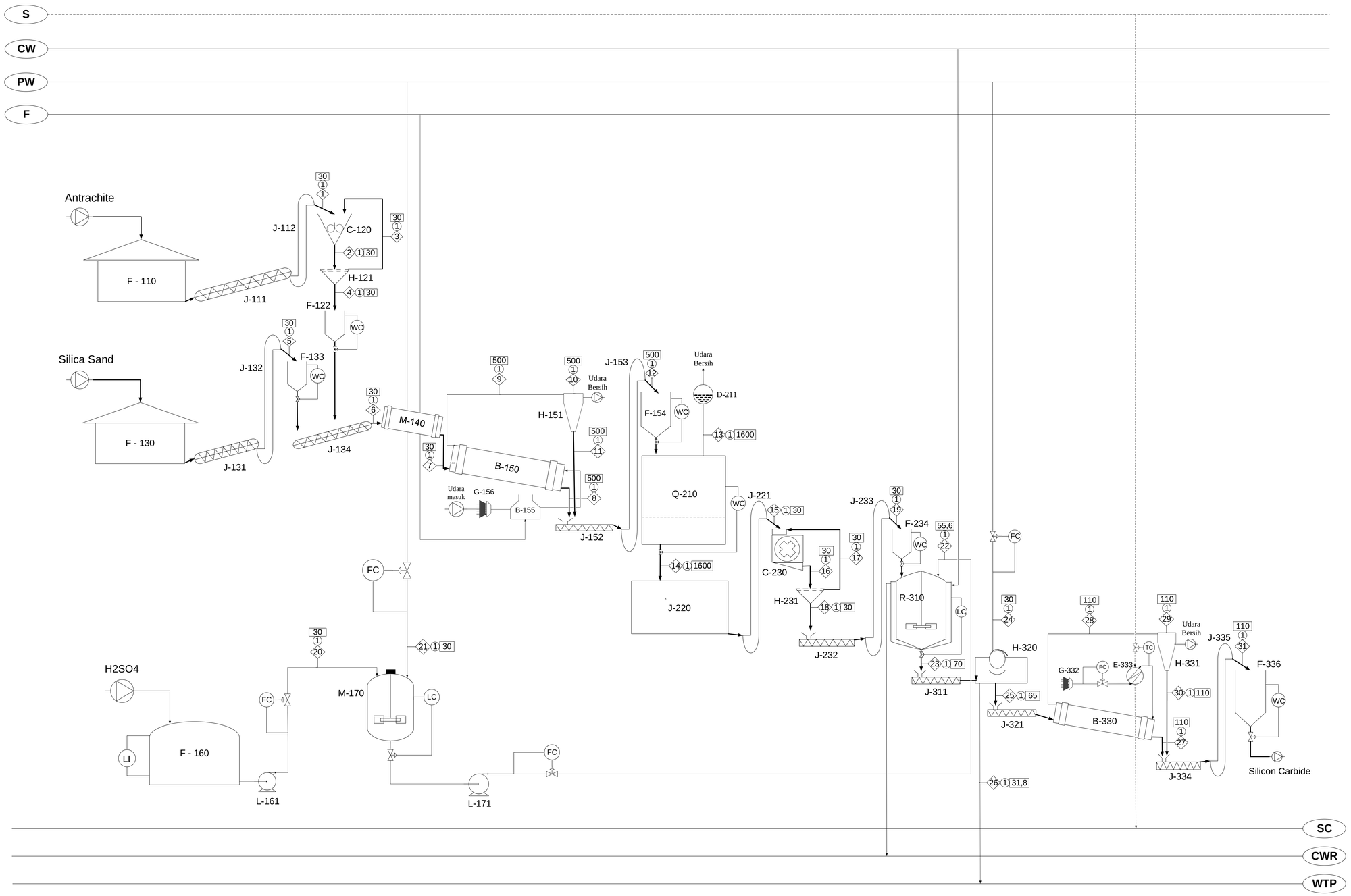
FLOWSHEET PRA-RENCANA PABRIK SILICON CARBIDE DARI SILICA DIOXIDE DAN CARBON DENGAN MENGGUNAKAN ELECTRIC FURNANCE



KETERANGAN :

▭	Temperatur ; °C	CW	Cooling Water
◇	Aliran Massa ; kg/jam	CWR	Cooling Water Return
○	Tekanan ; atm	PW	Process Water
S	Steam	WTP	Water Treatment Plant
SC	Steam Condensate		

NO	KODE	NAMA ALAT
1	F - 110	Gudang Antrasit
2	J - 111	Belt Conveyor 1
3	J - 112	Bucket Elevator 1
4	C - 120	Roll Mill
5	H - 121	Screen Roll Mill
6	F - 122	Hopper 1
7	F - 130	Gudang Pasir Kuarsa
8	J - 131	Belt Conveyor 2
9	J - 132	Bucket Elevator 2
10	F - 133	Hopper 2
11	J - 134	Belt Conveyor 3
12	M - 140	Drum Mixer
13	B - 150	Rotary Pre Heated Kiln
14	G - 156	Blower 1
15	B - 155	Burner
16	H - 151	Cylone 1
17	J - 152	Screw Conveyor 1
18	J - 153	Bucket Elevator 3
19	F - 154	Hopper 3
20	F - 160	Tangki Penampung H2SO4 98%
21	L - 161	Pompa H2SO4 98%
22	M - 170	Tangki Pengenceran
23	L - 171	Pompa H2SO4 30%
24	Q - 210	Electric Furnace
25	D - 211	Molecular Sieve
26	J - 220	Cooling Yard
27	J - 221	Bucket Elevator 4
29	C - 230	Hammer Mill
30	H - 231	Screen Hammer Mill
31	J - 232	Screw Conveyor 2
32	J - 233	Bucket Elevator 5
33	F - 234	Hopper 4
34	R - 310	Cone Reaktor
35	J - 311	Screw Conveyor 3
36	H - 320	Washer
37	J - 321	Screw Conveyor 4
38	B - 330	Rotary Dryer
39	G - 332	Blower 2
40	E - 333	Heater
41	H - 331	Cyclone 2
42	J - 334	Screw Conveyor 5
43	J - 335	Bucket Elevator 6
44	F - 336	Silo

