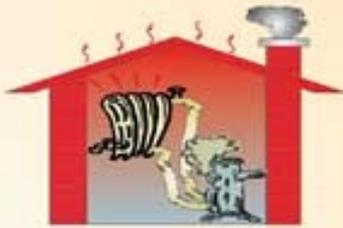


Modern design  
Of heating elements

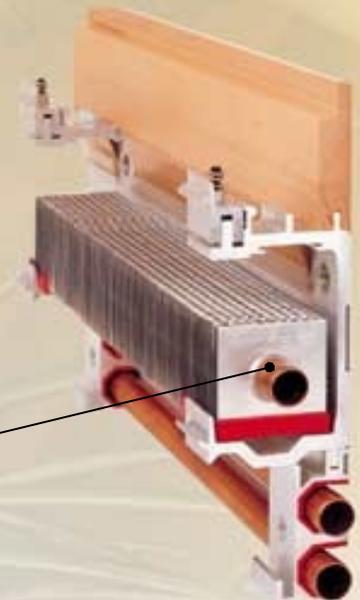
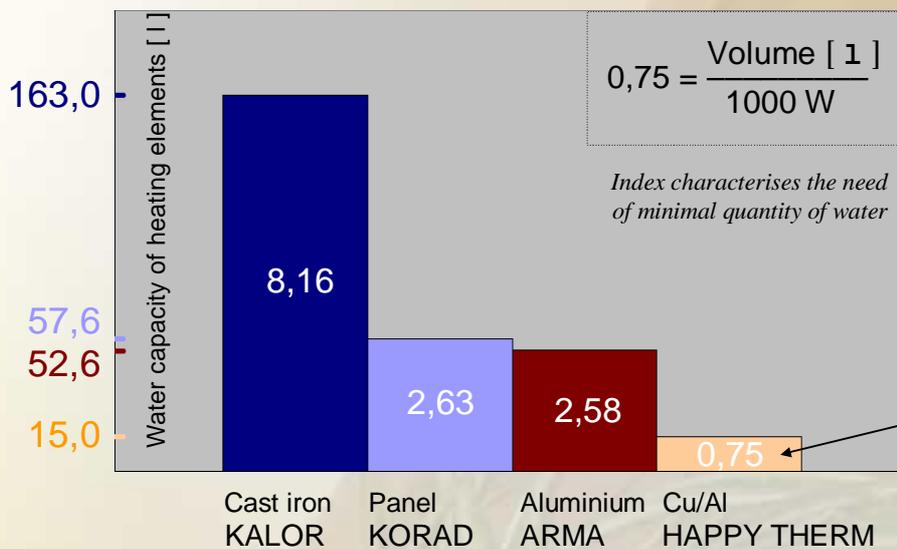


Skirting radiators

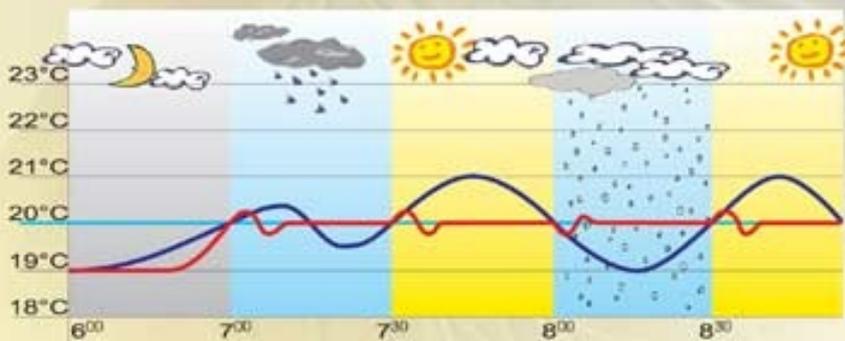


The development of heating systems leads to the achievement of the best possible thermal comfort at lower operation costs of heating. Therefore more attention is paid to thermal insulations of buildings, enhancement of flexibility and regulation of heating

systems. Thanks to these changes it is possible to heat up objects in a substantially economic way while maintaining thermal comfort.



