I.E.1 NO. EACH OF TOP OPERATING SIDE & TOP DRIVE SIDE CHOCKS), FITTED WITH ALL CHOCK SPARES. MANUFACTURER : DANIELI & C DRAWING NO : 8.504227.A.	1 Sets.	3,81,48,235.00
52	RSP	CHOCK ASSY,TOP WORK ROLL;DWN:8.504224.E. TOP WORK ROLL CHOCK ASSEMBLY , EXCLUSIVE OF (1) RADIAL & (2) AXIAL BEARINGS. 1 SET = 2 ASSEMBLY UNITS(1 SET EACH OF TOP DRIVE SIDE & TOP OPERATING SIDE CHOCKS). EACH ASSEMBLY UNIT COMPRISE OF THE QUANTITY OF CHOCK SPARES REQUIRED FOR 1 COMPLETE SET OF TOP WORK ROLL CHOCK.	2 Sets.	1,09,70,520.00

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53	RSP	SLEEVE F/SPINDLE WOBBLER FOR SPINDLE WOBBLER OF NEW PM WORK ROLL CHOCK ASSEMBLY. MANUFACTURER : DANIELI SERVICE DRAWING NO : 5.512989.K.	4 Nos.	10,50,247.80
54	RSP	BUFFER,JARRET,MM:BR20S-50R RATING AT 20DEGREE CENT:1)INITIAL TENSION:50KN,2)ELASTIC FORCE:110KN, 3)MAX STROKE:68MM,WEIGHT PER PIECE:37KG MANUFACTURER : ENIDINE TYPE/MODEL : BR20S-50R DRAWING NO : DC4404B2.D	8 Nos	2,48,640.10
55	RSP	PIVOT,FREE FLEX,5020/600,DIA:5/8IN	64 EA	5,864.40
56	RSP	WORK ROLL FOR NEW PLATE MILL (4.3 MTR. WIDE): Roll Material: Double Poured Indifinite Chilled Alloy Cast Iron,with Nodular core., Drawing No: PD/R-228360 , PD/R-228361 , PD/R-228363, PD/ R-228364 , Roll Size: 1120 MM DIA X 4600 MM X 9095 MM, Barrel Dia: 1120 MM, Scrap Dia:1020 MM, Roll Wt.: 48.945 MT, Barrel hardness : 65-70 Degree Shore "D" JIS or 679-709 LE, Neck hardness: 38-40 Degree Shore "D" (JIS) or 502-538 LE. Minimum Barrel Hardness at Scrap Diameter : Should not fall below 60 Degree Shore "D" (JIS) or 650 LE , Assembly Requirement: Roll neck to be shrunk fitted with Labyrinth rings (Spacer rings) as Per Drawing no:PD/ R- 228364 (Ref. Assembly drawing no:PD/R-228363) , Alloying Element (Shell): (indicative): C:3-3.6%, Si:0.7-1.4%,Mn:0.5-1.2%,Cr:0.8- 2.2% ,Ni:4% (min.),Mo:0.2-0.8%, Core: Nodular iron. Minimum Guaranteed Tonnage : 2,00,000 MT.	24 Nos	1,28,27,360.13

