The value of steam at different pressures.

**High Pressure Steam**

* Can provide a source of heat and shaft power as pressure is reduced via turbine

**Enthalpy Method**

* Assigns relative value to steam based on heat content only
* 600 lb steam
  + 1,379 BTU/lb
  + Relative value: 100%
* 150 lb steam
  + 1,245 BTU/lb
  + Relative value: 90%
* 15 lb steam
  + 1,189 BTU/lb
  + Relative value: 86%

The method above ignores the work potential of steam. Focuses only on the heat associated with the steam, and not the loss of ability to perform shaft work.

**Exergetic Method**

The exergy method considers the loss of work (irreversibility – 2nd law of thermodynamics). When the steam is let down, the ability to perform work is decreased.

**Second law of thermodynamics – During energy transformations, some energy is always lost to entropy (disorder).**

When steam is dropped down to lower pressure, entropy increases due to the generation of heat that does not have the ability to do any work. This method accounts for the enthalpy changes that represent the total energy content and the entropy generation due to the irreversibility of the process.

Enthalpy

Enthalpy represents the internal energy (from temp) and the flow work (from pressure).