Aliran / Komponen	1	2	3	4	5	6	7	8	9	10	11	12	13
C	3713,40	3713,40	185,670	3899,07		3899,07	3899,07	3860,08	38,9907	0,3899	38,6008	3898,68	
H	39,7580	39,7580	1,9879	41,7460		41,7460	41,75	41,3285	0,4175	0,0042	0,4133	41,7418	41,7418
O2	198,790	198,790	9,9395	208,730		208,730	208,73	206,642	2,0873	0,0209	2,0664	208,709	
N2	3,9758	3,9758	0,1988	4,1746		4,1746	4,17	4,1328	0,0417	0,0004	0,0413	4,1742	86,4658
SiO2					6251,52	6251,52	6251,52	6189,00	62,5152	0,6252	61,8900	6250,89	
Al2O3					9,5252	9,5252	9,53	9,4299	0,0953	0,0010	0,0943	9,5242	
Fe2O3					0,7645	0,7645	0,76	0,7569	0,0076	0,0001	0,0076	0,7644	
TiO2					0,4700	0,4700	0,47	0,4653	0,0047	0,0000	0,0047	0,4699	
CaO					1,5666	1,5666	1,57	1,5510	0,0157	0,0002	0,0155	1,5665	
MgO					0,1316	0,1316	0,13	0,1303	0,0013	0,0000	0,0013	0,1316	
H2O	19,8790	19,8790	0,9940	20,8730	2,5818	23,4548	23,45		23,4548	23,4548			
CO2													317,053
CO													5250,75
SiC													
Al2(SO4)3													
Fe2(SO4)3													
Ti(SO4)2													
CaSO4													
MgSO4													
H2SO4													
Total (kg)	3975,80	3975,80	198,790	4174,60	6266,56	10441,15	10441,15	10313,52	127,6318	24,4966	103,1352	10416,66	5696,01

Aliran / Komponen	14	15	16	17	18	19	20	21	22	23	24	25	26
C	436,731	436,731	436,731	21,8365	458,567	458,567				458,567		458,567	
H													
O2													
N2													
SiO2	625,089	625,089	625,089	31,2545	656,344	656,344				656,344		656,344	
Al2O3	9,5242	9,5242	9,5242	0,4762	10,0004	10,0004				0,2000		0,2000	
Fe2O3	0,7644	0,7644	0,7644	0,0382	0,8027	0,8027				0,0161		0,0161	
TiO2	0,4699	0,4699	0,4699	0,0235	0,4934	0,4934				0,0099		0,0099	
CaO	1,5665	1,5665	1,5665	0,0783	1,6448	1,6448				0,0329		0,0329	
MgO	0,1316	0,1316	0,1316	0,0066	0,1382	0,1382				0,0028		0,0028	
H2O							0,7717	87,4568	88,2285	94,4791	11259,13	1032,15	10321,5
CO2													
CO													
SiC	3750,54	3750,54	3750,54	187,527	3938,06	3938,06				3938,06		3938,06	
Al2(SO4)3										32,8602		2,9873	29,8729
Fe2(SO4)3										1,9665		0,1788	1,7878
Ti(SO4)2										1,4507		0,1319	1,3188
CaSO4										3,9146		0,3559	3,5588
MgSO4										0,4062		0,0369	0,3693
H2SO4							37,8122		37,8122	3,7812		0,3437	3,4375
Total (kg)	4824,81	4824,81	4824,81	241,241	5066,05	5066,05	38,5839	87,4568	126,041	5192,09	11259,13	6089,42	10361,81

Aliran / Komponen	27	28	29	30	31
C	453,982	4,5857	0,0459	4,5398	458,521
H					
O2					
N2					
SiO2	649,780	6,5634	0,0656	6,4978	656,278
Al2O3	0,1980	0,0020	0,0000	0,0020	0,2000
Fe2O3	0,0159	0,0002	0,0000	0,0002	0,0161
TiO2	0,0098	0,0001	0,0000	0,0001	0,0099
CaO	0,0326	0,0003	0,0000	0,0003	0,0329
MgO	0,0027	0,0000	0,0000	0,0000	0,0028
H2O	10,3215	1021,82	1021,82	0,0000	10,3215
CO2					
CO					
SiC	3898,68	39,3806	0,3938	38,9868	3937,67
Al2(SO4)3	2,9574	0,0299	0,0003	0,0296	0,0591
Fe2(SO4)3	0,1770	0,0018	0,0000	0,0018	0,0035
Ti(SO4)2	0,1306	0,0013	0,0000	0,0013	0,0026
CaSO4	0,3523	0,0036	0,0000	0,0035	0,0070
MgSO4	0,0366	0,0004	0,0000	0,0004	0,0007
H2SO4	0,3403	0,0034	0,0000	0,0034	0,0068
Total (kg)	5017,02	1072,40	1022,33	50,07	5063,13

FLOWSHEET PABRIK SILICON CARBIDE DARI SILICON DIOXIDE DAN CARBON MENGGUNAKAN ELECTRIC FURNANCE

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