



Symbols and units

Quantities, units, symbols and signs

- in accordance with ISO 31 and IEC 60027
- (to be revised as ISO/IEC 80000)

Symbol represents variable in text, table,
figure, equation



Symbols and units

ISO style:

- Times New Roman italics
for Latin alphabet (e.g. *t*, *m*, *d*)
- Symbol italics
for Greek letters (e.g. φ , λ , ρ)

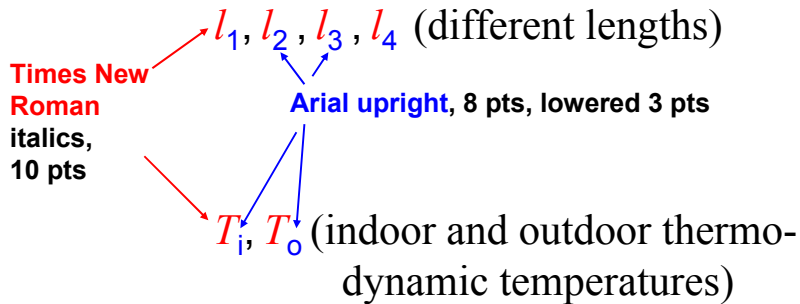
Other types of fonts are used in figures

Do NOT italicize subscripts unless they are also variables (e.g. q_V , m_f)



Symbols and subscripts

- To differentiate the use of a symbol when given different specific meanings, use a subscript, e.g.:



Symbols and subscripts (cont.)

Symbol italics, 10 pts → $\alpha_1, \alpha_2, \alpha_3$ (different angles)

but α_i (angle i) for $i = 1, 2, 3, \dots$

D_i (diameter i) for $i = 1, 2, 3, \dots$

or D_A (cross-section diameter)

Times New Roman italics, 8 pts, lowered 3 pts

The text 'Times New Roman italics, 8 pts, lowered 3 pts' is positioned below the symbol D_A , with a red arrow pointing from the text to the subscript A in D_A .

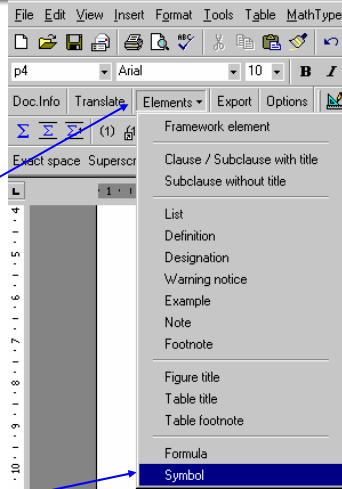


Symbols and subscripts (template)

Place cursor where symbol to be placed

Click on **Elements** from the template toolbar

Choose **Symbol**



Symbols and subscripts (template)

