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Rules or Handbooks or Guidelines

Appendix 2 Environmental Cleanliness

This Appendix provides guidelines relating to the cleanliness requirements for the post cleaning handling of vacuum components for installation in the various ITER Vacuum systems. It only refers to the post final cleaning cleanliness requirements to maintain the achieved cleanliness.

<i>Approval Process</i>			
	<i>Name</i>	<i>Action</i>	<i>Affiliation</i>
<i>Author</i>	Worth L.	02 Sep 2009:signed	IO/DG/CP/PSP/VSP
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<i>Approver</i>	Pearce R.	14 Sep 2009:approved	IO/DG/CP/PSP/VSP
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<i>Change Log</i>			
Appendix 2 Environmental Cleanliness (2EL9Y6)			
<i>Version</i>	<i>Latest Status</i>	<i>Issue Date</i>	<i>Description of Change</i>
v1.0	In Work	27 Aug 2008	
v1.1	In Work	12 Jan 2009	
v1.2	In Work	13 Jan 2009	
v1.3	Signed	18 Jun 2009	Updated to include new figures for airborne contamination and minor textual changes
v1.4	Approved	02 Sep 2009	Minor changes to text for consistency with Vacuum Handbook

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Environmental Cleanliness

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2 Environmental Cleanliness requirements pertaining to Vacuum Quality Classification

2.1 Scope

This Appendix provides guidelines relating to the cleanliness requirements for the post cleaning handling of vacuum components for installation in the various ITER Vacuum systems. It only refers to the post final cleaning cleanliness requirements to maintain the achieved cleanliness.

It is anticipated that further guidance which will not be mandatory may be provided in the future.

2.2 Post Cleaning Handling of Vacuum Components

The following details are reproduced from the ITER Vacuum Handbook (Issue 2.3), Section 24.5 and Table 24.1 and are therefore mandatory.

“After final cleaning, the handling of vacuum equipment shall be controlled to preserve cleanliness. General area cleanliness requirements pertaining to Vacuum Classification are summarised in Table 2-1. The suitability of any given area used for handling vacuum equipment should be assessed on a regular basis by monitoring the airborne particulate count and should not exceed 5.0×10^6 particles of size $> 0.5 \mu\text{m}$ per m^3 for VQC 1.

VQC	Cleanliness requirements	Personnel	Area Cleanliness	Monitoring
1	Segregated clean area. Limited Access to authorised personnel. Authorised equipment operated to approved procedures. Management of equipment (e.g. no vacuum pumps exhausting into clean area)	Trained personnel. Protective hair nets. Powder free latex or nitrile outer gloves. Clean white overalls. Overshoes. Clean job specific footwear	Daily Cleaning of area including floors and surfaces. Sticky mats at area entry	Daily air quality checks. Results stored in component document package. Weekly cleanliness test of area with results stored in component document package
2	Authorised equipment operated to approved procedures. Management of equipment (e.g. no vacuum pumps	Trained personnel Powder free latex or nitrile outer gloves for the handling of clean equipment	Daily Cleaning of work area including floors and surfaces.	

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	exhausting into clean area)			
3&4	House Keeping	Trained personnel. Powder free latex or nitrile outer gloves for the handling of clean equipment	Daily cleaning of area.	

Table 2-1 Environmental cleanliness pertaining to VQC

Additional cleanliness requirements shall be defined in the component installation procedures.”