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Product Safety Marking and Requirements for Components and Materials

Document Number and Revision: 3092 Rev GE

Overview

This specification indicates that a part, an assembly, or a material used in a part must comply with product safety regulatory agency requirements. Agency examples are Underwriters Laboratories (UL), Canadian Standards Association (CSA) and TUV Rheinland.

Audience

Oracle audience is Sourcing and Purchasing Departments.

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1.0 Scope

This Oracle specification indicates safety critical parts, assemblies and/or materials used in Oracle products which must comply with product safety regulatory agency requirements. Product safety regulatory agency examples are Underwriters Laboratories (UL), Canadian Standards Association (CSA), TUV Rheinland, etc.

2.0 Purpose

This specification provides requirements for component product safety approvals and markings in addition to any part specific requirements. It provides the necessary information for Suppliers, Oracle program teams and manufacturers to verify approvals and markings of safety critical components.

3.0 Design Changes

Subsequent to qualification by Oracle Product Safety Engineering, no changes in design, construction or part number shall be made without prior written consent/approval from Oracle Product Safety Engineering.

4.0 Commodity Supply and Sourcing Management Functions

Suppliers are provided the latest revision of this specification and any other required Oracle specifications referred to in this document. The latest version of this specification can be accessed in Fusion Product Development module.

5.0 Definitions

5.1 Nationally Recognized Testing Laboratory (NRTL): A US OSHA accredited laboratory to test and certify equipment for use in the workplace. **https://www.osha.gov/nationally-recognized-testing-laboratory-program** .

5.2 National Certification Body (NCB):   A certification organization that grants nationally recognized conformity certificates to electrical products. NCBs are accredited through the IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE, or CB Scheme). https://www.iecee.org/ .

6.0 Reference Documents

6.1 7335087: Oracle Commodity Compliance Specification
6.2 950-1009-latest: Oracle Fabrication Specification – Printed Wiring Boards

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7.0 Examples of Markings

The markings shown below are examples that may be provided on a particular product, component, sub-assembly or material. The supplier may use other agency certifications/markings. Requirements for agency certifications on component, sub-assembly or material types are given in Section 7.

Marking Examples	Description
UL Listing to US (UL) standards **UL Listing to Canada (CSA) standards** **UL listing to US (UL) and Canada (CSA) standards**	UL Listing Marks - issued by UL for products that meet the applicable UL and/or CSA tests and standards requirements as a complete system or product. Designation of UL Listing is the appearance of the UL Listing Marks on the product. UL may require additional elements shown with the mark and/or allow other marking methods. This is considered a "NRTL" mark.
UL Recognition to US (UL) standards **UL Recognition to Canada (CSA) standards** **UL Recognition to US (UL) and Canada (CSA) standards**	UL Recognition Mark – issued by UL for components, materials or sub-assemblies that meet the applicable UL and/or CSA standards requirements and intended for use in an end-product or system. UL Recognition includes "Conditions of Acceptability" or "Engineering Considerations" that must be assessed in the end-use product. Designation of UL Recognition is the appearance of the UL Recognition Mark (shown below) on the product. UL may allow other marking methods. This is considered a "NRTL" mark.
	CSA Certification Mark – Issued by CSA for products or components/subassemblies that meet the applicable CSA standards requirements. This is considered a "NRTL" mark.
	ENEC Mark – Issued by accredited certification bodies. The mark indicates compliance to European Union requirements for a component/product. The number shown next to the ENEC mark identifies the issuing certification body.

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Mark	Description
(FI) (N) (S) (D)	Nordic Marks (Northern Europe) – issued by certifying bodies. Each are issued individually. S = Semko (Sweden) N = Nemko (Norway) FI = Fimko (Finland) D = Demko (Denmark)
CE	CE Mark – A self declaration mark used by the manfacturer of the component/product. The CE mark indicates compliance to European Union requirements and must be based on a Technical File maintained by the manufacturer.

8.0 Certification, Marking and Traceability Requirements

The following table list requirements to obtain and maintain traceability of each product safety critical component, sub-assembly and material.   All parts are controlled by the supplier at the component, sub-assembly or material levels.

8.1 End-use application of components in the table below to be used in Oracle products must be reviewed by Oracle Product Safety Engineering to identify any specific certification requirements.

8.2 Supplier must provide a copy of the "Engineering Considerations" or "Conditions of Acceptability" provided in the certification reports for all components in the table below.

8.3 All components and products are to be marked with manufacturer name, model and any additional markings required by the certifying agencies. If a component is too small to be marked, identification must be according to requirements of certifying agencies.