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57	RSP	BACKUP ROLL,FOR NEW PLATE MILL (4.3 MTR. WIDE) AS PER DRAWING NO:PD/R-228357,PD/ R-228358,PD/R-228359. 1)SIZE OF THE ROLL: 2200(+ 0.5 /-0.0)MM (BARRE L DIA) X 4300 MM (BARREL LENGTH) X 9860 MM (TOTAL LENGTH). 2) SCRAP DIA OF THE ROLL:2000 MM. 3) MATERIAL: ALLOY FORGED VACUUM DEGASSED STEEL. 4) APPX.WEIGHT:1,70,200 KG. 5) BARREL HARDNESS:53-58 DEG SHORE""D""(640/672LD). 6) NECK HARDNESS:47-52 DEG.SHORE""D""JIS (600/633 LD). 7) MINIMUM HARDNESS AT SCRAP DIAMETER (2000 MM) SHOULD NOT FALL BELOW 50 DEG. SHORE""D""JIS (620 LD). 8) SURFACE FINISH OF BARREL:0.80 MICRON (MIN.). 9) RUN-OUT, ROUNDNESS , CONCENTRICITY TOLERANCE: 0.05 MM,THROUGH OUT THE ROLL. 10) CHEMICAL COMPOSITION (INDICATIVE): C:0.38- 0.48%, SI:0.3-0.6%,MN:0.4-0.8%,CR:2.5-3.6%,MO: 0.50-0.80%, V:0.08-0.15%, NI:0.60%(MAX.), P&S:0.025% (MAX). RETAINED AUSTENITE:4%(MAX.). 11) MINIMUM GUARANTEED TONNAGE:40,00,000 MT. 11) (A) 2 NOS OF PIN TO BE SHRUNK FITTED ON EACH SIDE OF THE ROLL NECK , AS PER DRAWING NO:PD/R-228357, ITEM NO:305. (B) 2 NOS OF ROLL NECK KEY (ITEM NO:302) TO BE FITTED ON EACH SIDE OF ROLL NECK AS PER DRAWING NO:PD/R-228357. ALL THE ROLL NECK KEYS ARE TO BE TIGHTENED BY SCREW ALONGWITH WASHER AS PER ITEM NO:304 & 303 RESPECTIVELY OF THE DRAWING NO:PD/R-228357. DRAWING NO : PD/R-228357 TO 359	2 Nos	6,31,40,040.00
58	RSP	GRINDING WHEEL,CERAMIC,915X100X304.8MM WITH 2 BLOTTERS.GRAIN:CERAMIC, GRADE:NQG36LB OF GRINDWEL NORTON/ 2875A36J5B01 OF TYROLIT/ DA36N8BYY OF 3M/95C36-0 Q4 B9220 OF THELEICO. FOR GRINDING OF HI-CR STEEL WORK ROLL & FORGED STEEL BACK-UP ROLLS OF NEW HSM.	18 Nos.	98,278.81
59	RSP	GRINDING WHEEL,CER.,F/NI GRAIN & ICDP WR 915X100X304.8 MM GRINDING WHEEL WITH 2 BLOTTERS. GRAIN:CERAMIC,GRADE:NQG46LB OF GRINDWEL NORTON/ 43AC46H5B01 OF TYROLIT/ DA36N8BYY OF 3M/95C36-0R4 B9220 OF THELEICO. FOR GRINDING OF NI GRAIN & ICDP WORK ROLLS OF NEW HSM.	128 Nos.	79,306.09

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60	RSP	GREASE,PALMAX L USAGE TEMPERATURE :-10 TO 150 DEG.C. PROPERTIES OF PALMEX L GREASE: CONTAINING SPECIAL LITHIUM COMPLEX SOAP,ORGANIC MOLYBDENUM COMPOUND AND MOLYBDENUM DISULFIDE. THICKENER:SPECIAL -LITHIUM COMPLEX,BASE OIL:MINERAL OIL BASE KINEMATIC VISCOSITY AT 100 DEG C : 17.2 MM2/S (TEST METHOD : ASTM D 445),APPEARANCE : BLACK,BUTTERY,WORKED PENETRATION:300(TEST METHOD:ASTM D 217),DROPPING POINT:235(TEST METHOD:ASTM D 566), CU STRIP CORROSION @ 100 DEG C,24H:PASS (TEST METHOD:ASTM D 4048),OIL SEPARATION @ 100 DEG C,24H:1.3 MASS %(TEST METHOD:FTMS 791C-321 MOD.), OXIDATION STABILITY @ 99 DEG C,100 H:29 (TEST METHOD: ASTM D 942), TIMKEN OK VALUE (COAT METHOD *1) : 8.16 KG (TEST METHOD : ASTM D 2509), CORROSION PREVENTIVE PROPERTIES @ 52 DEG C,48H :#1 (TEST METHOD : ASTM DD 1748-73), FOUR BALL EP L.N.S.L : 618 (TEST METHOD : ASTM D 2596), FOUR BALL EP W.P : 3923 (TEST METHOD : ASTM D 2596), FOUR BALL EP L.W.I : 500 (TEST METHOD : ASTM D 2596).	50,220 Kg.	1,587.00
61	RSP	BACK UP ROLL FOR PLATE MILL (OLD) Roll Material: Alloy Forged Vaccum Degassed Steel, Roll Size: 1500 MM Dia X3000 MM X 6820 MM, Barrel Dia: 1500 MM, Scrap Dia: 1400 MM, Roll Wt.: 64 MT, Drawing No: PD/R -3438 REV-4, Barrel hardness : 55-60 DEG. SHORE "D" JIS or 616-650 LE, Neck hardness: 45-50 DEG. SHORE "D" JIS or 558-588 LE, Minimum Barrel Hardness at Scrap Diameter : Should not fall below 50 Deg. Shore "D" JIS or 588 LE. Assembly Requirement: Roll to be supplied with 2 nos Thrust Rings shrunk fitted on its neck. Thrust rings to be made as per Drg.No PD/R-54577 REV-2. Alloying Elements: % Minimum: Cr = 1.5, Mo = 0.30 & V = 0.10, Other Elements : % Maximum: S = 0.015 & P = 0.015, Minimum Guranteed Tonnage : 12,00,000 MT	2 Nos	1,94,10,440.00

