

VisiJet® Base Materials for the ProJet MJP 5600

The VisiJet composite family of materials is precisely mixed by the ProJet MJP 5600 print head on-the-fly to achieve superior mechanical properties and custom performance characteristics to meet your exacting specifications. This ingenious system simultaneously prints and blends together flexible and rigid material composites, layer-by-layer at the pixel level, in a variety of colors and shades including opaque, clear, black or white and numerous shades of gray.



Properties	Condition	VisiJet CR-BK	VisiJet CR-WT 200*	VisiJet CR-CL 200*	VisiJet CE-NT	VisiJet CE-BK
Composition		UV curable plastic	UV curable plastic	UV curable plastic	UV curable elastomeric	UV curable elastomeric
Description		Rigid ABS-like	Rigid ABS-like	Rigid polycarbonate-like	Elastomeric	Elastomeric
Color		Opaque black	Opaque white	Translucent clear	Translucent natural	Opaque black
Bottle Quantity (kg)		2	2	2	2	2
Solid Density (g/cm³)		1.18	1.18	1.18	1.12	1.12
Tensile Strength (MPa)	ASTM D638	45-52	37-47	37-47	0.2-0.4	0.2-0.4
Tensile Modulus (MPa)	ASTM D638	2200-2900	1000-1600	1000-1600	0.27-0.43	0.27-0.43
Elongation at Break	ASTM D638	7-11 %	7-16 %	7-16 %	160-230 %	160-230 %
Flexural Strength (MPa)	ASTM D790	63-76	61-72	61-72	N/A	N/A
Flexural Modulus (MPa)	ASTM D790	1800-2100	1400-2000	1400-2000	N/A	N/A
Impact Strength (Notched Izod) (J/m)	ASTM D256	17-24	16-19	16-19	N/A	N/A
Shore A Hardness	ASTM 2240	N/A	N/A	N/A	27-33	27-33
Shore D Hardness	ASTM 2240	78-83	76-80	76-80	N/A	N/A
24 hr Water Absorption	ASTM D570	0.5%	0.5%	0.5%	0.9%	0.6%
Heat Distortion Temp @ 0.45 MPa @ 1.82 MPa	D648	61 °C 41°C	46 °C 41°C	46 °C 41°C	N/A N/A	N/A N/A
Tear Resistance (kN/m)	ASTM D624	N/A	N/A	N/A	3.1 - 3.7	3.1 - 3.7

** Respectively replaces former VisiJet® CR-WT and VisiJet® CR-CL

DISCLAIMER: It is the responsibility of each customer to determine that its use of any VisiJet® material is safe, lawful and technically suitable to the customer's intended applications. The values presented here are for reference only and may vary. Customers should conduct their own testing to ensure suitability for their intended application.

VisiJet® Composite Combinations for the ProJet MJP 5600

In addition to printing in pure base materials, the ProJet MJP 5600 can mix any two base materials together pixel-by-pixel to achieve your targeted properties, in up to twelve different composite ratios. An entire object can be printed in any of these composites, or a user can easily select a specific region of a part to be any number of different material combinations.

PROPERTIES	ASTM	MULTI-MATERIAL COMPOSITES (VisiJet CR-BK + VisiJet CE-BK)										
Material Name		RBK-EBK-D75	RBK-EBK-D70	RBK-EBK-D65	RBK-EBK-D60	RBK-EBK-D55	RBK-EBK-A90	RBK-EBK-A80	RBK-EBK-A70	RBK-EBK-A60	RBK-EBK-A50	RBK-EBK-A40
Description		Very rigid	Slightly rigid	Rigid	Rigid	Slightly rigid	Slightly flexible	Slightly flexible	Flexible	Flexible	More flexible	Very flexible
Appearance*		Black	Black	Black	Black	Black	Black	Black	Black	Black	Black	Black
Tensile Strength (MPa)	D638	19-27	12-16	8-10	4-5	2-3	1.4-1.9	1.3-1.7	.75-1.1	.48-.77	.35-.48	.23-.32
Flexural Strength (MPa)	D790	18-21	12-13	7-7.4	3.9-4.2	1.6-1.9	N/A	N/A	N/A	N/A	N/A	N/A
Flexural Modulus (MPa)	D790	450-750	350-550	150-250	70-180	30-80	N/A	N/A	N/A	N/A	N/A	N/A
Impact Strength (J/m) (Notched Izod)	D256	18-25	22-30	32-52	29-42	74-114	N/A	N/A	N/A	N/A	N/A	N/A
Shore A Hardness, Scale A	D2240	N/A	N/A	N/A	N/A	N/A	86-92	75-85	65-75	55-65	45-55	35-45
Shore D Hardness, Scale D	D2240	70-80	65-75	60-70	55-65	50-60	N/A	N/A	N/A	N/A	N/A	N/A
Tear Resistance (kN/m)	D624	N/A	N/A	N/A	N/A	N/A	44-62	25-32	18-23	11-17	6.6-9.3	6.5-8.5

*Visual approximation. No guarantee that part output will match exactly to software or datasheet values.

