

The case study of water flow measurement comparison in the range of (12-120) L/min

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Nowadays, the water flow measurement involves in our daily life such as water meters for tap water, hydrocarbon flow meters at petrol stations, etc. Those flow meters have to be calibrated by higher accuracy equipments with the accredited calibration laboratory. Therefore the accreditation laboratory has to complete the measurement comparison with reliable laboratory or the National Institute of Metrology (Thailand), NIMT which confirms the traceability chain and the measurement capability. However, the liquid primary standard at NIMT applies volumetric principle to measure flow rate which differs from other laboratories using gravimetric method. Thus, the case study of water flow measurement comparison has been done to verify the possibility of compatibility of those two methods. With high accuracy and good repeatability, the Coriolis mass flow meter was used as the transfer standard in the range of (12 –120) litre per minute and (12 –120) kilogram per minute. The comparison result of both measurement principles are considered by using the degree of equivalence, En ratio. The result shows that En ratio is less than 1 which means that both principles are agreed.

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