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62	RSP	5 STAND, 4 HIGH, TANDEM MILL, STAND 2-5 WORK ROLL OF CRM: Roll Material: Alloy Forged Vacuum Degassed Steel., Roll Size: 585 MM Dia X1420 MM X 3460 MM., Barrel Dia: 585 MM., Scrap Dia: 545 MM., Roll Wt.: 4.50 MT., Drawing No: PD/R -23903 REV-5 Item-2., Barrel Hardness: 93-95 DEG. SHORE "D" JIS or 822-832 LE, Neck Hardness: 40-45 DEG. SHORE "D" JIS or 526-558 LE, Minimum Barrel Hardness at Scrap Diameter: Hardness at a depth of 20 mm from surface should not fall below 88 Deg. Shore "D" JIS or 796 LE. Assembly Requirement : NIL., Alloying Elements: % Minimum :Cr = 3.0, Mo = 0.25 & V= 0.08., Other Elements : % Maximum: S = 0.012 , P = 0.012 & Ni=0.20., Minimum Guaranteed Tonnage : 60,000 MT Microstructure of the roll shall consists of a Uniform distribution of fine globular carbides in a matrix of fine tempered martensite (i.e absence of accicularity) and minimum retained austenite.	120 EA	14,98,680.00
63	RSP	WORK ROLL FOR PLATE MILL (OLD): Roll Material: Double Poured Indefinite Chilled Alloy Cast Iron, Roll Size : 1003 MM DIA X 3100 MM X 7310 MM Barrel Dia : 1003 MM, Scrap Dia : 932 MM, Roll Wt. : 28.275 MT, Drawing No : PD/R -3437 Rev-4 & PD/R-50921 REV-2, Barrel Hardness: 68-72 Deg Shore 'D' JIS or 679-702 LE, Neck Hardness: 40-45 Deg Shore 'D' JIS or 509-545 LE, Minimum Barrel Hardness at Scrap diameter: Should not fall below 63 Deg Shore 'D' JIS or 650 LE, Assembly Requirement : Rolls to be shrunk fitted with 2 nos of Labyrinth rings (thrust rings), as per Drg. no:PD/R:50921, Rev-2, on the neck , Alloying Elements (shell) : % Minimum Cr= 1.4 ,Ni= 4.2 & Mo= 0.35, (Core) : Grey Iron , Other Elements : % Maximum: S & P = 0.035, Minimum Guaranteed Tonnage : 1,00,000 MT.	28 Nos	43,12,849.17

