

TECHNICAL DATA SHEET

Product:	Alpha-Core® DC Dual Cure Resin Based Composite
Product Description:	Alpha-Core® DC is a highly filled radiopaque, dual cure composite in an Automix Delivery System designed specifically for core build-ups and cementation of posts and pins. The material exhibits ideal mechanical properties with high compressive and tensile strength yet maintains a dentin-like feel while cutting.
Indications for Use:	Alpha-Core® DC is designed specifically for core build-ups and cementation of posts and pins.
Appearance:	Catalyst: Opaque white paste Base: Opaque blue or natural (A2) shade paste.
Curing Mechanism:	Dual-cured: <ul style="list-style-type: none">- Self-cured by mixing base and catalyst together.- Light-cured by applying an external energy activated Dental Blue Light with a minimum output of 600 mW/cm² and wavelength of 400 to 500 nm.
Shelf-Life:	36 months
Filler Type:	Blend of inorganic fillers. Filler % by Volume: 48.61 Filler Particle Range, µm: 0.02 – 5.0 Average Filler Particle Size, µm: 3.14

Main Composition (%w/w):

Inorganic Fillers	65 – 75
Blend of Methacrylate Monomers	25 – 35
Initiator	< 1
Inhibitor	< 1
Accelerator	< 1
Photoinitiator	< 1
UV Absorber	< 1
Colorants	< 1

Physical /Mechanical Properties: (Typical Values)

Working Time (Blue Shade) at 23 °C, seconds	110
Working Time (Natural Shade) at 23 °C, seconds	110
Setting Time (Blue Shade) at 37 °C, seconds	135
Setting Time (Natural Shade) at 37 °C, seconds	135
Depth of Cure (Blue shade) at 20 sec, mm/2	1.6
Depth of Cure (Blue shade) at 40sec, mm/2	1.9
Depth of Cure (Natural shade) at 20 sec, mm/2	2.0
Depth of Cure (Natural shade) at 40 sec, mm/2	2.6
Flexural Strength, MPa	143

Diametral Tensile Strength, MPa	39
Compressive Strength, MPa	296
Water Sorption, $\mu\text{g}/\text{mm}^3$	17.7
Water Solubility, $\mu\text{g}/\text{mm}^3$	1.8
Color Stability	Stable
Radio-opacity, compared to 1mm thick Aluminum	1.0