# Scope

This micro-credential sets the minimum criteria for a person to demonstrate competency pre-tensioning a fastener using manual torque tools.

# MICRO-CREDENTIAL Manual Torque Tools

* 1. Did the candidate perform a hazard assessment for the work about to be demonstrated?
     1. Candidate MUST
        1. Perform a hazard assessment for the area in which they are to demonstrate manual torque tools
        2. Use safety glasses as a minimum requirement for PPE
        3. Verbally communicate to the evaluator and include all recognized hazards
     2. Proper PPE MUST
        1. Be selected and inspected for the hazards identified
  2. Did the candidate locate the proper torque value for the fastener(s) they are preparing to torque?
     1. Candidate MUST
        1. Use a recognized resource to determine the torque value of the fastener(s) they intend to demonstrate the torque process with
           1. These resources include but are not limited to trades books, service manuals, ASME, ASE or vetted internet resources
        2. Evaluator MUST
           1. Verify the torque value BEFORE the candidate demonstrates the torque process
  3. Did the candidate properly set up the manual torque wrench to the torque value identified in Step B?
     1. Candidate MUST
        1. Correctly set up the torque wrench to the value determined in Step B
     2. Evaluator is ENCOURAGED
        1. Ask the candidate questions about conversion from Metric to English values
  4. Did the candidate select the correct torque wrench setting for use with a manual torque multiplier?
     1. Candidate MUST
        1. Demonstrate the set-up of a manual torque wrench for use with a torque multiplier
        2. Explain to the evaluator, in detail:
           1. The loss through the multiplier
           2. The ratio of the multiplier
           3. How the multiplier is manipulated and braced to perform the torque operation
     2. Evaluator MAY
        1. Select a fastener for the candidate to use or assign a torque value to the candidate to use for demonstration
  5. Did the candidate demonstrate the correct torque wrench setting for use with a torque adaptor (extension)?
     1. Candidate MUST
        1. Demonstrate the mathematical calculation for the torque wrench setting adjustment when using a torque adaptor (extension)
        2. Be able to explain to the evaluator how the calculation is made and why the torque wrench setting is different than the desired value of torque on the fastener
     2. Evaluator MAY
        1. Assign a specific fastener for the candidate to use or assign a value for the candidate to use for demonstration
  6. Did the candidate perform all tasks safely?
     1. Candidate MUST
        1. Demonstrate the task safely while incorporating all identified PPE from the hazard assessment in Step A