PROPERTIES	ASTM	MULTI-MATERIAL COMPOSITES (VisiJet CR-BK + VisiJet CE-NT)											
Material Name		RBK-ENT-D78	RBK-ENT-D75	RBK-ENT-D70	RBK-ENT-D65	RBK-ENT-D60	RBK-ENT-D55	RBK-ENT-A90	RBK-ENT-A80	RBK-ENT-A70	RBK-ENT-A60	RBK-ENT-A50	RBK-ENT-A40
Description		Very rigid	Slightly rigid	Rigid	Rigid	Slightly rigid	Slightly rigid	Slightly flexible	Slightly flexible	Flexible	Flexible	More flexible	Very flexible
Appearance*		Translucent dark brown	Translucent dark brown	Translucent brown	Translucent brown	Light brown	Light brown	Light brown	Light tan	Light tan	Light tan	Light amber	Light amber
Tensile Strength (MPa)	D638	30-39	19-27	12-16	8-10	4-5	2-3	1.4-1.9	1.3-1.7	.75-1.1	.48-.77	.35-.48	.23-.32
Flexural Strength (MPa)	D790	18-21	12-13	7-7.4	3.9-4.2	1.6-1.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flexural Modulus (MPa)	D790	450-750	350-550	150-250	70-180	30-80	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Strength (J/m) (Notched Izod)	D256	18-25	22-30	32-52	29-42	74-114	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Shore A Hardness, Scale A	D2240	N/A	N/A	N/A	N/A	N/A	N/A	86-92	75-85	65-75	55-65	45-55	35-45
Shore D Hardness, Scale D	D2240	75-81	70-80	65-75	60-70	55-65	50-60	N/A	N/A	N/A	N/A	N/A	N/A
Tear Resistance (kN/m)	D624	N/A	N/A	N/A	N/A	N/A	N/A	44-62	25-32	18-23	11-17	6.6-9.3	6.5-8.5

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VisiJet® Composite Combinations Continued

PROPERTIES	ASTM	MULTI-MATERIAL COMPOSITES (VisiJet CR-WT 200** + VisiJet CE-BK)										
Material Name	RWT-EBK-D75	RWT-EBK-D70	RWT-EBK-D65	RWT-EBK-D60	RWT-EBK-D55	RWT-EBK-A90	RWT-EBK-A80	RWT-EBK-A70	RWT-EBK-A60	RWT-EBK-A50	RWT-EBK-A40	
Description	Very rigid	Slightly rigid	Rigid	Rigid	Slightly rigid	Slightly flexible	Slightly flexible	Flexible	Flexible	More flexible	Very flexible	
Appearance*	Very light grey	Lighter grey	Light grey	Light grey	Light grey	Medium light grey	Grey	Medium dark grey	Dark grey	Darker grey	Very dark grey	
Tensile Strength (MPa)	D638	19-27	12-16	8-10	4-5	2-3	1.4-1.9	1.3-1.7	.75-1.1	.48-.77	.35-.48	.23-.32
Flexural Strength (MPa)	D790	18-21	12-13	7-7.4	3.9-4.2	1.6-1.9	N/A	N/A	N/A	N/A	N/A	N/A
Flexural Modulus (MPa)	D790	450-750	350-550	150-250	70-180	30-80	N/A	N/A	N/A	N/A	N/A	N/A
Impact Strength (J/m) (Notched Izod)	D256	18-25	22-30	32-52	29-42	74-114	N/A	N/A	N/A	N/A	N/A	N/A
Shore A Hardness, Scale A	D2240	N/A	N/A	N/A	N/A	N/A	86-92	75-85	65-75	55-65	45-55	35-45
Shore D Hardness, Scale D	D2240	70-80	65-75	60-70	55-65	50-60	N/A	N/A	N/A	N/A	N/A	N/A
Tear Resistance (kN/m)	D624	N/A	N/A	N/A	N/A	N/A	44-62	25-32	18-23	11-17	6.6-9.3	6.5-8.5

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** Respectively replaces former VisiJet® CR-WT and VisiJet® CR-CL

