

# Waste Industry POWER PROFILE



The Peterson Pacific 6710B track-mounted horizontal grinder, now powered by a Cat® C27 ACERT™, processes municipal solid waste at the North Memphis Landfill.

**Extensive experience and ongoing relationships give Peterson Pacific Corp. an intuitive edge with emerging markets like the waste industry.**

**Customer:**

Peterson Pacific Corp.

**Location:**

Eugene, Ore.

**Scope of engine use:**

C7 ACERT  
C9 ACERT  
C13 ACERT  
C15 ACERT  
C18 ACERT  
C27 ACERT  
C32 ACERT

**Cat Dealer:**

Peterson Power Systems

Peterson Pacific, located in Eugene, Ore., is continuing to develop its product line to target new, and promising, markets.

"Processing C&D (construction and demolition material) and MSW (municipal solid waste) is an emerging market for us," explains Dave Benton, marketing manager for Peterson Pacific Corp. To date the company's horizontal grinders have been used in numerous recycling applications, from processing wood waste for mulch, compost and fuel. The MSW and C&D markets are new opportunities.

**Breaking it down to increase potential**

"Processing C&D debris with a Peterson grinder reduces the volume considerably. Transportation costs are reduced because higher payloads can be achieved," explains Jim Prior, service manager. Two or three truckloads of unprocessed C&D may be reduced to one truckload. Landfills also typically charge a tipping fee based on volume so tipping fees are also reduced.

Most C&D landfills in North America do not produce any recycled products. The landfill life is extended through compaction with track heavy dozers and landfill compactors. Landfill cover is required for pest and odor control in a C&D landfill every 14 days.

"As downstream customers demand more recycling of their waste stream, C&D landfills will need

to produce a recycled product or lose these customers," explains Benton.

One of the ways to produce a recycled product is to make alternative daily cover from the C&D waste stream. The alternative cover can be used at the C&D landfill or sold to a MSW landfill that requires daily cover.

Producing alternative daily cover requires the C&D debris to be reduced to less than four inch material. Processing the material with a specially configured Peterson grinder, plus screening, is a cost effective method to produce a recycled alternative daily cover product.

Several modifications have been done to make Peterson grinders more suited for this waste industry application:

- The grinding chamber is opened up to eliminate the sizing screens that could get damaged from uncrushable materials.
- An airbag on the grinders' patented Impact Release System minimizes damage from contaminants in the feed material. The airbag allows the anvil and first grate section to "float."
- The rotor is slowed by 25% to reduce the impact, wear and abrasion in the grinder.

"These changes combined with the use of Cat engines with ACERT Technology, has also provided the added benefit of decreased fuel consumption," notes Erik Vipond, Peterson's powertrain engineer. "We've seen a 4 to 5% improvement in fuel econ-

omy with Cat engines with ACERT TECHNOLOGY compared to the previous engine technology. The combination of the above changes in the grinding process for C&D materials further reduces the fuel consumption per ton of processed to approximately 0.15 gal per ton of processed material.

“The other benefit of grinding C&D material is that it compacts better and will provide a higher landfill compacted density. The landfill life extension may have a high economic value particularly if the landfill is well located and has a transportation cost advantage over competing landfills,” continues Dave Benton. If the landfill is slated for closure within ten years, the value of the life extension may more than offset the added cost of grinding.

MSW grinding also has positive economic benefits, particularly in bioreactor cells. The higher landfill density achieved with reduced MSW extends the landfill life. Methane gas production is also faster since the decomposition process becomes anaerobic more quickly.

### **The power to grind**

Peterson Pacific has been powering its line of horizontal grinders with Cat engines for years. Track-mounted and portable Peterson Pacific grinders use Cat engines including C18 ACERT, C27 ACERT and C32 ACERT (the smaller Cat C7 ACERT, C9 ACERT, C13 ACERT and C15 ACERT are utilized in the company's line of forestry, bark blower and debarking machines.) All three engines utilized in the waste industry are operated at 2,100 rpm with horsepower ratings as follows: 700-765 hp for the C18 ACERT, 1,050 hp for the C27 ACERT and 1,200 for the C32 ACERT.

The engine power is efficiently utilized with about 90% of the required power delivered via a direct drive wet disc clutch and power band belts to the grinding rotor. The other 10% of the power is used by the hydraulic functions. A high efficiency load sense



**Processing storm debris is another application for the Peterson model 6710B horizontal grinder. Here it's shown in Louisiana after Hurricane Katrina.**

hydraulic system minimizes fuel consumption. The cooling fans are also thematically controlled to only use the minimum power needed to maintain proper engine and hydraulic temperatures.

### **Strong, lasting relationships**

Peterson Pacific has been relying on its local Cat dealer, Peterson Power Systems, to aid its transition into emerging markets for years. The dealer is continuing with its high-level support commitment as Peterson Pacific enters the waste business.

“We are working with the waste industry to develop a processing system that will help respond to the environmental issues we all face today,” notes Benton. “Our Cat dealer has been very responsive to our needs and we work very closely with them during every stage of this process. They are a very good partner.”

**A Cat® C32 ACERT™ diesel engine powers the Peterson Pacific model 6700 horizontal grinder. Here it processes MSW at a transfer station near Bremerton, Wash.**



**CATERPILLAR®**