Concurrently we heat ten litres of water in one pot and five litres in the other one. In practice and by logics we shall find out that we consumed less time and less energy for heating of five litres of water.



Do you ask: **What importance does it have in heating system?**

This picture shows the thermal course in a room during the sudden change in weather within a short time period. Pale blue line represents an optimal temperature of 20 °C. Dark blue line represents heating using radiators with larger amount of water and

red line represents heating using low-volume skirting radiators sold under trademark *HAPPY THERM*. Inertia, as well as the start-up of the system with a larger volume is substantially higher than for low-volume system. That means that heating system *HAPPY THERM* offers you not only a high comfort but also a pleasant thermal well-being as well as saving in costs of heating.

While developing skirting heating system *HAPPY THERM* we considered the aesthetical properties of heating system that complements the interior and thus affects apartment architecture. The result of this effort is heating system that combines the advantages of low-volume heating with a high flexibility and modern design that may be brought into harmony with the interior as far as colouring and used wood species in the space are concerned (e.g. to stain according to requirements).

***This heating system may be qualitatively entered into the category of furniture.***

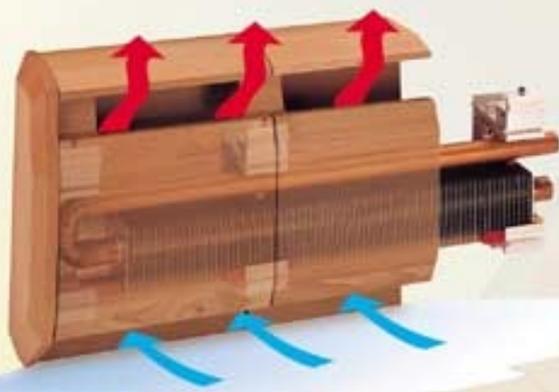
Wooden panellings may be replaced easily at any time and thus we may repeatedly adapt them to the new requirements of design while reconstructing the interior. *HAPPY THERM* can be easily integrated into any space according to your ideas. The results of hitherto applications are heating systems in:

- living and fire-place rooms
- hotels, cottages, cabins
- children's room
- attics
- schools, churches

### Properties

- the activity of skirting heating system *HAPPY THERM* is based upon a natural air flow in a room:
  - cooler air situated above the floor flows via heat Cu/Al exchanger
  - heated air washes the coolest wall in the space and it creates a veil of warm air around it
- this way of heating has impact on better proportioned distribution of temperature in a room, thus also often unpleasant feeling of cold wall is reduced .
- with regards to a low volume of water, heating system *HAPPY THERM* is characterized with a high flexibility, low inertia, it responds promptly to the requirements of the change in temperature in a room

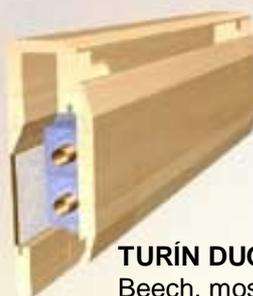
Skirting radiator  
MERAN - stained



**ROMA**  
Beech, continuous



**ROMA QUATRO**  
Beech, continuous



**TURIN DUO**  
Beech, mosaic



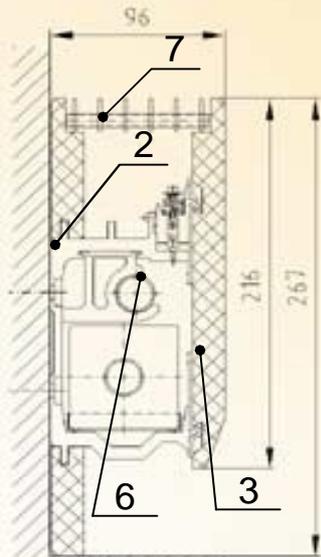
**MERAN**  
Spruce

Heating system *HAPPY THERM* offers you low-volume Cu/Al heating elements covered by a quality **solid wood** of various species and surfaces or alternatively by aluminium cover with different surface treatment.

