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Sektion 6 b

Substations and user behaviour

The Mathilda project

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MATILDA



THE CONCEPT
FOR
SUBSTATIONS



BACKGROUND

	Manufacturer	DH-utility	Consultant / Entrepreneur
In situ	2	3	3/3
Prefabricated	3	2	1/1
Matilda	2	1	0/1

3 = Very substantial amount of work
2 = Substantial amount of work
1 = Less amount of work
0 = No work at all



AUTHORITY DEMAND

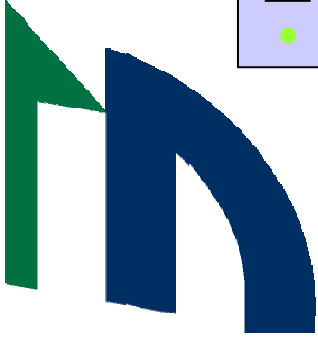
- Discussions with the authority about what demands should be valid for the domestic hot water system
- Temperature levels
- Design demands





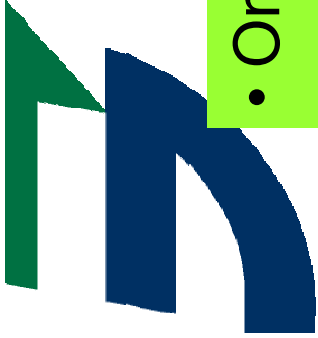
THE CONCEPT OF MATILDA

- Residential buildings up to 500 kW
- Standardised modules for domestic hot water and for heat
- Capacity
- CEN 1148
- Demands from utilities
- Easy to change with new knowledge



ADVANTAGES

- More simple and easy production for the manufacturer. The result is better logistics and reduced time of delivery
- No work at all for consultants !
- Unchanged work for the entrepreneur
- Considerable less work input for the DH-utility
 - no dimensioning
 - no drawings and documentation



EQUIPMENT

- One step connection (in parallell)
- Control of the radiator system
- Control of the domestic hot water
- Temperature sensors
- Filter
- Enough straight pipelength for flow sensors
- Measuring of differential pressure shall be possible
- Differential pressure valves shall not be used



MODULARIZED SUBSTATIONS FOR RESIDENTIAL BUILDINGS

	V 1	V 2		
Varmvattenväxlare				
Dim temperatur	65-22/10-55	65-22/10-55		
Effekt växlare kW	80	140		
Ca. flöden pr. / sek. l/s	0,6 / 0,6	1,1 / 1,1		
Max tryckfall pr. / sek. kPa	< 25 / < 25	< 25 / < 25		
Primära. styrventiler kv	1,0 - 1,6 - 2,5	1,6 - 2,5		
Rek. styrventil	1,6	2,5		
	R 1	R 2	R 3	R 4
Radiatorväxlare				
Dim. temperatur	100-63 / 60-80	100-63 / 60-80	100-63 / 60-80	100-63 / 60-80
Effekt växlare kW	80	125	230	365
Ca. flöden pr. / sek. l/s	0,53 / 0,98	0,8 / 1,48	1,46 / 2,71	2,26 / 4,18
Max. tryckfall pr. / sek. kPa	< 25 / < 15	< 25 / < 15	< 25 / < 15	< 25 / < 15
Prim. Styrventil kv	1,6	2,5	2,5 - 4	6.3

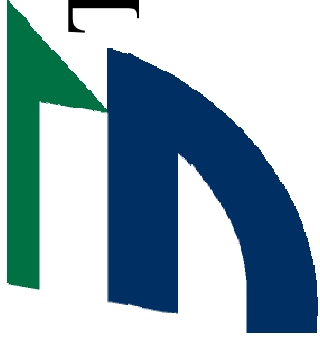


MODULES

- 2 modules for heat exchangers for hot water
- 4 modules for heat exchangers for heating

Each module contains valves and controls

a
c
h



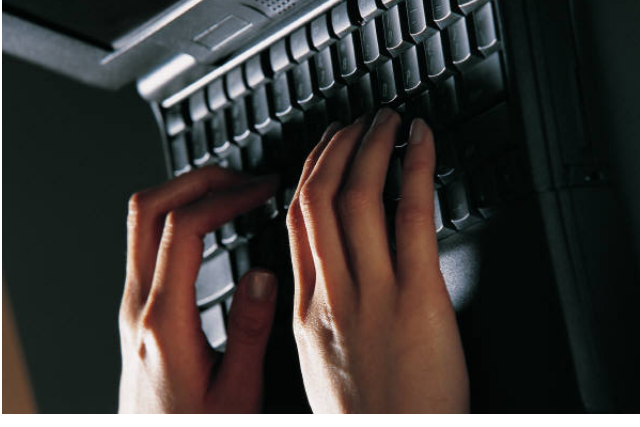
THE MATILDA SUBCENTRAL

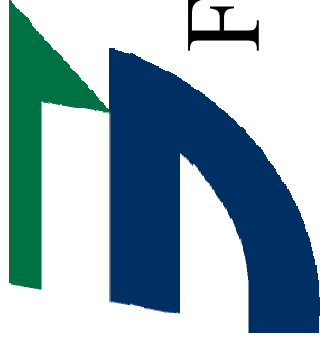
- 1 module of heat and 1 module of hot water
- Pipes
- Temperature sensors
- Filter
- Necessary place for measurement installation



