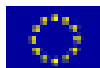




# ***Vocational Profiles Refrigeration Craftsman Europe***

**Questionnaire**

**July 2003**



This project is carried out with the support of the European Community

The survey is anonymous

You will not be asked for your name in this questionnaire. At the end of the questionnaire you will be asked to give some personal details, such as age and experience. These details are needed for the statistical analyses and national comparisons.

The research is subject to the guidelines of the Personal Data Protection Act and the code of conduct of the MarketResearchAssociation.

## A. Information about your company

1. How many people work in your company? If your company has more than one location or plants, give the total number of people in the whole organisation.

..... people

2. If you work in an organisation with more than one location:

- a. How many locations does this organisation have?

..... locations

- b. How many people work at your location:

..... people

*If your company has more than one location, the questions below relate only to the location at which you work.*

3. How many people are involved with operational refrigerating engineering activities?

..... people

4. What is the work area of your location?

- National  
 International

5. What kinds of service does your location provide?

*(More than one answer possible)*

- Installation  
 Repair  
 Maintenance  
 Sales  
 Design

- 6a. What refrigerating engineering specialisations are there in your company/location?

*(More than one answer possible)*

- White goods consumer refrigeration (mobile air conditioners)  
 Commercial refrigeration (shops, refrigeration equipment)  
 Comfort air conditioning (home/office >15°C)  
 Heat pumps  
 Industrial refrigeration (large-scale storage, cold stores)  
 Process industry (e.g. chemical)  
 Industrial air conditioning (ripening/growth process >15°C)  
 Transport refrigeration

6b. What **other** specialisations are there in your company/location?  
(More than one answer possible)

- Electrical engineering
- Installation engineering heating
- Other installation engineering
- Air conditioning
- Metal processing

7. What kinds of customer does your company have?  
(More than one answer possible)

- Retail
- Wholesale
- Catering
- Agriculture, fisheries
- Construction and non-residential construction
- Industry
- Transportcooling
- Shipping
- Other

## **B. Information about yourself and your job**

8. What is your gender?

- Male
- Female

9. What is your age?

..... years

10. How long have you been working in your current job?

..... years

11. How long have you been working in refrigeration?

..... years

12. What is your job in the organisation called?

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13. How many colleagues do you have with the same job in your location?

..... colleagues

14. How many people are you in charge of (daily)?

..... people

15. Please state in broad terms what percentage of your time you devote to the following activities.

	% time
Cold engineering activities:	
Building new installations	%
Setting up on existing installations	%
Clearance of faults	%
Repair	%
Inspection & maintenance	%
Technical management	%
Other activities:	
Electrical engineering	%
Installation engineering heating	%
Other installation engineering	%
Air conditioning	%
Metal processing	%
Managing	%
Customer work (offers, sales, etc.)	%
Total	100%

16. Do you work on large or small installations?

*(More than one answer possible)*

- Installations with a refrigerant content up to 3 kilograms
- Installations with a refrigerant content from 3 to 10 kilograms
- Installations with a refrigerant content from 10 to 30 kilograms
- Installations with a refrigerant content from 30 to 100 kilograms
- Installations with a refrigerant content from 100 to 200 kilograms
- Installations with a refrigerant content from 200 to 300 kilograms
- Installations with a refrigerant content from 300 to 1,000 kilograms
- Installations with a refrigerant content exceeding 1,000 kilograms

17. How many years of technical training have you had?

..... years

18. How many years of specific refrigeration training have you had?

Full-time training in ..... years.

Part-time (dual) training in ..... years.

Courses ..... different courses.

19. Do you have an environmental diploma/certificate for Air Conditioning/Refrigeration engineer?

Yes

No

Don't know

## What activities do you do in your work?

Please read the instructions below carefully.

In the next part you are asked to select the activities that you carry out in your work, and how often. The list contains over 300 activities and a list of tools that you might use. To help you out, activities are clustered in blocks or themes. Every block starts with a title in capitals.

