

Typefaces of Symbols

(according to JIS Z 8201, JIS Z 8202/0-10, 12, 13, and ISO 31/0-13)

- Symbols for quantities and variables are, with few exceptions, single letters of the Latin or Greek alphabets that may have subscripts or superscripts or other identifying signs and are italic:

m (mass) ρ (density) p (pressure) τ (shear stress) E (modulus of elasticity)

Note: Abbreviations MC (moisture content), MOR (modulus of rupture), MOE (modulus of elasticity), SD (standard deviation), etc. should not be used as symbols for quantities, which are usually u , σ_b , E_b , σ , etc., respectively.

- Symbols used as subscripts and superscripts are italic if they represent quantities or variables and roman if they represent descriptive terms:

c_p (specific heat at constant pressure) α_v (coefficient of volume expansion) Θ_i ($i = 0, 1, 2, \dots$)

x_2 m_A (mass of A) E_L (modulus of longitudinal elasticity) v_{\max} (maximum velocity)

- Symbols for vectors are boldface italic, symbols for tensors are sans-serif bold italic, and symbols for matrices are boldface italic:

$\mathbf{A} \cdot \mathbf{B} = \mathbf{C}$ (vectors) \mathbf{T} (tensors) $\mathbf{A} = \begin{pmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{pmatrix}$ (matrices)

- Symbols representing dimensionless parameters and fundamental constants are italic:

Re Pe Fr Kn k (Boltzmann constant) R (gas constant)

- Symbols for units and SI prefixes (n, μ , m, k, M, etc.) are roman:

N GPa nm ms μg J/(kg·K) kg/m^3 rad/s^2 l (or L)

Note: Symbols sec, day, hour, and ℓ should not be used instead of s, d, h, and l (or L), respectively.

- Symbols for chemical elements are roman:

C Ar Cr Hg CO₂ C₂H₄ SiCl₄

- Arabic numerals expressing the numerical values are roman, the decimal sign or marker is the dot on the line, and the comma should not be used to separate digits into groups of three:

2483 0.123 4×10^3

- Symbols representing mathematical constants that never change are roman:

e (base of natural logarithms) i, j (imaginary units) π (circular constant)

- Symbols representing explicitly defined functions or well defined operators are roman, and symbols for variables in equations are italic:

$\sin x$ $\cos x$ $\tan x$ $\sinh x$ $\cosh x$ $\tanh x$ $\exp x$ $\log_a x$ $\ln x$ $\text{erf } x$ $\text{Re } x$ $\text{Im } x$

$\frac{dx}{dt}$ $\int f(x)dx$ $\sum_{k=1}^{\infty} \frac{1}{k^3}$