Supplementary Materials

Table 1. Axial compressive strength of infiltrated and uninfiltrated scaffolds, where N is the number of samples and SD is the standard deviation.

	Axial Compressive Strength Sample Type	**N**	**Mean ± SD (MPa)**
Infiltrated	Radial	7	210 ± 40
	Radial-concentric	6	200 ± 30
	Conventional	5	177 ± 17
Uninfiltrated	Radial-concentric	5	7 ± 2
	Radial	6	7.0 ± 1.3
	Conventional	8	6.5 ± 1.6

Table S2. Axial compressive modulus of infiltrated and uninfiltrated scaffolds, where N is the number of samples and SD is the standard deviation.

	Axial Compressive Modulus Sample Type	**N**	**Mean ± SD (MPa)**
Infiltrated	Radial-concentric	6	4600 ± 500
	Radial	7	4100 ± 800
	Conventional	5	3000 ± 400
Uninfiltrated	Concentric	6	400 ± 200
	Radial	8	290 ± 150
	Conventional	5	100 ± 40

Table S3. Axial tensile strength of infiltrated and uninfiltrated scaffolds, where N is the number of samples and SD is the standard deviation.

	Splitting Tensile Strength Sample Type	**N**	**Mean ± SD (MPa)**
Infiltrated	Radial-concentric	6	17 ± 2
	Conventional	5	15.4 ± 1.5
	Radial	7	10.8 ± 1.9
Uninfiltrated	Radial	6	0.9 ± 0.3
	Radial-concentric	5	0.212 ± 0.06
	Conventional	8	0.19 ± 0.08

Figure S1 below shows a radial-concentric sample in which temperatures between the frozen solid and the liquid slurry were not equilibrated in the second step of the radial-concentric freeze casting method.

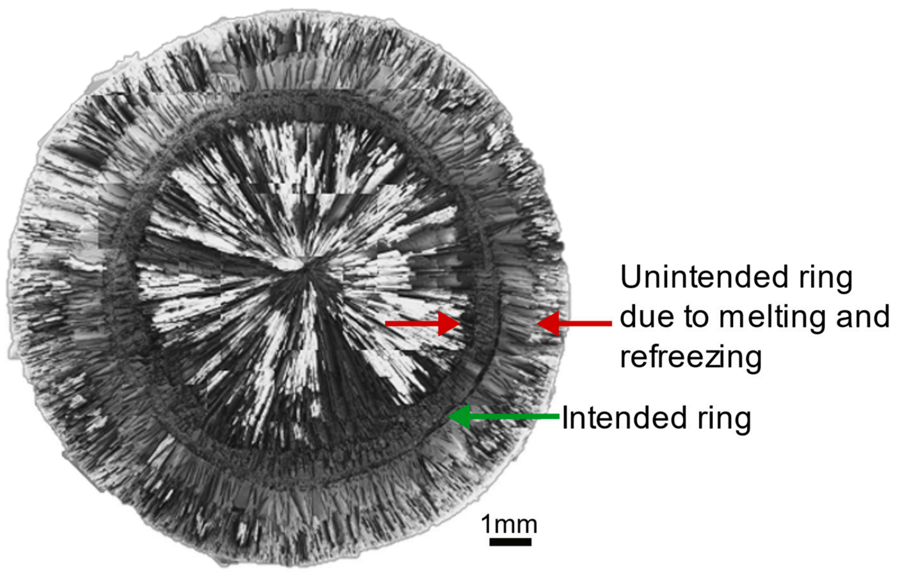

Figure S1. Scanning electron microscopy image of radial-concentric sample manufactured without equilibrating temperatures of the frozen solid and liquid slurry, where unintended rings from melting and refreezing are pointed out by the red arrows.

Variances were analyzed using a linear model and summarized in Table S4.

Table S4. Analysis of variance, p-values (where p<0.05 indicates that the mechanical property is influenced by that source).

Source	**Axial Compressive Modulus**	**Axial Compressive Strength**	**Splitting Tensile Strength**	**Maximum Strain**
Structure	0.001	0.277	0.000	0.004
Infiltration	0.000	0.000	0.000	0.054
Structure × Infiltration	0.000	0.320	0.0000	0.000