

## **Non-Technical Summary**

### **Introduction**

The applicant's sole business is the weaving of upholstery fabrics for its main customer along with processing fibre, yarn and fabric by dyeing and finishing. dyeing and winding of wool and synthetic fibre yarns, for the apparel, hand knitting, upholstery and carpet yarn manufacturing sectors of the textile trade. The applicant owns the raw materials and does not carry out any commission work.

The applicant, trading as Wooltex UK Ltd owns the premises at Woodlands Mill, Dale Street, Longwood, Huddersfield, HD3 4TG. The site has been operational since 1996 as a weaving and dry processing operation and since 2017 as a wet processing operation in a new building adjacent to the original mill. Application for an EPR Permit has been deemed necessary because the wet processing department now has the capability to process more than 10 tonnes of textile materials in a 24-hour period.

### **Operations at the site**

Raw fibrous materials are received as loose fibre and yarn and are dyed in this form prior to weaving or are woven and then dyed and finished. The applicant has modern machinery which can be easily adapted to dye loose fibre, yarn or fabric depending upon requirement and also has a number of specialised finishing machines which, mainly through application of steam, temperature and pressure can apply different functional finishes to the final fabric.

In addition to a range of synthetic organic dyestuffs, a variety of technical grade chemicals including inorganic acids and bases, organic acids, oxidising and reducing agents and inorganic salts are used in these processes. Formulated preparations designed to perform specific functions are used to control the rate of uptake of dyes (blocking and levelling agents) and impart performance specific characteristics to the fibre (e.g. stain resistance).

### **In process controls**

The installation operates with the benefit of modern process controls. Control of the dyeing operation starts with establishment of reliable dyeing recipes, the applicant has laboratory facilities and a computer match prediction system, which are used to match customer shades using recipes that will scale up to production using the minimum of dye, chemicals and energy. Dyeing machine fill and drain sequences and dyeing liquor temperature are controlled using programmable logic controllers or similar devices.

The process control systems and methods of working adopted by the applicant meet the criteria for best available technique benchmarked in the European Commission BAT reference document.

### **Abatement of point-source emissions to air**

The applicant purchases energy in the form of electricity and gas from national suppliers and produces steam on site using two gas boilers. Steam is distributed to the wet processing and finishing machinery via a system that minimise wastage.

There are no significant point-source emissions to air from the installation, other than water vapour removed from the wet fibre, yarn and fabric during drying and finishing. The process does not make use of volatile chemicals, which could give rise to emissions to air during the dyeing or drying processes.

**Abatement of point source emissions to surface water and sewer**

There are no emissions directly to surface water from the installation.

The process emits effluent to sewer via a management system which controls effluent temperature, pH and flow volume. The wet processing area is floored with impervious resistant concrete and machine are sited above ground so that all parts of the equipment are visible to the operators. Discharge is to stainless steel drains that lead to the effluent collection point and the dyeing area is surrounded by a gridded drainage channel set into the floor which also drains to the effluent collection point. Drains are cleaned and service twice per year. Following heat recovery, balancing and pH correction, all within stainless steel bunded tanks, the mixed effluent is discharged to public sewer (running down Dale Street a few meters from the effluent treatment facility.)

The composition of the wastewater discharged from the installation is regulated by the applicant using in-process measures. The applicant selects raw materials which will have a low impact on the environment and operates the process to achieve maximum uptake of dyes and finishing chemicals by the fibre.

The process control systems and methods of working adopted by the applicant meet the criteria for best available technique, benchmarked in the European Commission Reference Document for Best Available Techniques in the textile industry.

**Abatement of point source emissions to groundwater**

There are no direct emissions from the installation, which could reach groundwater. All machines in the dyehouse are sited over solid concrete floors and are permanently connected to the drainage system, which directs wastewater to the sewer. A proportion of this pipework is above ground and readily inspected for leaks.

**Control of fugitive emissions to air**

There are no significant pathways for fugitive emissions to air. The process does not require the use of volatile chemicals, which could give rise to emissions during storage or use in the process.

**Control of fugitive emissions to surface water, sewer and groundwater.**

Specific handling techniques are used to ensure that all raw materials including chemicals and dyes are stored and handled in a way that minimises the risk of fugitive emissions to the aqueous environment. Chemicals are purchased in relatively small quantities and are not stored in quantities which could have significant impact. The applicant employs trained operatives to handle materials that are considered to have a high inherent risk, for example mothproofers. Specific work instructions cover the use and handling of such materials. Materials with a high inherent risk as a consequence of composition or volume held are stored in bunded areas. The applicant has an Accident Management Plan which details procedures to be followed in the event of an

incident or accident, which could have an impact on the environment. This plan is updated on a regular basis.