TESTING

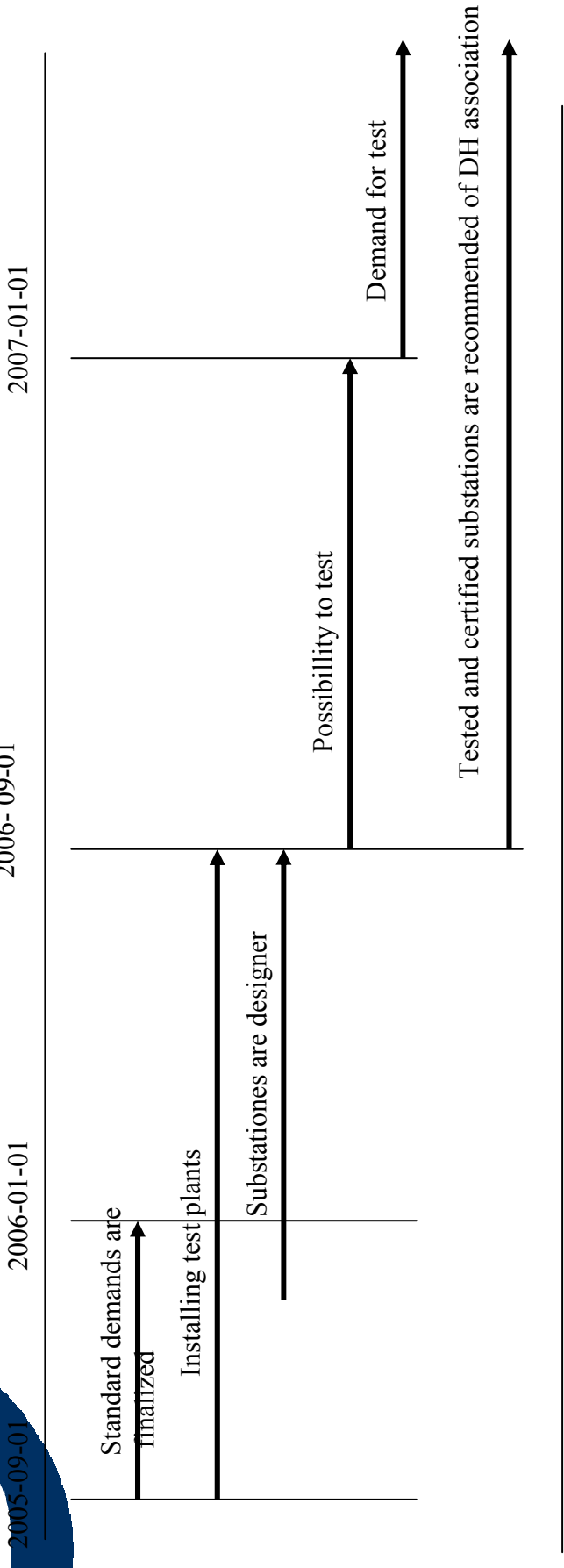
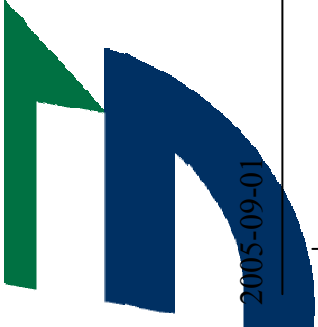
- Test for certification shall cover the complete concept of Matilda
- Due to economical reasons will the testing not check all combinations of modules in each test.
- For the domestic hot water the recommended module will be tested.
- Tests according to F:103-4





FINAL RESULTS FOR THE MATILDA CONCEPT

- CONSIDERABLE LESS **TIME AND MONEY** ARE NEEDED FOR BOTH MANUFACTURING AND INSTALLATION OF A SUBSTATION FOR A MULTI-APARTMENT HOUSE.





COOPERATION

- Norway (Within the Matilda project)
- Denmark (Within the Matilda project)
- Poland Interested
- Slovenia Interested
- Hungary Interested
- **GERMANY**



THE FUTURE

- IF Germany is going to start up any kind of standardisation for substations in the future we really invite You to do it in cooperation with us.
- The outcome of such a cooperation has the possibility to cover the whole european market.
- Everything should be possible to discuss.



FUTURE DEVELOPMENT

- If Europe get **one system** for all we all will benefit from that both economically and technically
- If Europe gets two or more independent national standards we will have severe problems with the free market