



# PolyJet Materials

PolyJet is a powerful 3D printing technology that produces smooth, accurate parts, prototypes and tooling. With microscopic layer resolution and accuracy down to 0.014mm, it can produce thin walls and complex geometries.



| High Detail Plastic & High Detail Fullcolor Plastic:<br>VEROWHITE, BLACK, GRAY, COLOR |                |                   |           |
|---|----------------|-------------------|-----------|
| PROPERTIES  | ASTM           | UNIT              | METRIC    |
| Tensile strength  | D-638-03       | MPa               | 50-65     |
| Elongation at break   | D-638-05       | %                 | 10-25     |
| Modulus of elasticity   | D-638-04       | MPa               | 2000-3000 |
| Flexural strength   | D-790-03       | MPa               | 75-110    |
| Flexural modulus  | D-790-04       | MPa               | 2200-3200 |
| HDT °C@0.45 MPa   | D-648-06       | °C                | 45-50     |
| HDT °C@1.82 MPa   | D-648-07       | °C                | 45-50     |
| Izod notched impact   | D-256-06       | J/m               | 20-30     |
| Water absorption  | D-570-98, 24hr | %                 | 1.1-1.5   |
| Tg  | DMA, E>>       | °C                | 52-54     |
| Shore hardness  | Scale D        | Scale D           | 83-86     |
| Rockwell hardness   | Scale M        | Scale M           | 73-76     |
| Polymerized density   | D-792          | g/cm <sup>3</sup> | 1.17-1.18 |
| Ash content VeroGray + White  | USP-281        | %                 | 0.23-0.26 |
| Ash content VeroBlack   | USP-281        | %                 | 0.01-0.02 |

| TRANSPARENT           |                |                   |           |
|-----------------------|----------------|-------------------|-----------|
| PROPERTIES            | ASTM           | UNIT              | METRIC    |
| Tensile strength      | D-638-03       | MPa               | 50-65     |
| Elongation at break   | D-638-05       | %                 | 15-25     |
| Modulus of elasticity | D-638-04       | MPa               | 2000-3000 |
| Flexural strength     | D-790-03       | MPa               | 80-110    |
| Flexural modulus      | D-790-04       | MPa               | 2700-3300 |
| HDT °C@0.45 MPa       | D-648-06       | °C                | 45-50     |
| HDT °C@1.82 MPa       | D-648-07       | °C                | 45-50     |
| Izod notched impact   | D-256-06       | J/m               | 20-30     |
| Water absorption      | D-570-98, 24hr | %                 | 1.5-2.2   |
| Tg                    | DMA, E>>       | °C                | 48-50     |
| Shore hardness        | Scale D        | Scale D           | 83-86     |
| Rockwell hardness     | Scale M        | Scale M           | 73-76     |
| Polymerized density   | D-792          | g/cm <sup>3</sup> | 1.18-1.19 |
| Ash content           | USP-281        | %                 | 0.01-0.02 |

| VEROBLUE              |                |                   |           |
|-----------------------|----------------|-------------------|-----------|
| PROPERTIES            | ASTM           | UNIT              | METRIC    |
| Tensile strength      | D-638-03       | MPa               | 50-60     |
| Elongation at break   | D-638-05       | %                 | 15-25     |
| Modulus of elasticity | D-638-04       | MPa               | 2000-3000 |
| Flexural strength     | D-790-03       | MPa               | 60-70     |
| Flexural modulus      | D-790-04       | MPa               | 1900-2500 |
| HDT °C@0.45 MPa       | D-648-06       | °C                | 45-50     |
| HDT °C@1.82 MPa       | D-648-07       | °C                | 45-50     |
| Izod notched impact   | D-256-06       | J/m               | 20-30     |
| Water absorption      | D-570-98, 24hr | %                 | 1.5-2.2   |
| Tg                    | DMA, E>>       | °C                | 48-50     |
| Shore hardness        | Scale D        | Scale D           | 83-86     |
| Rockwell hardness     | Scale M        | Scale M           | 73-76     |
| Polymerized density   | D-792          | g/cm <sup>3</sup> | 1.18-1.19 |
| Ash content           | USP-281        | %                 | 0-21-0.22 |

| High Detail Clear Plastic: VEROCLEAR |                |                   |           |
|--------------------------------------|----------------|-------------------|-----------|
| PROPERTIES                           | ASTM           | UNIT              | METRIC    |
| Tensile strength                     | D-638-03       | MPa               | 50-65     |
| Elongation at break                  | D-638-05       | %                 | 10-25     |
| Modulus of elasticity                | D-638-04       | MPa               | 2000-3000 |
| Flexural strength                    | D-790-03       | MPa               | 75-110    |
| Flexural modulus                     | D-790-04       | MPa               | 2200-3200 |
| HDT °C@0.45 MPa                      | D-648-06 °C    | 45-50             | 45-50     |
| HDT °C@1.82 MPa                      | D-648-07 °C    | 45-50             | 45-50     |
| Izod notched impact                  | D-256-06       | J/m               | 20-30     |
| Water absorption                     | D-570-98, 24hr | %                 | 1.1-1.5   |
| Tg                                   | DMA, E>>       | °C                | 52-54     |
| Shore hardness                       | Scale D        | Scale D           | 83-86     |
| Rockwell hardness                    | Scale M        | Scale M           | 73-76     |
| Polymerized density                  | D-792          | g/cm <sup>3</sup> | 1.18-1.19 |
| Ash content                          | USP-281        | %                 | 0.02-0.06 |

