

Measurement

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History of Measurement and Measuring Systems Introduction Units of measurements are among the oldest inventions by humans. The prehistoric societies inclusive of the primitive humans used different measurements for purposes such as construction of their dwellings to ensure that they were of apposite shape and size. With time, man has become more accurate in making measurements due to advancements in technologies. This paper focuses on use of measurements by humans. The paper will discuss history of measuring systems, who invented them, and their importance to engineering and construction. Additionally, how engineers observe measurements, why measurements are much needed in the world, the role of measurements in quality control, and different type of measurements techniques used in engineering will be discussed.

The term “ measurement” is derived from the Greek word metron which means limited proportion. The first measurement systems were astronomical objects. Babylonians and Egyptians are believed to have invented use of measurement. However, they mainly used comparisons to measure things. For example, they would compare capacity of containers by filling the smaller container and emptying it into the bigger one to measure the volumes (Manseau & Shields, 2005).

However, Gabriel Mouton, who was an astronomer, invented the metric system. He also suggested the swing length of pendulum, which is used as a unit of measuring length. In engineering and construction, there are different metric systems depending on what is being measured. For example, construction materials that are in liquid form are measured using measures such as gallons and liters. In case of length, units such as inches, meters, and feet are used depending on the size being measured. While measuring <https://assignbuster.com/measurement/>

mass, unit such as pounds, kilograms, and grams are applied (Manseau & Shields, 2005). Although scientists make use of standardized metric units, there are two different types of metric systems. The type of metric system being used depends on the application. When measuring small units of length or mass, engineers make use of the CGS (centimeter-gram-second) system. However, MKS (meter-kilogram-second) system is used while measuring large quantities (Manseau & Shields, 2005).

With globalization, metric system is becoming widely acceptable worldwide though some countries such as United States are resistant to switch to the metric system. US makes use of a mixture of different systems of measurement. In 1960, the General Conference of Weights and Measures revised and simplified the measurement system. Seven units of measure were accepted and include meter (for measuring length), kilogram (for measuring mass), Ampere (for measuring electric current), and Kelvin for measurement of thermodynamic temperature. The other units of measurement documented include mole for substance, candela for luminous intensity, and second for time (Manseau & Shields, 2005).

Measurement estimates used in construction include approximate measurements, detailed estimates, unit quantity method, total quantity method, and total quantity method. Having a standard unit of measure is important to enhance international exchange of goods as well as communication of ideas. Engineers are capable of designing and constructing buildings in different parts of the world due to existence of common units of measure across the globe (Manseau & Shields, 2005).

Conclusively, measurement is as old as human beings are. However, the units and systems of measurements have undergone transformation

resulting in standard units that enable sharing of information amongst different engineers across the globe.

References

Manseau, A., & Shields, R. (2005). Building tomorrow: Innovation in construction and engineering. New York: Ashgate Publishing.