



**OFFICE OF  
LICENSING &  
GUIDANCE**

**INSPECTORS REPORT ON A LICENCE APPLICATION**

<b>To:</b>	DIRECTORS	
<b>From:</b>	SEÁN O DONOGHUE	- LICENSING UNIT
<b>Date:</b>	13 <sup>TH</sup> MARCH 2007	
<b>RE:</b>	APPLICATION FOR AN IPPC LICENCE FROM GAIRDINI TRADING AS MUNSTER JOINERY LIMITED, LICENCE REGISTER NO. P0639-02	

Application Details	
Class of activity:	<i>Class 12.2.2, The use of coating materials in processes with a capacity to use at least ten tonnes per year of organic solvents, not included in Class 12.2.1.</i>
Licence application received:	9 <sup>th</sup> June 2006
Supplementary material submitted by applicant	20 <sup>th</sup> July 2006
Notices under Article 11(2)(b)(2) issued:	7 <sup>th</sup> November 2006
Article 11(2)(b)(2) responses received:	28 <sup>th</sup> February 2007
Notices under Article 18(2) issued:	8 <sup>th</sup> September 2006
Article 18(2) response received:	20 <sup>th</sup> September 2006
Submissions received:	None.
Site visits:	2 <sup>nd</sup> November 2006

**Company**

Gairdini (trading as Munster Joinery) is a family run business founded in 1973 and based at Lacka Cross, Ballydesmond, Co. Cork. It is Ireland's largest energy saving window and door manufacturer. A range of hardwood, softwood, uPVC, Steel and Aluminium doors and windows are manufactured at the Ballydesmond facility. It is a large installation (54 acres in total), in a rural area approximately 3 km South of the village of Ballydesmond.

Approximately 1,100 people are employed on site, with a further 400 employed in mobile crews fitting doors and windows on sites countrywide. Hours of operation are 24 hours, five days a week, although only the extrusion of PVC and hardwood drying take place outside the hours of 8 a.m. to 6 p.m. The installation has full planning permission.

### **Licensing History**

The company originally applied for an IPC licence in April 2002, and was issued with a Proposed Determination, Reg. No. P0639-01, in April 2005. However prior to the issue of a final licence, it came to light that some key pieces of information supplied in the application were incorrect, and that ELVs set in the PD, which were based on this information, may not have provided adequate protection of the environment. The company subsequently withdrew their application and resubmitted the revised application, which is the subject of this report.

### **Process Description**

The process involves the following steps:

- Cutting of raw materials to the size and shape required (wooden planks, aluminium and uPVC profiles, steel panels, ironmongery and sheets of glass). The hardwood is dried on site in a kiln. The uPVC profiles are either manufactured on site or purchased. The manufacture of these profiles involves heating a uPVC powder and then extruding it into the required profiles.
- These materials are then assembled into doors and windows.
- Surface treatment of assembled hardwood product may take place in the teakstain spray booth, and assembled softwood product is impregnated with preservative by vacuum treatment in the Protim 418V Prevac system. Glass panels and fittings such as locks, handles etc. are added.
- The completed products are dispatched.

### **Use of Resources**

#### **Fuel**

Sawdust is the main fuel used on site, with diesel used as backup. Annual usage of sawdust is estimated at approximately 14,000 tonnes, which is well below the guide value of 50,000 at which a Class 11.1 licence would be required. Sawdust from untreated timber is extracted by vacuum from workstations at the plant, and transported to concrete bunkers, from where it is fed to the recently installed CHP plant. Steam generated at the CHP plant will provide 100% of the plant's heating requirements, with any excess steam used to reduce the importation of electricity from the grid. Annual diesel usage is currently 35,000 litres per annum.

#### **Electricity**

Annual usage of electricity in 2003 was 19,300 MWh.

#### **Water**

Water is extracted from an on-site well, and annual usage is estimated at 34,000 m<sup>3</sup>.

#### **Materials**

Some List I and II substances (under The Dangerous Substances Directive and the Groundwater Directive) are found in paint, adhesive, and thinners used on site. Substances with Risk Phrases R51/53 are white spirits and Protim wood preservative.

## **IPPC Directive**

This installation falls outside the scope of Annex I of Council Directive 96/61/EC concerning integrated pollution prevention and control. Schedule A of the RD prohibits the licensee from exceeding the solvent use thresholds which would bring the installation within the scope of the Directive. It should be noted that, as only assembled product is passed through the Prevac system, the maximum mass throughput is not sufficient to classify the activity under class 8.3, (The treatment or protection of wood, involving the use of preservatives, with a capacity exceeding 10 tonnes of wood per day) of Schedule 1 of the EPA Act 1992 & 2003. The preservative in use is organic solvent based, and the annual solvent usage is such that the activity falls within the scope of class 12.2.2 of this schedule.

