

Silicone Mock Vessels and Anatomies



Leading the world in silicone vasculature™



Medical Device Testing & Equipment • Simulation Platforms • Silicone Vessels

Silicone Vasculature from BDC Labs: A Legacy of Expertise

With nearly a decade of experience in fabricating compliant silicone mock vessels and clinically accurate models of human and animal anatomies, BDC Labs leads the world in silicone vasculature. We use several proprietary methods to fabricate silicone vessels and anatomies for the world's leading cardiovascular device companies. Our broad domain expertise in functional testing of life-saving cardiovascular devices utilizing silicone mock vessels made by BDC gives us a unique perspective into the fabrication of mock anatomies and the intricacies needed to satisfy the most demanding requirements of our customers.



AAA extending into femoral arteries

From simple to complex silicone mock vessels

BDC Labs offers certified silicone mock vessels in straight, curved or bifurcated configurations. Our mock vessels are used for validation and verification testing, simulations, marketing and sales materials, and demonstration models. We can fabricate mock vessels based on wall thickness or compliance. Qualification can be performed at physiologic 1.2 Hz or at other test frequencies and at various pulse pressures (e.g., 160 mmHg/80 mmHg).



Curved compliant mock vessels

Mock vessel diameter range: from 1.5 mm to > 50 mm

Mock Anatomies

With expertise born from the functional testing of cardiovascular devices, BDC Labs knows the intricacies and requirements of even the most complex patient based anatomy. We utilize advanced software programs to extract the required vascular geometries from raw DICOM images or STL files. Our engineers can also manipulate the geometry to change diameters, lengths, tortuosity, and angulations. We can work with your patient files, or select patient files that meet your requirements from our database.



Gothic arch

Anatomical Model Housings:



Submersible tank
with hemostatic valves



Drip tray with
hemostatic valves



Sheet-base with
hemostatic valves

to clinically accurate mock anatomies,



Heart valves

BDC Labs can model ventricles and atria, and vascular disease shapes such as ascending and descending aneurysms, coarctations and structural heart defects. Our silicone vasculature team can add or remove any disease shape from a patient's dataset to create the exact silicone anatomy desired. We excel at building to your specific dimensions and compliance specifications or to a specific feel or lubricity.

Quality and Product Certification



The image shows a 'Silicone Mock Vessel Certificate of Conformance' form from BDC Laboratories. The form includes fields for Customer, Order, and POC. It has a 'Specifications' section with fields for Description, Quantity, Diameter Compliance (in mm and in), Flaring Pressure (in mm Hg), Flaring Frequency (in Hz), All Taper Pressure (in mm Hg), Overall Length (in mm), Inner Diameter (in mm), and Outer Diameter (in mm). There is also an 'Additional Information' section and a table for 'Tested On' with columns for Date, Signature, and Date.

At BDC Labs, we don't 'test' for quality, we build quality into every silicone mock vessel and anatomy. From CNC machining of metal mandrels for mock vessels to advanced manufacturing methods that leave a glass-like seamless finish on mock anatomies, we fabricate silicone vasculature with the most accurate compliance and dimensions for every product.

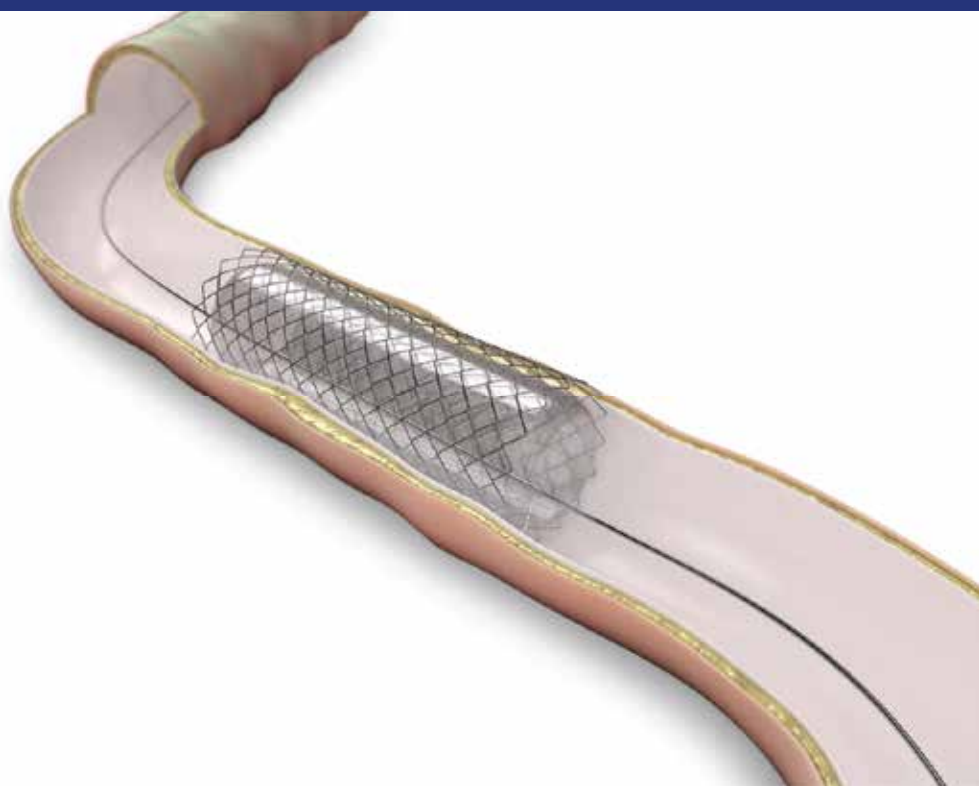
100% Inspection

Each mock vessel built by BDC Labs is certified prior to shipment and a Certificate of Compliance accompanies each order. We utilize a fully validated compliance test system and test methods to ensure the product meets all customer specifications.