Maths

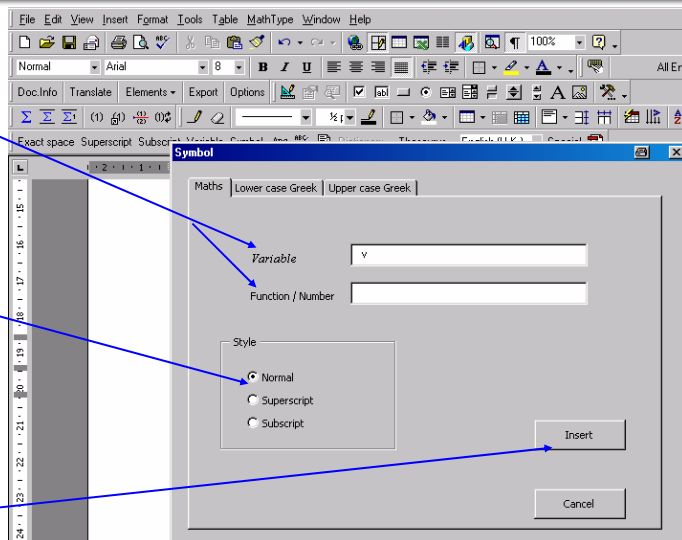
Type in

- **Variable** or
- **Function** or **Number**

Select style

- **Normal**
- **Superscript**
- **Subscript**

Click **Insert**

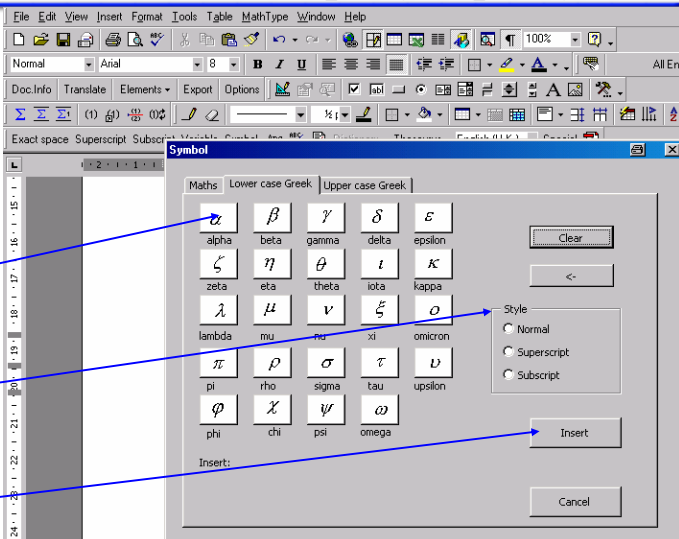




Symbols and subscripts (template)

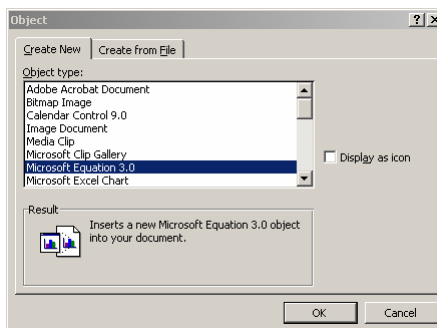
Lower or upper case Greek letters

- Choose **Letter**
- Select **Style**
- Click **Insert**



Equation Editor

- Accessed using the Insert object commands
- Choose the Microsoft Equation 3.0
- Then enter the ISO Equation Editor settings (see page 7 of the ITSIG Guide, 2001)





Equation Editor — Setting spacing

In the Equation Editor menu:
Click **Format**
Select **Spacing**
Set spacing

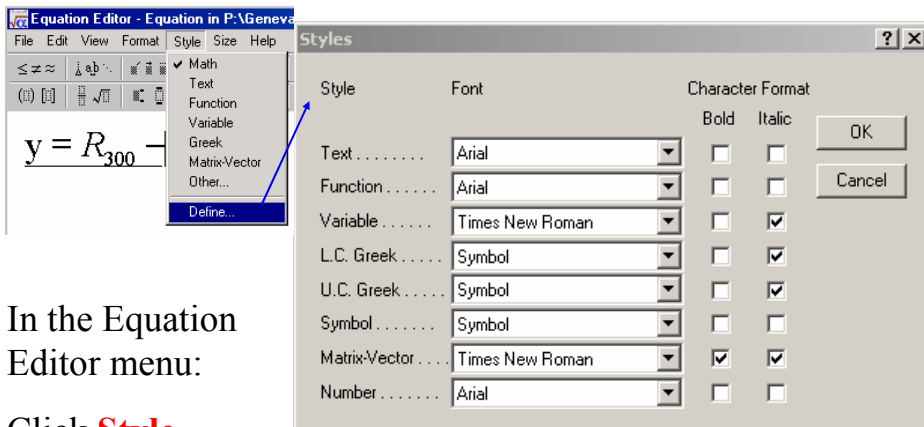


Equation Editor — Setting spacing (cont.)

Scroll down to check the spacing settings
Once the settings have been entered, click **OK**



Equation Editor — Styles setting



In the Equation Editor menu:

Click **Style**

Select **Define**

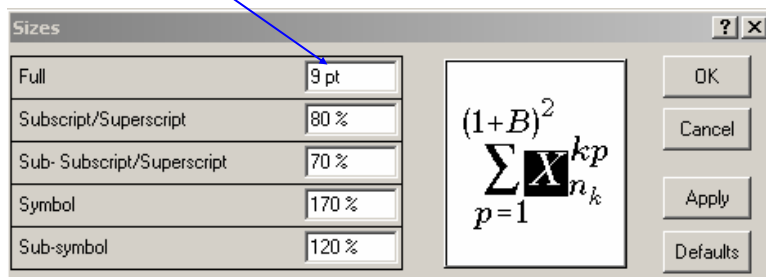
Set styles and click **OK**



Equation Editor — Size setting

For **equations in notes, etc.**

Change the size **Full** to 9 pt
(all of the other sizes are adjusted automatically)





