

# Calorific Value Of Wood Pellets



Environment Friendly  
Engineering Solution Company



In Association with SVCH-Technologies, Moscow (Russia)

ISO 9001-2008 | ISO 9001-2015 | EMS 14001 | OHSAS 18001

The average calorific value of wood pellets is 4400±100Kcal/Kg, but it varies with different materials.



### Calorific values of different wood pellets

Types	raw material source	lower calorific value kcal/kg	Density t/m <sup>3</sup>	Ash content %
Pine	cedar, spurge, fir	4300-4500	>=1.20	<=0.9
Hardwood	Xylosma, Catalpa, elm	4500	>=1.2	<=0.9
Softwood	poplar, birch	4300	>=1.20	<=1.1%
Crop waste	Bean stalk, cotton stalk, peanut shell	3800	>=1.15	<=6.0%
	corn stalk, rape shoot	3700	>=1.15	<=6.0
	wheat straw	3500	>=1.10	<=7.0
	potato straw	3400	>=1.10	<=7.0
	rice straw	3200	>=1.10	<=8.0

### Compositions of different biomass materials

Material	Moisture %	Ash %	volatiles %	Fixed carbon %	calorific value kcal/kg	Sulfur %
weed	5.43	9.10	68.27	16.40	3873	0.22
Straw	3.61	12.20	67.80	19.36	4215	0.09
Maize stalk	6.10	4.70	76.00	13.20	4241	0.11
corn cob	4.87	5.93	71.95	17.25	4238	0.01
wheat straw	4.39	8.90	67.36	19.32	4429	0.07
Peanut shell	7.88	1.60	68.10	22.42	5119	0.10
Cedar	3.27	0.71	81.20	14.79	4587	0.03
Pine	6.00	0.40	79.60	17.00	4552	0.00

### Calorific value of wood pellets and other fuels



Fuels	Average calorific value kcal/kg	Heat utilization rate	Pollutant
raw coal	4984	0.80	sulphur
crude oil	9969	0.85	sulphur
gasoline	10268	0.85	sulphur
kerosene	10268	0.85	sulphur
diesel	10168	0.85	sulphur
liquefied petroleum gas	11303	0.85	sulphur
coke oven gas	3987kcal/m3	0.85	sulphur
electricity	857 kcal/KWH	0.90	none
wood pellets	4400	0.90	none

In conclusion, wood pellets have the following advantages:

**High calorific value**, usually around 3800-4600kcal/kg. After carbonization, the calorific value is up to 7000-8000kcal/kg.

**High heat utilization rate**. Wood pellets contains carbon of 75-85%, ash content 3-6%, moisture 1-3%, without gangue or other substance that doesn't generate heat.

**Environmental friendly**. Wood pellets contains no sulphur or phosphorus, and there is no SO<sub>2</sub> or P<sub>2</sub>O<sub>5</sub> emission in burning. Meanwhile, it is carbon neutral. Burning wood pellets will not cause corrosion to the boiler or not give rise to air pollution or acid rain.

**Clean and convenient**. Due to small and uniform size, wood pellets are easy to utilize. It can be fed into the boiler automatically so as to save labor. The ash and slag after combustion is little. It doesn't take much place. Besides, the wood pellet ashes are high-quality organic potassium fertilizer, which can be applied on farms or in gardens.



**KERONE**

Kerone Engineering Solutions Limited

#### UNIT I

A/4, Marudhar Industrial Estate,  
Goddev Fatak road,  
Bhayander(E), Mumbai-401105

#### UNIT II

Plot No. B-47, Addl. MIDC  
Anandnagar, Ambarnath  
(East), Dist. Thane-  
421506

#### UNIT III

Plot NO. W-104, Addl.  
MIDC Anandnagar,  
Ambarnath East, Thane-  
421506.(India)

#### EMAIL

[info@kerone.com](mailto:info@kerone.com) |  
[sales@kerone.com](mailto:sales@kerone.com)  
[marketing@kerone.com](mailto:marketing@kerone.com)

#### WEBSITE

[www.kerone.com](http://www.kerone.com) |  
[www.kerone.net](http://www.kerone.net)  
[www.keroneindia.com](http://www.keroneindia.com)

#### Phone

+91-22-28150612/14  
+91-251-  
2620542/43/45/46