



L.V INTERNATIONAL CO., LTD

QUESTIONNAIRE FOR KILN AND COOLER

Date	:	
Customer Name	:	
Address	:	
Contact Person	:	

L.V International Company Limited

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No.	Question	Unit	Answer
1.	<p><u>GENERAL INFORMATION</u></p> <p>Altitude, meter above sea level Ambient temp. (min/max) Operation days per year of kiln</p>	<p>m °C d/y</p>	
2.	<p><u>KILN AND PREHEATER</u></p> <p>Original kiln and preheater supplier Type of preheater and no. of stages No. of strings in preheater With or without calciner Dimension of calciner (Height, Dia., Width) Tertiary duct diameter Cyclone sizes Central pipes in cyclones Kiln dimensions (Length x Diameter) Kiln inclination Kiln max. rpm</p>	<p>- - - w / wo m m - yes / no m x m % rpm</p>	
3.	<p><u>COOLER</u></p> <p>Original cooler supplier Type of cooler Air beam technology on first grate Width and length of cooler No. of grates Fixed cooler inlet Total cooling air installed Area of grate 1, 2 ... and total area</p>	<p>- - yes / no m / m - yes / no Nm³/min (Am³/min) m²</p>	
4.	<p><u>YEAR OF INSTALLATION</u></p> <p>Kiln and cooler</p>	<p>-</p>	
5.	<p><u>CAPACITY OF PYRO PROCESS</u></p> <p>Present production Production guaranteed by supplier Average production (last 12 months) Present specific heat consumption Heat consumption guaranteed by supplier Average heat consumption (last 12 month)</p>	<p>t/d t/d t/d kcal/kg kcal/kg kcal/kg</p>	

No.	Question	Unit	Answer
6.	<p><u>KILN FEED DETAILS</u></p> <p>Kiln feed system (elevator, pneumatic) -</p> <p>If pneumatic trans.: direct feed Yes / no</p> <p>Lime Saturation Factor, LSF %</p> <p>Silica Module, MS -</p> <p>Alumina Module, MA -</p> <p>Residue on 90 µm sieve %</p> <p>Residue on 200 µm sieve %</p> <p>Temperature of feed °C</p> <p>Heat of reaction (excl.) kcal/kg</p> <p>Moisture content (free and combined H₂O) %, %</p> <p>Loss on Ignition (LOI) %</p> <p>Organic carbon content %</p> <p>SO₃ content %</p>		
7.	<p><u>BY-PASS</u></p> <p>By-pass installed Yes / no</p> <p>Separate dedusting Yes / no</p> <p>Design capacity of by-pass system % bypass</p> <p>Bypass fan flow, design Am³/h</p>		
8.	<p><u>CLINKER DETAILS</u></p> <p>Lime Saturation Factor, LSF %</p> <p>Silica Module, MS -</p> <p>Alumina Module, MA -</p> <p>Average free lime %</p> <p>Residue on 5 mm sieve %</p> <p>Average clinker temperature °C</p> <p>SO₃ content %</p>		
9.	<p><u>FUEL DETAILS</u></p> <p>Type of fuel to kiln -</p> <p>Type of fuel to calciner -</p> <p>Net heat value of fuel(s) kcal/kg</p> <p>Ash content %</p> <p>Fineness of coal dust (Res. 90 µm) %</p> <p>Moisture content %</p> <p>Sulphur content %</p>		
10.	<p><u>KILN BURNER DATA</u></p> <p>Burner supplier and type -</p> <p>Fuel flow capacity kg/hr</p> <p>Primary air fan flow, design Am³/min</p> <p>Primary air fan pressure, design mbar</p> <p>Actual fan flow Am³/min</p> <p>Actual fan pressure mbar</p>		

No.	Question	Unit	Answer
11.	<u>ID-FAN (PREHEATER) DATA</u> Fan supplier Fan motor power installed (name plate) Fan gas flow, design Fan pressure, design Inlet temperature, design Actual fan motor power consumption Actual gas flow at fan inlet Actual pressure at fan inlet Fan speed, max Variable speed drive Fan speed, range of regulation Actual fan speed Actual fan damper position	- kW Am ³ /h mbar °C kW Am ³ /h mbar rpm yes / no ? – 100 % rpm %	
12.	<u>FILTER FAN DATA</u> Fan supplier Fan motor power installed (name plate) Fan gas flow, design Fan pressure, design Inlet temperature, design Actual fan motor power consumption Actual gas flow at fan inlet Actual pressure at fan inlet Fan speed, max Variable speed drive Fan speed, range of regulation Actual fan speed Actual fan damper position	- kW Am ³ /h mbar °C kW Am ³ /h mbar rpm yes / no ? – 100 % rpm %	
13.	<u>KILN MOTOR DATA</u> Motor power installed (name plate) Actual power consumption	kW kW	
14.	<u>COOLER EXCESS AIR FAN</u> Fan supplier Fan motor power installed (name plate) Fan gas flow, design Fan pressure, design Inlet temperature, design Actual fan motor power consumption Actual gas flow at fan inlet Actual pressure at fan inlet Fan speed, max Variable speed drive Fan speed, range of regulation Actual fan speed Actual fan damper position	- kW Am ³ /h mbar °C kW Am ³ /h mbar rpm yes / no ? – 100 % rpm %	

No.	Question	Unit	Answer
15.	<p><u>OPERATION DATA</u></p> <p>Kiln feed amount</p> <p>Preheater outlet pressure</p> <p>Preheater outlet temperature</p> <p>O₂ at kiln inlet</p> <p>O₂ at preheater outlet</p> <p>CO at kiln inlet</p> <p>CO preheater outlet</p> <p>Firing rate, kiln</p> <p>Firing rate, calciner</p> <p>Bottom cyclone stage temperature</p> <p>Kiln speed</p> <p>Tertiary air temperature</p> <p>Total cooler fan flow</p> <p>Excess air temperature</p> <p>Avg. clinker temperature</p> <p>LOI of material from bottom stage to kiln</p> <p>SO₃ content in material to kiln</p> <p>Cl content in material to kiln</p>	<p>t/h</p> <p>mbar</p> <p>°C</p> <p>%</p> <p>%</p> <p>%</p> <p>%</p> <p>kg/h</p> <p>kg/h</p> <p>°C</p> <p>rpm</p> <p>°C</p> <p>Am³/h</p> <p>°C</p> <p>°C</p> <p>%</p> <p>%</p> <p>%</p>	
16.	<p><u>PREFERRED BENEFIT</u> (give priority from 1 to 4, 1 is highest priority)</p> <p>Production increase :</p> <p>Power saving :</p> <p>Waste fuel firing :</p> <p>Decrease of emission (Nox, dust)</p>		

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17.	<u>ELECTRICITY AND CONTROL</u> + Cycle + High Tension + Low Tension	Hz Voltage for more than kW Voltage for less than kW	
18.	<u>ANY ADDITIONAL INFORMATION</u> <u>AND SPECIAL REQUIREMENTS</u>		

DRAWINGS REQUIRED

PROCESS FLOW SHEET

KILN AND PREHEATER GENERAL DRAWINGS

COOLER DRAWINGS

FAN CHARACTERISTIC CURVES (ID-FAN, FILTER FAN, COOLER FANS)

LABORATORY ANALYSIS OF KILN FEED, FILTER DUST (W/O RAWMILL), CLINKER, FUEL ASH

HARDCOPYS OF PREHEATER, KILN AND COOLER SCREENS DURING STABLE OPERATION