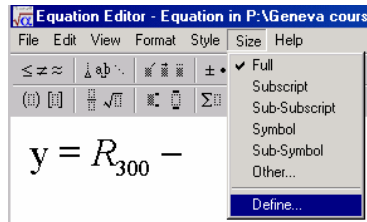
Equation Editor — Size setting

In the Equation Editor menu:

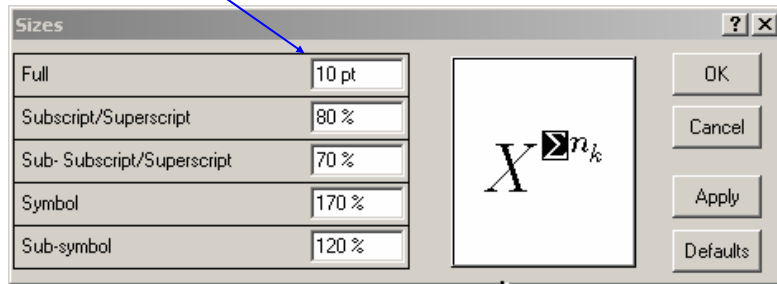
Click **Size**

Select **Define**

Set sizes and click **OK**

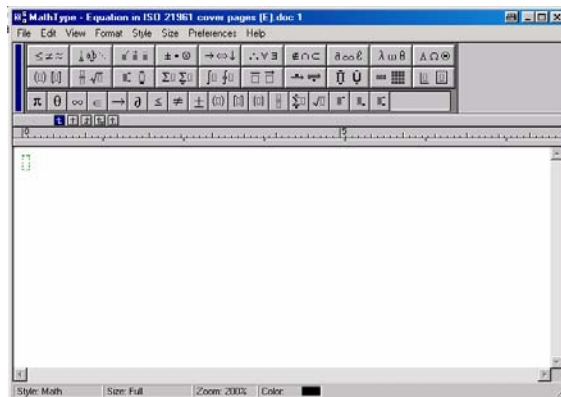
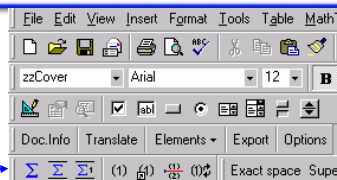


For **equations in text Full** size set to 10 pt



MathType 4.0

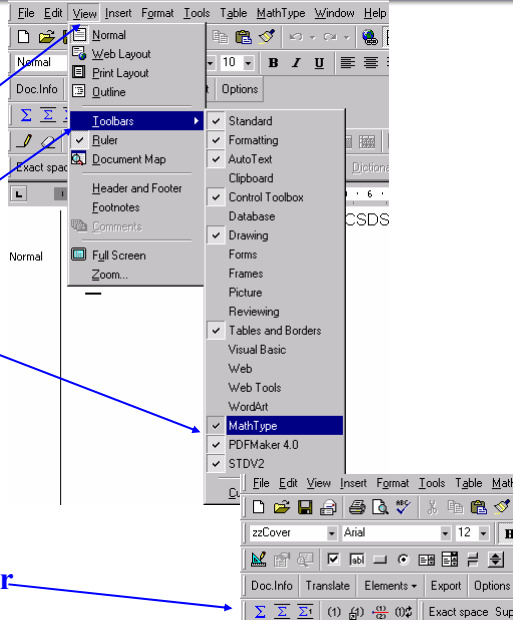
- To open an equation simply click on Σ in the **MathType toolbar**
- The **MathType** window opens





MathType 4.0 Settings

- Show the MathType toolbar by selecting
- **View**
- **Toolbars**
- Select **MathType**
- **MathType toolbar**



