BOLT GROUP

Eccentric bolt group

DESIGN | S15

Summary

Bolt Group is used to calculate the maximum resistance of a bolt group and determine the smallest bolt size that can be used to resist an in-plane shear force. Both single and double shear cases can be considered.

What makes this module special?

- Evaluate current bolt group
- Optimise bolt group for economic design
- Linear and non-linear stress analysis
- Detailed calculations

Detailed Description

The quick-and-easy to use **Bolt Group** calculates the maximum resistance of a bolt group subjected to an in-plane shear force. With this module you can also determine the smallest bolt size that can be used to resist an in-plane force with arbitrary orientation. Both single and double shear cases can be considered.

When determining the bolt forces, the module gives you the option to choose between a linear or non-linear method of analysis.

After the analysis, the design output displays the bolt forces graphically and provides you with the design calculations. You can export the resultant pictures as drawings to **Padds**, **AutoCAD®** and other CAD software.

The capacity of a single bolt is :

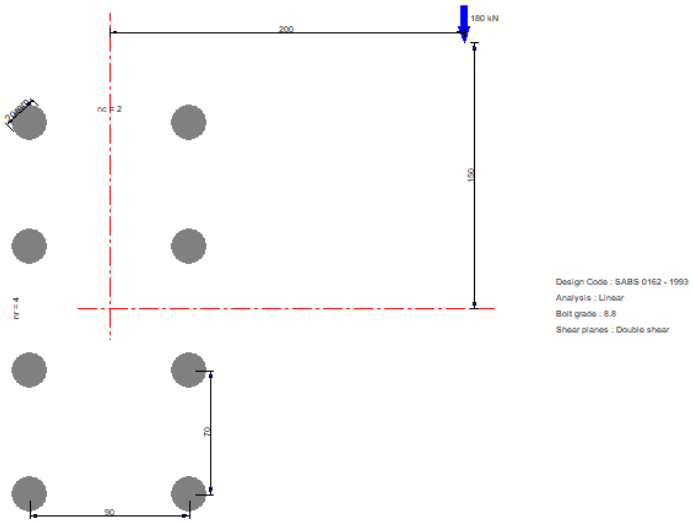
$\phi_b = 0.67$

$A_b = 314.159 \text{mm}^2$

$f_u = 800 \text{MPa}$

$m = 1$

$$V_r = \frac{0.75 \cdot 0.60 \cdot \phi_b \cdot m \cdot A_b \cdot f_u}{1000} = 75.775 \text{ kN}$$



The capacity of the bolt group is **182.22 kN**

The applied ULS force is : **180 kN**

Bolt shear design is safe

Supported Design Codes

Design Codes

- AISC - 1999 LRFD
- AISC 360-16 ASD
- AISC 360 – 16 LRFD
- AS4100 – 1998
- AS4100 - 2020
- BS 5950 – 1990
- BS 5950 –2000
- CAN / CSA-S16.1-94
- CSA S16-01 2001
- Eurocode 3 – 2005
- IS:800 – 2007
- NZS 3404 – 1997
- SABS 0162 – 1984
- SABS 0162 – 1993
- SANS 10162 - 2005
- SANS 10162-1:2011