Summary of the most commonly used test methods

Part 5A - Hip joint prostheses

- Femoral components
- Femoral heads

ISO 7206-4 etc.
Implants for surgery -- Partial and total hip joint prostheses -- Part 4: Determination of endurance properties and performance of stemmed femoral components

Scope
Determining the endurance properties of stemmed femoral components of total or partial hip joint prostheses.

ISO 7206-6 etc.
Implants for surgery -- Partial and total hip joint prostheses -- Part 6: Determination of endurance properties of head and neck region of stemmed femoral components

Scope
Determining the endurance properties of the head and neck region of stemmed femoral components of total or partial hip joint prostheses.

ASTM F2996
Standard Practice for Finite Element Analysis (FEA) of Non-Modular Metallic Orthopaedic Hip Femoral Stems

Scope
Simulation of metallic hip stems using Finite Element Analysis techniques. Can be used for worst case assessment.

ASTM F1875
Standard Practice for Fretting Corrosion Testing of Modular Implant Interfaces: Hip Femoral Head-Bore and Cone Taper Interface

Scope
Evaluating the mechanical stability of the bore and cone interface of the head and stem junction of modular hip implants.

ASTM F2009
Standard Test Method for Determining the Axial Disassembly Force of Taper Connections of Modular Prostheses

Scope
Determining the force required to disassemble tapers of implants.

ISO 7206-13
Implants for surgery -- Partial and total hip joint prostheses -- Part 13: Determination of resistance to torque of head fixation of stemmed femoral components

Scope
Determining the torque required to loosen the fixation of the head of hip joint prostheses.
Summary of the most commonly used test methods
Part 5B - Hip joint prostheses

• Acetabular devices

ASTM F1820
Standard Test Method for Determining the Forces for Disassembly of Modular Acetabular Devices

Scope
Measuring the attachment strength between the modular acetabular shell and liner.

ISO 7206-12
Implants for surgery -- Partial and total hip joint prostheses -- Part 12: Deformation test method for acetabular shells

Scope
Determining the short-term deformation of a press-fit acetabular component for total hip joint replacement.

ASTM F2003
Standard Practice for Accelerated Aging of Ultra-High Molecular Weight Polyethylene after Gamma Irradiation in Air

Scope
Evaluation of the oxidative stability of UHMWPE materials as a function of processing and sterilization method.

ASTM F2582
Standard Test Method for Impingement of Acetabular Prostheses

Scope
Evaluation of acetabular component fatigue, deformation, and wear and femoral head assembly dislocation under dynamic impingement conditions.

For further information also regarding additional test methods not covered by this summary please contact:
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