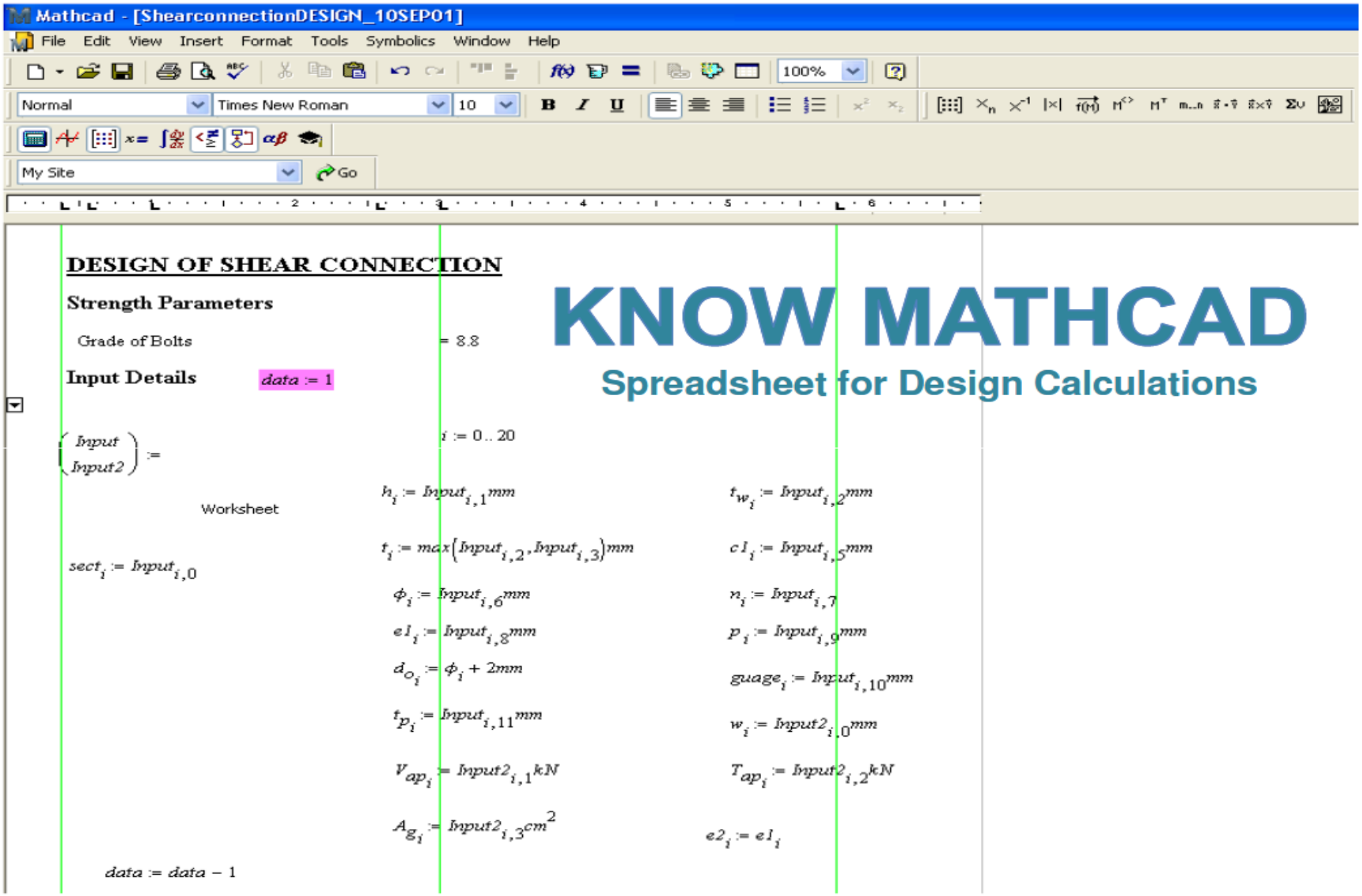


KNOW MATHCAD

Spreadsheet for Design Calculations

Know Mathcad

- ✓ Mathcad combines a powerful computational engine, accessed through conventional math notation, with a full-featured word processor and graphing tools.
- ✓ Standard mathematical notation, text, and graphs –single document.
- ✓ Unit-aware calculations.

$$x = \frac{-b + \sqrt{b^2 - 4 \cdot a \cdot c}}{2 \cdot a}$$

Know Mathcad

- ✓ Mathcad

$$x = \frac{-b + \sqrt{b^2 - 4 \cdot a \cdot c}}{2 \cdot a}$$

- ✓ Programming language

```
x=(-B+SQRT(B**2-4*A*C))/(2*A)
```

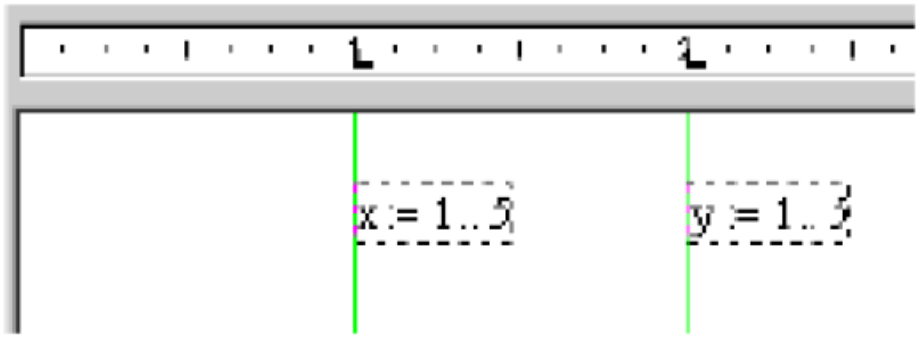
- ✓ Spread sheet

```
+(-B1+SQRT(B1*B1-4*A1*C1))/(2*A1)
```

Mathcad Workspace

- Blank worksheet - can enter text, math equation, graph and images.

Worksheet Ruler



- Guideline – to align regions.

Mathcad Sample

DOC. NO:

PAGE NO.:2 OF 4
DATE: 6/18/2009

PREPARED BY : RJ

CHECKED BY : JA

RESULT

REVISION : CALCULATION

Slab design for a span of 3.50m X 3.50m(S2)

Assuming depth of slab as 150mm $D := 150mm$

Material Properties

$\gamma_c := 25\frac{kN}{m^3}$ $f_{ck} := 30\frac{N}{mm^2}$ $f_y := 500\frac{N}{mm^2}$

Providing 8mm dia bars and 30mm cover

Dia, $\phi_1 := 8mm$ Cover, $C_c := 30mm$ Effective depth, $d_{eff} := D - C_c - \frac{\phi_1}{2}$ $d_{eff} = 0.12\,m$

Span, $l_y := 3.5m$ $l_x := 3.5m$ $b := 1m$