

Project Name:  
Project Number:

## 1. DESIGN OVERVIEW

This budget offer includes the equipment, engineering, supervision of mechanical erection, insulation, electrical installation and commissioning and start-up required to operate

### **1 line of Andritz Drum dryer DX-1500**

drying

<u>RDF</u>	Nominal Capacity	15,000	kg/h
	Max. Capacity	17,500	kg/h

	min	nom	max
MC <sub>in</sub>	30%	40%	50%
MC <sub>out</sub>	15%	15%	15%

Evap., nom.	[kg/h]	2,647	4,412	6,176
Evap., max.	[kg/h]	3,088	5,147	7206

and utilizing natural gas as heat source.

Overview and Preliminar Process description as per Appendix 13.

## 2. DESIGN, PROCESS AND CONSUMPTION DATA

For this offer we have based our design on 15-17,5 t/h RDF, to be dried in one (1) drum DX-1500. Moisture content in the wet RDF is 30% up to 50% MC.

### ***Data given are expected values!***

The below mentioned data refer to the plant operation at an outside temperature of 20°C and a relative moisture of 70%.

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## 2.1 Overview Process Data / Design data

Input [t/h]	MC <sub>in</sub> [%]	MC <sub>out</sub> [%]	Evap. [t/h]	Output [t/h]	Inlet temperature [°C]	Outlet temperature [°C]	Exhaust gas to RTO [Nm³/h]	Gas <sub>Dryer</sub> [Nm³/h]	Gas <sub>RTO</sub> [Nm³/h]	Gas <sub>total</sub> [Nm³/h]
15,0	30	15	2,65	12,35	200	105	16050	300	36	336
15,0	40	15	4,41	10,59	245	105	20950	440	47	487
15,0	50	15	6,18	8,82	270	105	26600	581	60	641
17,5	30	15	3,09	14,41	215	105	17500	347	39	386
17,5	40	15	5,15	12,35	250	105	23950	512	54	566
17,5	50	15	7,21	10,29	295	105	29700	674	67	741

## 2.2 Design / Technical Data for Min. Capacity with Min. Moisture Content (15 t/hr @ 30%MC)

Drum drying system design (Data at Moisture content 30%)	AIR RECIRCULATION	
Product type	RDF	
Product size	90%<30 mm 99%<50 mm	mm
Inert content (sand, glass, metals etc)	<1%	
Bulk density	approx. 200 (to be confirmed)	kg/m³
Product quantity	15	ton/hr
Dry substance quantity	10,5	ton DS/hr
Moisture content of the wet product	30	%DS
<b>Dried product</b>		
Quantity	12,35	ton/hr
Moisture content	15	%MC
Water evaporation	2,650	kg/hr
Operating time	24 5 Resp. 6,240	hr/day days/week hr/a
<b>Location</b>		
Country	UK	
Site	Wales	
Number of lines	1 x DX-1500	
Required area	See Preliminary Layout attached	Metres (L x W X H)
<b>Consumption data</b>		
Installed power <sub>e</sub> (approx.)	595	kW
Power <sub>e</sub> absorption (approx.)	456	kW
Natural Gas (NCV = 36 MJ/Nm³), Dryer	300	Nm³/hr

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Drum drying system design (Data at Moisture content 30%)	AIR RECIRCULATION	
(approx.)		
Natural Gas RTO (approx.)	36	Nm <sup>3</sup> /hr
Thermal requirement	3,0	MW
Emissions	AIR RECIRCULATION	
Exhaust air quantity (approx.)	16,050	Nm <sup>3</sup> /hr
Exhaust air temperature (approx.)	105	°C
Noise Emissions**		
Sound pressure level at 1 m distance	≤ 85	dB(A)

### 2.3 Design / Technical Data for Max. Capacity with Max. Moisture Content (17,5 t/hr @ 50% MC)

Drum drying system design (Data at Moisture content 30%)	AIR RECIRCULATION	
Product type	RDF	
Product size	90%<30 mm 99%<50 mm	mm
Inert content (sand, glass, metals etc)	<1%	
Bulk density	approx. 200 (to be confirmed)	kg/m <sup>3</sup>
Product quantity	17,5	ton/hr
Dry substance quantity	8,75	ton DS/hr
Moisture content of the wet product	50	%DS
Dried product		
Quantity	10,29	ton/hr
Moisture content	15	%MC
Water evaporation	7,210	kg/hr
Operating time	24 5 Resp. 6,240	hr/day days/week hr/a
Location		
Country	UK	
Site	Wales	
Number of lines	1 x DX-1500	
Required area	See Preliminary Layout attached	Metres (L x W X H)
Consumption data		
Installed power <sub>e</sub> (approx.)	595	kW
Power <sub>e</sub> absorption (approx.)	456	kW
Natural Gas (NCV = 36 MJ/Nm <sup>3</sup> ), Dryer	674	Nm <sup>3</sup> /hr

<b>Drum drying system design (Data at Moisture content 30%)</b>	<b>AIR RECIRCULATION</b>	
(approx.)		
Natural Gas RTO (approx.)	67	Nm <sup>3</sup> /hr
Thermal requirement	6,75	MW
<b>Emissions</b>	<b>AIR RECIRCULATION</b>	
Exhaust air quantity (approx.)	29,700	Nm <sup>3</sup> /hr
Exhaust air temperature (approx.)	105	°C
<b>Noise Emissions**</b>		
Sound pressure level at 1 m distance	≤ 85	dB(A)

\*\* Related Standards:

Determination of sound power levels and mechanical vibration produced by gears units shall be subject to ISO 45635.

Sound pressure levels shall be measured in dB (A) using a calibrated sound meter meeting the requirements of EN 60651.