The heating system may be adapted directly to the interior according to requirement (*as far as dimensions are concerned*), since this constructional system has the character of "LEGO".



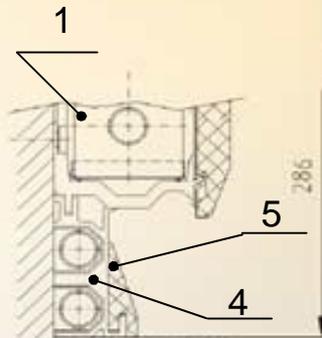
## Dimensions of the most frequently used types:



**ROMA 30**

The most effective type (ROMA) from the point of view of ratio *performance / price*

1. Heat exchangers
2. Al bracket, main
3. Set of wooden panelling
4. Al bracket of distribution systems
5. Covering lath
6. Reversible pipe (ø22 mm)
7. Al grill elox



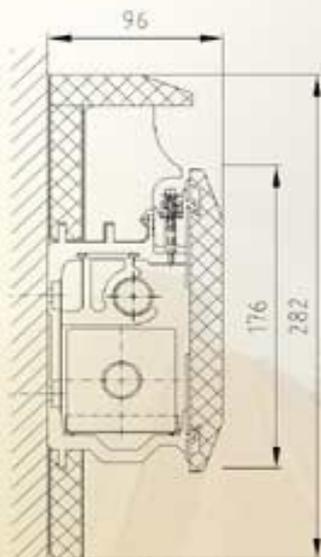
**ROMA 31**



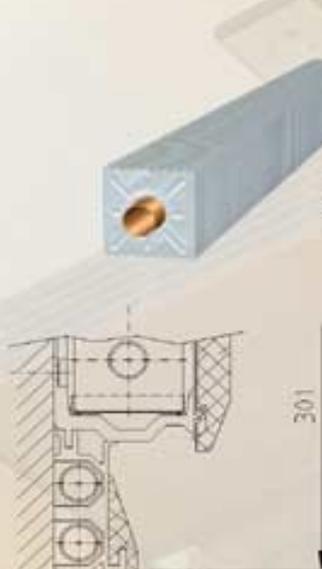
## Main components

### Heat exchanger Cu/Al

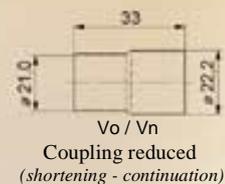
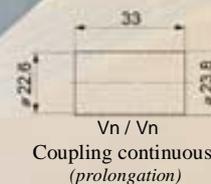
- Cu pipe of ø22 mm with pressed on aluminium lamellas
- **capacity only 0.35l water / 1m**
- as a standard in single- or double pipe version
- Cu/Al heat exchanger may be prolonged or shortened according to need (use calibration couplings made by HPM Therm)



**TURÍN 30**

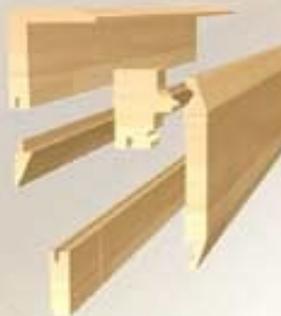


**TURÍN 31**



### Set of wooden panelling (TURÍN 30)

- solid wood (varnished / non-varnished)
- basic materials:
  - beech continuous
  - beech mosaic
  - spruce
- standard length 800 mm
- faces made of the same material
- wooden panelling may be:
  - shortened according to need
  - cut under 45° (corners)



### Faces

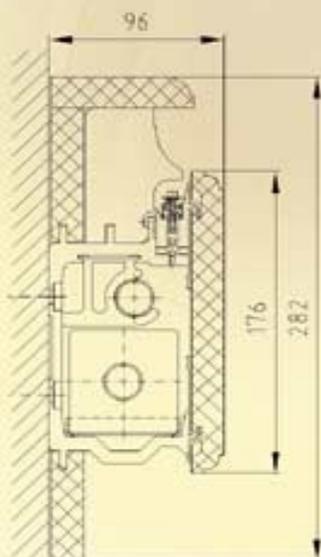
- left and right face
- resolution of field of:
  - wood species
  - version (30, 31, 32)