	NRTL Certification (US & Canada)	EU Certification (European Union)	CB Scheme Certification (Int'l)	FDA CDRH Letter of Accession (USA)	BSMI (Taiwan)	CCC (China)	BIS (India)	KATS (S. Korea)	Comments
Agency Marking →	UL, C-UL or other comparable NRTL markings	VDE or TUV or other comparable EU markings	CE	CFR statement Laser Class Any required warnings	BSMI logo with RoHS designation	CCC logo	BIS logo with registration Number	KC Mark	
AC Line Filters	X	X							
Appliance Inlet (see comments)	X	X							End-use application of appliance inlet in Oracle products must be reviewed by Oracle Product Safety Engineering for specific certification requirements.
Appliance Inlet with integral EMI Filter	X	X							
Batteries/Battery Packs - Lithium Ion (Secondary Batteries) (see comments)	X	X	X				X (see comments for India BIS)		Refer to Oracle specification 7335087 for additional certification requirements. UL 1642 (cell), UL 2054 (pack) IEC/EN 62133 (cell & pack):

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									If battery pack contains protection circuitry, pack must also comply with 60950-1 and 62368-1. India BIS required for batteries/packs used in portable applications.
Batteries - Lithium Metal (Coin Cell Types, Primary Batteries)	X (see comments)								If a lithium cell is integral with an IC or if an IC is used in a lithium battery regulation circuit, that component shall be UL Recognized in UL Category (NWGQ2) or (AZOT2) and IEC Certified to IEC 60950-1 or 62368-1.
Cable Assemblies (Chassis Internal)	X (see comments)								Per Oracle Engineering Drawing, must meet the following: • Manufacturer name of the wire. • Minimum 18 AWG wire. • Flammability rating: VW-1. • UL 758 wire.
Cables – External	X (see comments)								Must be UL Recognized under Wiring Harness, ZPFW2.
Cables Assemblies– Fiber/External		X (see comments)	X (see comments)	X					If cable assembly has integral transceivers, they must be UL Recognized under UL 62368-1 and certified to IEC/EN 62368-1 and 60825-1. Cables must be UL Listed under QAYK and be marked "OFC" or "OFN" with suffix letter P or R..
Capacitors, X or Y, used from AC Line-to-Line or AC Line to Ground	X	X							
Capacitors – SuperCaps (see comments)	X								Super Caps must be UL Recognized under BBBG2.
Cards – PCIe (see comments)	X	X	X						Attention to future safety standard changes, revisions or effective dates required. Refer to Oracle specification 7335087 for additional certification requirements.

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Agency Marking →	NRTL Certification (US & Canada) UL, C-UL or other comparable NRTL markings	EU Certification (European Union) VDE or TUV or other comparable EU markings	CB Scheme Certification (Int'l) CE	FDA CDRH Letter of Accession (USA) CFR statement Laser Class Any required warnings	BSMI (Taiwan) BSMI logo with RoHS designation	CCC (China) CCC logo	BIS (India) BIS logo with registration Number	KATS (S. Korea) KC Mark	Comments
Circuit Breaker (see comments)	X	X							Oracle Safety Engineering determines Listing vs. Recognition requirement based on end-use application in Oracle product.
Connectors, Receptacles and Plugs (see comments)	X	X							Oracle Safety Engineering determines requirement for certification vs. manufactured with UL Recognized, minimum flammability V-1.
Fans (see comments)	X	X							Supplier to provide the fan specification which must include the fan ratings (voltage and ampere) and CFM.
Flexible Circuits	X (see comments)	X							Must comply with Oracle Specification 10151002 and must be NRTL Recognized Printed Wiring Board.
Fuses (see comments)	X								Consult with Oracle Product Safety Engineering for specific certification requirements.
Fuseholders (see comments)	X								Consult with Oracle Product Safety Engineering for specific certification requirements.
Drives HDD, SDD (see comments)	X	X							For additional certification requirements, refer to Oracle specification 7335087.
ICs – current limiting (see comments)	X		X						Must comply with UL/IEC60950-1 Annex CC or UL/IEC62368-1 Annex G.
Labels	X (see comments)								Required for compliance labels, electrical rating labels, product safety warning labels and any labels that include a regulatory agency mark. Permanence of marking requirement to UL/IEC 60950-1, clause 1.7.11 or UL/IEC 62368-1, Annex F required.
Motors, Secondary (See comments)									To be marked with Manufacturer's name and model or Oracle specification number of the motor assembly.

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Operator Panel Assemblies	X	X (see comments)	X						If a power supply or inverter (> 42.4V or 60Vdc) is provided with the operator panel, EU Certification required.
Optical/Laser components (see comments)	X	X	X	X					Must include required markings for US CDRH, EN60825-1 and EN62368-1, including applicable safety laser warnings.
Optical Drives (DVDs) (see comments)	X	X	X	X					Must include required markings for US CDRH, EN60825-1 and EN62368-1, including applicable safety laser warnings.
Optical transceivers,– Includes lasers and high-power LEDs (see comments)	X	X	X	X					Refer to Oracle specification 7335087 for additional pluggable transceiver requirements.
Plastic Parts	X (see comments)								Consult with Oracle Product Safety Engineering for specific flammability requirements. Must be made of material as specified on the engineering drawing. Oracle Polymeric Materials Specification 1016999 includes many raw materials for plastic parts that can be used. The supplier must provide traceability of material based on the part engineering drawing or specification.
Power Distribution Unit (PDU) (see comments)	X	X	X		X	X	X	X	Refer to Oracle specification 7335087 for additional requirements. Refer to Oracle technical specification for power distribution unit.
External Power Adapters (see comments)	X	X	X		X	X	X	X	Refer to Oracle specification 7335087 for additional requirements.
Power Cordsets (see comments)	X	X	X		X	X	X	X	Refer to Oracle specification 7335087 for additional requirements.
Power Supplies (see comments)	X	X	X		X	X	X	X	Refer to Oracle specification 7335087 for additional requirements. Refer to Oracle technical specification for power supply.