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64	RSP	Roll Material: Double Poured Indefinite Chilled Alloy Cast Iron, Roll Size : 600 MM dia X 1420 MM X 3460 MM, Barrel Dia : 600 MM, Scrap Dia : 550 MM, Roll Wt. : 4.2 MT, Drawing No : PD/R -23903 Rev-5 Item-1, Barrel Hardness: 80-85 Deg sh 'D' JIS or 739-763 LE, Neck Hardness: 40-45 Deg Sh 'D' JIS or 509-545 LE, Minimum Barrel Hardness at Scrap diameter: Should not fall below 75 Deg Shore 'D' JIS or 718 LE, Assembly Requirement : NIL, Alloying Elements (shell) : % Minimum Cr= 1.7 ,Ni= 4.2 & Mo= 0.35, (Core) : As offered by the manufacturer , Other Elements : % Maximum: S=0.025 & P = 0.035, Minimum Guaranteed Tonnage : 1,00,000 MT.	6 Nos	5,79,127.60
65	RSP	4 HIGH, 5 STAND TANDEM MILL, STAND 1-5 BACK UP ROLL OF CRM: Roll Material: Alloy Forged Vacuum Degassed Steel., Roll Size: 1425 MM dia X 1420 MM X 4047 MM., Barrel Dia: 1425 MM., Scrap Dia: 1295 MM., Roll Wt.: 25.50 MT., Drawing No: PD/R -23955 REV-2., Barrel Hardness: 65-70 DEG. SHORE "D" JIS. or 680-708 LE, Neck Hardness : 40-45 DEG. SHORE "D" JIS or 526-558 LE, Minimum Barrel Hardness at Scrap Diameter: Should not fall below 60 Deg. Shore "D" JIS or 650 LE. Assembly Requirement : NIL., Alloying Elements: % Minimum :Cr = 3.0, Mo=0.30, Ni=0.20 & V = 0.05., Other Elements : % Maximum: S = 0.020 , P = 0.020. , Minimum Guaranteed Tonnage : 10,00,000 MT	3 Nos	65,59,440.00
66	RSP	6 STAND, 4 HIGH, FINISHING MILL BACK UP ROLL OF HOT STRIP MILL: Roll Material: Alloy Forged Vacuum Degassed Steel, Roll Size: 1310 MM dia X 1700 MM X 4715 MM, Barrel Dia: 1310 MM, Scrap Dia: 1180 MM, Roll Wt.: 25 MT, Drawing No.: PD/R -3440 REV-4, Barrel Hardness: 55-60 DEG. SHORE "D" JIS or 616-650 LE. Neck Hardness : 40-45 DEG. SHORE "D" JIS or 526-558 LE. Minimum Barrel Hardness at Scrap Diameter : Should not fall below 50 Deg. Shore "D" JIS or 588 LE. Assembly Requirement: NIL, Alloying Elements : % Minimum: Cr = 3.0, Mo = 0.30 & V = 0.10, Other Elements: % Maximum: S = 0.020 & P = 0.020 , Minimum Guaranteed Tonnage: 18,00,000 MT	22 Nos	70,51,760.00

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67	RSP	FINISHING STD.-I WORK ROLL (HI-CR-IRON) FOR HOT STRIP MLL: Roll Material: High Chrome Iron , Roll Size : 760 MM Dia X 1730 MM X 4260 MM, Barrel Dia : 760 + 2 MM/-0 MM, Scrap Dia : 710 MM, Roll Wt. : 9.10 MT ,Drawing No : PD/R - 51432 Rev-4, Barrel Hardness: 78-82 Deg Shore`D' JIS or 733-749 LE, Neck Hardness: 35-40 Deg Shore`D' JIS or 472-509 LE, Minimum Barrel Hardness at Scrap diameter : Should not fall below 75 Deg Shore`D' JIS or 718 LE, Assembly Requirement: Nil, Alloying Elements (Shell) : % Minimum of Cr = 16 ,Ni=1.10 & Mo=1.5 (Core) : SG Iron , Other Elements : % Maximum: S & P = 0.03, Minimum Guaranteed Tonnage: 2,50,000 MT	25 Nos	12,94,866.04
68	RSP	FINISHING STD.-2-6 WORK ROLL (ICDP) FOR HOT STRIP MLL: Roll Material: Double Poured Indefinite Chilled Alloy Cast Iron, (Roll to be Centrifugally cast), Roll Size: 663 MM Dia X 1730 MM X 4040 MM, Barrel Dia: 663 + 2 MM/-0 MM, Scrap Dia: 612 MM, Roll Wt.: 6.6 MT, Drawing No: PD/R -50979 Rev-3, Barrel Hardness: 80-85 Deg Shore`D' JIS or 739-763 LE, Neck Hardness: 40-45 Deg Shore`D' JIS or 509-545 LE, Minimum Barrel Hardness at Scrap diameter: Should not fall below 75 Deg Shore`D' JIS or 718 LE, Assembly Requirement : NIL, Alloying Elements (Shell): % Minimum Cr=1.7 ,Ni= 4.20 & Mo= 0.350, (Core): As offered by the manufacturer. Other Elements: % Maximum: S=0.025 & P = 0.035, Minimum Guaranteed Tonnage: 1,50,000 MT,	109 Nos	9,15,000.00
69	RSP	4 HIGH ROUGHING STAND - I & II BACK UP ROLL OF HOT STRIP MILL: Roll Material: Alloy Forged Vacuum Degassed Steel, Roll Size: 1310 MM Dia X1736 MM X 4980 MM, Barrel Dia: 1310 MM, Scrap Dia: 1180 MM, Roll Wt.: 27.50 MT, Drawing No.: PD/R -595 REV-1, Barrel Hardness : 55-60 DEG. SHORE "D" JIS or 616-650 LE. Neck hardness:40-45 DEG. SHORE "D" JIS or 526-558 LE. Minimum Barrel Hardness at Scrap Diameter : Should not fall below 50 Deg. Shore "D" JIS or 588 LE , Assembly Requirement: NIL, Alloying Element: % Minimum: Cr = 3.0, Mo = 0.30 & V = 0.10, Other Elements: % Maximum: S = 0.020 & P = 0.020 , Minimum Guaranteed Tonnage : 31,00,000 MT.	2 Nos	77,46,800.00