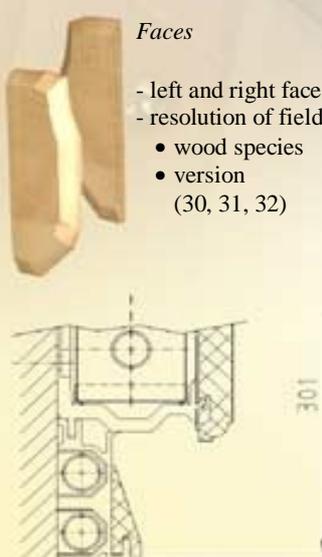
### Al bracket, main



- developed special shape of profile
- wooden panelling is to be fixed into a flexible bedding
- heat exchanger Cu/Al freely placed on PVC pad
- fixation of wood is achieved by means of a special screwdriver
- diameter of reversible pipe ø22 mm



**MERAN 30**



**MERAN 31**

### Al bracket of distributions

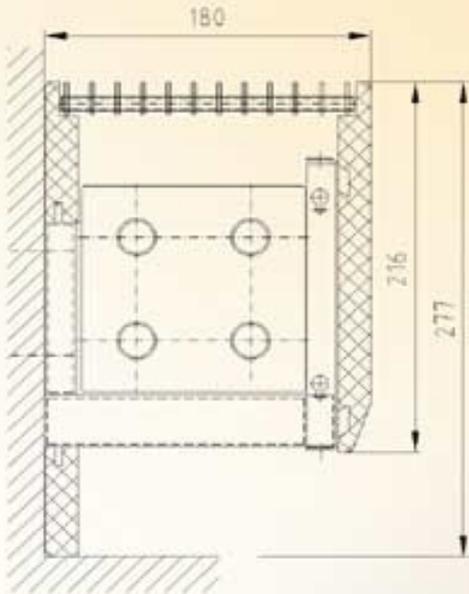


- developed special profile
- it serves for placing of distribution pipes and at the same time for fixation of covering lath
- diameter of distribution pipes max. ø22 mm

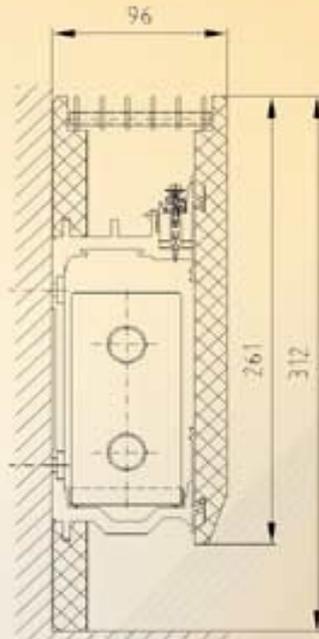
The most aesthetic types (MERAN, TURÍN) – external design is formed only by wood (no metal grill)

