

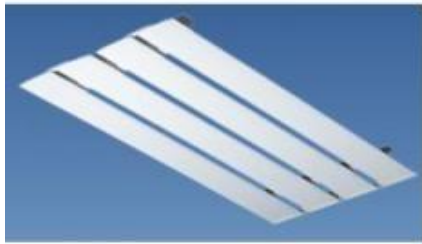
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HVAC Learning.com

# Exercise Booklet

Print this exercise booklet before studying the lesson on-line. It will enable you to write your answers to the HVAC learning exercises. You will thus be able to switch between reading or listening to the file on-line and writing in the booklet.



## COOLING FLOORS AND CEILINGS AND CHILLED BEAM TECHNOLOGY

English lesson

<https://hvac-learning.com/air-conditioning-cooling/fan-coils-units-cooling-floor-and-ceiling-chill-beam-training/cooling-floors-and-ceilings-and-chilled-beam-technology/>

French version:

<https://formation.xpair.com/cours/technologie-planchers-plafonds-rafraichissants-poutres-froides.htm>

For each exercise, you will write your answer, then you will study its correction on-line before going to the next exercise.

If you cannot do an exercise, you will be able to study its correction directly, but **force yourself to write your answer** as often as possible.

Note that between 2 exercises, you will find it necessary to study the course. As a warning, in the booklet, you will sometimes find the following indication:

- “ **Study the course on-line before doing the next exercise** ” or
- “ **Study the course on-line before going to the next paragraph** ”

Only study the paragraphs or the exercises which have an equal or a lower level than the one your training requires.

NVQ Level = Vocational Certificate

A Level = High school Diploma

HND Level = Associate's Degree

MSC Level = Engineering Schools

Then, when you have completed a file, you will be able to assess your level on-line through a Multiple Choice Questionnaire in which you will only answer the questions related to the themes you have studied.

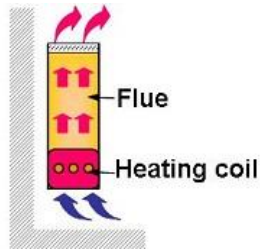
So now off you go and work well!

Good luck!

The Authors.




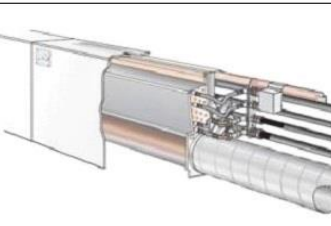
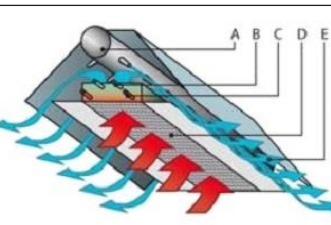
# N°1 – Convector and radiant systems – HND level

**Study the course on-line.**



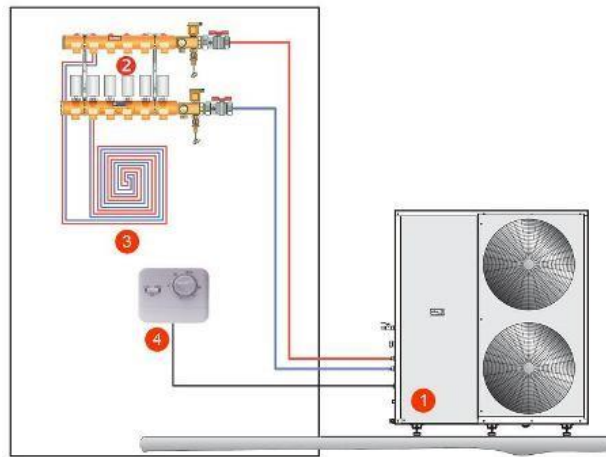
## Question 1

Without any additional information about the products we are going to study, classify them from the most radiant to the least radiant:

		The most radiant n°1 The least radiant n°5
Cooling floors		
Cooling ceilings		
Passive chilled beams		
Induction convectors		
Active chilled beams		

## N°2 – Cooling floors – HND level

**Study the course on-line.**



*Source Airwell*

### Question 1

Who, or what, radiates towards who or what? The person in the room towards the cooling floor, or the cooling floor towards the person?

**Study the course on-line before treating the next paragraph.**

## N°3 – Cooling ceilings – HND level

**Study the course on-line.**



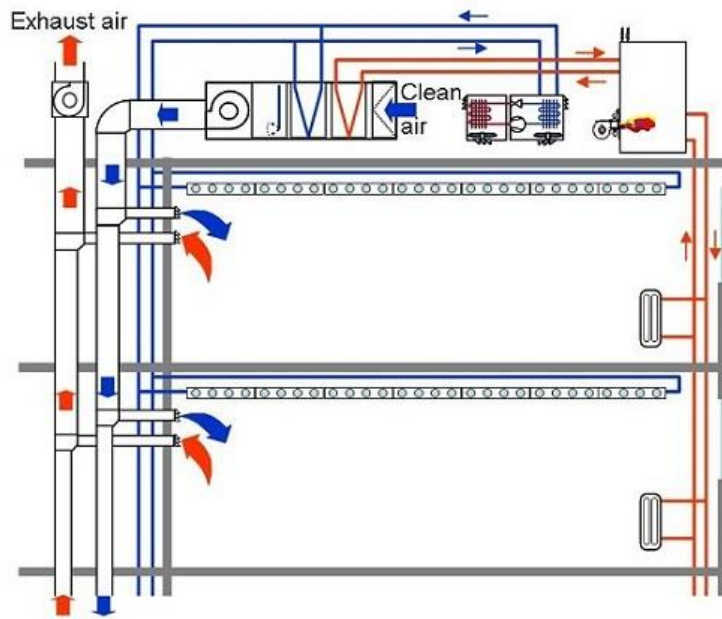
*Source klimaaplafonds*

### Question 1

What are the advantages and consequences of having low return temperature differences in the “cooled” water circuit?