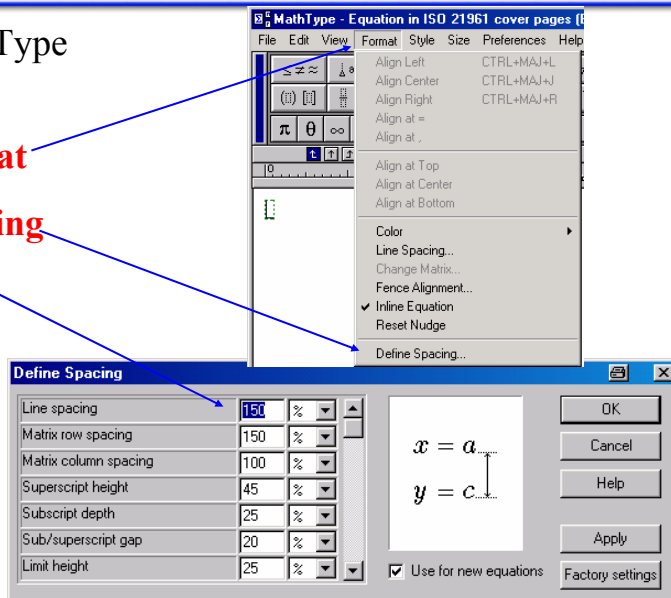
MathType 4.0 — Setting spacing

In the MathType menu:

Click **Format**

Select **Spacing**

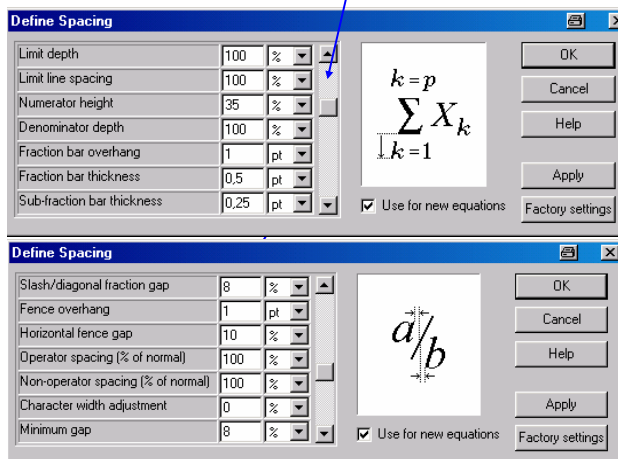
Set spacing





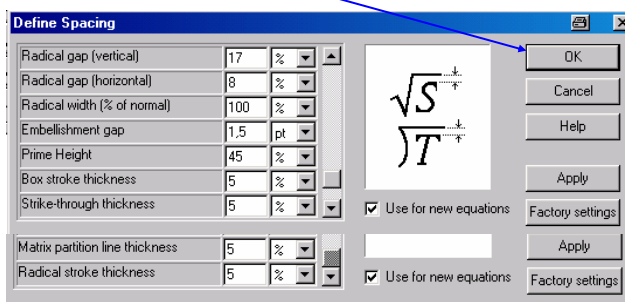
MathType 4.0 — Setting spacing (cont.)

Scroll down to check the spacing settings



MathType 4.0 — Setting spacing (cont.)

Once the settings have been entered, click **OK**

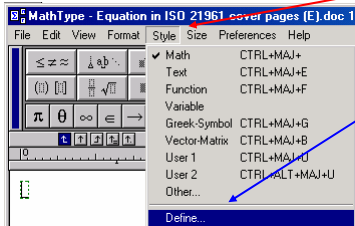




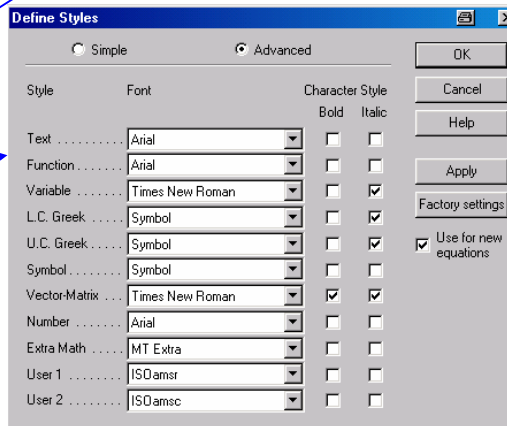
MathType 4.0 — Styles setting

In the MathType menu:

- Click **Style**
- Select **Define**



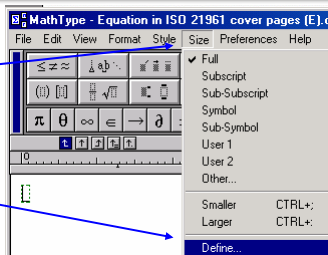
- Set styles
- Click **OK**



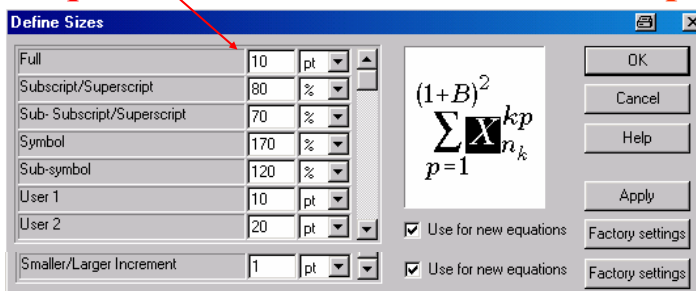
MathType 4.0 — Size setting

In the Equation Editor menu:

