NTB
Interstaatliche Hochschule für Technik Buchs
FHO Fachhochschule Ostschweiz

WPZ
Wärmepumpen-Testzentrum

General Website User Guide

Purpose

This user guide describes the primary uses of the WPZ Data Warehouse http://wpz.energiewerkbank.ch website: uploading of new test results, search-and-comparison of heat pumps by homeowners, and maintenance of the WPZ Data Warehouse itself. The search-and-comparison portion of the website provides homeowners a method of finding heat pumps matching their home's requirements and viewing the differences among these heat pumps in detail. Additionally, all of WPZ's public heat pump test results are available for download in Microsoft Excel format through links in the navigation bar, and French and English translations are available for the public interface. The maintenance and test result uploading portions of the website are only available to WPZ personnel after authentication with the site's login credentials, and they provide the means to update the database with results from the heat pump tests which the WPZ conducts. Since this site is a subdomain of Markus Markstaler's site, his credentials are necessary for file transfers and any updates beyond maintaining the database.

Uploading Test Results

By navigating to the site http://wpz.energiewerkbank.ch/pruefresultate, WPZ technicians may add a set of new test results to the database without needing to worry about updating individual tables. Individual test conditions may be specified and added under the "Prüfbedingung" section, and if a bivalent point is given in the "Bivalentpunkt" field then a corresponding test condition should be recorded with the "Abiv / W__" label. Additional test conditions may be inserted by clicking the "Einfügen" button at the bottom of the table or removed by clicking the ✖ symbol on the right. After the results are submitted through the "Senden" button at the bottom of the form, the database stored on the server and the Microsoft Excel files available for download will be promptly updated.
Following is a description of each of the input fields. The quotation marks included in the examples should not be understood to be part of the example, and none of the numeric entries are required to have any certain number of decimals.

Sichtbar
Description: visibility of the new test results for public search and download
Required: Yes Constraints: None
Type: true/false

Kategorie
Description: type of the heat pump being tested
Required: Yes Constraints: None
Type: dropdown

Heizungstyp
Description: type of heating provided
Required: Yes Constraints: None
Type: dropdown

Auftraggeber
Description: name of the heat pump manufacturer
Required: Yes Constraints: None
Type: dropdown

Gerät
Description: model of the heat pump being tested
Required: Yes Constraints: None
Type: text entry Example: “E-Natura 350-G 33kW”

Gerät 2
Description: optional subfield of the heat pump model
Required: No Constraints: None
Type: text entry Example: “BWH351.A33”

Prüfnummer
Description: ID number of the WPZ test
Required: Yes Constraints: 7 digits separated by dashes after the 3rd and 5th digits
Type: text entry Example: “123-45-67”

Bauart
Description: construction type of the heat pump
Required: No Constraints: None
Type: dropdown

Produktart
Description: current stage or type of manufacturing
Required: No Constraints: None
Type: dropdown

Kältemittel 1
Description: primary type of refrigerant
Required: Yes Constraints: None
Type: text entry Example: “R410A”

Kältemittelmenge 1
Description: storage capacity in kilograms of the primary type of refrigerant
Required: Yes Constraints: Must be a number
Type: text entry Example: “1.2”

Kältemittel 2
Description: secondary type of refrigerant
Required: No Constraints: None
Type: text entry Example: “R410A”

Kältemittelmenge 2
Description: storage capacity in kilograms of the secondary type of refrigerant
Required: No Constraints: Must be a number
Type: text entry Example: “1.2”

Schall aussen
Description: sound level of the heat pump to surrounding neighbors or passersby
Required: No Constraints: Must be a number
Type: text entry Example: “12.3”

Schall aussen Prüfpunkt
Description: temperature test point at which the outdoor sound level was measured
Required: No Constraints: Should have the same format as a Prüfbedingung
Type: text entry Example: “A7 / W55”

Schall innen
Description: sound level of the heat pump within its building
Required: No Constraints: Must be a number
Type: text entry Example: “12.3”

Schall innen Prüfpunkt
Description: temperature test point at which the indoor sound level was measured
Required: No Constraints: Should have the same format as the Prüfbedingungen
Type: text entry Example: “A7 / W55”

Prüfbedingung
Description: The environmental conditions, denoted by the ambient and the supply temperature, at which the corresponding test results were measured
Constraints: the condition "Abiv / W__" should be included if the "Bivalenzpunkt" field is filled.
Required: Yes Type: dropdown

Heizleistung
Description: heat capacity in kilowatts of the heat pump
Required: Yes Constraints: Must be a number
Type: text entry Example: "1.23"

Leistungsaufnahme
Description: input power in kilowatts of the heat pump
Required: Yes Constraints: Must be a number
Type: text entry Example: "1.23"

COP
Description: coefficient of performance
Required: Yes Constraints: Must be a number
Type: text entry Example: "1.23"

Volumenstrom Norm
Description: volume flow rate of the water source at standard temperature in m^3/hr
Required: No Constraints: Must be a number
Type: text entry Example: "1.23"

Volumenstrom V35
Description: volume flow rate of the water source at 35 °C in m^3/hr
Required: No Constraints: Must be a number
Type: text entry Example: "1.23"

Volumenstrom V45
Description: volume flow rate of the water source at 45 °C in m^3/hr
Required: No Constraints: Must be a number
Type: text entry Example: "1.23"

Volumenstrom V55
Description: volume flow rate of the water source at 55 °C in m^3/hr
Required: No Constraints: Must be a number
Type: text entry Example: "1.23"

Bivalenzpunkt
Description: the temperatures of the ambient air and source water at which the bivalent point was calculated. Should correspond to the data described by the "Abiv / W__" Bedingung
Required: No Constraints: Formed by two numbers separated by a slash
Type: text entry Example: "-7 / 34" or "2/25"

SCOP
Description: standard coefficient of performance
Required: No Constraints: Must be a number
Type: text entry Example: "1.23"

Bemerkung
Description: comment field for any additional necessary information
Required: No Constraints: None
Type: text entry Example: "2 Compressors"

Prüfnormen
Description: testing standards conducted and met on the given heat pump
Required: Yes Constraints: None
Type: checkboxes

Search and Comparison

The tool to search and compare heat pumps is designed to be an intuitive interface that the average person could navigate to online and immediately begin to use. After choosing the structure and type of heat pump that a homeowner needs to use, the tool provides two different methods of finding suitable heat pumps. The first is based on specifications which a homeowner could receive from a professional heat pump installer, and the second is based on measurements that a homeowner could make themselves of their home through an existing heat pump in the case that they desired to upgrade. Both of these tools use a formula incorporating the search criteria to approximate the heat capacity of heat pumps suited to the homeowner and display pumps whose test results at the specified environmental condition match to within 20%.

Maintenance

Since updates upon the database is a process with multiple side effects and possible consequences to describe, and also since the structure of the database is a topic unto itself, further information pertaining to the maintenance of the WPZ Data Warehouse is laid out within the *Database Breakdown* and *Database Maintenance User Guide* documents.