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70	RSP	R#0 ROLL OF HOT STRIP MILL (SINGLE STAND, 2 HIGH, REVERSING): Roll Material: Alloy Forged Vaccum Degassed Steel., Roll Size: 1100 MM dia X1800 MM X 5260 MM., Barrel Dia: 1100 MM., Scrap Dia: 1005 MM., Roll Wt.: 21.50 MT., Drawing No: PD/R -156604 REV-3, Barrel Hardness: 40-45 DEG. SHORE "D" JIS. or 526-558 LE, Neck Hardness: 40-45 DEG. SHORE "D" JIS or 526-558 LE. Minimum Barrel Hardness at Scrap Diameter: Should not fall below 40 Deg. Shore "D" JIS. or 526 LE, Assembly Requirement: Roll to be supplied with 2 Nos. Abutment Rings shrunk fitted on the Necks. Abutment ring as per Drg. No: PD/R-201687 R-1, Alloying Elements: % Minimum :Cr = 1.40, Mo=0.25, Ni=0.30 & V = 0.07., Other Elements : % Maximum: S = 0.012 , P = 0.012, Minimum Guaranteed Tonnage: 7,00,000 MT	14 Nos	56,68,920.00
71	RSP	ROUGHING STD.- I&II W/ROLL (HI-CR-STEEL) FOR HOT STRIP MILL: Roll Material: High-Chrome-Steel, Roll Size: 910 MM Dia X 1800 MM X 4890 MM, Barrel Dia: 910 MM, Scrap Dia: 825 MM, Roll Wt.: 15 MT, Drawing No: PD/R -53829 Rev -1, Barrel Hardness: 70-75 sh 'D' JIS or 691-718 LE, Neck Hardness: 30-35 Sh 'D' JIS or 440-472 LE, Minimum Barrel Hardness at Scrap diameter: Should not be Fall below 67 Deg. Shore 'D' JIS or 674 LE. Assembly Requirement: Roll to be fitted with 2 nos of shrunk fitted labyrinth rings as per Drawing No. CDB/R-26035 R-1 on the necks, Alloying Elements (Shell) : % minimum Cr = 10, NI= 1.1 & Mo= 1.5, (Core): S.G.Iron. Other Elements : % Maximum: S = 0.025 & P = 0.035, Minimum Guaranteed Tonnage: 8,50,000 MT	21 Nos	-
72	RSP	SINGLE STAND, 4 HIGH, COLD REVERSING, SILICON STEEL MILL, BACK UP ROLL: Roll Material: Alloy Forged Vaccum Degassed Steel., Roll Size: 1220 MM Dia X1270 MM X 3715 MM., Barrel Dia: 1220 MM., Scrap Dia: 1105 MM., Roll Wt.: 17.50 MT., Drawing No: PD/R -62891 REV-3, Barrel Hardness: 65-70 DEG. SHORE "D" JIS or 680-708 LE., Neck Hardness: 40-45 DEG. SHORE "D" JIS or 526-558 LE, Minimum Barrel Hardness at Scrap Diameter: Should not fall below 60 Deg. Shore "D" JIS or 650 LE, Assembly Requirement : NIL., Alloying Elements: % Minimum :Cr = 3.0, Mo=0.30, Ni=0.20 & V = 0.05., Other Elements : % Maximum: S = 0.020 , P = 0.020. , Minimum Guaranteed Tonnage : 1,00,000 MT	9 Nos	50,96,960.00