### **Odour**

The chemicals and processes used in the installation are not odorous and do not give rise to odours that could be considered a nuisance. Nevertheless an odour management plan has been created and monitoring is carried out.

### **Management**

Responsibility for all aspects of the operation of the installation which could have an impact on the environment are described in the applicant's ISO 14001 and ISO 9002 operating documentation. Clearly defined day-to-day operational details are vested in an in-house trained management team. The applicant has a series of detailed and documented procedures for managing certain aspects of its permitted operations. They cover in detail:

- o Preventive maintenance
- o Monitoring
- o Training
- o Reporting and dealing with incidents and accidents
- o Accident Management Plans

### **Raw materials selection**

The applicant is aware that the quality of the raw materials used in the installation can have a significant impact on environmental performance and selects dyes and chemicals accordingly.

Materials are screened via suppliers and alternatives found for any that may contain harmful substances. The wool fibre processed in the installation may contain trace levels of sheep-dip pesticides. The Applicant Company does not process wool which it believes could contain these substances at above background levels. Yarns are sampled and tested at intervals to support this.

The strategy and methods of working adopted by the applicant meet the criteria for Best Available Technique, benchmarked in the European Commission Reference Document for Best Available Techniques in the textile industry.

### **Waste minimisation**

The consumption of raw materials, particularly water, energy and chemicals are monitored regularly.

### **Water use**

Water is used in the dyeing process and consumption is largely dictated by the design of the dyeing machines and the sequence of operation required to complete a dyeing. In the majority of cases the applicant uses a simple two-bath batch dyeing process, which consists of colour application followed by rinsing. Rinse baths are recycled where possible.

Water consumption for the operations is in a range 19-62 litres/kg of finished fabric (total processing) and is indicative of the expected water consumption in the installation. This value compares favourably with the range of values indicated in the

European Commission Document on Best Available Techniques in the Textile Industry (<200 litres/kg for dyed and finished fabric.)

### **Waste handling and recovery**

Besides wastewater the installation produces small quantities of other wastes, typically fibre, packaging materials, metal and redundant chemicals. The dry process also produces small amounts of waste. Where possible the applicant recycles wastes on-site (reuse of packaging for example) or the waste is disposed of to off-site recyclers. The applicant records waste arising from the site.

### **Energy**

Steam is the primary energy source for heating dye liquor and drying wet fibre. Electrical energy is used for motive power in the equipment (both wet processing and dry processing.) The majority of dyeings require the dye liquor to be taken to the boil and held at that temperature for a period of time. The hot liquor is then discharged to the mill wastewater system, which includes heat recovery to warm in-coming process water.

Energy management techniques used in the installation meet the criteria for Best Available Technique, benchmarked in the European Commission Reference Document for Best Available Techniques in the Textile Industry.

### **Accidents and their consequences**

The applicant has an accident management plan in place to deal with all reasonably foreseeable accidents at the site.

### **Noise and vibration**

The processes used in the wet processing installation are not inherently noisy and there is no potential for nuisance despite the proximity of housing. The weaving process is a noisy operation but this area is well insulated from the general environment and has been running for many years at the site without cause for public complaint.

### **Monitoring**

The applicant monitors the consumption of raw materials, steam, electricity and effluent volume on a regular basis as these have implications for both the environmental and economic performance of the business.

Monitoring of emissions to sewer is currently carried out by Yorkshire Water – the consent by which Yorkshire Water accept effluent to the sewer is due for renewal in the light of the new wet processing plant at the site. The company has installed an MCERTS compatible flow, pH and temperature monitoring system along with a suitable 24-hour flow related composite sampler.

### **De-commissioning**

The applicant has a detailed decommissioning plan ensuring that all environmental significant materials are removed from the site and that all machinery and plant is de-commissioned without risk to the environment.

**Emissions inventory and benchmark comparison**

The applicant has presented in this application a benchmark comparison exercise based on the recent operation of the site and its discharges to the site effluent treatment system. Indicative emissions at the installation boundary are benchmarked against compliance of the receiving river with EC or UK surface water Environmental Quality Standards.

**Impact**

The applicant has assessed the impact of indicative emissions at the installation boundary on the receiving watercourse using a worst-case model of the installation emissions, operational parameters in the WWRW and environmental conditions in the river. This modelling indicates that emissions from the installation are expected to have minimal impact on the aqueous environment under normal operating conditions.

**Waste Management Licensing**

There are no activities on the installation site that require a Waste Management License.

**Habitats**

The installation is located approximately 6.0 km from the South Pennine Moors, an area of upland moor designated as a European site (Special Area of Conservation and Special Protection Area), 2.0 km from an ancient woodland site and 1.70 km from a local nature reserve at Gledholt Woods. The applicant considers that any emissions to the environment from the installation are unlikely to have any impact on these habitats.