

**Validation of Spreadsheet Applications**

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6.3.4. Discuss the Spreadsheet design XXXXXXXXXXXXXXXXXXXX

6.3.5. Develop a matrix that references XXXXXXXXXXXXXXXX.  
Use Attachment 7.2.

6.3.6. Review the design XXXXXXXXXXXXXXXXXXXX Use Attachment 7.3.

6.3.7. Document formulas or algorithms used within the program for data analysis, XXXXXXXXXXXXXXXXXXXX manipulations.

6.4. Implementing the Code (Developer)

6.4.1. Write the code XXXXXXXXXXXXXXXX your organization if available.

6.4.2. Annotate the code using XXXXXXXXXXXXXXXX programmer can understand it.

6.4.3. The code documentation must clearly state the Spreadsheet title, revision number and file name.

6.5. Structural Testing (Developer)

6.5.1. Testing includes structural code testing (white box testing, code review) as XXXXXXXXXXXXXXXXXXXX the programmer and at least one other person, preferably another programmer.

6.5.2. Develop XXXXXXXXXXXXXXXX to the design specification. Use Attachment 7.4.

6.5.3. Check the XXXXXXXXXXXXXXXX).

6.5.4. At least one other programmer should check the code as described in 6.5.3.

Note: For larger projects, structural testing should firstly be done by individual developers and afterwards by a team.

6.6. Functional Testing (User)

6.6.1. Functional testing tests XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXX  
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX by the validation group and approved by the QA department. Functional testing should be performed by anticipated users.

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Note: Functional test person and the programmer must be different persons.

- 6.6.2. Develop a XXXXXXXXXXXXXXXX all functions.
- 6.6.3. Develop a matrix that links functions to be tested to functional specifications. Use Attachment 7.5.
- 6.6.4. Develop test cases XXXXXXXXXXXXXXXX.
- 6.6.5. Use test templates with the purpose of the test, the functions to be tested, the test steps XXXXXXXXXXXXXXXX. Use Attachment 7.6.
- 6.6.6. Test protocols must clearly state the Spreadsheet title, revision number and file name.
- 6.6.7. Tests should describe XXXXXXXXXXXXXXXX.
- 6.6.8. Develop test XXXXXXXXXXXXXXXX
- 6.6.9. Include test cases with normal data across the operating range, boundary testing and unusual cases (wrong inputs, stress testing etc).
- 6.6.10. Include procedures to verify calculations.

Note: This is not necessary for calculations as provided by the standard software, e.g., Excel™.

- 6.6.11. Include XXXXXXXXXXXXXXXX user's environment.
- 6.6.12. Specify how errors found will be classified and documented and what corrective action will be taken.
- 6.6.13. Specify release criteria before the test starts.
- 6.6.14. Results should be documented XXXXXXXXXX.
- 6.6.15. Prepare a test summary sheet with all tests, results and suggested corrective actions. Use Attachment 7.7.

6.7. Installation and Operational Checks Prior to Routine Use (User)

After the Spreadsheet application has been released, it should be XXXXXXXXXXXXXXXX

- 6.7.1. Install the Spreadsheet according to XXXXXXXXXXXXXXXX.