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JIS

JAPANESE INDUSTRIAL STANDARD

General rules for heat balance

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In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

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General rules for heat balance

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1. Scope

This Japanese Industrial Standard specifies the general rules of method in the case where the heat balance is conducted for industrial equipment using heat, fuel and electrical heating.

Remarks: The units and numerical values given in { } in this Standard are based on the traditional units and are appended for informative reference.

2. Definitions

The definitions of main terms to be used in this Standard shall be as follows.

(1) heat balance To investigate the amount of heat, heat equivalent of fuel and electric power supplied to equipment and their using state and clarify the relation between heat input and heat output.

(2) sensible heat Amount of heat to be used for temperature change of material bodies at equal pressure.

(3) latent heat Amount of heat to be expended for the change of phase of mtter at equal pressure.

Informative reference: The heat of vaporization, heat of melting, heat of sublimation, etc. correspond to this.

(4) heat of reaction Amount of heat to be generated or absorbed in chemical reaction in equipment.

(5) higher calorific vlaue Total amount of heat generated when the fuel has been combusted completely by air saturated by steam.

Remarks: This higher calorific value includes the heat of vaporization of steam generated by burning (sum of steam of water content in fuel and steam formed by burning) but does not include the heat of vaporization of steam in air.

(6) lower calorific value Amount of heat obtained from higher calorific value by subtracting the heat of vaporization of steam generated by burning [see Remarks of (5)].

3. Reference of heat balance

The reference when heat balance is conducted shall comply with the following.

(1) Reference temperature The reference temperature of heat balance shall be, in general, the atmospheric temperature. If circumstances require to adopt 0°C or other temperature as reference, this effect must be described clearly.