# Dimensions of additional types:

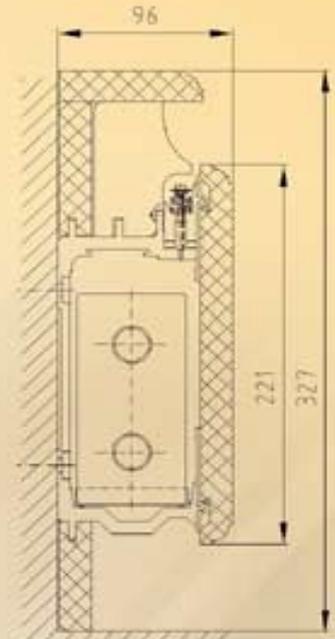
We are meeting your wishful thinking



**ROMA QUATRO 30**  
The most powerful skirting radiator



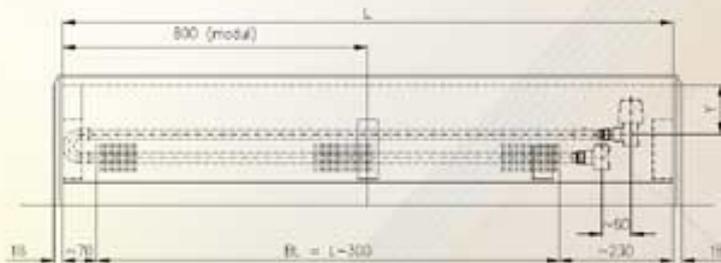
**ROMA DUO 30**



**MERAN (TURÍN) DUO 30**

System DUO is to be used only in the case the single-pipe exchanger may not be used:

- output larger just by ca 9%
- possibility of version 31 (+19mm)



Note:

- Version 30 (only small base)
- Version 31 (kryt rozvodov)
- Version 32 (electric guide)

## Do not overlook!

- thermal-exchange surface (BL) is shorter than the total length of skirting radiator by ca 300mm
- we recommend to use thermostatic and regulation valve

## Thermal output Q [ W ]

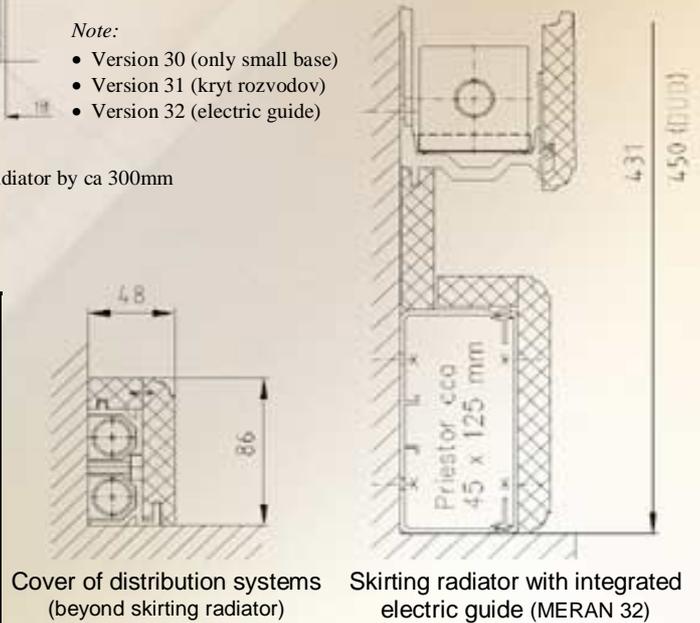
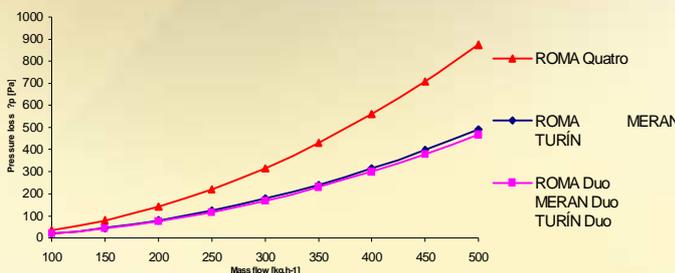
Recalculated per 1 m of lamellar area (BL)

		MERAN TURÍN	ROMA	MERAN TURÍN Duo	ROMA Duo	ROMA Quatro
$t_i$	$t_w$					
15	80	526	607	591	651	1235
	70	425	490	478	528	985
	50	238	275	270	298	534
20	80	475	548	534	589	1108
	70	376	434	424	468	865
	50	195	225	222	245	433
22	80	455	525	511	564	1058
	70	357	412	403	444	819
	50	179	206	204	225	395

