



1. TITLE OF THE CERTIFICATE (NL)

Diploma Beroepsonderwijs
Kwalificatie: Technicus maintenance koude- en klimaatsystemen
Kwalificatiedossier: Koude- en klimaatsystemen

In the original language

2. TRANSLATED TITLE OF THE CERTIFICATE (EN)

Certificate Senior Secondary Vocational Education
Qualification: Technician maintenance refrigeration and climate control systems
Qualification file: Refrigeration and climate control systems

This translation has no legal status

3. PROFILE OF SKILLS AND COMPETENCES

Core task 1: Prepares work on refrigeration and climate control systems and places parts

- 1.1 Does preparations for work on cooling and air conditioning systems
- 1.2 Disassembles components and piping of cooling and air conditioning systems
- 1.3 Places and assembles parts in cooling and air conditioning systems
- 1.4 Lays system of pipes for cooling and air conditioning systems
- 1.5 Completes work on cooling and air conditioning systems

Core task 2: Carries out service-technical work

- 2.1 Inspects and does maintenance on complex cooling and air conditioning systems
- 2.2 Analyses and resolves issues with complex cooling and air conditioning systems
- 2.3 Adjusts cooling and air conditioning systems in company

4. RANGE OF OCCUPATIONS ACCESSIBLE TO THE HOLDER OF THE CERTIFICATE

A Technician maintenance refrigeration and climate control systems (Technician maintenance R&CS) works at a company which installs, maintains and repairs professional refrigeration & climate control, air treatment, comfort technology and heat pump systems. He carries out work on commercial refrigeration systems, air conditioners and heat pump systems. Furthermore, he also works on larger systems with water and water-glycol as a secondary refrigeration substance, but also systems in which other secondary refrigeration substances are applied, among which CO₂, such as:

- Industrial refrigeration and climate control systems with refrigeration substances such as NH₃, CO₂, propane, isobutene and propylene;
- Complex systems such as pump circulation systems, thermosyphon systems, industrial cascade systems, dual-step & compound systems and transcritical systems.

According to article 3 of the 'Fluorinated greenhouse gasses and regulated refrigeration substances regulations', the Technician R&CS is required to possess a 'Fluorinated greenhouse gasses and regulated refrigeration substances regulations' diploma.

*** Explanatory note**

This document is designed to provide additional information about the specified certificate and does not have any legal status in itself. The format of the description is based on the following texts: Council Resolution 93/C 49/01 of 3 December 1992 on the transparency of qualifications, Council Resolution 96/C 224/04 of 15 July 1996 on the transparency of vocational training certificates, and Recommendation 2001/613/EC of the European Parliament and of the Council of 10 July 2001 on mobility within the Community for students, persons undergoing training, volunteers, teachers and trainers.

More information is available at: <http://www.europass.cedefop.europa.eu/>

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5. OFFICIAL BASIS OF THE CERTIFICATE

<p>Name and status of the body awarding the certificate The certificate issued on completion of the programme is signed by the examination board at the school where the pupil attended the programme.</p>	<p>Name and status of the national/regional authority providing accreditation/recognition of the certificate Ministry of Education, Culture and Science</p>																				
<p>Level of the certificate (national or international) Qualification level 4 of the Dutch VET qualification structure Characteristics: non-job related skills such as tactical and strategic capacities. The professional bears his or her own responsibility, which is not only related to practical implementation in terms of monitoring and supervision, but also a more formal, organisational responsibility. The range of tasks also includes drafting new procedures. NLQF-niveau 4 - EQF level 4 - ISCED 3A</p>	<p>Grading scale / Pass requirements</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%;">10</td><td>excellent</td></tr> <tr><td>9</td><td>very good</td></tr> <tr><td>8</td><td>good</td></tr> <tr><td>7</td><td>very satisfactory</td></tr> <tr><td>6</td><td>pass</td></tr> <tr><td>5</td><td>fail</td></tr> <tr><td>4</td><td>unsatisfactory</td></tr> <tr><td>3</td><td>very unsatisfactory</td></tr> <tr><td>2</td><td>poor</td></tr> <tr><td>1</td><td>very poor</td></tr> </table>	10	excellent	9	very good	8	good	7	very satisfactory	6	pass	5	fail	4	unsatisfactory	3	very unsatisfactory	2	poor	1	very poor
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<p>Access to next level of education/professions Based on work experience and further education, a Technician maintenance R&CS can develop to become a Technician engineering R&CS, Planner, Service coordinator, Service manager refrigeration technology or Energy performance advisor. He can specialise in technical aspects or perhaps other technical professions. He can specialise in building more complex systems with other refrigeration substances. After the required work experience and education, he can focus on another area of expertise in refrigeration technology, such as heat pump appliance or system design.</p>	<p>International agreements Technician maintenance refrigeration and climate control systems is not a regulated profession in the Netherlands. However, the education and training for this profession on qualification level 4 is regulated under the European directive 2005/36/EC, amended by directive 2013/55/EU. The regulated education and training gives access to regulated professions at the level of a diploma according to article 11 of this directive.</p>																				
<p>Legal basis Act on Vocational Education and Training (WEB), registered number of qualification (crebo): 25560 The education and training for this qualification is offered as of 01-08-2017.</p>																					

6. OFFICIALLY RECOGNISED WAYS OF ACQUIRING THE CERTIFICATE

<p>Senior secondary vocational education features two learning pathways: the school-based pathway (bol) and the training on the job pathway (bbl). In the school-based pathway, the majority of the course consists of theory at school. The extent of the practical component (vocational practice) is between 20% and 60%. In the training on the job pathway, the extent of vocational practice is at least 60% of the course. The participant works four days a week in a training company, and attends school for theory subjects just one day a week. In principle it is possible to follow both learning pathways, but which pathway is offered will depend on the individual educational institution.</p>	
<p>Average duration of the education/ training leading to the certificate</p>	<p>3 years (4800 study hours) (depending on previous education)</p>
<p>Entry requirements The certificate preparatory vocational secondary education (vmbo) advanced vocational programme, combined programme, or theoretical programme, or a comparable level.</p>	

7. ADDITIONAL INFORMATION

<p>Dutch senior secondary VET is based on qualification files, that each contain one or more qualifications. The information included in part 3 and 4 is derived directly from the qualification file determined by the Minister of Education, Culture and Science. The complete qualification file can be found at kwalificaties.s-bb.nl, only in Dutch.</p> <p>Optional subjects are linked to the qualification. The optional subjects have a total size of 15% of the course duration. The optional subjects completed by the student are listed on the certificate.</p>

7. ADDITIONAL INFORMATION

Additional information, including a description of the Dutch national qualifications system, is available at the Netherlands National Reference Point (NRP): www.s-bb.nl. The NRP is the information centre for vocational qualifications in the Netherlands. SBB has been appointed in this capacity by the Ministry of Education, Culture and Science.