- Click **Size**
- Select **Define**
- Set sizes and click **OK**



For equations in text Full size set to 10 pt

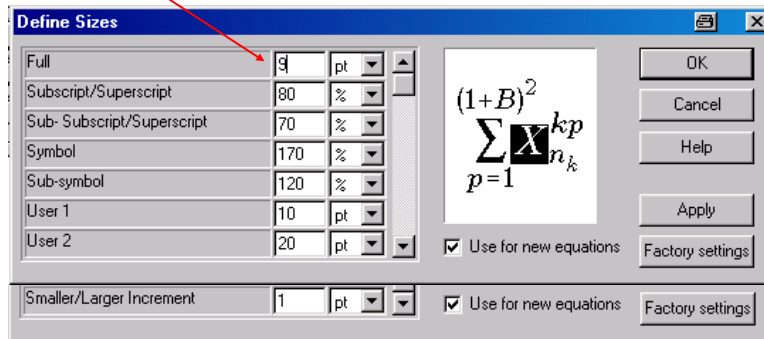




MathType 4.0 — Size setting

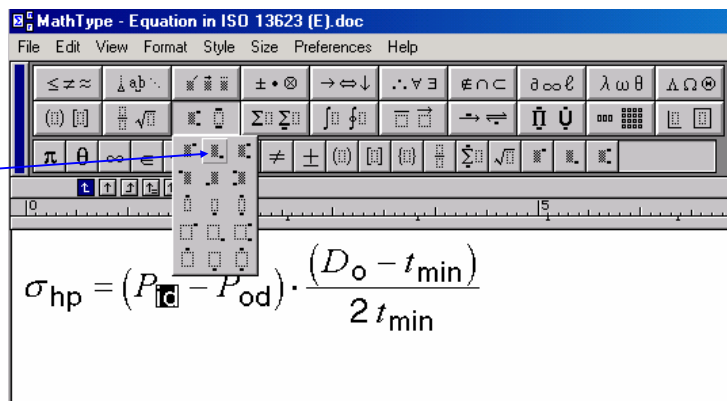
For **equations in notes, etc.**

Change the size **Full** to 9 pt
(all of the other sizes are adjusted automatically)



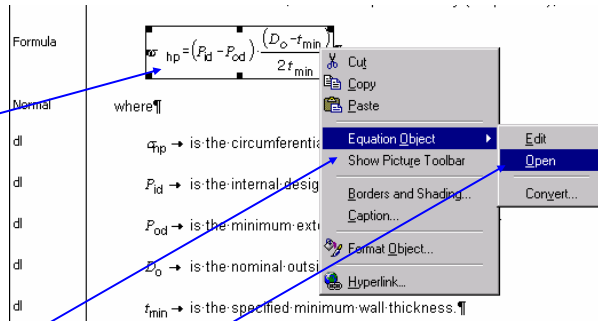
Equation Editor or MathType 4.0

To avoid problems of file exchange, use the automatic functions from the toolbar



To open the equation:

- Select equation
- Place cursor close to inside edge of equation
- Right click mouse
- Choose **Equation Object**
- Select **Open**



The screenshot shows the Equation Editor interface. On the left, a vertical toolbar contains icons for Formula, Normal, dl, dl, dl, dl, and dl. The main workspace contains the following text:

where

$\sigma_{hp} = (\bar{P}_{id} - P_{od}) \cdot \frac{(D_o - f_{min})}{2 f_{min}}$

σ_{hp} → is the circumferential stress

\bar{P}_{id} → is the internal design pressure

P_{od} → is the minimum external design pressure

D_o → is the nominal outside diameter

f_{min} → is the specified minimum wall thickness

A right-click context menu is open over the equation, with the following options:

- Cut
- Copy
- Paste
- Equation Object** (highlighted)
 - Edit
 - Open** (highlighted)
 - Convert...
- Borders and Shading...
- Caption...
- Format Object...
- Hyperlink...