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73	RSP	FINISHING STAND 2-6 W/ROLL HI-CR-IRON QUALITY FOR HOT STRIP MILL: Roll Material : Adamite (Hi-Cr-Iron), Roll Size: 663 MM dia X 1730 MM X 4040 MM, Barrel Dia: 663 + 2/-0 MM , Scrap Dia: 652 MM, Roll Wt.: 6.80 MT, Drawing No: PD/R - 50979 Rev-3, Barrel Hardness: 60-65 deg sh 'D' JIS or 638 - 662 LE , Neck Hardness : 35-40 deg Sh 'D' JIS or 472 - 517 LE, Minimum Barrel Hardness at Scrap Diameter : Should not fall below 60 Deg Shore`D' JIS or 638 LE, Assembly Requirement : NIL , Alloying element of material in Shell : Cr 15% MIN, Ni : 0.50% min, Mo : 1.00% min.Other elements S & P : 0.03% max ; Core material: S.G.Iron , Minimum Guaranteed Tonnage : 30,000 MT.	2 Nos	11,02,250.00
74	RSP	ROUGHING STAND WORK ROLL (HI-CR-STEEL) FOR HOT STRIP MILL-II: Roll Material: ADAMITE quality, Roll Size: 1200 (+0.2/-0) MM Dia X 440 MM X 2265 MM, Barrel Dia: 1200 (+0.2/-0) MM, Scrap Dia: 1100 MM, Roll Wt.: 8170 KG, Drawing No: PD/R -272156, 272157 , Barrel Hardness & Neck Hardness :45 (+/- 3) DEG. SHORE "D" JIS or 524-559 LE. Minimum Barrel Hardness at Scrap Diameter : Should not fall below 42 Deg.Shore "D" JIS or 524 LE , Assembly Requirement: Roll to be shrunk fitted with sleeves on both end necks as per Drg. No:PD/R-272158, Assembly drawing no: PD/R -272156, Alloying Element: % Minimum Cr = 0.9 , Ni= 0.8 & Mo= 0.35 , Other Elements: % Maximum: S & P = 0.03 , Minimum Guaranteed Tonnage : 25,00,000 MT, Total wt. of assembly: 8625 KG NOTE: Each roll is to be supplied, fitted with all the parts as indicated above & in the drawings.	18 Nos	76,44,786.20

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Sl#	Plant	Item	Required Annual Quantity	Rate / Value converted to INR
75	RSP	FINISHING STD. 1-4 WORK ROLL (HI-CR-IRON) FOR HOT STRIP MILL-II: Roll Material: High-Chrome-Alloy Cast Iron, Roll Size: 825 (+0.1/-0) MM Dia X 2250 MM X 5835 MM, Barrel Dia: 825 (+0.1/-0) MM, Scrap Dia: 735 MM, Roll Wt.: 13769.20 KG, Drawing No.: PD/R -272146,272147,272148,272149, 272150, Barrel Hardness : 69-75 DEG. SHORE "D" JIS or 685-718 LE. Neck hardness: 35-45 DEG. SHORE "D" JIS or 472-545 LE. Minimum Barrel Hardness at Scrap Diameter : Should not fall below 65 Deg.Shore "D" JIS or 662 LE , Assembly Requirement: Roll to be shrunk fitted with sleeves on M/S neck & D/S neck for radial bearings and for Thrust bearing seating area as per Drg. No:PD/R-272148, 272149 & 272150, Assembly drawing no:PD/R -272146, Alloying Element (Shell): % Minimum: Cr = 16.0, Ni= 1.1 & Mo= 1.5, Core: S.G.Iron, Other Elements: % Maximum: S & P = 0.03 , Minimum Guaranteed Tonnage : 3,06,000 MT.,Total wt. of assembly:13992.20 KG NOTE: Each roll is to be supplied, fitted with all the parts as indicated above & in the drawings.	252 Nos	33,42,664.83
76	RSP	FINISHING STD. 5-7 WORK ROLL (NI-GRAIN) FOR HOT STRIP MILL-II: Roll Material: ICDP Nickel Grain alloy Cast Iron, Roll Size: 680 (+0.1/-0) MM Dia X 2450 MM X 5535 MM, Barrel Dia: 680 (+0.1/-0) MM, Scrap Dia: 600 MM, Roll Wt.: 9354.30 KG, Drawing No.: PD/R -272151,272152,272153,272154, 272155, Barrel Hardness : 78-82 DEG. SHORE "D" JIS or 730-749 LE. Neck hardness: 35-44 DEG. SHORE "D" JIS or 472-538 LE. Minimum Barrel Hardness at Scrap Diameter : Should not fall below 72 Deg.Shore "D" JIS or 702 LE , Assembly Requirement: Roll to be shrunk fitted with sleeves on M/S neck & D/S neck for radial bearings and for Thrust bearing seating area as per Drg. No:PD/R-272153, 272154 & 272155, Assembly drawing no:PD/R -272151, Alloying Element (Shell): % Minimum Cr=1.7 ,Ni= 4.20 & Mo= 0.350,, Core: S.G.Iron (ductile cast iron), Other Elements: % Maximum: S & P = 0.03 , Minimum Guaranteed Tonnage : 1,95,000 MT., Total wt. of assembly:9437.80 KG NOTE: Each roll is to be supplied fitted with all parts as indicated above & in the drawings	288 Nos	18,27,768.09

