The Design to Manufacturing Co.

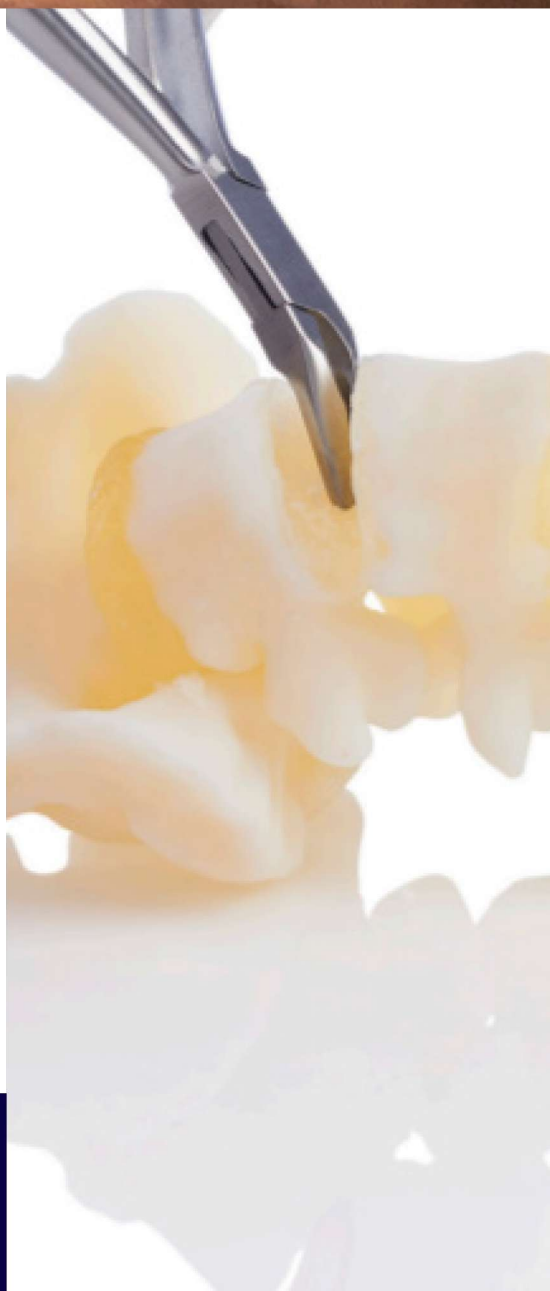
MATERIAL

BONEMATRIX

OVERVIEW

For more information or advice: theD2Mco.com/contact-us info@theD2Mco.com

Digital Anatomy Materials: BoneMatrix®



The Digital Anatomy material family includes a collection of materials that can be used to mimic human tissue.

Mixing these materials in different ratios, along with PolyJet™ materials such as the Vero™ family and Agilus30™, can generate a range of shore values to create almost any anatomy in the human body. This family of materials opens new possibilities to enrich medical modeling — to create models with mechanical properties similar to any type of tissue, educate, suture, puncture, drill, stretch and perform mechanical tests for research and medical practice.

BoneMatrix

Rigid translucent material is used to mimic bone structures. This material is stiff and stable, and can be drilled into to practice procedures like total knee replacement (TKR).

Example anatomy presets include:

- Long Bone
- Ribs
- Vertebra
- Skull

The Design to Manufacturing Co.

stratasys

Technical information about BoneMatrix is listed in the table below:

Properties	BoneMatrix
Printer	Digital Anatomy™ Printer
Print Mode	High Mix, High Speed
Support Material	SUP706
Number of UV Lamps	2
Color	Translucent
Impact, J/m	58.0±4.5
HDT, °C	40.9±0.7
Curling, mm	0.8
Tensile Strength, MPa	28.7±1.6
Strain at Break, %	60.0±6.9
Tensile Modulus, MPa	1059±31
Flex Strength, MPa	29.4±0.9
Flex Modulus, MPa	1102±104
WA, %	4.5

Collaboration Makes Development

Stratasys has collaborated with top research and medical institutes to develop a library of anatomies that can be printed for research, surgical planning and education using the Digital Anatomy printer and PolyJet materials.

Technion and TLV University

In 2020, a group of scientists from the Technion Institute of Technology Materials Science and Engineering Laboratory and from the Computational Mechanics and Experimental Biomechanics Lab in Tel-Aviv University, performed a series of mechanical tests to compare the accuracy of bone presets and bone advanced capabilities of GCP to a real tissue. The results showed that the bone presets are highly realistic, have a good repeatability and a significant cost reduction.