

IEEE Standards Interpretation for IEEE Std 1003.1™-1990 IEEE Standard for Information Technology--Portable Operating System Interfaces (POSIX®)

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Interpretation Request #74

Topic: tmpfile **Relevant Sections:** 8.2.3.9

Section 8.2.3.9 tmpfile(), line 398-399 describes the tmpfile() function as "tmpfile() shall allocate a file descriptor as fopen() does". The fopen() descriptions states "The fopen() function shall allocate a file descriptor as open() does". Many common implementations return a file descriptor for an unlinked file. Is it conforming for tmpfile() to call open() with a mode of zero, so that the temporary file created in the file namespace prior to unlinking be protected from access by other users ?

POSIX 2003.1 has an assertion 8.2.3.9-05(B) that would say that it is not conforming; the assertion states: "When a call to tmpfile() creates a file, then the file permission bits are set to allow both reading and writing for owner, for group, and for other users except for those bits set in the process's file mode creation mask. No execute (search) permission bits are set. The user ID of the file is set to the process's effective user ID and the group ID of the file is set to the process's effective group ID or to the group owner of its parent directory." This assertion relates to the references between tmpfile() -> fopen() -> open(). It appears to us that this requirement is beyond the specification in P1003.1 for tmpfile() which is to allocate a file descriptor and that this requirement in P2003.1 should be noted as incorrect.

Interpretation Response

Yes it is conforming. The standard clearly does not require a particular implementation of tmpfile(), just that a file descriptor be allocated. This is a conflict between the 1003.1-1990 base standard and the 2003.1-1992 test method standard. The test method standard clearly indicates that a conforming test suite is required to test this, however the base standard indicates that a conforming implementation may fail such a test. This situation is being referred to the sponsor(s).

Rationale for Interpretation

None.