



CARE GUIDANCE

RECOMMENDATIONS ON BEST PRACTICE

LEVEL 3

Removal



REMOVAL

INTRODUCTION

This is a level 3 document in the ECFIA CARE Guidance series and should be read in conjunction with the level 1 document "Working with HTIW – Effective Risk Management".

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

WHAT IS REMOVAL?

"Removal" to large scale demolition of HTIW and other refractory products from high-temperature industrial process equipment such as furnaces, and also smaller scale removal where control measures such as LEV are not possible.

DUST EXPOSURE

Release of fibrous and particulate dust during removal is caused by:

- manual handling of friable HTIW materials/products that have been exposed to heat,
- bagging of the removed material,
- transfer to waste disposal site.

Particular care must be taken when removing HTIW blankets, modules or formed shapes. For example, pulling a module under tension from the metal pins of the anchor (refer to Fig. 1-4) – and in particular removing modules and blankets from complex areas of the construction (i.e. corners and other inaccessible places) – can lead to increased fibrous dust release.

The dust released during these activities must be adequately controlled to ensure operators' safety; this document highlights some of the ways in which this can be done.

WET METHOD

If technically and practically possible, and safe to do so, dust exposure during removal of modules and other HTIW refractory materials can be significantly reduced by wetting using a water spraying device. The dry dust will be "captured" by the water (with added dust suppressing agent) and dust exposure reduced.



Figs. 1&2: pulling a HTIW module from the metal pins of the anchor



"AIR FED SYSTEM WITH P3 FILTER"



Figs. 3&4: Removed material placed into sealed plastic bags Fibrous dust reduction

Removal is categorised as an operation with high exposure levels. Therefore relevant health and safety measures including **the use of respiratory protection with P 3 filter or filtering face piece FFP 3, preferably a safety mask¹ with airflow system, and personal protective clothing, are required for all removal operations.**

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With mask: BS EN 12942; With Hood/ Helmet: BS EN 12941



The location of removal activities should be marked as an area of caution by using warning tape and signs at a radius/distance of about 6 meters around the location. The floor in the area should be covered with plastic film prior to the removal of HTIW.

HTIW waste (blankets and modules) should be handled carefully to prevent airborne dust generation. Where technically feasible, equipment, such as portable tools, which create less dust or which have built-in dust extraction should be used in removal operations. A mobile HEPA-vacuum cleaner with appropriate accessories and fittings is the preferred method for removing fibrous dust from surfaces and for cleaning the work station. When the work has been completed, any used protective clothing should be thoroughly cleaned (vacuumed) and/or disposed of.

After the removal operation, the dust that remains on the surface of the surrounding area and any equipment used in the process, can present further secondary dust exposure. The handling of portable tools can disturb settled dust and can create an exposure issue for the worker. In order to prevent this, handling should be kept to a minimum and workers should take extra care to try not to create additional dust disturbance. In order to capture the dust and to prevent further exposure to the worker, the use of a mobile dust extraction unit should be considered. The plastic film, used to line the removal site, should be wrapped up, sealed and disposed of appropriately.

HANDLING OF WASTE

The removed HTIW material/waste must be handled carefully and placed into plastic air-tight bags and sealed. All ASW-containing material for disposal must be kept in a segregated area in sealed and labelled bags (e.g. marked "ASW/RCF waste"). All HTIW and other refractory waste should be disposed of according to national regulations and laws. If the waste is contaminated with other harmful substances (e.g. heavy metals) this has to be taken into consideration when storing and disposing of the waste. Practical procedures from national regulations should be followed (e.g. TRGS 558; TRGS 559; COSHH) or developed in cooperation with the responsible national government department and waste receiving point. As national and local regulations can vary there is a need to consult with local authorities. A detailed list of waste codes can be found in the CARE Guidance Level 3: "Waste Disposal".

SUMMARY

Removal operations must be undertaken by professional, trained personnel. Materials must be handled with care to prevent dust generation. Where it is technically and practically possible pre-wetting of the HTIW will help to reduce dust generation. Dust should also be reduced by using a HEPA vacuum system to clean the area after removal.

HTIW waste should be placed in to plastic bags, which are then sealed and labelled before removal to the waste skip/container.



FURTHER INFORMATION

CARE Guidance Documents

Level 2: "Local Exhaust Ventilation (LEV) Systems for High Temperature Insulation Wool (HTIW)"

Level 3: "Waste Disposal"

Links:

- www.guidance.ecfia.eu
- www.hse.gov.uk/coshh
- www.baua.de
- www.inrs.fr

References:

TRGS 558:

Technical Rules for Hazardous Substances: Activities involving high temperature wool

TRGS 559:

Technical Rules for Hazardous Substances: Mineral Dust

COSHH:

Control Of Substance Hazardous to Health

INRS Guidance document:

ED 6085 Refractory Ceramic Fibres Isolation and Thermal Protection in the Industrial Environment Chapter 8.6 dealing with ASW/RCF removal waste