PROPERTIES	ASTM	MULTI-MATERIAL COMPOSITES (VisiJet CR-WT 200** + VisiJet CE-NT)										
Material Name	RWT-ENT-D75	RWT-ENT-D70	RWT-ENT-D65	RWT-ENT-D60	RWT-ENT-D55	RWT-ENT-A90	RWT-ENT-A80	RWT-ENT-A70	RWT-ENT-A60	RWT-ENT-A50	RWT-ENT-A40	
Description	Very rigid	Slightly rigid	Rigid	Rigid	Slightly rigid	Slightly flexible	Slightly flexible	Flexible	Flexible	More flexible	Very flexible	
Appearance*	Very light white	Lighter white	Light tan	Light tan	Light tan	Medium tan	Medium tan	Tan	Tan	Amber	Amber	
Tensile Strength (MPa)	D638	19-27	12-16	8-10	4-5	2-3	1.4-1.9	1.3-1.7	.75-1.1	.48-.77	.35-.48	.23-.32
Flexural Strength (MPa)	D790	18-21	12-13	7-7.4	3.9-4.2	1.6-1.9	N/A	N/A	N/A	N/A	N/A	N/A
Flexural Modulus (MPa)	D790	450-750	350-550	150-250	70-180	30-80	N/A	N/A	N/A	N/A	N/A	N/A
Impact Strength (J/m) (Notched Izod)	D256	18-25	22-30	32-52	29-42	74-114	N/A	N/A	N/A	N/A	N/A	N/A
Shore A Hardness, Scale A	D2240	N/A	N/A	N/A	N/A	N/A	86-92	75-85	65-75	55-65	45-55	35-45
Shore D Hardness, Scale D	D2240	70-80	65-75	60-70	55-65	50-60	N/A	N/A	N/A	N/A	N/A	N/A
Tear Resistance (kN/m)	D624	N/A	N/A	N/A	N/A	N/A	44-62	25-32	18-23	11-17	6.6-9.3	6.5-8.5

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** Respectively replaces former VisiJet® CR-WT and VisiJet® CR-CL

VisiJet® Composite Combinations Continued

PROPERTIES	ASTM	MULTI-MATERIAL COMPOSITES (VisiJet CR-CL 200** + VisiJet CE-BK)										
Material Name		RCL-EBK-D75	RCL-EBK-D70	RCL-EBK-D65	RCL-EBK-D60	RCL-EBK-D55	RCL-EBK-A90	RCL-EBK-A80	RCL-EBK-A70	RCL-EBK-A60	RCL-EBK-A50	RCL-EBK-A40
Description		Very rigid	Slightly rigid	Rigid	Rigid	Slightly rigid	Slightly flexible	Slightly flexible	Flexible	Flexible	More flexible	Very flexible
Appearance*		Clear	Clear	Light clear	Light clear	Light clear	Medium light clear	Medium clear	Medium clear	Dark clear	Darker clear	Very dark clear
Tensile Strength (MPa)	D638	19-27	12-16	8-10	4-5	2-3	1.4-1.9	1.3-1.7	.75-1.1	.48-.77	.35-.48	.23-.32
Flexural Strength (MPa)	D790	18-21	12-13	7-7.4	3.9-4.2	1.6-1.9	N/A	N/A	N/A	N/A	N/A	N/A
Flexural Modulus (MPa)	D790	450-750	350-550	150-250	70-180	30-80	N/A	N/A	N/A	N/A	N/A	N/A
Impact Strength (J/m) (Notched Izod)	D256	18-25	22-30	32-52	29-42	74-114	N/A	N/A	N/A	N/A	N/A	N/A
Shore A Hardness, Scale A	D2240	N/A	N/A	N/A	N/A	N/A	86-92	75-85	65-75	55-65	45-55	35-45
Shore D Hardness, Scale D	D2240	70-80	65-75	60-70	55-65	50-60	N/A	N/A	N/A	N/A	N/A	N/A
Tear Resistance (kN/m)	D624	N/A	N/A	N/A	N/A	N/A	44-62	25-32	18-23	11-17	6.6-9.3	6.5-8.5

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** Respectively replaces former VisiJet® CR-WT and VisiJet® CR-CL

