



# Standard Specification for Knee Replacement Prosthesis<sup>1</sup>

This standard is issued under the fixed designation F2083; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This specification is intended to cover all the widely used generic types of knee replacement prostheses used to provide functioning articulation. This includes total knee replacement (TKR) and unicondylar knee replacement (UKR) prostheses of both fixed and mobile bearing varieties, and for primary or revision surgeries. Although a patellar component may be considered an integral part of a TKR, the detailed description of this component is excluded here since it is provided in Specification [F1672](#).

1.2 Included within the scope of this specification are replaceable components of modular designs, for example, tibial articulating surfaces and all components labeled for, or capable of, being used with cement, regardless of whether the same components can also be used without cement.

1.3 This specification is intended to provide basic descriptions of material and prosthesis geometry. Additionally, those characteristics determined to be important to *in vivo* performance of the prosthesis are defined. However, compliance with this specification does not itself define a device that will provide adequate clinical performance.

1.4 Excluded from the scope are hemiarthroplasty devices that replace only the femoral or tibial surface, but not both; and patellofemoral prostheses. Also excluded are devices designed for custom applications.

1.5 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

## 2. Referenced Documents

### 2.1 ASTM Standards:<sup>2</sup>

[F67](#) Specification for Unalloyed Titanium, for Surgical Implant Applications (UNS R50250, UNS R50400, UNS

[R50550](#), UNS R50700)

[F75](#) Specification for Cobalt-28 Chromium-6 Molybdenum Alloy Castings and Casting Alloy for Surgical Implants (UNS R30075)

[F86](#) Practice for Surface Preparation and Marking of Metallic Surgical Implants

[F90](#) Specification for Wrought Cobalt-20Chromium-15Tungsten-10Nickel Alloy for Surgical Implant Applications (UNS R30605)

[F136](#) Specification for Wrought Titanium-6Aluminum-4Vanadium ELI (Extra Low Interstitial) Alloy for Surgical Implant Applications (UNS R56401)

[F138](#) Specification for Wrought 18Chromium-14Nickel-2.5Molybdenum Stainless Steel Bar and Wire for Surgical Implants (UNS S31673)

[F451](#) Specification for Acrylic Bone Cement

[F562](#) Specification for Wrought 35Cobalt-35Nickel-20Chromium-10Molybdenum Alloy for Surgical Implant Applications (UNS R30035)

[F563](#) Specification for Wrought Cobalt-20Nickel-20Chromium-3.5Molybdenum-3.5Tungsten-5Iron Alloy for Surgical Implant Applications (UNS R30563) (Withdrawn 2005)<sup>3</sup>

[F648](#) Specification for Ultra-High-Molecular-Weight Polyethylene Powder and Fabricated Form for Surgical Implants

[F732](#) Test Method for Wear Testing of Polymeric Materials Used in Total Joint Prostheses

[F745](#) Specification for 18Chromium-12.5Nickel-2.5Molybdenum Stainless Steel for Cast and Solution-Annealed Surgical Implant Applications (Withdrawn 2012)<sup>3</sup>

[F746](#) Test Method for Pitting or Crevice Corrosion of Metallic Surgical Implant Materials

[F748](#) Practice for Selecting Generic Biological Test Methods for Materials and Devices

[F799](#) Specification for Cobalt-28Chromium-6Molybdenum Alloy Forgings for Surgical Implants (UNS R31537, R31538, R31539)

[F981](#) Practice for Assessment of Compatibility of Biomaterials for Surgical Implants with Respect to Effect of

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee F04 on Medical and Surgical Materials and Devices and is the direct responsibility of Subcommittee F04.22 on Arthroplasty.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> The last approved version of this historical standard is referenced on [www.astm.org](http://www.astm.org).