

**Proposal for C23**  
**WG14 N2749**

**Title:** IEC 60559 bindings  
**Author, affiliation:** C FP group  
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**Reference:** N2596

Specification in F.10 refers to functions not bound to operations in IEC 60559. For example, F.10 says:

[10] Whether or when library functions not bound to operations in IEC 60559 raise the "inexact" floating-point exception is unspecified, unless stated otherwise.

The binding to operations in IEC is given in F.3, where there are two tables. The first table, titled "Operation binding", gives a strict binding to operations in IEC 60559 to C operations, i.e. the C operations are correctly rounded and raise floating-point exceptions as specified in IEC 60559. The second table, which is untitled, lists C functions that correspond to IEC 60559-recommended mathematical operations, though the C functions do not have the IEC 60559 requirement for correctly rounding.

The specification in F.10 that refers to functions not bound to operations in F.10 is intended to apply to the functions not in the first table. For example, the operations in the first table are required to fully support the "inexact" floating-point exception as specified in IEC 60559; the functions in the second table are not.

The suggested changes below provide needed clarification.

Another paper notes that the qualification "not bound to operations in IEC 60559" is erroneously missing from F.10 #11, and proposes adding those words. The changes below supersede that part (and only that part) of the other paper.

**Suggested changes:**

Changes in F.3:

[20] The C functions in the following table ~~provide~~ correspond to mathematical operations recommended by IEC 60559. ~~The C functions are represented by the function name without a type suffix. C~~ However, correct rounding, which IEC 60559 specifies for its operations, is not required for the C functions in the table. ~~See also 7.31.8. 7.31.8 reserves cr\_ prefixed names~~

for functions fully matching the IEC 60559 mathematical operations. In the table, the C functions are represented by the function name without a type suffix.

Changes in F.10:

[10] Whether or when library functions not ~~bound to operations in IEC 60559~~ listed in the “Operation binding” table in F.3 raise the "inexact" floating-point exception is unspecified, unless stated otherwise.

[11] Whether or when library functions not listed in the “Operation binding” table in F.3 raise ...

[12] Whether the functions not ~~bound to operations in IEC 60559~~ listed in the “Operation binding” table in F.3 honor the rounding direction mode is implementation-defined, unless explicitly specified otherwise.