$t_w$  [°C] - stredná teplota vody  
 $t_i$  [°C] - teplota interiéru

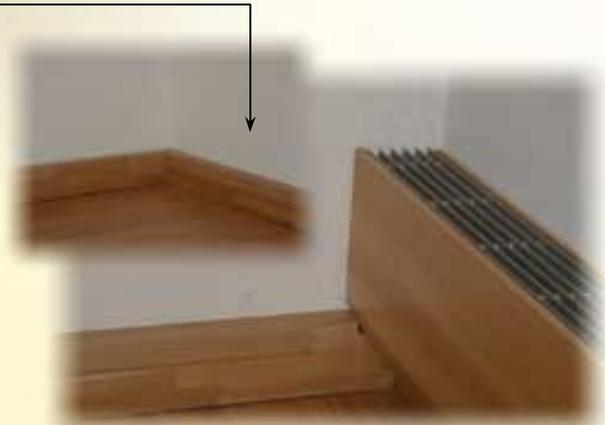
*Nominal outputs for the single-pipe skirting radiators were determined with installed reversible pipe*

Dependence of pressure loss on mass flow

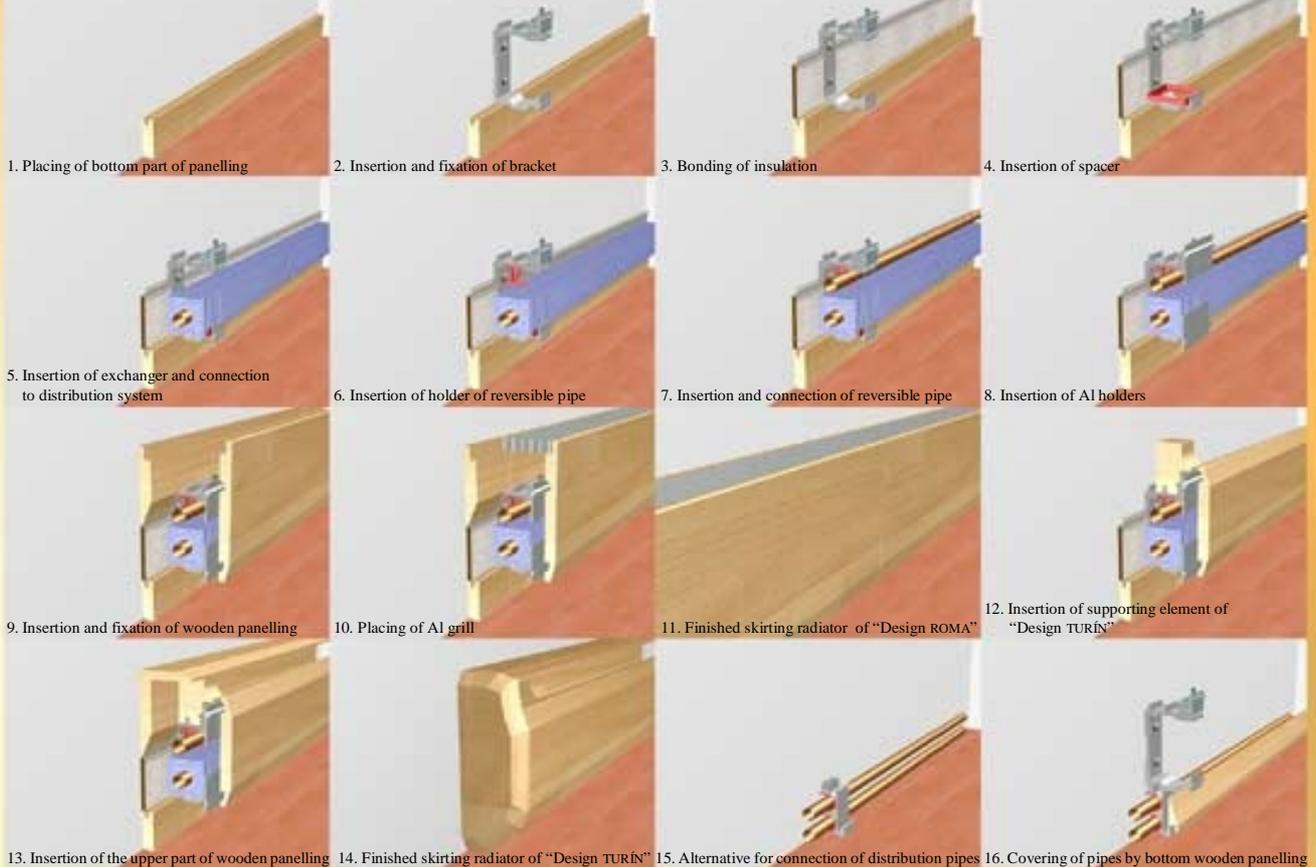


Cover of distribution systems (beyond skirting radiator)

Skirting radiator with integrated electric guide (MERAN 32)



## Assembly procedure of skirting radiator



### Assembly instructions

- basic procedure of assembly is clear from the pictorial sequence
- technical design of the system ensures simple "LEGO" assembly
- basic parts of skirting radiator - Cu/Al exchanger and the set of wooden panelling may be adapted as far as length is concerned during assembly

### The critical success of the assembly is correct - exact installation and layout of brackets from the point of view of:

- W planarity towards floor, walls and total length
- W basic spans of the individual modules (800 mm)
- location of extremity brackets with regards to connection to hot-water system with regulation elements and the total design

### Recommendations:

- prior to assembly check the *planarity* of walls and floor, we recommend to level the small unevenness by pads
- prior to assembly, *for beginners* we recommend to sketch the exact layout of brackets and modules of wood on a piece of paper
- use *water level of maximal length* in order to secure the planarity of brackets while sighting
