



Hushpak News, Issue 01, August 2009

## Welcome

Welcome to the first edition of Hushpak News. Hushpak prides itself on executing complex and challenging projects. In response to interest shown by our customers and the common nature of sound problems encountered by industry, we have decided to feature some of these projects in our newsletter.

## Industrial Noise

What do you do when you have to build a major woodchip plant only 250 metres from a residential area?

### Background

The woodchip plant had an electric motor of approximately 3000 hp to woodchip the logs. Plants such as this are capable of generating large amounts of noise across a wide sound spectrum. Because of the intensity of the noise, all workers at the plant had to be removed from the inside of the building while the plant was in operation. However, access to the machinery and plant had to occur about 3 to 4 times a day during a typical work cycle.

### The Brief

Hushpak was asked to design large swing doors to be incorporated into the design of the building. The doors were required to minimise the mill's noise impacts on neighbours and the workers outside, whilst facilitating the movement of staff and machinery. The doors were required to:

- Provide superior sound reduction capabilities;
- Be robust enough to deal with the intensity of the sound and the wavelengths involved;
- Easily swing open and closed; and
- Achieve a high level of fire resistance because of the type of environment in the woodchip mill.

### The Solution

Hushpak determined that the doors had to be constructed of heavy channel and plate steel to withstand the types of noise generated and the sound power involved. The inside of the doors required layers of damping material of different grades and thicknesses. These layers had to be retained in various ways that would not cause the materials to degrade over time or collapse because of the impact of sound energy into their structure.

Hushpak drew upon its extensive technical library and material catalogue collection to assist in the procurement of the most modern materials. A special elastomer mix with known sound damping qualities was chosen for placement between the plates to be fixed to the doors and the channel chassis of the doors. Much of the sound generated was of an extremely low frequency.

## Hushpak... First in Sound Engineering



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Hushpak's Technical Director, Norman Ling, devised the special multi-component absorption system. It was built to extremely tight tolerances both in the metal work construction and the placement of the sound dampening materials.

*"Sound of this sort travels through structures very easily if there are any gaps or holes in the structure or dampening materials. It is essential that great care is taken in the placement and fixing of the dampening materials. Because of the harsh environment, special attention must also be given to the durability of the materials used. Too many times, all sound deadening is lost after only a few years because of the collapse of the materials used".* Norman Ling, Technical Director

Each door weighed some 800 kilograms and required ball bearing hinges built to engineer's specifications. The ball bearing hinges reduce the amount of friction required to open and close the doors.



Doors under construction at Hushpak's Adamstown manufacturing plant



Doors in place at our client's premises after being fitted to the mill

## Further Information

If you have a sound related problem that you need advice on, give Hushpak a call on **4952 1533**. Our staff would be pleased to discuss the matter with you.

Remember, Norman Ling and our staff have many years of experience in a wide range of industries - including mining, quarrying, chemical, timber, manufacturing and water reticulation.

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