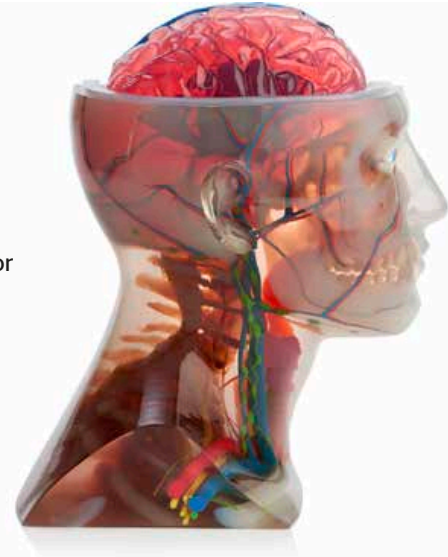


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## Benefits of PolyJet:

- Create smooth, detailed prototypes that convey final-product aesthetics.
- Produce accurate molds, jigs, fixtures and other manufacturing tools.
- Achieve complex shapes, intricate details and delicate features.
- Incorporate the widest variety of colors and materials into a single model for unbeatable efficiency.

| ABS-LIKE   |          |                   |           |
|--|----------|-------------------|-----------|
| PROPERTIES   | ASTM     | UNIT              | METRIC    |
| Tensile strength   | D-638-03 | MPa               | 55-60     |
| Elongation at break                                      | D-638-05 | %                 | 25-40     |
| Modulus of elasticity                                    | D-638-04 | MPa               | 2600-3000 |
| Flexural strength  | D-790-03 | MPa               | 65-75     |
| Flexural modulus   | D-790-04 | MPa               | 1700-2200 |
| HDT °C@0.45 MPa  | D-648-06 | °C                | 58-68     |
| HDT °C@0.45 MPa after thermal post treatment procedure A | D-648-06 | °C                | 82-90     |
| HDT °C@0.45 MPa after thermal post treatment procedure B | D-548-06 | °C                | 92-95     |
| HDT °C@1.82 MPa  | D-648-07 | °C                | 51-55     |
| Izod notched impact                                      | D-256-06 | J/m               | 90-115    |
| Tg DMA, E>>  | °C       | 47-53             | 83-86     |
| Shore hardness   | Scale D  | Scale D           | 85-87     |
| Rockwell hardness  | Scale M  | Scale M           | 67-69     |
| Polymerized density                                      | D-792    | g/cm <sup>3</sup> | 1.17-1.18 |



| PP-LIKE               |          |         |           |
|-----------------------|----------|---------|-----------|
| PROPERTIES            | ASTM     | UNIT    | METRIC    |
| Tensile strength      | D-638-03 | MPa     | 29-38     |
| Elongation at break   | D-638-05 | %       | 25-35     |
| Modulus of elasticity | D-638-04 | MPa     | 1100-1700 |
| Flexural strength     | D-790-03 | MPa     | 35-45     |
| Flexural modulus      | D-790-04 | MPa     | 1200-1500 |
| HDT °C@0.45 MPa       | D-648-06 | °C      | 38-41     |
| Izod notched impact   | D-256-06 | J/m     | 21-40     |
| Shore hardness        | D2240-05 | Scale D | 76.1-81.7 |

| High Detail Flexible Plastic: RUBBER-LIKE, SHORE A, FLX |        |         |         |         |         |         |           |         |          |
|---|--------|---------|---------|---------|---------|---------|-----------|---------|----------|
| PROPERTIES  | ASTM   | UNIT    | 27      | 40      | 50      | 60      | 70        | 85      | 95       |
| Tensile strength  | D-412  | MPa     | 0.8-1.5 | 1.3-1.8 | 1.9-3.0 | 2.5-4.0 | 3.5-5.0   | 5.0-7.0 | 8.5-10.0 |
| Elongation at break                                     | D-412  | %       | 170-220 | 110-130 | 95-110  | 75-85   | 65-80     | 55-65   | 35-45    |
| Tensile tear resistance                                 | D-624  | Kg/cm   | 2-4     | 5.5-7.5 | 7.5-9.5 | 11-13   | 15.5-17.5 | 23-25   | 41-44    |
| Shore hardness  | D-2240 | Scale A | 27      | 40      | 50      | 60      | 70        | 85      | 95       |