- assembly is to be carried out *after completion* of all constructional and painting works

### Maintenance

- always prior to heating season, we recommend to vacuum dust

### Warranty

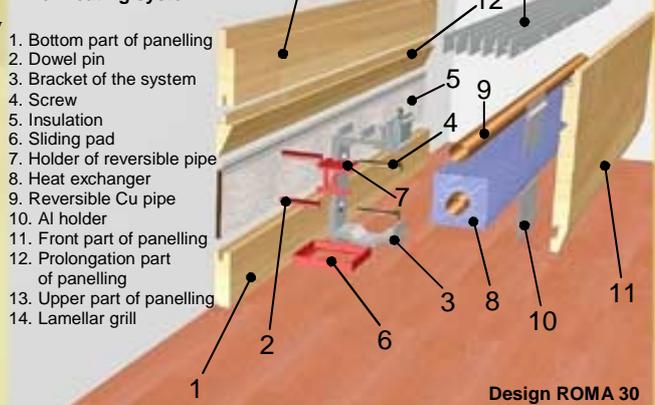
- 10 years for lamellar Cu/Al exchanger
- 12 months for the other components

### Warranty does not apply to the following:

- damages caused by mishandling
- mechanical damages caused by unprofessional handling

/HPM Therm reserves the right to make constructional modifications./

### Layout of components of heating system



### Scope of delivery

- Since this is "LEGO" system, the skirting radiator is delivered by parts, in the lengths or in the number of pieces specified by designer, installation engineer or your vendor, i.e.:
  - Y length of exchanger (with threaded end-pieces or without them), or reversal pipe, knee bends, etc.
  - Y the number of sets of wooden panelling according to the specification of wood species
  - Y number of complete brackets (or screw-driver)
  - Y faces (left – right), or delivery without faces
  - Y other special requests according to consultation with vendor
- a part of delivery is pictorial and text assembly manual and warranty certificate

### Packing

- individually in cardboard wraps or in PVC foil or in simple wooden panelling

Your vendor:



916 42 Moravské Lieskové 2  
tel. / fax :032 7792 983 (4)  
e-mail : [hpmtherm@isternet.sk](mailto:hpmtherm@isternet.sk)  
[www.hpmcoil.sk](http://www.hpmcoil.sk)