The WTW / MHC Group:
Handling of Alternative Fuels in a Spanish Cement Plant
Global Fuels Supplier of the Year 2011

Mr. Jürgen Bäumer of WTW Americas accepts the award for the Global Fuels Supplier of the Year 2011 from Dr. Robert McCaffrey at the GFC in Kuala Lumpur, Malaysia.

Global Cement Magazine May 2011
Alternative fuels used
Design rate
Alternative fuel pictures
Savings
Target / Project Requirements
General Layout
Truck Unloading Station TUS
Chain Conveyer SKF
Explosion Protection
Sweeping Auger SAS
Buffer bin and Weigh feeder
Alternative Fuels used:

- Sludge
- Municipal solid waste
- Vegetable waste
- Bone meal
- Wood waste

Lodosa Depuradora
Fraccion RSU
Podas
Harinas carnicas
Desperdicio de madera

Density: 0.2 to 0.75 t/m³
Moisture: 5 to 25 %
Lump size: < 20 mm
Design Rate:

300 m³/h

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densities between 0.2 to 0.5 t/m³

or

150 m³/h

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densities between 0.5 and 1.0 t/m³
Shredded Wood Pallets/Skids
Compost
Wood Chips
Waste Wood
Shredded Plastic
Shredded Rubber
Municipal Refuse
Urban Waste
Shredded Wood
Wood Chips
Wood Chips
Cost saving effects by using of alternative fuels

For the following bulk materials: woodchips, fluff, sewage sludge

High flexibility to use other materials (saw dust, waste wood, pellets, textiles etc.) in future. Market for alternative fuels is not static !!!

Reception of all kinds of trucks (regular + walking floor trailers)

Storage of 750 m³ material to provide enough capacity over the weekend

Feeding rate 5 t/h

Good weighing and dozing accuracy

Transport to burner

Environmentally friendly, low spillage
General Layout:
Truck Unloading Station (TUS)
Truck Unloading Station (TUS)
Handling of Alternative Fuels
Truck Unloading Station TUS:

Dust housing with rubber curtain
Truck Unloading Station TUS:

- Arrival of Truck

Design for both normal tipping truck and walking floor trailer
Truck Unloading Station TUS:

Leveling plate
(adjustable for height)
Rotary Cutter:

- Filter unit
- Truck tipping

Rotary Cutter
Truck Reception TUS:

- Maintenance platform with ladder / stairs to access dedusting unit
- Dedusting filter system
- Drive unit rotary cutter
- Clean air outlet
- Chain Conveyor
- Drive unit TUS

[Image of a truck reception facility with labels indicating various components such as maintenance platform, clean air outlet, chain conveyor, and drive unit]
Trough Section
Chain
Chain
Sealing

- Adjustable skirt-boards
- Vulcanized T-shaped rubber strips at both sides of the belt
Rotary Cutter
Chain Conveyor
Tensioning Station
Chain Conveyor
Drive Station
Drive Station Double Strand
Drop Forged Fork Link Chain

- Single Stand
- Double Strand
Chain Types
Silo Discharge System
Inclined Chain Conveyor SKF
Silo Discharge System
Inclined Chain Conveyor SKF
Head Station
(Transfer point between SKF and TKF chain conveyor)
Silo Overview

TKF Conveyor on the top of silos

SKF Chain Conveyor
Explosion Protection

Burst disk with high pressure chimney
Exhaust air treatment and silo filter

Silo Filter
Slide Gate

Two of each Silo

Pneumatic slide gate
Sweeping Auger SAS

Dosing by PFISTER® weighing unit
Sweeping Auger SAS

A discharge screws transports the bulk material to the central machine housing where it is distributed to the two outlet openings.

1) Rotating internal cone
2) Screw
3) Stationary lower part
4) Two outlets
5) Bulk Material
6) Distribution Rotor
7) Hollow shaft gear motor
8) Vertical main shaft
9) Bevel gear
Sweeping Auger SAS
Special Features

Ceramic Lining

special coating and increased thickness

teeth in creusabro
Screw Support
Sweeping Auger SAS / Lubrication System

Lubrication System

Slide gate
Sweeping Auger SAS

Outlet Openings

Charging screw to weighing unit
Weighing Cells

Buffer bin with stirrer

Rotary weighing unit PFISTER®
Collecting Conveyor

Collecting conveyor after rotary weighing unit

Rotary feeder
(infeed to pneumatic transport)
Overview

- Buffer bin with stirrer
- Rotary weighing unit PFISTER®
- Burner feeding