Items for Roll Shop & Mills

Sl#	Plant	Item	Required Annual Quantity	Rate / Value converted to INR
77	RSP	ROUGH. STD & FIN. STD 1-4 BACK UP ROLL FOR FOR HOT STRIP MILL-II: Roll Material: Alloy Forged Vacuum Degassed Steel, Roll Size: 1550 (+0.5/-0) MM Dia X 2230 MM X 5934 MM, Barrel Dia: 1550 (+0.5/-0) MM, Scrap Dia: 1400 MM, Roll Wt.: 47614.20 KG, Drawing No.: PD/R -272137,272138, 272141,272142 , Barrel Hardness : 65-71 DEG. SHORE "D" JIS or 685-718 LE. Neck hardness: 37-43 DEG. SHORE "D" JIS or 472-545 LE. Minimum Barrel Hardness at Scrap Diameter : Should not fall below 60 Deg.Shore "D" JIS or 662 LE , Assembly Requirement:Roll to be supplied with 4 nos of pin (2 nos fitted on each side), 2nos of lock plate with hexagonal socket head bolt (1 no on each side) and 4 nos of rest buttons fitted at both the ends. PIN drawing no:PD/R-272141, Lock plate drawing no:PD/R-272142, Assembly drawing no:PD/R-272137, Alloying Element: % Minimum: Cr = as per drawing no:PD/R-272138, Other Elements: % Maximum: S = 0.020 & P = 0.020 , Minimum Guaranteed Tonnage : 32,00,000 MT., Total wt. of assembly:47664.60 KG. NOTE: Each roll is to be supplied fitted with all parts as indicated above & in the drawings,Drawing no:PD/R-272137	36 Nos	1,41,61,440.00
78	RSP	FIN. STD 5-7 BACK UP ROLL FOR FOR HOT STRIP MILL-II: Roll Material: Alloy Forged Vacuum Degassed Steel, Roll Size: 1550 (+0.5/-0) MM Dia X 2230 MM X 5830 MM, Barrel Dia: 1550 (+0.5/-0) MM, Scrap Dia: 1400 MM, Roll Wt.: 46254.50 KG, Drawing Nos.: PD/R -272139,272140, 272141,272142 , Barrel Hardness : 65-71 DEG. SHORE "D" JIS or 680-714 LE. Neck hardness: 37-43 DEG. SHORE "D" JIS or 524-547 LE. Minimum Barrel Hardness at Scrap Diameter : Should not fall below 60 Deg.Shore "D" JIS or 648 LE , Assembly Requirement:Roll to be supplied with 4 nos.of Pins (2nos.fitted on each side), 2 nos. of Lock Plate with hexagonal socket head bolt (1 no.on each side) and 4 nos. of Rest buttons fitted at both the ends. PIN drawing no:PD/R-272141, Lock plate drawing no:PD/R-272142, Assembly drawing no:PD/R-272139, Alloying Element: % Minimum: Cr = as per drawing no:PD/R-272140, Other Elements: % Maximum: S & P = 0.020 , Minimum Guaranteed Tonnage : 19,12,500 MT., Total wt. of assembly:46304.90 KG NOTE: Each roll is to be supplied fitted with all parts as indicated above & in the drawings, Drawing no:PD/R-272139	34 Nos	1,37,32,108.00

