

# Comparison table

|               | PA12                 | PA11                               | FLEXA SOFT       |
|---------------|----------------------|------------------------------------|------------------|
|               | High surface quality | Superior durability and resistance | Elastic and soft |
| Material type | Nylon 12             | Nylon 11                           | TPU              |
| Status        | Available            | Available                          | Available        |

## GENERAL PROPERTIES

|  |                 |            |   |
|--|-----------------|------------|---|
| Granulation                            | 18 - 90 µm      | 20 - 80 µm | 50 - 80 µm                                |
| Average granulation                    | 38 µm           | 40 µm      | 65 µm                                     |
| Color                                  | Navy Grey       | Black      | Light Grey                                |
| Material refreshing ratio <sup>1</sup> | 30 %            | 50 %       | 0 %                                       |
| Compatible with                        | Lisa & Lisa PRO | Lisa PRO   | Lisa <sup>3</sup> & Lisa PRO <sup>2</sup> |

## PARAMETERS

|  |                      |                       |                        |
|--|----------------------|-----------------------|------------------------|
| Tensile Strength                                     | 31 MPa <sup>5</sup>  | 46 MPa <sup>5</sup>   | 1.8 MPa                |
| Flexural Strength                                    | 47.4 MPa             | 61.9 MPa              | -                      |
| Elongation at Break                                  | 6 % <sup>5</sup>     | 34 % <sup>5</sup>     | 137 %                  |
| Impact resistance at 7.5 J (Charpy test / unnotched) | 16 KJ/m <sup>2</sup> | 179 KJ/m <sup>2</sup> | -                      |
| Shore Hardness in scale                              | D 70                 | D 74                  | A 45 / 58 <sup>4</sup> |

## THERMAL PROPERTIES

|   |                        |                        |                        |
|---|------------------------|------------------------|------------------------|
| Softening point (Vicat method type A50) | -                      | -                      | 60.0 °C                |
| Melting point                           | 186 °C                 | 201 °C                 | 150 °C <sup>6</sup>    |
| Heat deflection temperature at 1.8 MPa  | 68.4 °C                | 47.3 °C                | -                      |
| Printout density                        | 1.03 g/cm <sup>3</sup> | 0.92 g/cm <sup>3</sup> | 0.77 g/cm <sup>3</sup> |
| Printout water absorption               | 8.7 %                  | 0.5 %                  | 12.2 %                 |

## APPLICATIONS

|  |   |   |   |
|--|---|---|---|
| Functional prototypes                                      | ✓ | ✓ | ✓ |
| Final products   | ✓ | ✓ | ✓ |
| Detailed objects   | ✓ | ✓ | ✓ |
| Complex spatial shapes                                     | ✓ | ✓ | ✓ |
| Parts printed for environments with high mechanical stress | - | ✓ | - |
| High temperature resistant objects                         | - | ✓ | - |
| Chemical resistant objects                                 | ✓ | ✓ | - |
| Flexible objects   | - | - | ✓ |
| Vibration dampers  | - | - | ✓ |
| Shock absorbers  | - | - | ✓ |

| FLEXA BRIGHT         | FLEXA GREY             | TPE                       |
|----------------------|------------------------|---------------------------|
| Flexible and dyeable | Functional flexibility | Dense, elastic and strong |
| TPU                  | TPU                    | TPE                       |
| Available            | Available              | Available                 |

|                              |                 |                              |
|------------------------------|-----------------|------------------------------|
| 26 - 117 µm                  | 20 - 105 µm     | 50 - 80 µm                   |
| 72 µm                        | 50 µm           | 65 µm                        |
| Oyster White                 | Grey            | Grey                         |
| 0 %                          | 0 %             | 10 %                         |
| Lisa & Lisa PRO <sup>2</sup> | Lisa & Lisa PRO | Lisa & Lisa PRO <sup>2</sup> |

|                        |                        |                        | Method                   |
|------------------------|------------------------|------------------------|--------------------------|
| 10.0 MPa               | 3.7 MPa                | 6.0 MPa                | PN-EN ISO 37:2007        |
| -                      | -                      | -                      | PN-EN ISO 178:2011       |
| 318 %                  | 137 %                  | 196 %                  | PN-EN ISO 37:2007        |
| -                      | -                      | -                      | PN-EN ISO 179-1/1eU:2010 |
| A 79                   | A 70 / 90 <sup>4</sup> | A 90                   | PN-EN ISO 868:2005       |
| 75.1 °C                | 67.6 °C                | n.d.a                  | PN-EN ISO 306:2014-02    |
| 160 °C <sup>6</sup>    | 160 °C <sup>6</sup>    | 190 °C <sup>6</sup>    | PN-EN ISO 11357-3:2018   |
| -                      | -                      | -                      | PN-EN ISO 75-2:2013-06   |
| 0.95 g/cm <sup>3</sup> | 0.74 g/cm <sup>3</sup> | 0.70 g/cm <sup>3</sup> | PN-EN ISO 845:2010       |
| 3.0 %                  | 9.1 %                  | n.d.a                  | PN-EN ISO 62:2008        |

|   |   |   |
|---|---|---|
| ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ |
| - | - | - |
| ✓ | ✓ | ✓ |
| - | - | ✓ |
| - | - | - |
| - | - | ✓ |
| ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ |

<sup>1</sup> Refresh ratio is the amount of refreshing powder that is required to be mixed after the printing with unsintered material. FLEXA has 100 % usability.  
<sup>2</sup> Can be used only with Sinterit Studio Profiles or Advanced.  
<sup>3</sup> Compatible only with Lisa 1.5 or higher versions.  
<sup>4</sup> Depending on printing settings.  
<sup>5</sup> Tested according to ISO 527-2:2012  
<sup>6</sup> Internal procedure

Information provided within this document are average values for reference and comparison only. Parameters presented in this specification are subject to change. Final part properties may vary based on printed part design and print orientation.

