



Product Category Rule (PCR) Guidance for Building-Related Products and Services

Part B: Water Cooled Chiller EPD Requirements

UL 10010-4

www.ul.com/businesses/environment



Documents
Document Sharing Hub

Product Category Rules Part B: Water Cooled Chiller EPD Requirements, UL 10010–4

Second Edition, Dated June 29, 2018

Summary of Topics***Version 2.0 of the Product Category Rules Part B: Water Cooled Chiller EPD Requirements, UL 10010–4 has been issued.***

Subject to these terms and conditions and those in any other agreements between you and UL Environment, Underwriters Laboratories Inc. (UL) and/or their representatives, you are hereby granted a limited, non-exclusive, non-transferable license to use the Product Category Rules (PCR) solely for your internal, non-commercial business purposes. The PCR is not being sold, and other than the limited license granted herein UL retains all rights, title and interest (including exclusive ownership) in the PCR and all copyright therein. UL reserves the right to regain possession of the PCR from you at any time. When no longer needed, you agree to destroy the PCR (if in hardcopy form) or delete and purge the PCR from your files (if in electronic form). No part of the PCR may be reproduced, modified, stored in a retrieval system, or transmitted in any form by any means, whether electronic, mechanical photocopying, recording, or otherwise without prior written permission of UL or UL Environment. You further agree not to create any derivative works from the PCR or remove or alter any copyright or other proprietary notices in the PCR. The limited license to use the standard shall automatically terminate upon your breach of any of the terms and conditions herein or any other agreement between you and UL, UL Environment and/or their representatives.

UL Environment provides this PCR “as is” without warranty of any kind, either expressed or implied, including but not limited to, the implied warranties of merchantability or fitness for any purpose.

In no event will UL Environment, UL or any of their affiliates be liable for any special, incidental, consequential, indirect or similar damages, including loss of profits, lost savings, loss of data, or any other damages arising out of the use of or the inability to use this PCR, even if UL Environment or UL or their authorized representative has been advised of the possibility of such damage. In no event shall UL Environment’s or UL’s liability for any damage ever exceed the price paid for the license to use this PCR, regardless of the form of the claim.

Users of the electronic versions of UL Environment’s Product Category Rules agree to defend, indemnify, and hold UL Environment, ULI, their affiliates and each of their respective trustees, officers, employees, agents and representatives harmless from and against any loss, expense, liability, damage, claim, or judgment (including reasonable attorney’s fees) resulting from any error or deviation introduced while purchaser is storing an electronic PCR on the purchaser’s computer system.



Publisher:

UL Environment

Tracking of versions

Version	Comments	History
1.0	Preliminary version 1.0 by IBU – Product Category Rules Water Chilled Coolers confirmed by the Advisory Board (SVA)	May 2011
1.1	NA Addendum by UL Environment	January 2015
2.0	Update and revision to conform with ISO 21930: 2017, USGBC Guidance and UL Part A/Part B Structure	June, 2018

© UL Environment

Editor's Note:

This PCR is based on revisions made to the Institute of Construction and Environment (Institut Bauen und Umwelt e.V., or IBU) standard Part B PCR structure.

The revisions are not modifications to the overall methodology or structure of the IBU PCR, but are intended to reflect practices, methods and requirements that are specific to North America.

This PCR is valid for a period of five (5) years, set to expire in June, 2022.

I. Background Information and Acknowledgements

This PCR was developed to address the product group specific rules for the creation of Environmental Product Declarations (EPD) for water cooled chillers.

Other PCRs considered in the original development of this PCR include:

- Water Cooled Chiller PCR confirmed by the SVA, the Institute of Construction and Environment (Institut Bauen und Umwelt e.V., or IBU), Preliminary Draft v 1.0, May 2011¹

This PCR assumes a 75 year building service life to be consistent with ASTM E2921 (2013, Section 6.1.1), and ASHRAE 189.1 (2014, Section 9.5.1).

Interested Parties

This Part B has been prepared with input from the following stakeholders:

¹ At the time of publication, this PCR document was a preliminary version given EN 15804:2012 had yet to be published.



Trade Associations

- Air-Conditioning, Heating, and Refrigeration Institute (AHRI)

Manufacturers/Consultants

- Carrier
- Daikin
- Dimplex
- Trane

Governance

Trane sponsored the update of this PCR and is a member of the Air-Conditioning, Heating, and Refrigeration Institute (AHRI), the major industry accounting for more than 90% of HVACR and water heating residential and commercial equipment manufactured and sold in North America. AHRI's role is to inform its members of important industry developments and to represent their interests in projects such as the update of a PCR affecting their products. This is important because it effectively demonstrates that a large percentage of the chillers industry is represented in the effort to renew the PCR for water chiller products.