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Printed Wiring Boards	X (see comments)								PWB flammability rating must be V-1 or better. Refer to Oracle specification 950-1009-(latest version) for additional requirements.
PTC Thermistor (Positive Temperature Coefficient)	X (see comments)	X (see comments)	X						Must be NRTL Recognized XGPU2 or JDYX2. Must be certified to IEC 60730-1.
Relays	X	X	X						
Receptacles – Convenient	X	X	X						
Switches (power and component)	X (see comments)	X	X (see comments)						Switches used as an interlock must be certified to UL 61058-1 and IEC 61058-1.
Terminals: Hook, Ring, Quick-Connect	X								
Terminal Boards, Blocks and Strips	X (see comments)								For use in AC applications or DC input applications.
Transformers – custom	X (see comments)								Insulation system and core dimensions per latest engineering drawing. Part must be marked with manufacturer's name and model number.
Tubing, Insulating	X								
Varistors, MOVs, Surge Protectors	X	X (see comments)	X						Must comply with Annex Q of UL/EN/IEC 60950-1, or UL/EN/IEC 62368-1 Annex G.
Wiring Ducts	X								
Wiring, Internal	X								
Wire Harnesses	X (see comments)								A wire harness is normally constructed according to a harness diagram and is generally designed for a specific application. Flat cables are considered wire harnesses. The wire harness is to be built by a UL Recognized supplier under the "Wiring Harnesses – Component" program, category ZPFW2.

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Related Information

Reference Documents and Records

REFERENCE DOCUMENTS AND RECORDS

Document History

Rev	Date	Description of Change	Originator
A		INITIAL RELEASE	N/A
B	9/1/1978	REVISED AND RETYPED	N/A
C	6/4/1979	REFORMATTED & REVISED	N/A
D	8/8/1982	REFORMATTED & REVISED	N/A
E	8/12/1985	REVISED, ADDITIONAL COMPONENTS INCLUDED	
F	8/7/1987	REVISED, ADDITIONAL COMPONENTS INCLUDED	N/A
		GENERAL REVISIONS FOR COMPONENT TECHNOLOGY UPDATES AND TO INCORPORATE DOCUMENT IN ADVANCED QUALITY PLANNING (AQP) PROCESS	N/A
Agile History			
G	4/18/1999	TITLE CHANGE, REFORMATTED AND REVISED	N/A
GA	4/6/2011	REFORMAT AND REVISIONS	N/A
GB	9/11/2014	GENERAL REVISIONS FOR COMPONENT TECHNOLOGY UPDATES AND TO INCORPORATE DOCUMENT IN ADVANCED QUALITY PLANNING (AQP) PROCESS	
PD History			
GC	10/26/2018	REVISED FORMAT OF SPEC, UPDATED VARIOUS COMPONENT REQUIREMENTS - COMMENTS ADDED FOR BATTERIES/BATTERY PACKS, CABLE ASSYS, FIBER/EXTERNAL, CARDS (CPU, GRAPHICS, I/O), FANS, ICS (CURRENT LIMITING), EXTERNAL POWER ADAPTERS, POWER CORDSETS, POWER SUPPLIES - ADDED TAIWAN, S. KOREA AND INDIA CERTIFICATION REQUIREMENTS FOR POWER CORDS, POWER SUPPLIES AND EXTERNAL POWER ADAPTERS	N/A

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GD	11/20/2022	Update to Redwood format. Removed reference to Beehive. Removed 7353737: Oracle 3rd Party Product (3PP) HW Compliance Requirements. Added UL CCN "AZOT2" to Lithium Batteries. Delete TUV SUD.	N/A
GE	02/10/2024	Section 5: updated OSHA link. Section 7: added additional UL/UR logos Section 8 table: updated comments on Capacitor – Super Caps to: Super Caps must be NRTL RC BBBG2. Consolidated Card – CPU, Cards – Graphic, Cards – I/O into one row – Cards – PCIe. Revised comments on Fans to: Supplier to provide the fan specification which must include the fan ratings (voltage and ampere) and CFM. Updated Flexible Circuit comments from UL recognized to NRTL Recognized Printed Wiring Board. Updated Hard Disk Drives to Drives – HDD, SDD. Updated Optical/Laser component comments: EN62368-1. Added new row to table for Power Distribution Unit. PTC Thermistor (Positive Temperature Coefficient) comments: added "must be NRTL Recognized XGPU2 or JDYX2." Changed Wiring, Processed to Wiring, Internal. Corrected punctuation throughout.	N/A

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