Items for Roll Shop & Mills

Sl#	Plant	Item	Required Annual Quantity	Rate / Value converted to INR
79	RSP	EDGER ROLL (ADAMITE QUALITY) FOR HOT STRIP MILL-II: Roll Material: ADAMITE quality, Roll Size: 1200 (+0.2/-0) MM Dia X 440 MM X 2265 MM, Barrel Dia: 1200 (+0.2/-0) MM, Scrap Dia: 1100 MM, Roll Wt.: 8170 KG, Drawing No: PD/R -272156, 272157 , Barrel Hardness & Neck Hardness :45 (+/- 3) DEG. SHORE "D" JIS or 524-559 LE. Minimum Barrel Hardness at Scrap Diameter : Should not fall below 42 Deg.Shore "D" JIS or 524 LE , Assembly Requirement: Roll to be shrunk fitted with sleeves on both end necks as per Drg. No:PD/R-272158, Assembly drawing no: PD/R -272156, Alloying Element: % Minimum Cr = 0.9 , Ni= 0.8 & Mo= 0.35 , Other Elements: % Maximum: S & P = 0.03 , Minimum Guaranteed Tonnage : 25,00,000 MT, Total wt. of assembly: 8625 KG NOTE: Each roll is to be supplied, fitted with all the parts as indicated above & in the drawings.	18 Nos	20,08,984.16

Items for Roll Shop & Mills

Sl#	Plant	Item	Required Annual Quantity	Rate / Value converted to INR
80	RSP	SEAL,T-BEARING,DDSS 76",DWN:8.494750.P T-BEARING SEAL DDSS 76" ,,"DANIELI HDB,ITEM NO.0.551627.D, AS PER DRAWING NUMBER :8.494750.P,FOR NEW PLATE MILL BACK-UP CHOCK ASSEMBLIES. MANUFACTURER : DANIELI & C SPA DRAWING NO : 8.494750.P	10 Nos.	1,65,074.60
81	RSP	T-WATER BARRIER DDSS 76",DWN:494750.P T-WATER BARRIER DDSS 76" ,"DANIELI HDB",ITEM NO.0.551628.M, AS PER DRAWING NUMBER :8.494750.P,FOR NEW PLATE MILL BACK-UP CHOCK ASSEMBLIES. MANUFACTURER : DANIELI & C SPA DRAWING NO : 494750.P	15 Nos.	1,46,000.00
82	RSP	LABYRINTH DDSS 54" W/BUMPERS,8.494750.P LABYRINTH DDSS 54" WITH BUMPERS,"DANIELI HDB" , ITEM NO.0.551629.N. AS PER DRAWING NUMBER :8.494750.P,FOR NEW PLATE MILL BACK-UP CHOCK ASSEMBLIES. MANUFACTURER : DANIELI & C SPA DRAWING NO : 8.494750.P	10 Nos.	2,38,684.39

Items for Roll Shop & Mills

Sl#	Plant	Item	Required Annual Quantity	Rate / Value converted to INR
83	RSP	Item name : WORK ROLL FOR ROUGHING STAND OF HSM-II AS PER DRAWING NO: PD/R - 272143, 272144,272145 ROLL MATERIAL: HIGH-CHROME-STEEL, ROLL SIZE:1200 (+0.1/-0)MM DIA X 2250 MM X 5780 MM, BARREL DIA:1200 (+0.1/-0) MM, SCRAP DIA: 1100 MM, ROLL WT.: 29321.30 KG, BARREL HARDNESS:75-80 DEG. SHORE"D"JIS OR 718-739LE. NECK HARDNESS: 40(+/- 5) DEG.SHORE "D" JIS OR 509 (+/-36) LE. MINIMUM BARREL HARDNESS AT SCRAP DIAMETER SHOULD NOT FALL BELOW 70 DEG.SHORE "D" JIS OR 691 LE, ASSEMBLY REQUIREMENT: ROLL TO BE SHRUNK FITTED WITH 2 NOS.OF LABYRINTH RINGS (SLEEVE) AS PER DRAWING NO: PD/R-272145 AND TO BE FITTED WITH OTHER COMPONENTS AS PER ASSEMBLY DRAWING NO:PD/R-272143, ALLOYING ELEMENTS: % MINIMUM: CR= 10.0, NI= 1.1 & MO= 1.5,CORE: S.G.IRON, OTHER ELEMENTS: % MAXIMUM: S=0.025 & P=0.035, MINIMUM GUARANTEED TONNAGE : 12,75,000 MT., TOTAL WT. OF ASSEMBLY:29836.50 KG. NOTE: EACH ROLL IS TO BE SUPPLIED,FITTED WITH ALL THE PARTS AS PER DRAWING NUMBERS INDICATED ABOVE.DRAWING NO:PD/R-272143	8 Nos.	6,43,00,000.00