

Analysis of limestone, water & instrument air

Lime-Stone:

Absorbent Name	LIMESTONE		
Grain Size	Medium		
Bond Index	13kWh/short-ton		

Type of Absorbent	☒ Rock ☐ Powder ☐ Slurry ☐ Others :
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Feed Condition to Absorber	☐ Powder ☒ Slurry 30 wt% ☐ Others :
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Absorbent Composition			Limestone			Note
			Design	Normal	Guarantee	
CaCO ₃	wt%-d		79 (*1)	-	89 (*1)	
Dolomite(MgCa(CO ₃) ₂)	wt%-d		0	-	0	
Inert	CaO	wt%-d	47-51.0 (*1)	-	-	
	MgO	wt%-d	0.9-2.0	-	-	
	Cl ₂	wt%-d	<0.015	-	-	
	Al ₂ O ₃	wt%-d	1.19-2.1	-	-	
	Si ₂ O ₃	wt%-d	2.1-4.5	-	-	
	Fe ₂ O ₃	wt%-d	0.45-1.0	-	-	
	TiO ₂	wt%-d	<0.02	-	-	
	Na ₂ O	wt%-d	<0.16	-	-	
	K ₂ O	wt%-d	<0.01	-	-	
	P ₂ O ₅	wt%-d	Traces	-	-	
	LOI	wt%-d	39.0-41.3	-	-	
	Total Sulphur	wt%-d	<0.1	-	-	
	Mn ₂ O ₃	wt%-d	<0.12	-	-	
Density	kg/m ³		1400			For volume
	kg/m ³		1700			For torque, drive calculation and structural load calculation

N/D : Not detectable

(*1) Design condition limestone purity CaCO₃ 79%; Guarantee condition limestone purity CaCO₃ 89%

Process Water:

			Raw water (*1)		
			Minimum	Normal	Maximum
Temperature at B.L.	deg.C			27	45
Pressure at B.L.	MPaG		-	-	-
pH	-		-	7.5	-
S.S.	mg/l		-	-	-
Composition					
	Ca ²⁺	ppm CO ₃ Ca	-	38	-
	Mg ²⁺	ppm CO ₃ Ca	-	22	-
	Na ⁺	ppm CO ₃ Ca	-	-	-
	K ⁺	ppm CO ₃ Ca	-	-	-
	Oil and Grease	mg/l	-	-	-
	N ₂ H ₄	mg/l	-	-	-
	HCO ₃ ⁻	ppm CO ₃ Ca	-	-	-
	CO ₃ ²⁻	ppm CO ₃ Ca	-	-	-
	Cl ⁻	ppm CO ₃ Ca	-	20	-
	SO ₄ ²⁻	ppm CO ₃ Ca	-	17	-
	Total Silica	mg/l	-	7	-
	To-NH ₄	mg/l	-	-	-
	Fe ²⁺ (total)	mg/l	-	0.1	-
	Cd	mg/l	-	-	-
	NO ₃ ⁻	ppm CO ₃ Ca	-	-	-
	B	mg/l	-	-	-
	To-Inorganic	mg/l	-	-	-
	Cu	microg/l	-	-	-
	Hg	microg/l	-	-	-
	Pb	microg/l	-	-	-
	NO ₂ ⁻	microg/l	-	-	-
	F ⁻	microg/l	-	-	-
	Cr ⁶⁺	microg/l	-	-	-
	Ni	microg/l	-	-	-
	To-Zn	microg/l	-	-	-
BOD5	mg/l		-	-	-
COD Cr	mg/l		-	-	-
Total alkalinity	ppm CO ₃ Ca		-	54	-
Total Hardness	ppm CO ₃ Ca		-	-	-
Turbidity	NTU		-	2	-
Conductivity	micro m/m		-	-	-

(*1) Raw water Analysis is taken from tender documents (Part A-Section VI - Sub section II-A5)

Cooling Water

Water Source		DM Water					
		Available Value			Design Value		
		Minimum	Normal	Maximum	Minimum	Normal	Maximum
Supply Temp. at TP	deg.C	-	-	-	-	35(*1)	-
Return Temp. at TP	deg.C	-	-	-	-	45(*1)	-
ΔT	deg.C	-	-	-	-	10	-
Supply Press. at TP	MPaG	-	-	-	-	0.6(*1)	-
Return Press. at TP	MPaG	-	-	-	-	0.3(*1)	-

(*1) Assumed value - (based on sister unit inputs)

Instrument Air:

Air Source		-					
Dew Point (atmospheric)	deg.C	≤ -40					
Oil Mist Contamination		☐ Contaminated ☒ Not Contaminated					
		Available Value			Design Value		
		Minimum	Normal	Maximum	Minimum	Normal	Maximum
Temperature at TP	deg.C	-	-	-	-	45(*1)	-
Pressure at TP	MPaG	-	-	-	0.55	-	0.8

(*1) In summer