



Technical Guideline

Number

9.1e

CSVS

Transport and Packaging of Vacuum Components

Status

2017-08-02

After the vacuum chamber or set of vacuum chambers has successfully passed the FAT, and the Company has released the shipment, the vacuum chamber or set of vacuum chambers must be packed carefully in such a way that it remains clean and free from any damage or contamination at all times during shipping, transportation and storage. A stable, weather-proof packaging is mandatory. It is recommended to keep and to ship the vacuum chamber or set of vacuum chambers in a wooden box. Furthermore, each vacuum chamber or component shall be packed in a plastic bag. To prevent residual moisture a desiccant bag (e.g. silica gel) shall be added into each plastic bag.

Prior to packaging and shipping of the vacuum chamber or set of vacuum chambers it must be vented thoroughly with dry nitrogen (99.995% purity = nitrogen 4.5). In some cases, a GN₂ filling of the corresponding vacuum chamber or set of vacuum chambers may be demanded. The vacuum chamber or set of vacuum chamber must be properly supported and contained in order to prevent any damage during handling and transport.

Special attention must be paid to assemblies and sub-assemblies with moving parts. These must be securely fastened, padded, crated and/or boxed for shipping so that any damage due to vibration or unwanted motion is prevented.

All packaging must be robust and suitable for lifting and transportation without any damage using a forklift truck or crane.

All shipping containers must be labelled or tagged with the following information:

- a) name of each single item according to the Company's nomenclature,
- b) name and address of the Contractor including named personnel to be contacted by the Company in case of any observed damage of packed items or components,
- c) weight and size of each single item,
- d) weight and size of package, box, pallet,
- e) if special handling is required: safety note, hazard warning, handling note (e.g. "FRAGILE"), marking with tilt-watch, shock-watch or shock sensors, support specifications for transport and lifting (e.g. "THIS SIDE UP" or "TOP"), etc.
- f) labelling with barcode system defined by the Company: code information should contain at least: a), b) and c).

Prior to shipment, it must be ensured that one flange of each vacuum chamber is labelled and tagged with the corresponding numbering of the component or QR code according to the Company's specifications, if demanded.

The following documents must be provided at the delivery of the vacuum component:

- a) accompanying protocol/record with component number,
- b) date of delivery,
- c) drawing number(s).

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