- ❶ At every block, read the title, then read through the list of activities.
- ❷ Decide if you ever perform one or more of the listed activities in your work.
- ❸ If yes, tick the YES-box below the title and proceed at point 5.
- ❹ If you do not carry out one or more of the activities in this block, tick the NO-box below the title and continue at the next block of activities.

11 INSTALLATION OF REGRIGERATION TECHNIQUE		HOW OFTEN?			
		Never	Monthly	Weekly	Daily
<input checked="" type="checkbox"/> No, go to block 12 <input type="checkbox"/> Yes, please fill in this block					
1	I fit a semi hermetic compressor.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	I fit an oil separator.....				

- ❺ Please, for each activity within this block, fill in how often you do this activity in your work. Tick the box in the corresponding column under 'How often'. Please, select only 1 column per activity.

11 INSTALLATION OF REGRIGERATION TECHNIQUE		HOW OFTEN?			
		Never	Monthly	Weekly	Daily
<input type="checkbox"/> No, go to block 12 <input checked="" type="checkbox"/> Yes, please fill in this block					
1	I fit a semi hermetic compressor.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	I fit an oil separator.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If you make a mistake, please modify your answer in the following way:

1. PROJECT INTAKE		HOW OFTEN?			
<input type="checkbox"/> No, go to block 2 <input type="checkbox"/> Yes, please fill in this block		Never	Monthly	Weekly	Daily
1	I record the customer specifications .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	I record the coldroom dimensions .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	I check the feasibility of installing an air conditioning- / refrigeration system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I perform a simple calculation for the main and auxiliary components.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I calculate the refrigeration / AC load .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I carry out a general risk assessment.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I estimate modifications and updates .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	I estimate the work required (less time or overtime) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	I request a quote for components .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	I order tools/equipment.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	I order components.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	I create a materials list.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	I order materials.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. CUSTOMER ACQUISITION		HOW OFTEN?			
<input type="checkbox"/> No, go to block 3 <input type="checkbox"/> Yes, please fill in this block		Never	Monthly	Weekly	Daily
1	I hold a sales discussion.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	I sell a refrigeration system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	I sell parts for a refrigeration system .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I receive payment for the refrigeration system on delivery.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I find new customers.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I advise the customer on the selection of the refrigeration system .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I advise the customer on component assembly for a refrigeration system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	I visit trade fairs.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