**Study the course on-line before treating the next exercise.**

Study the diagram below :

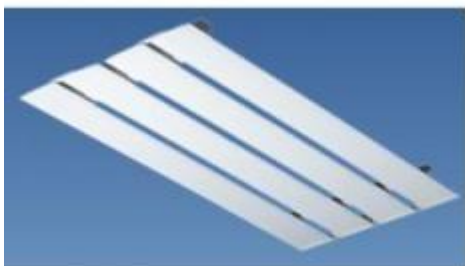


#### Question 2

Draw up a mini special technical specification description for the installation of the unit above for heating, ventilation and air conditioning.

### N°4 – Passive chilled beams – HND level

**Study the course on-line.**



## Question 1

Compare the two systems, cooling ceiling and passive chilled beams, in terms of bulk, power, and radiation or convection exchange:

***Study the course on-line before treating the next paragraph.***

## N°5 – Induction convectors – HND level

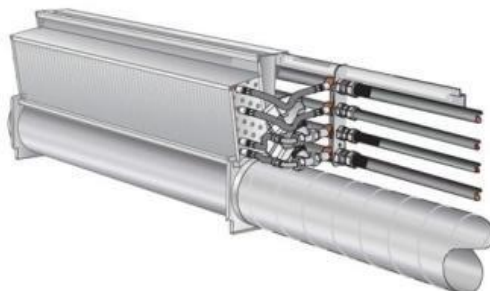
***Study the course on-line.***



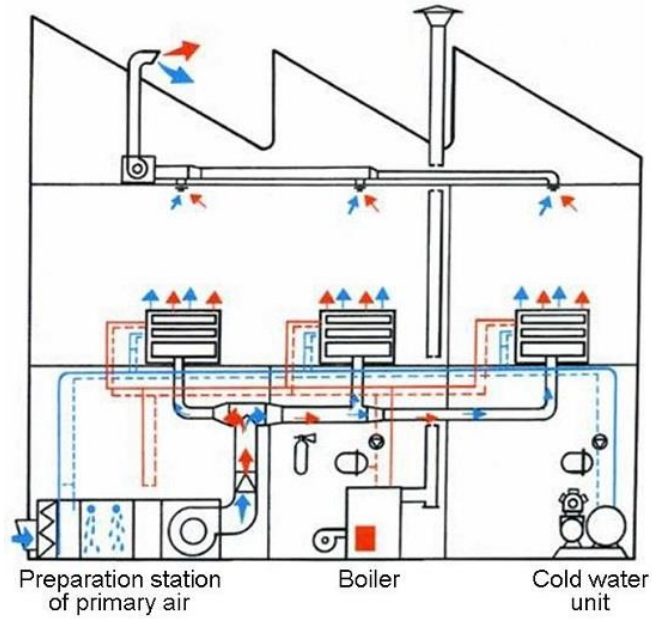
*Source Confort Systems*

## Question 1

The induction convector below is of which type: 2 pipe, 2 pipe-2 wire, 4 pipe?



**Study the course on-line before treating the next exercise.**



### Question 2

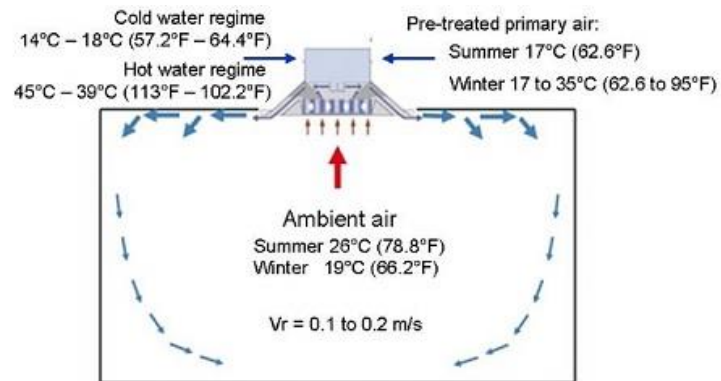
Draw up a mini special technical specification description for the system above, covering the heating, ventilation and air conditioning.

### Question 3

What is in France the purpose of the Special Technical Specification chart in an HVAC project?

## N°6 – Active chilled beams – HND level

**Study the course on-line.**



*Source France air*



### Question1

Name the elements designated by the letters A, B, C, D, E in the diagram above.

### Question2

What is the principle difference between passive chilled beams and active chilled beams?  
What are the consequences in terms of cooling power output and the quality of the air circulation?

## N°7 – Installation of active chilled beams – HND level

**Study the course on-line.**



Source Swegon

English lesson

<https://hvac-learning.com/air-conditioning-cooling/fan-coils-units-cooling-floor-and-ceiling-chill-beam-training/cooling-floors-and-ceilings-and-chilled-beam-technology/>

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