



CARE GUIDANCE

RECOMMENDATIONS ON BEST PRACTICE

LEVEL 2

Exposure to Fibrous Dust during Mixing / Forming



EXPOSURE TO FIBROUS DUST DURING MIXING / FORMING

INTRODUCTION

This document is an overview of the processes that should be followed for controlling (eliminating or reducing) dust exposure in the workplace. This is the level 2 document in the ECFIA CARE Guidance series. Where more detailed information on specific parts of the hierarchy of controls is available this is indicated in the text.

WHAT IS THE CARE PROGRAMME?

ECFIA's Controlled And Reduced Exposure (CARE) Programme is an important part of the Product Stewardship Programme. It allows employers to proactively minimize fibrous dust exposure and thus protect workers' health.

WHAT ARE THE CARE GUIDANCE DOCUMENTS?

These documents form a comprehensive library of information on the safe handling and use of HTIW products. They have been written by industry experts and are designed to give customers of ECFIA members helpful information to put in place effective controls to minimise exposure to airborne fibres. This series of documents will progressively grow as new documents are produced.

Level 1 guidance document: "Working with HTIW - Effective risk management"

Level 2 guidance documents: Risk management measures applicable to HTIW

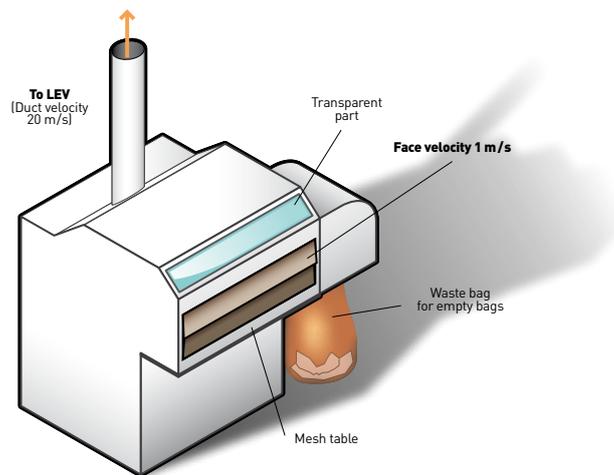
Level 3 guidance documents: Examples of specific applications

EXPOSURE DURING MIXING

When wet formed parts are made, the initial mixing operation can generate elevated levels of airborne dust. This dust can be controlled in a number of ways, as summarised below. Further details can be found in the level 3 documents.

RAW MATERIAL FEEDING

An ideal arrangement would be to have the raw material feeding process automated and enclosed, to take away the exposure risk from the worker. Further information about the possible ways of controlling exposure in the raw material feeding process is highlighted in the Level 3 document.



Enclosed Mix Tank with De-bagging Station

MIXING TANK COVERS

The easiest way to control dust emissions is to affix a lid to the mix tank so that the majority of the dust generated when raw materials are added can be closed off from the operator.



Un-lidded Tank



Lidded Tank

LEV

It is also recommended that LEV is positioned at an appropriate point of the mix tank so that airborne dust can be drawn away from the operator before it reaches the breathing zone. This solution works best in conjunction with enclosure or partial enclosure of the tank to minimise the air volume required for the LEV system. Further information on LEV can be found in the level 2 document "Local Exhaust Ventilation (LEV) Systems for High Temperature Insulation Wool (HTIW)".

WATER MIST SPRAYS

Another way of suppressing dust is to use a misting spray as shown in the picture below¹:



Mist Spray

EXPOSURE DURING FORMING

'Forming' in the context of this document is a wet process, and there is therefore little potential for exposure to fibrous dust. The main source for dust release would be from the trays that the newly formed pieces are placed upon to go for oven drying; these trays tend to have dried product on them from previous vacuum forming operations and this dried product is more friable and therefore has the potential to become airborne when the trays are moved or stacked. One way to minimise this build up is to ensure that the trays are washed regularly. Further means of minimising worker exposure are to incorporate the trays into a down-draft table so that fibrous dust is pulled away from the worker when the pieces are removed, or use perforated release paper placed on the trays and disposed of regularly.

DRYING AND PACKAGING

Exposure can also occur when loading and unloading the dried pieces out of the oven, especially when removing them from the trays and packing them into boxes. The friable nature of the pieces means that they can create dust when they knock against each other so ideally they should be packed in boxes with dividers to separate the finished products. Quality checks and manual finishing should be carried out under LEV, unless fibrous dust concentrations have been shown to be low.

¹ use of mist systems should take into account Legionella control measures and where applicable local regulations regarding this control