

## Report on the results of the enquiry of the set of 15 CEN EPBD standards prepared by CEN TC 228 – Heating systems and water based cooling systems in buildings



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For all prEN's the enquiry finished according to the overall planning of CENTC 228 before the end of March. There was a huge interest on the standards, most of countries had positive comments. The majority of countries would accept all the drafts as EN standards, only for two of them more fundamental improvements are needed. These are the drafts on Emission efficiency (prEN 15316-2) and Heat Pump Generation efficiency (prEN 15216-4-2).

The time schedule and the procedure for answering the comments and revising the standards is the following:

The draft standards are expected to be ready for FV and the connected draft TR's for TCA by September 2015. The different task leaders are already planning task group meetings to discuss and resolve all comments before the CENTC 228 WG4 meeting June 2015.

The list of TC 228 standards on heating systems and water based cooling systems in buildings:

- prEN 12831-1: 2014 – Method for calculation of the design heat load - Part 1: Space heating load.
- prEN 12831-3:2014 – Method for calculation of the design heat load - Part 3: Domestic hot water systems heat load and characterisation of needs.
- prEN 15316-1:2014 – Method for calculation of system energy requirements and system efficiencies - Part 1: General and Energy performance expression.
- prEN 15316-2:2014 – Method for calculation of system energy requirements and system efficiencies - Part 2: Space emission systems (heating and cooling).
- prEN 15316-3:2014 – Method for calculation of system energy requirements and system efficiencies - Part 3: Space distribution systems (DHW, heating and cooling).
- prEN 15316-4-1:2014 – Method for calculation of system energy requirements and system efficiencies - Part 4-1: Space heating and DHW generation systems, combustion systems (boilers, biomass).
- prEN 15316-4-2:2014 – Method for calculation of system energy requirements and system efficiencies - Part 4-2: Space heating generation systems, heat pump systems.
- prEN 15316-4-3:2014 – Method for calculation of system energy requirements and system efficiencies - Part 4-3: Heat generation systems, thermal solar and photovoltaic systems.
- prEN 15316-4-4:2014 – Method for calculation of system energy requirements and system efficiencies - Part 4-4: Heat generation systems, building-integrated cogeneration systems.
- prEN 15316-4-5:2014 – Method for calculation of system energy requirements and system efficiencies - Part 4-5: District heating and cooling.
- prEN 15316-4-8:2014 – Method for calculation of system energy requirements and system efficiencies - Part 4-8: Space heating generation systems, air heating and overhead radiant heating systems, including stoves (local).
- prEN 15316-4-10:2014 – Method for calculation of system energy requirements and system efficiencies - Part 4-10: Wind power generation systems.
- prEN 15316-5:2014 – Method for calculation of system energy requirements and system efficiencies - Part 5: Space heating and DHW storage systems (not cooling).
- prEN 15459-1:2014 – Energy performance of buildings - Part 1: Economic evaluation procedure for energy systems in buildings.
- prEN 15378-1:2014 – Heating systems and DHW in buildings - Part 1: Inspection of boilers, heating systems and DHW.
- prEN 15378-3:2014 – Heating systems and DHW in buildings - Part 3: Measured energy performance. ■

