

1. Title	Verify the design of air-conditioning systems of trains and perform design reviews
2. Code	EMRADE509A
3. Range	Apply the professional knowledge and techniques of air-conditioning engineering to verify the design of air-conditioning systems of trains and perform design reviews according to the design requirements and in coordination with the overall train design.
4. Level	5
5. Credits	6
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Design requirements for air-conditioning systems of trains to match with the overall train design</p> <ul style="list-style-type: none"> ◆ Understand the design requirements for air-conditioning systems of trains and master the key points. The system equipment includes: <ul style="list-style-type: none"> • Air-conditioners of trains • Ventilation equipment • Control equipment and circuits ◆ Master the key points of the overall train design and the techniques of matching the design of air-conditioning systems of trains with the overall train design <p>6.2 Methods and procedures of verifying the design of air-conditioning systems of trains and performing design reviews</p> <ul style="list-style-type: none"> ◆ Verify the design of the air-conditioner according to the carrying capacity of the train, range of temperature and humidity in Hong Kong, the expected span and mode of operation ◆ Verify the design of the ventilation of air-conditioner and air ducts of the train according to the requirements on fresh air volume and total air volume of the train ◆ Verify the design of the control equipment and circuits of the air-conditioner of the train according to the requirements on the temperature in train compartment and total air volume of the train ◆ Verify the design of the control equipment and circuits of the air-conditioner of the train according to the requirements on the overall control of the air-conditioning system of the train ◆ Review comprehensively the design of the air-conditioning system according to the requirements on the comfort of the train compartment ◆ Consider the comfort of the train compartment, system reliability, efficiency and environmental protection level during design reviews

	<p>6.3 Professionalism in verifying and reviewing the design of air-conditioning systems of trains</p> <ul style="list-style-type: none"> ◆ Verify the design of air-conditioning systems of trains and perform design reviews according to the standards and requirements for work safety, health, environmental protection and quality management of railway works ◆ Understand the safety guidelines as required by the law and codes of practice in verifying and reviewing the design of air-conditioning systems of trains
7. Assessment Criteria	<p>The integrated outcome requirement of this unit of competency is:</p> <ul style="list-style-type: none"> (i) Capable to verify the design of the air-conditioning system equipment of trains efficiently according to the requirements and standards on carrying capacity, temperature and air volume in compartments and air-conditioning systems of trains; and (ii) Capable to review the design of air-conditioning systems of trains efficiently according to the standards complying with the overall train design.
8. Remarks	<p>The credit value of this unit of competency is set on the presumption that the person already possesses professional knowledge of air-conditioning system equipment.</p>