

Readme For Circular Hollow Section Member

CHS member is an Excel Spreadsheet Template for the design of Circular Hollow members. It helps in the sizing of members subject to axial load, shear and moments and the sizing of welds at their end joints.

In general, the methods used and results obtained as in the Steelwork Design Guide to BS 5950-1:2000, Volume 1, 6th Edition, The Steel Construction Institute, BCSA, 2001

Features:

- Steel Grade can be S275, S355 or S460.
- Section types can be Hot-Rolled or Cold-Formed.
- Member ends type as per Cl 4.2.5.1 can be Simply-supported/Cantilever OR Continuity at one or both ends.
- The design-factored loads are Axial Load, Shear, Moment M_x and Moment M_y .
- When sizing or checking members, pull down menus include 282 CHS sections for selecting a member size.
- Database facility within the CHSmember file keeps design data for up to 500 members in its worksheet STORE.
- Section class in flexure can be Class-1 Plastic, Class-2 Compact, Class-3 Semi-compact or Class-4 slender. The section class in axial compression may be Class 1-3 or Class-4 slender.
- In the design of members subjected to axial load, shear and moment, the template offers the use either of the simplified method or the exact method based on Cl 4.8.3 of BS5950-1:2000.
- The simplified and the exact method share the same data in the worksheet STORE. A member can therefore be designed easily by both methods. A few mouse clicks allow switching between the two methods and using the same data.
- Where helpful, the template includes diagrams showing dimensions and details required for design.
- All calculation results are shown on the screen and in the printed output. Users and checkers can verify results by hand calculations
- The screen displays provide background information via comments, when moving the mouse pointer over cells.
- Using a reference number in the range 1001 to 1500, each member data can be retrieved, changed and re-saved with ease at a later date.
- The Database in the worksheet STORE is visible to the user. Using spreadsheet features of Excel, new data can be generated and the existing one examined and or modified.
- The template has virtually no user interface. The printed Output matches the Screen Display. Knowing how to use Excel and the ability to verify results as a designer is sufficient for using CHSmember.

- Shaded cells in the spreadsheet signify User-Input and un-shaded cells signify Spreadsheet-Results. This permits easy checking at a glance by the users and the checkers of CHSmember output