...we lead the world in silicone vasculature.

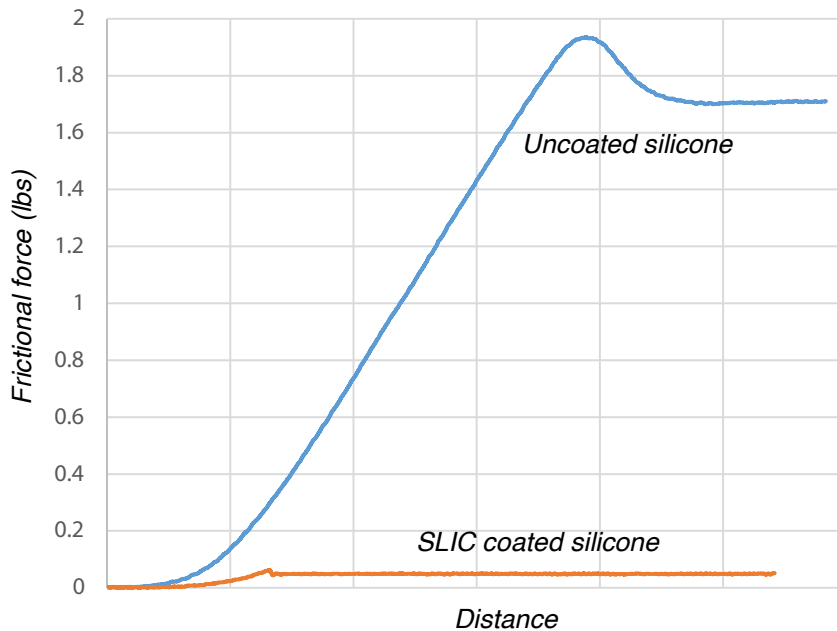
We specialize in:

- Ventricles and atria
- Aortic arches
- Straights and bifurcations
- Heart valves
- Ascending and descending aortic aneurysms
- Occlusions and dissections
- Mock flow loops
- Custom patient anatomies
- Acrylic tanks with vessel supports



SLIC™ Friction Reduction Coating

The SLIC lubricious coating from BDC Labs is a proprietary surface treatment that serves to significantly reduce surface friction and tackiness, specifically on silicone mock anatomies and mock vessels. The SLIC coating offers a unique combination of friction reduction coupled with excellent bonding to native silicone and superior resistance to abrasion and erosion. BDC Labs' proprietary process for applying the SLIC coating



Reduction of friction with SLIC coating on a silicone vessel.

produces an ultra-thin, gap-free, conformal coating of all exposed luminal silicone surfaces, providing a uniform, ultra-low-friction surface. The process also ensures that the compliance of mock silicone vessels is unaffected.

The clarity of BDC's silicone is maintained on anatomies and vessels coated with SLIC when wetted, making visual monitoring of the sample within a coated silicone vessel or anatomy convenient. Once applied to the surface, the SLIC coating forms a durable layer that will perform repeatably for in excess of 100 tracking cycles.

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What can we coat with SLIC™?

We coat the following BDC Labs' silicone items with SLIC on request:

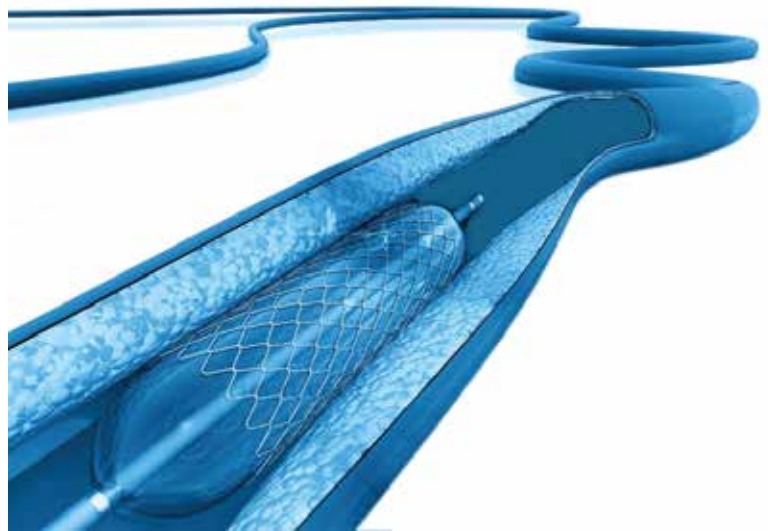
- Mock anatomies
- Mock vessels

“All lubricious coatings are not created equal.”

are not created equal.

Advantages of coating with SLIC™

- Creates a more clinically relevant environment than uncoated silicone
- Promotes ultra-low friction advancement of stents and endovascular devices within mock anatomies and vessels
- Reduces insertion force on delivery systems during advancement, deployment and retraction, preventing potential damage
- Virtually eliminates 'stick-slip-stick' effect between silicone and delivery systems to promote a higher level of deployment accuracy
- Simplifies mounting of silicone vessels onto fittings
- Saves time during assembly, disassembly and testing
- Eliminates the need to add artificial surfactants and other slippery liquids to the test solution to overcome silicone's inherent tackiness



No more 'Stick-Slip-Stick'

If you are looking to substantially improve ease of deployment, shorten testing procedure times, and prevent potential damage to silicone items and test samples, contact us and we'll be happy to send you a SLIC coated sample on request.

Advantage: SLIC, for a surface that ~~grips~~ slips!



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