<b>3. PROJECT PREPARATION/DRAFT DOCUMENTATION</b>		<b>HOW OFTEN?</b>			
<input type="checkbox"/> No, go to block 4 <input type="checkbox"/> Yes, please fill in this block		Never	Monthly	Weekly	Daily
1	I prepare a system outline for other employees .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	I draw a general plan .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	I prepare a plan/outline drawing for wall openings .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I create a revised drawing.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I draw a schematic diagram of the refrigeration circuit .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I draw an electrical diagram.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I attend new build projects from the build through to handover to the customer .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	I decide on the location of the refrigeration system with the customer ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>4. PROVIDE INSTRUCTIONS/GUIDELINES</b>		<b>HOW OFTEN?</b>			
<input type="checkbox"/> No, go to block 5 <input type="checkbox"/> Yes, please fill in this block		Never	Monthly	Weekly	Daily
3	I manage the build of a refrigeration system .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I manage the commissioning and adjustment of the refrigeration system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I manage maintenance works for the customer.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I create work reports .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I give instructions to my colleagues .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	I check the work of other colleagues .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. COORDINATION		HOW OFTEN?			
<input type="checkbox"/> No, go to block 6 <input type="checkbox"/> Yes, please fill in this block		Never	Monthly	Weekly	Daily
		1	I create a project plan .....	<input type="checkbox"/>	<input type="checkbox"/>
2	I draw up a schedule.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	I arrange an appointment with the customer .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I organise the transportation of the refrigeration system and its components .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I decide on fault rectification .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I organise support for other employees within my company .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I involve another company in the project.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	I contact the wholesaler .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	I take part in a project meeting .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	I hold discussions with company management .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	I hold discussions with the environmental office.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	I talk to the architect.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	I coordinate with the building firm .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	I coordinate with the electrical supplier or the refrigeration/airconditioning company.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	I coordinate with the specialist insulation company.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	I coordinate with an agency for contract work .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. TECHNICAL CONSULTATION		HOW OFTEN?			
<input type="checkbox"/> No, go to block 7 <input type="checkbox"/> Yes, please fill in this block		Never	Monthly	Weekly	Daily
		1	I consider the customer's wishes .....	<input type="checkbox"/>	<input type="checkbox"/>
2	I advise the customer when planning maintenance times .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	I advise the customer on saving energy .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I make the customer aware of environmental issues .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I advise the customer on safety issues.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I inform the customer of the method of operation of the refrigeration system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I process customer complaints .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	I advise the customer whether a new system, or repair of components, is required .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	I advise the customer with regard to shutting down the refrigeration system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. PROJECT PREPARATION		HOW OFTEN?			
<input type="checkbox"/> No, go to block 8 <input type="checkbox"/> Yes, please fill in this block		Never	Monthly	Weekly	Daily
1	I evaluate the refrigeration system drawing for accuracy .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	I evaluate the electrical drawing for accuracy.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	I read a building drawing.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I read another technical installation drawing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I read an exploded view of a drawing .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I read an isometric drawing.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I create a materials list using the drawings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	I procure the necessary materials and tools/equipment.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	I check the equipment of the assembly/service vehicle .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	I create identification panels .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	I create the operating instructions .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	I create the log book for the refrigeration system .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	I generate/write operating instructions.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	I set the refrigerant content of the refrigeration system .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	I fill in the log book .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	I add the documentation for the newly installed components to the logbook .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	I perform an overview of the refrigerant volumes used (data requirement).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	I generate a service report with information on all activities undertaken..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	I check the relevant documentation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>8. PRE-ASSEMBLY OF THE REFRIGERATION SYSTEM</b>		<b>HOW OFTEN?</b>			
<input type="checkbox"/> No, go to block 9 <input type="checkbox"/> Yes, please fill in this block		Never	Monthly	Weekly	Daily
1	I work flat steel.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	I work aluminium profiles.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	I create a steel construction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I work with copperpipe.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I work with steelpipe, size smaller than DN 80.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I work with steelpipe, size larger than DN 80.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I weld steel pipes.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	I perform hard soldering (copper).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	I perform soft soldering (copper).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	I create certified weld joints.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	I create flared joints.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	I create self sealing joints.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	I create flanged joints.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	I create glued joints.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	I install water pipes.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	I install pre-filled refrigerant pipes.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>9. ELECTROTECHNICAL PRE-ASSEMBLY</b>		<b>HOW OFTEN?</b>			
<input type="checkbox"/> No, go to block 10 <input type="checkbox"/> Yes, please fill in this block		Never	Monthly	Weekly	Daily
1	I lay electrical cables in the cable routes.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	I prepare cable glands.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	I install electrical equipment.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I install a switch box.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I wire a switch box.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. INSTALLATION OF NON-REFRIGERATION TECHNOLOGY		HOW OFTEN?			
<input type="checkbox"/> No, go to block 11 <input type="checkbox"/> Yes, please fill in this block		Never	Monthly	Weekly	Daily
		1	I insulate the pipeline .....	<input type="checkbox"/>	<input type="checkbox"/>
2	I install insulated cladding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	I fit a pre-fabricated coldroom wall.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I install split systems .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I install a domestic refrigerator.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. INSTALLATION OF REFRIGERATION TECHNOLOGY		HOW OFTEN?			
<input type="checkbox"/> No, go to block 12 <input type="checkbox"/> Yes, please fill in this block		Never	Monthly	Weekly	Daily
1	I read the plans and operating instructions for the compressors.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	I fit an open compressor .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	I fit a semi-hermetic compressor .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I fit a fully-hermetic compressor.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I fit a screw-type compressor.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I fit a piston compressor.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I fit a turbo compressor .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	I fit a scroll compressor.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	I fit an electrical motor to a base.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	I fit a manometer.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	I install a suction and pressure cut-off valve.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	I install a direct drive coupling or a pulley and belt.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	I install oil level controllers .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	I fit an anaconda into the pipeline.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	I fit an oil separator .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	I connect oil return pipes.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	I install oil tray heating .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	I install an air-cooled condenser.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	I install a water-cooled condenser .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	I install a cooling tower .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	I install an evaporation condenser .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	I install a lamellar evaporator.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	I install a coiled pipe evaporator .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	I install a chiller .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	I fit an axial ventilator .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. INSTALLATION OF REFRIGERATION TECHNOLOGY (2)		HOW OFTEN?			
		Never	Monthly	Weekly	Daily
26	I fit a radial ventilator.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	I install an oil differential pressure switch .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	I fit a thermostat .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	I fit a pressure control .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	I fit a start controller .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31	I fit a condenser pressure controller .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	I fit an evaporation pressure controller .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	I install an adjustable cut-off valve.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34	I install a thermostatic expansion valve .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35	I install a fluid distributor .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36	I fit a solenoid valve .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37	I fit a solenoid valve .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38	I fit an electronic expansion valve.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39	I fit a motor-controlled valve.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40	I fit a manual cut-off valve.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41	I install a filter dryer.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42	I install a suction filter .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43	I fit an oil filter.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44	I fit a burn-out filter .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45	I fit an inspection glass .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46	I fit a level display .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47	I fit a hygrometer.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48	I fit an anemometer .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49	I fit a return valve/flap trap .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50	I install flexible piping.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