## Modular structure Overview of the set of EPB standards:

Technical Building Systems									
Overarching		Building (as such)							
Descriptions		Standards		Descriptions		Heating		Cooling	
sub1	M1	sub1	M2	sub1	M3	M4	M5	M6	M7
1	General	EN 15603 (EN ISO 52000-1) CEN/TR 15615 (CEN ISO/TR 52000-2)	1	General --	1	General EN 15316-1	EN 16798-9 CEN/TR 16798-10	EN 16798-3 (EN 13779 rev.) CEN/TR 16798-4	EN 16798-3 (EN 13779 rev.) CEN/TR 16798-4
2	Common terms and definitions, symbols, units and subscripts	EN 15603 (EN ISO 52000-1) CEN/TR 15615 (CEN ISO/TR 52000-2)	2	Building Energy Needs	EN ISO 52016-1 CEN ISO/TR 52016-2	2	Needs		
3	Applications	EN 15603 (EN ISO 52000-1) CEN/TR 15615 (CEN ISO/TR 52000-2)	3	(Free) Indoor Conditions without Systems	EN ISO 52016-1 CEN ISO/TR 52016-2	3	Maximum Load and Power	EN 16798-11 NCETR 16798-12	EN 16798-13 p/EN 15193-1
4	Ways to Express Energy Performance	EN ISO 52003-1 EN ISO 52003-2	4	Ways to Express Energy Performance	EN ISO 52018-1 CEN ISO/T 52018-2	4	Ways to Express Energy Performance	EN 15316-1	EN 16798-3 CEN/TR 16798-4
5	Building Functions and Building Boundaries	EN 15603 (EN ISO 52000-1) CEN/TR 15615 (CEN ISO/TR 52000-2)	5	Heat Transfer by Transmission	EN ISO 13769 EN ISO 6946 EN ISO 14683 CEN ISO/TR 52019-2 EN ISO 10077-1 EN ISO 10077-2 EN ISO 13631	5	Emission & control	EN 15316-2 EN 12098-1 CEN/TR 12098-1 EN 12098-3 CEN/TR 12098-3 EN 12098-5 CEN/TR 12098-5	EN 16798-7 CEN/TR 16798-8 EN 15500 CEN/TR 15500
6	Building Occupancy and Operating Conditions	EN 16798-1 (EN 15251 rev.) CEN/TR 16798-2	6	Heat Transfer by Infiltration and Ventilation	EN ISO 13769	6	Distribution & control	EN 15316-3 EN 12098-1, CEN/TR 12098-1 EN 12098-3, CEN/TR 12098-3, EN 12098-5	EN 16798-5 CEN/TR 16798-6
7	Aggregation of Energy Services and Energy Carriers	EN 15603 (EN ISO 52000-1) CEN/TR 15615 (CEN ISO/TR 52000-2)	7	Internal Heat Gains	See M1-6	7	Storage & control	EN 15316-5 EN 12098-3, CEN/TR 12098-3 CEN/TR 12098-5	EN 16798-15 CEN/TR 16798-15
8	Building Zoning	EN 15603 (EN ISO 52000-1) CEN/TR 15615 (CEN ISO/TR 52000-2)	8	Solar Heat Gains	EN ISO 52022-3 EN ISO 52022-1 CEN ISO/TR 52022-2	8	Generation & control	EN 12098-1, CEN/TR 12098-1, EN 12098-3 CEN/TR 12098-3, EN 15316-4-1, EN 15316-4-2, EN 15316-4-3, EN 15316-4-4 EN 15316-4-5, EN 15316-4-6, EN 15316-4-8	EN 16798-5 CEN/TR 16798-6 EN 15316-4-1 EN 15316-4-2 EN 15316-4-3 EN 15316-4-4 EN 15316-4-5 EN 15316-4-6
9	Calculated Energy Performance	EN 15603 CEN/TR 15615	9	Building Dynamics (thermal mass)	EN ISO 13786	9	Load dispatching and operating conditions		
10	Measured Energy Performance	EN 15603 CEN/TR 15615	10	Measured Energy Performance	--	10	Measured Energy Performance	EN 15378-3	EN 16798-17 CEN/TR 16798-18
11	Inspection	--	11	Inspection	(Existing standards on IR inspection, airtightness,...)	11	Inspection	EN 15378-1	EN 16798-17 CEN/TR 16798-18
12	Ways to Express Indoor Comfort	EN 16798-1 (EN 15251 rev.) CEN/TR 16798-2 (ISO 7777-1, ISO 7777-2)	12	--	BMS				EN 15193-1 CEN/TR 15193-2 WI 00247093
13	External Environment Conditions	EN ISO 52010-1 CEN ISO/TR 52010-2							
14	Economic Calculation	EN 15459-1							