The Recommended Determination (RD) as drafted takes account of the requirements of the EPA Acts 1992 and 2003. In particular, Condition 7 deals with water, energy and raw materials use, reduction and efficiency on site. BAT is taken to be represented by the limits set for wood impregnation and wood and plastic lamination in the Solvents Directive and guidance given in the IPPC BAT reference document on surface treatment using organic solvents.

## **Council Directive 1999/13/EC-Solvents Directive**

The processes carried out fall within the scope of EU Council Directive 1999/13/EC on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations. The applicant supplied the following information on solvent use at the installation:

- Approximately 60 tonnes of solvent per annum are used in the Protim softwood impregnation operation. This activity is within the scope of Annex I of the Directive as 'wood impregnation' and falls under Activity 12 of Annex IIA – 'wood impregnation'.
- Approximately 23 tonnes of solvent per annum is used in a wood and plastic laminating operation at the installation. This activity is within the scope of Annex I of the Directive as 'wood and plastic lamination' and falls under Activity 15 of Annex IIA – 'wood and plastic lamination'.
- The applicant currently uses about 10 tonnes per annum of solvents in painting of hardwood product. This solvent usage falls below the threshold of 15 tonnes per annum specified in Activity 10 of Annex IIA 'Coating of wooden surfaces', and so this operation does not fall within the scope of the Directive. The applicant is gradually phasing out the use of solvent based hardwood painting at the installation, and expects to have completely ceased the use of solvents in this regard by the end of 2008.

### Wood impregnation

There is a vacuum system in use at the installation with no point source emissions to air, and so the ELV of 100 mg/Nm<sup>3</sup> specified in the Directive does not apply. The Directive also specifies a total emission limit value of 11 kilograms solvent per m<sup>3</sup> of timber, and this ELV is applicable to vacuum systems. This emission limit value relates to the amount of solvent that will be uptaken by the timber during the impregnation process, and subsequently released to the environment. The manufacturers specification indicates that emissions of 8.9 kg/m<sup>3</sup> can be achieved, and this can be verified by measuring the volumes of preservative uptaken.

### Wood and plastic lamination

The applicant has nine laminating lines, all located within one building at the installation. The solvent based substance used in the laminating process contains dichloromethane, which is assigned risk phrase R40. However, there is no local extraction system, or process vents, only general workspace extraction, and so the point source emission limit value specified in Article 5(8) of the Directive does not currently apply. The RD does

however require that the licensee, in accordance with Article 5(8), investigates the technical and economic feasibility of controlling the emission under contained conditions. The RD also requires that, where the outcome of this investigation indicates that dichloromethane can be feasibly discharged through a process emission point, the point source emission limit value ( $20 \text{ mg/Nm}^3$  at massflows greater than  $100\text{g/hr}$ ) shall apply.

Annex IIA of the Directive for this activity specifies a total emission limit value of 30 grammes of solvent per  $\text{m}^2$  of laminated surface, and the applicant has calculated that its emissions are well below this limit, at  $22.75 \text{ g/m}^2$ .

Condition 6 of the RD requires the licensee to maintain a Solvent Management Plan (SMP) to be submitted annually as part of the AER, and also requires verification of compliance with the  $11 \text{ kg/m}^3$  and  $30 \text{ g/m}^2$  total emission limit values.

### **European Communities (Control of Major Accident Hazards involving Dangerous Substances) Regulations, 2000 (S.I. No. 476 of 2000)**

In Question 11 of the IPC licence application form the applicant has given details of the assessment of on-site storage with the requirements of SI 476 of 2000. The assessment concludes that the activity is classified as not requiring compliance with Articles 6,7 and 9 of Seveso II.

### **Proposed Determination**

#### **Air:**

The CHP plant is fuelled by sawdust, and there are also several smaller backup and emergency boilers on site operating on sawdust and diesel. The total thermal input of installed combustion plant at the installation is just over 30MW, with the CHP plant contributing almost half of this capacity, and the installation may therefore require a permit under the EC (Greenhouse Gas Emissions Trading) Regulations.

The CHP plant exhaust is fitted with electrostatic precipitators to reduce particulate emissions, and a particulate ELV of  $20 \text{ mg/Nm}^3$  has been set in the RD. The air exhausts from the sawdust collection system are fitted with filter system to remove particulate. This filtration system will achieve a maximum particulate emission concentration of  $15 \text{ mg/Nm}^3$  in the exhaust stream. The RD has not set ELVs or monitoring requirements for this emission, as the physical structure of the emission point does not allow for accurate monitoring. The RD does however require daily visual inspection of the filter outlet and monthly visual inspection of the filter itself, in accordance with the manufacturer's recommendations. The RD also requires spare filters to be held on site. Dispersion modelling conducted for the application indicates that no exceedances of the relevant AQS, or OEL derived ambient guideline concentrations for sawdust, will occur at the emission concentrations quoted above.

The mass emissions from the teak stain spray booths are such that these emissions are classified as minor.