11. INSTALLATION OF REFRIGERATION TECHNOLOGY (3)		HOW OFTEN?			
		Never	Monthly	Weekly	Daily
51	I install a liquid receiver .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52	I install an air-purger .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53	I install a water softening system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54	I install level control .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55	I fit a plate heat exchanger .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56	I install a pump.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57	I insulate a heat exchanger.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58	I insulate a liquid chiller .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59	I install a liquid chiller .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60	I clean the suction filter .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. INSTALLATION/CONTROL OF ELECTRICAL AND ELECTRONIC COMPONENTS		HOW OFTEN?			
		Never	Monthly	Weekly	Daily
<input type="checkbox"/> No, go to block 13 <input type="checkbox"/> Yes, please fill in this block					
3	I connect a single-phase motor .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I connect a three-phase motor .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I install electrical components in the refrigeration system .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I install an output regulator at the compressor .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I check the electrical motor .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	I check the pcb control card .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	I check the wiring .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	I check the electrical safety according to the national regulations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	I check the switch boxes .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	I check the signal lamps .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	I measure the current through the electrical cables .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	I measure the voltages of the electrical components .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	I check the emergency power equipment .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	I adjust the PLC .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	I adjust the Digital data control .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	I check the A.C. motor .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	I check the servo motor .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. COMMISSIONING		HOW OFTEN?			
<input type="checkbox"/> No, go to block 14 <input type="checkbox"/> Yes, please fill in this block		Never	Monthly	Weekly	Daily
		3	I perform a pressure test.....	<input type="checkbox"/>	<input type="checkbox"/>
4	I evacuate the refrigeration system .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I perform a vacuum test.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I weigh the refrigerant container .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I charge the refrigeration system with refrigerant .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	I check the refrigerant charge .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	I switch the motors on/phase sequence control .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	I adjust the thermostat and the pressure control .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	I adjust the valve settings .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	I perform a reference value/actual value comparison .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	I check the refrigeration system for seal-tightness .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	I draw off the refrigerant.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	I draw off the oil .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	I fill a recovery cylinder with the refrigerant .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	I fill authorized containers with the drawn-off oil.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	I decommission the refrigeration system .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. CONTROLS AND FAULT ANALYSIS		HOW OFTEN?			
		Never	Monthly	Weekly	Daily
<input type="checkbox"/> No, go to block 15 <input type="checkbox"/> Yes, please fill in this block					
1	I speak to the customer about the problems with the refrigeration system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	I check the log book.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	I record the technical data .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I decide whether to replace components.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I decide whether to repair components .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I use a leak detection lamp to check the system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I use an electronic leak detection device to check the system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	I check the refrigerant charge .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	I test the leak detection devices .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	I check the gas warning system .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	I check pressure safety.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	I check temperature safety .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	I check power consumption .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	I check the floating ring seal .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	I check the oil tray heating .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	I check the output regulator .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	I check the suction filter .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	I check the drive connection/flywheel .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	I check the oil level .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	I measure the liquid temperatures (On/Off) of the refrigerant .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	I check the air temperatures (On/Off) of an evaporator/air-cooler.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	I check the liquid level.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	I check the evaporation temperature .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	I check safety devices.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	I check the status of the shaft seal .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. CONTROLS AND FAULT ANALYSIS (2)		HOW OFTEN?			
		Never	Monthly	Weekly	Daily
