

1. Title	Design high pressure gas piping network and relevant pressure regulation control equipment
2. Code	EMGADE505A
3. Range	Design high pressure gas piping network and relevant pressure regulation control equipment in a cost-effective way for gas piping network in roads according to present needs and future development as well as the requirements of the gas safety regulation and codes of practice; take the initiative to accomplish the design task independently, coordinate with other public utilities and relevant government departments, and brief the engineering personnel or people concerned on the engineering details.
4. Level	5
5. Credits	6
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Knowledge and principles of designing high pressure gas piping network and relevant pressure regulation control equipment</p> <ul style="list-style-type: none"> ◆ Understand different properties and range of application of the following pipes: <ul style="list-style-type: none"> • Polyethylene (PE) pipe • Seamless steel pipe (Schedule 80) • Ductile iron pipe ◆ Understand the operation and limitations on the use of electro fusion method to connect PE pipes ◆ Understand the operation and limitations on the use of automatic butt fusion method to connect PE pipes ◆ Understand the purpose and limitations on the use of cathode protection ◆ Point out the protection requirements correctly on underground pipes, including anti-corrosion, road surface pressure and mechanical damage, etc. ◆ List the advantages and disadvantages of different pressure regulation control equipment ◆ Understand underground public utilities plans

	<p>6.2 Methods and procedures of designing high pressure gas piping network and relevant pressure regulation control equipment</p> <ul style="list-style-type: none"> ◆ Design a high pressure gas piping network with suitable pipe diameter and path ◆ Determine to use branches or loops for the piping network with reference to the conditions and actual situation ◆ Select pressure regulation control equipment with reference to conditions like the position for installation, amount of gas consumed, operating pressure and accuracy required ◆ Read out and explain the working drawing of the gas network clearly and put on record the work completed <p>6.3 Professional knowledge and responsibilities for designing high pressure gas piping network and relevant pressure regulation control equipment</p> <ul style="list-style-type: none"> ◆ Apply basic legislations and regulations relevant to underground public utilities installation
7. Assessment Criteria	<p>The integrated outcome requirement of this unit of competency is:</p> <p>(i) Capable to design high pressure gas piping network and relevant pressure regulation control equipment for general gas piping network in roads.</p>
8. Remarks	<p>The credit value of this unit of competency is set on the presumption that the person already possesses the competency of EMGADE101A 【Basic knowledge of gas application】, EMGADE403A【Design low pressure gas piping network and relevant pressure regulation control equipment】 and EMGADE405A 【Design intermediate and medium pressure gas piping network and relevant pressure regulation control equipment】 .</p>