PROPERTIES	ASTM	MULTI-MATERIAL COMPOSITES (VisiJet CR-CL 200** + VisiJet CE-NT)										
Material Name		RCL-ENT-D75	RCL-ENT-D70	RCL-ENT-D65	RCL-ENT-D60	RCL-ENT-D55	RCL-ENT-A90	RCL-ENT-A80	RCL-ENT-A70	RCL-ENT-A60	RCL-ENT-A50	RCL-ENT-A40
Description		Very rigid	Slightly rigid	Rigid	Rigid	Slightly rigid	Slightly flexible	Slightly flexible	Flexible	Flexible	More flexible	Very flexible
Appearance*		Very clear white	Light clear white	Light clear white	Light clear tan	Light clear tan	Medium clear tan	Medium clear tan	Medium clear tan	Translucent tan	Translucent amber	Translucent amber
Tensile Strength (MPa)	D638	19-27	12-16	8-10	4-5	2-3	1.4-1.9	1.3-1.7	.75-1.1	.48-.77	.35-.48	.23-.32
Flexural Strength (MPa)	D790	18-21	12-13	7-7.4	3.9-4.2	1.6-1.9	N/A	N/A	N/A	N/A	N/A	N/A
Flexural Modulus (MPa)	D790	450-750	350-550	150-250	70-180	30-80	N/A	N/A	N/A	N/A	N/A	N/A
Impact Strength (J/m) (Notched Izod)	D256	18-25	22-30	32-52	29-42	74-114	N/A	N/A	N/A	N/A	N/A	N/A
Shore A Hardness, Scale A	D2240	N/A	N/A	N/A	N/A	N/A	86-92	75-85	65-75	55-65	45-55	35-45
Shore D Hardness, Scale D	D2240	70-80	65-75	60-70	55-65	50-60	N/A	N/A	N/A	N/A	N/A	N/A
Tear Resistance (kN/m)	D624	N/A	N/A	N/A	N/A	N/A	44-62	25-32	18-23	11-17	6.6-9.3	6.5-8.5

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** Respectively replaces former VisiJet® CR-WT and VisiJet® CR-CL

VisiJet® Composite Combinations Continued

PROPERTIES		MULTI-MATERIAL COMPOSITES (VisiJet CE-BK + VisiJet CE-NT)					
Material Name	EBK-ENT-R89	EBK-ENT-R78	EBK-ENT-R64	EBK-ENT-R50	EBK-ENT-R36	EBK-ENT-R22	EBK-ENT-R11
Description	Very flexible	Very flexible	Very flexible	Very flexible	Very flexible	Very flexible	Very flexible
Appearance*	Translucent dark brown	Translucent brown	Translucent brown	Light brown	Light brown	Light amber	Light amber
Mechanical Properties	Similar properties to VisiJet CE-NT or VisiJet CE-BK base materials						

*Visual approximation. No guarantee that part output will match exactly to software or datasheet values.

PROPERTIES		MULTI-MATERIAL COMPOSITES (VisiJet CR-WT 200** + VisiJet CR-CL 200**)					
Material Name	RWT-RCL-R89	RWT-RCL-R78	RWT-RCL-R64	RWT-RCL-R50	RWT-RCL-R36	RWT-RCL-R22	RWT-RCL-R11
Description	Rigid	Rigid	Rigid	Rigid	Rigid	Rigid	Rigid
Appearance*	Translucent white	Translucent white	Translucent white-clear	Translucent white-clear	Translucent white-clear	Light white-clear	Light clear
Mechanical Properties	Similar properties to VisiJet CR-WT 200 or VisiJet CR-CL 200 base materials						

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** Respectively replaces former VisiJet® CR-WT and VisiJet® CR-CL

PROPERTIES		MULTI-MATERIAL COMPOSITES (VisiJet CR-BK + VisiJet CR-CL 200**)					
Material Name	RBK-RCL-L10	RBK-RCL-L20	RBK-RCL-L30	RBK-RCL-L40	RBK-RCL-L50	RBK-RCL-L60	RBK-RCL-L70
Description	Rigid	Rigid	Rigid	Rigid	Rigid	Rigid	Rigid
Appearance*	Translucent black	Translucent black	Translucent dark clear	Translucent dark clear	Translucent clear	Translucent clear	Translucent clear
Mechanical Properties	Similar properties to VisiJet CR-BK or VisiJet CR-CL 200 base materials						

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** Respectively replaces former VisiJet® CR-WT and VisiJet® CR-CL

PROPERTIES		MULTI-MATERIAL COMPOSITES (VisiJet CR-BK + VisiJet CR-WT 200**)					
Material Name	RBK-RWT-L10	RBK-RWT-L20	RBK-RWT-L30	RBK-RWT-L40	RBK-RWT-L50	RBK-RWT-L60	RBK-RWT-L70
Description	Rigid	Rigid	Rigid	Rigid	Rigid	Rigid	Rigid
Appearance*	Darker grey	Medium dark grey	Grey	Medium light grey	Light grey	Lighter grey	Very light grey
Mechanical Properties	Similar properties to VisiJet CR-BK or VisiJet CR-WT 200 base materials						

*Visual approximation. No guarantee that part output will match exactly to software or datasheet values.

** Respectively replaces former VisiJet® CR-WT and VisiJet® CR-CL

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