Involvement of Interested Parties

AHRI informed their members of the water chiller PCR update through their regularly scheduled association and association committee meetings, newsletters, e-mail messages, and similar types of outreach. Trade associations operate at the behest of its members, and the fact that trade associations are participating in the update of a PCR for chiller products is an indication that their memberships are aware of this project and have authorized their association to represent them in this important endeavour.

Per the USGBC PCR Guidance, 90% of the industry as represented by regional market volume was included in the update to this PCR with a minimum of three companies.

UL Environment posted an open call for participation in this PCR update in September 2017 via its standards website, social media outlets, and outreach to original committee stakeholders and LCA practitioners. UL Environment also pursued direct outreach with manufacturers outside of AHRI in the markets represented in this PCR.

Update Process

The PCR shall be revised five (5) years from the publication date. The PCR shall be revised before the five year date if the following occurs in the industry:

- The industry desires an update
- Core governing standards ISO 14040, 14044, 14025, 21930 are updated with substantial material changes

Review

This Part B was reviewed by the following:

Lise Laurin
EarthShift Global, LLC
lise@earthshiftglobal.com

Sean Beilman
BCER Engineering, Inc.
sbeilman@bcer.com

François Charron-Doucet
Group AGÉCO
Francois.charron@groupeageco.ca

II. Scope

This document contains the Product Category Rule (PCR) requirements for Water Cooled Chiller Environmental Product Declarations (EPDs) published in coordination with the EN 15804 and ISO 21930 standards. The requirements for the background Life Cycle Assessment (LCA) project report used to inform the EPD are contained in UL Environment's Part A: Life Cycle Assessment Calculation Rules and



Report Requirements. This Part B document, coupled with the Part A, conforms to the EN 15804, ISO 21930, ISO 14025, and the US Green Building Council PCR Guidance sustainability standards for EPD reporting.

This PCR does not address requirements for creating an Industry Wide EPD given the industry does not anticipate their creation.

General Guidance

The scope of this PCR applies to the product group water cooled chillers (referred to as 'chillers') that are used for the purpose of cooling water in an air conditioning system, or process cooling system of a commercial building or building complex. Chillers includes all commercially available chiller products according to the standards or technical approvals shown under Section 9.

This PCR applies to the entirety of a packaged product intended for individual sale.

Applicable Products

The following CSI code covers the scope of this Part B:

- 15620 (pre-2016)
- 23 64 00 Packaged Water Chillers:
 - o 23 64 13 Absorption Water Chillers
 - o 23 64 13.13 Direct-Fired Absorption Water Chillers
 - o 23 64 13.16 Indirect-Fired Absorption Water Chillers
 - o 23 64 16 Centrifugal Water Chillers
 - o 23 64 16.16 Water-Cooled Centrifugal Water Chillers
 - o 23 64 19 Reciprocating Water Chillers
 - o 23 64 23 Scroll Water Chillers
 - o 23 64 23.16 Water-Cooled Scroll Water Chillers
 - o 23 64 26 Rotary-Screw Water Chillers
 - o 23 64 26.16 Water-Cooled, Rotary-Screw Water Chillers
 - o 23 64 33 Modular Water Chillers
 - o 23 64 33.16 Water-Cooled, Modular Water Chillers

Non-Applicable Products

Chillers that are air-cooled are not included :

- 23 64 23.13 Air-Cooled Scroll Water Chillers
- 23 64 26.13 Air-Cooled, Rotary-Screw Water Chillers
- 23 64 33.13 Air-Cooled, Modular Water Chillers

System Boundary

The system boundary for EPDs created using this PCR is cradle to grave.

The EPD requirements include:

- Requirements of the EN 15804 standard as a European core EPD for the purpose of consistency between declarations in Europe and the United States.
- Requirements of the ISO 21930:2017 standard for the purpose of global consistency



- The calculation rules for the Life Cycle Assessment and Requirements on the Project Report are specified in “Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report,” available at <http://www.shopulstandards.com>

III. Industry Average EPD Requirements

Given the specificity of the products within the water cooled chiller category, rules for the industry average EPD could not be developed.

IV. Product-specific LCA calculation rules

Product-specific LCA calculation documents exist in accompanying templates to this PCR:

Centrifugal Chillers Average Efficiency Calculator.xlsx