

WAC 51-54A-3904 Systems and equipment.

3904.2 Systems and equipment. Systems or equipment used for the extraction of oils from plant material shall comply with either Section 3404.2.1 or 3404.2.2.

3904.2.1 Listings. Systems or equipment used for the extraction of oils from plant material shall be listed and labeled in accordance with UL 1389 and installed in accordance with the listing and the manufacturer's installation instructions.

3904.2.2 Approvals. Systems or equipment used for the extraction of oils from plant material shall be approved for the specific use. The system shall be reviewed by a registered design professional. The registered design professional shall review and consider any information provided by the system's designer or manufacturer. A technical report in accordance with Section 3904.2.2.1 shall be prepared and submitted to the fire code official for review and approval. The firm or individual preparing the technical report shall be approved by the fire code official prior to performing the analysis.

3904.2.2.1 Technical report. A technical report, reviewed and approved by the *fire code official* as required by Section 3904.2.2, is required prior to the equipment being located or installed at the facility. The report shall be prepared by a *registered design professional* or other professional approved by the *fire code official*.

3904.2.2.2 Report content. The technical report shall contain all of the following:

1. Manufacturer information;
2. Preparer of record of the technical report;
3. Date of review and report revision history;
4. Signature page, including all of the following:
 - 4.1. Author of the report;
 - 4.2. Date of report;
 - 4.3. Date and signature of *registered design professional* of record performing the design or peer review.
5. Model number of the item evaluated. If the equipment is provided with a serial number, the serial number shall be included for verification at the time of site inspection;
6. Methodology of the design or peer review process used to determine minimum safety requirements. Methodology shall consider the basis of design, and shall include a code analysis and code path to demonstrate whether specific codes or standards are applicable;
7. Equipment description. A list of every component and subassembly, such as fittings, hose, quick disconnects, gauges, site glass, gaskets, valves, pumps, vessels, containers and switches, of the system or equipment, indicating the manufacturer, model number, material and solvent compatibility. Manufacturer's data sheets shall be provided;
8. A general flow schematic or general process flow diagram of the process. Postprocessing or winterization shall be included in this diagram. Primary components of the process equipment shall be identified and match the equipment list required in Item 7. Operating temperatures, pressures and solvent state of matter shall be identified in each primary step or component. A piping and instrumentation diagram (PID or P&ID) shall be provided;

9. Analysis of the vessel(s) if pressurized beyond standard atmospheric pressure. Analysis shall include purchased and fabricated components;

10. Structural analysis for the frame system supporting the equipment;

11. Process safety analysis of the extraction system, from the introduction of raw product to the end of the extraction process;

12. Comprehensive process hazard analysis considering failure modes and points of failure throughout the process. The process hazard analysis shall include a review of emergency procedure information provided by the manufacturer of the equipment or process and not that of the facility, building or room;

13. Review of the assembly instructions, operational and maintenance manuals provided by the manufacturer;

14. List of references used in the analysis.

3904.2.2.3 Site inspection. Prior to operation of the extraction equipment, where required by the *fire code official*, the engineer of record or *approved professional*, as *approved* in Section 3904.2.2, shall inspect the site of the extraction process once equipment has been installed for compliance with the technical report and the building analysis. The engineer of record or *approved professional* shall provide a report of findings and observations of the site inspection to the *fire code official* prior to the approval of the extraction process. The field inspection report authored by the engineer of record shall include the serial number of the equipment used in the process and shall confirm that the equipment installed is the same model and type of equipment identified in the technical report.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 19-24-058, § 51-54A-3904, filed 11/27/19, effective 7/1/20.]