#### **Emissions to Waters:**

Sewage is treated on site in a biological wastewater treatment plant with associated v notch weir and composite sampler. The company are currently upgrading the plant to cater for increases in personnel. The upgrade includes the installation of a new screening chamber, balancing tanks, aeration plant, and clarifier. The upgraded plant is expected to be fully operational by the end of March 2007. The discharge from this plant will be piped directly to the River Blackwater. An assessment of the impact of this effluent on the basis of emissions from the upgraded plant indicates that the effluent will not cause breaches of any Water Quality Standards, and emission limit values have been set accordingly in the RD.

Approximately  $3\text{m}^3$  of cooling water is used in the uPVC extrusion process. The company has installed a closed loop system with filtration to allow extended reuse of the cooling water.

The filter is automatically backwashed, with the washings currently discharged to a stormwater drain. The RD requires the cessation of this discharge to stormwater drain, and requires the effluent to be discharged to the effluent treatment plant.

Glass panes are washed with warm water which is discharged directly to the Blackwater via surface drain (SW3). The purpose of the washing is to remove any dust which may have gathered on the glass during processing, and from observation of the process during site visits, the degree of contamination of the wash water is very minor. This has been confirmed by the applicant with analysis of the wash water, and the RD requires weekly visual inspection of the discharge and weekly monitoring of suspended solids. The volume of the discharge is also minor, and no significant effect on receiving waters is expected.

Biological quality monitoring of the River Blackwater in the vicinity of the discharge from the installation indicated a slight deterioration in water quality in 2003, with a Q rating of 3-4 at this location, and Q4 ratings at the neighbouring monitoring points upstream and downstream. Prior to 2003, Q4 or higher ratings were achieved upstream and downstream of the discharge since 1990. The recent deterioration in water quality may have been due to the reduced effectiveness of the effluent treatment plant at the time, due to the substantial increase in personnel on the site. It is expected that the ELVs imposed in the RD, and the treatment plant upgrade which will enable compliance with these ELVs, will lead to a return to good water quality in the River.

#### **Surface Water:**

There are three stormwater discharges from the site to the River Blackwater. Bunding and chemical storage practices on the site are generally good, with several recent improvements to the site, including the construction of new bunds and the installation of a sawdust interceptor on a storm drain.

#### **Emissions to ground:**

There is a soakaway servicing the bunds for the standby generators fuel stores. The stormwater from this area discharges via a Class I oil interceptor. There is no record of historical incidents which would indicate any contamination of groundwater. Fuel and chemical storage practices and facilities on site appear adequate on the basis of recent site inspections, and there appears to be little threat to groundwater quality on site. However due largely to the age of the installation (established in 1973), a once off survey of groundwater on site is required by Condition 6 of the RD to assess groundwater quality.

#### **Waste:**

Hazardous wastes generated on site consist of hydraulic and lubrication oils which are sent off site for recovery, and paint sludges which are sent off site for disposal. Non hazardous wastes are either recycled off site (aluminium, uPVC and glass offcuts, cardboard and paper, and metal barrels) or disposed of, either to landfill by permitted contractors (domestic waste, plastic and steel door cut-outs). Sawdust and timber offcuts are used as fuel in the CHP boiler, and this operation is exempt from the Waste Incineration Directive by virtue of Article 2. All waste contractors are appropriately licensed or permitted.

#### **Noise:**

A survey conducted in June 2006 for the application indicated that EPA Guidance values could be achieved at 3 of the 4 nearby noise sensitive locations (NSLs), with the fourth location (NSL 2) slightly exceeding these levels. There are two residences at NSL 2, which is located just across the road (R577) from the installation. Both these residences have been acquired by the company since the completion of the survey, and are now part of the site and no longer considered NSLs. The RD requires noise levels below 55 dB<sub>A</sub> by day and 45 dB<sub>A</sub> by night at NSLs, and does not allow any tonal or impulsive component to noise generated by the plant to be audible at these locations.

**Best Available Techniques (BAT)**

I have examined and assessed the application documentation and I am satisfied that the site, technologies and techniques specified in the application and as confirmed, modified or specified in the attached Recommended Decision comply with the requirements and principles of BAT. I consider the technologies and techniques as described in the application, in this report, and in the RD, to be the most effective in achieving a high general level of protection of the environment having regard - as may be relevant - to the way the facility is located, designed, built, managed, maintained, operated and decommissioned.

**Submissions:**

None.

**Fit & Proper Person Assessment**

The applicants experience, technical abilities, financial and legal standing would qualify them as Fit & Proper Persons.

**Charges:**

The charge in the RD is €11,660, based on the current estimate of resources required for annual enforcement of the licence.

**Recommendation:**

I recommend that the Proposed Determination be issued subject to the conditions and for the reasons as drafted.

Signed

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Sean O'Donoghue

**Procedural Note**

In the event that no objections are received to the Proposed Determination of the application, a licence will be granted in accordance with Section 87(4) of the Environmental Protection Agency Acts 1992 and 2003 as soon as may be.