

1. Title	Verify the design of pneumatic systems of trains and perform design reviews
2. Code	EMRADE507A
3. Range	Apply the professional knowledge and techniques of pneumatic system engineering to verify the design of pneumatic systems of trains and perform design reviews according to the design requirements and compressed air consumption.
4. Level	5
5. Credits	6
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Design requirements for pneumatic systems of trains to match with the overall train design</p> <ul style="list-style-type: none"> ◆ Understand the design requirements for pneumatic systems of trains and master the key points. The system equipment includes: <ul style="list-style-type: none"> • Air compressor devices • Pipe line and pipe network • Equipment to maintain the compressed air quality ◆ Master the key points of the overall train design and the techniques of matching the design of pneumatic systems of trains with the overall train design <p>6.2 Methods and procedures of verifying the design of pneumatic systems of trains and performing design reviews</p> <ul style="list-style-type: none"> ◆ Verify the design of the pneumatic system pressure according to the consumption and using pattern of compressed air by and the pneumatic equipment type of the train ◆ Verify the design of the air compressor according to the demand and using frequency of compressed air by the train ◆ Verify the design of pipe line distribution and pipe network of the pneumatic system according to the distribution of pneumatic equipment, air consumption and using frequency ◆ Verify the design of air cylinder according to the distribution of pneumatic equipment, air consumption and using frequency and system pressure ◆ Verify the design of the pipe line valve according to the design requirements for pipe line network and control ◆ Verify the design of the pneumatic system equipment to maintain the compressed air quality according to the requirements maintaining compressed air quality ◆ Review comprehensively the design of the pneumatic system according to the consumption and using pattern of compressed air by and the pneumatic equipment type of the train ◆ Consider the safety, reliability, and efficiency of trains during design reviews

	<p>6.3 Professionalism in verifying and reviewing the design of pneumatic systems of trains</p> <ul style="list-style-type: none"> ◆ Verify the design of pneumatic 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 pneumatic 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 pneumatic system equipment of trains efficiently according to the consumption and using pattern of compressed air and the pneumatic equipment type and distribution on trains and the design requirements and standards for pneumatic equipment; and (ii) Capable to review the design of pneumatic 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 electrical and mechanical engineering.</p>