26	I check the liquid level in the sight glass within the surge drum .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	I check the current consumption of the fan motor .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	I check the phase sequence of the fan motor.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	I check the voltage at the fan motor .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	I check the bearing of the fan motor .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31	I check the defrost system .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	I check the thermostatic expansion valve.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	I check the water flow through the heat exchanger.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34	I check the current consumption of the frost protection system .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35	I check the water tubes of the heat exchanger for dirt .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36	I check for corrosion .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37	I check the quality of the insulation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38	I measure the water temperatures (On/Off) of a water-cooled condenser	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39	I measure the air temperatures (On/Off) of an air-cooled condenser.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40	I measure the phase sequence of the water pump (water-cooled condenser) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41	I measure the refrigerant inlet temperature to the condenser .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42	I measure the refrigerant liquid temperature at the end of the condenser	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43	I determine the degree of subcooling .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44	I check the condenser pressure control.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45	I check for noises/vibration .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46	I check whether there is air in the refrigeration system .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47	I check that there is no air present on the water side of the condenser ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48	I check the water control valve .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49	I check the water run-off system of a water-cooled condenser at the outflow.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50	I clean the water-cooled condenser.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. CONTROLS AND FAULT ANALYSIS (3)		HOW OFTEN?			
		Never	Monthly	Weekly	Daily
51	I clean the air-cooled condenser .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52	I check the air-cooled condenser for dirt .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53	I purge the refrigeration system of air .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54	I check a hand valve .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55	I check the pressure relief valve .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56	I check the liquid pump .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57	I test the oil.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58	I check the gas warning system .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59	I check the solenoid .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60	I check the filter dryer .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
61	I check the return valve.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62	I measure the discharge pressure .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
63	I measure the suction pressure .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
64	I measure the oil pressure .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
65	I measure the thermal protection .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
66	I measure the operational voltages .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
67	I check temperature control .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
68	I check the frost protection system .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
69	I check the pump-down circuit .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
70	I look in the inspection glass for vapour bubbles.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
71	I check the colour of the humidity indicator .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
72	I check the manometer .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
73	I check the pressure control.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
74	I check the thermostat .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
75	I check the vacuum pump.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>14. CONTROLS AND FAULT ANALYSIS (4)</b>		<b>HOW OFTEN?</b>			
		Never	Monthly	Weekly	Daily
76	I check the air purger .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
77	I check the heat exchanger.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
78	I check the plate heat exchanger.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
79	I check the air distribution in the cold room .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
80	I check the start controller.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
81	I check the refrigerant pressure control .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
82	I check the electrical earth connections of the refrigeration system and its components.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
83	I repair the compressor.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>15. REPORTS, CHECKS AND TECHNICAL ADMINISTRATION</b>		<b>HOW OFTEN?</b>			
		Never	Monthly	Weekly	Daily
<input type="checkbox"/> No, go to block 16 <input type="checkbox"/> Yes, please fill in this block					
1	I report on a customer complaint .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	I fill out a work time sheet .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	I fill out a service report for the customer .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Ik vul een materiaallijst-/staat in .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I fill in the log book /I create a certificate .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I fill in the test report .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I fill out a CE-compliance certificate .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. REFRIGERANTS		HOW OFTEN?			
<input type="checkbox"/> No, go to block 17 <input type="checkbox"/> Yes, please fill in this block		Never	Monthly	Weekly	Daily
1	I check whether the refrigeration system has been set up according to the national ammonia regulations.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	I check whether the safety regulations covering an ammonia refrigeration system are being followed.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Ik tref voorzorgsmaatregelen in verband met explosiegevaar.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I work on refrigeration systems with chemical refrigerants such as R134a, R407C, R404A, and R507 .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I work on refrigeration systems with the refrigerant NH3 (ammonia, R717) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I work on refrigeration systems with the refrigerant Isobutane (R600a) or Propane (R290) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I work on refrigeration systems with the refrigerant CO2 (carbon dioxide, R744).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	I check whether the refrigeration system has been set up in accordance with environmental regulations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	I check whether the pressure device guidelines are being followed (PED) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	I check whether the safety regulations covering refrigeration systems with HCFC/HFC are being followed.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	I check whether the safety regulations covering refrigeration systems with HC are being followed .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



