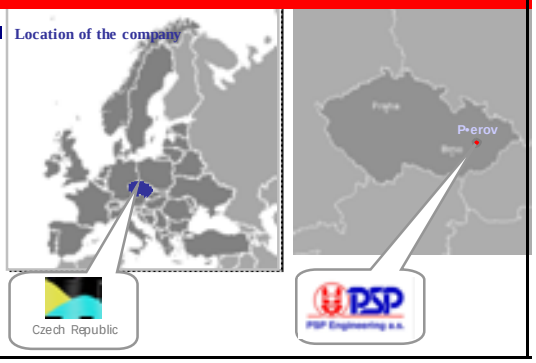
PSP Engineering a.s.

IKN

Pyroprocess Technology

Location of the company



The history of the PSP Engineering - highlights

1852 - Establishment of the Heinik - Mendl Company – the first machinery production in Přerov

1951 - Establishment of the national enterprise Přerovské strojírny

1990 - Transformation of Přerovské strojírny into the joint-stock company

1991 - Creation of the new company PSP Engineering

1995 - Transformation of PSP Engineering into the joint-stock company with 100 % shareholder Přerovské strojírny a.s.

1998 - Creation of the Production Division in PSP Engineering a.s.

1999 - Change of the owners and increase of equity capital of the PSP Engineering a.s.

2003 – PSP Beteiligungs GmbH, a sister company of the IKN GmbH, has bought the majority stake of PSP Engineering

Manufacturing Premises

Our Esteemed Customers:

Who choose PSP Engineering?

- § Holcim
- § Lafarge
- § Heidelberg Cement
- § Alas International
- § Colacem
- § Italcementi
- § Dyckerhoff
- § João Santos Group

- §Sagar Cements
- §Andhra cements
- §Voltaimpex

1960's in India:
Madras cements
UP Cements, Churk
Satna Cements

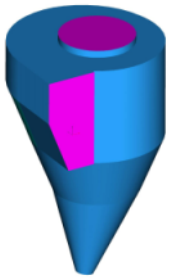
LUCY 6 Stage Preheater with Precalciner – Sagar Cements, India – 4500 TPD – 2008

Total preheater tower Height is only 114.2m

Preheater Cyclones

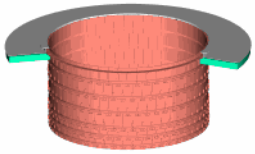
9.2m Dia at 5 Stages

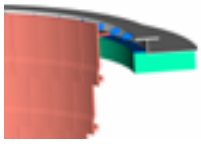
7.4m Dia Top Stage Twin Cycloner

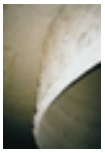


Dip Tube

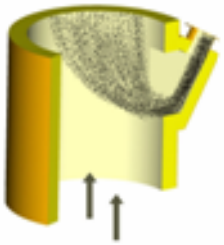
5th & 6th Stages - Segmented Thimbles





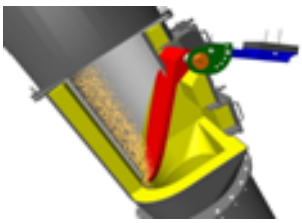


Splash Boxes

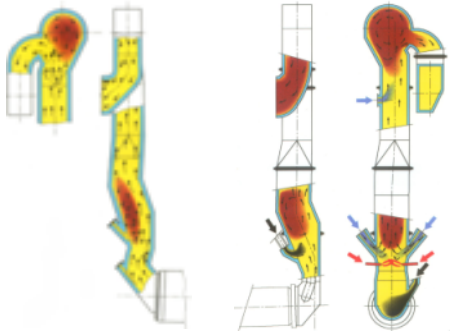


Raw Meal Flap – Counter weight type

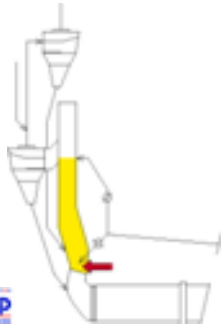
No Bearings – Oscilates on Vedge.



State of art Calcining Channel



NOx Reduction



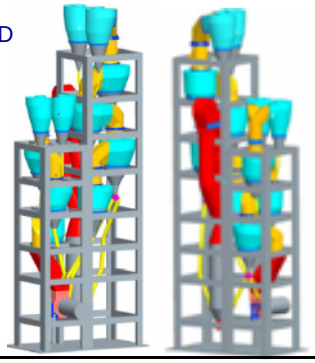
Andhra Cements, India

Upgraded from 3600 TPD To 5600 TPD in Year 2010

4 Stage K-Line, 5 Stage C-line Kiln Modification & IKN Pendulum Cooler

The Plant is under commissioning

Existing pre-heater Tower



Alternative Fuel firing in Calciner

Evolution

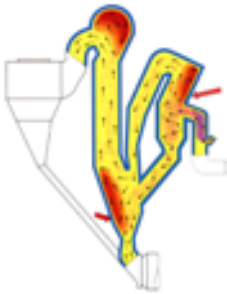
1. Low Volatile Low quality fuels
2. Higher portion of Alt Fuel firing
3. Any kind of Fuel– including Solids like, Tyre chips, MBM, Wood, & Plastics etc.
4. Still Reliable Burning process

Calcining Stages for Alternative fuel usage

KKS – Type

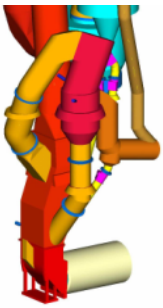
For low volatile and low quality fuel like Petcoke

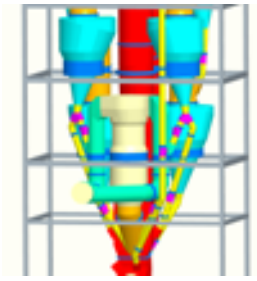
Modified KKS – Type



For Higher potion of AF

Calcining Chamber



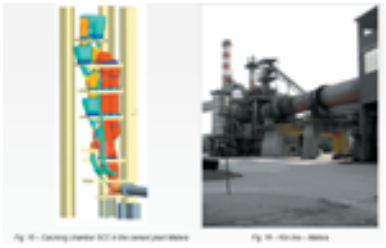


Calcining Chamber– SCC Type

Different type of Alt fuels & Coarser fractions
Relaiable Burning process

SCC - Performance

Fuel	LHV	Kiln		Calcining			
		Kiln burner		KKN		SCC	
	[MJ/kg]	[%]	[t/h]	[%]	[t/h]	[%]	[t/h]
Coal	31.80	19.69	2.10	4.69	0.5	13.12	1.40
SAF	19.30	11.37	2.00	0	0	16.96	2.98
MBM	17.88	34.17	6.48	0	0	0.00	0
Sum		65.23		4.69		30.08	
Conditions of the kiln line operation		with bypass					
Calculated calorific consumption		approx. 3 580 kJ/kg of clinker					
Portion of alternative fuels to the kiln		**approx. 62.5%**					



Parameter		
Capacity	t/d	2 200
Heat consumption with bypass	kJ/kg cl	3 182
Crushed tires	of heat consumption	≤ 30
Fuel		petroleum coke
NOx @10% O_2 - SNCR	mg/Nm³	≤ 500
Outlet clinker temperature	°C	≤ 70 + ambient
Fly ash from the preheater	g/Nm³	≤ 60

Alternative Fuel firing in Calciners

Proven design

Continue to Innovate

Committed to Deliver Quality