17. ASSISTANCE, TOOLS AND EQUIPMENT		HOW OFTEN?			
		Never	Monthly	Weekly	Daily
<input type="checkbox"/> No, I never do this in my regular job. Please go to the next part. <input type="checkbox"/> Yes, please fill in this block					
1	I use a manometer set.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	I use a recovery set .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	I use a Torr gauge .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	I use scales for weighing refrigerant.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I use a nitrogen cylinder.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	I use a nitrogen pressure regulating device.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I use an acid test kit to check an oil sample .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	I use a temperature recording device .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	I use a refrigerant cylinder .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	I use Oxy/Acetylene cylinders.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	I use electrical arc welding equipment.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	I use brazing equipment .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	I use an electronic leak detection device.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	I use leak indicator spray .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	I use litmus paper .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	I use a multimeter .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	I use a halide leak detection lamp .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	I use an anemometer.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	I use a hygrometer .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	I use a computer/laptop .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	I use product information from wholesalers.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	I use the installation instructions of the component manufacturer .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	I use the manufacturer's information on fault location/repair.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	I use elemental tables.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	I use a log-ph diagram .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	I use the h/x diagram .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	I read specialist magazines .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	I am aware of environmental regulations.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	I read foreign technical texts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## **E. ADDITIONS**

Were there any relevant activities missing in the survey? If yes, please describe the activities below:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_

**AREA wishes to thank you for filling in this survey and your contribution to the research on the Job Profile of the European Refrigerating Craftsman.**

**Please send this questionnaire to your regional contact person. You can use the envelope that you received with this questionnaire.**

**More information about this survey is available on [www.area-eur.be](http://www.area-eur.be)**

**This page can be placed next to the activity list while you fill it in.**

**HOW FREQUENT?**

**For each activity indicate how often you do the activity in your work. The categories have the following meaning**

<b>Never</b>	<b>= Never or seldom; the activity is not a part of your regular job</b>
<b>Monthly</b>	<b>= Once or a few times per month, but not every week</b>
<b>Weekly</b>	<b>= Once or a few times per week, but not every day</b>
<b>Daily</b>	<b>= Every day, once or a few times.</b>