



# Product Specification Sheet

**Document Classification: Free for use**

## SB21

**Product specification** (SI units are leading throughout this specification document)

- Length\* full roll\*\*  $\geq 200\text{m}$  ( $\geq 219$  yards)
- Width full roll\*\*  $\geq 1,60\text{m}$  ( $\geq 63$  inch)
- Areal density  $140 - 150 \text{ g/m}^2$  ( $4,13 - 4,42 \text{ oz/yd}^2$ )
- Visual defects  $\leq 15$  per roll

\* Gross length excluding the visual defect spot compensation.

\*\* In case of a non full roll length or width, the dimensions are specified in the box information sheet, supplied with every box.

### Visual Defects

Visual defects, or also called spot faults, are defects of a certain size that can be e.g. a gap, weld, stain or foreign material.

When the size of the defect is smaller than the dimensions listed below, it will not be removed from the product during production. These defects can be present up to the maximum number mentioned under the product specification in this document.

The exact number of visual defects is mentioned on the roll information sheet, supplied with each roll. When the size of the defect is greater than the dimensions listed below, it will be clearly marked with a bright colored sticker and compensated by adding 20 cm (7,87 inch) additional material per spot fault.

A defect counts as a visual defect when it exceeds both the width and the length dimensions mentioned below, where the Width and Length are defined in reference to the direction of the roll length:

- Width  $> 6,0 \text{ cm}$  (2,4 inch)      Length  $> 0,6 \text{ cm}$  (0,24 inch), or
- Width  $> 2,5 \text{ cm}$  (1,0 inch)      Length  $> 2,5 \text{ cm}$  (1,0 inch), or
- Width  $> 0,2 \text{ cm}$  (0,08 inch)      Length  $> 6,0 \text{ cm}$  (2,4 inch).

For large defects (exceeding 20 cm in length) 40 cm (15,7 inch) extra material as a compensation is given. The maximum size of a visual defect in the length direction is 42 cm (16,6 inch).

### Ballistic performance

DSM Dyneema carries out a ballistic test on a representative test sample. Although it is not a specified or guaranteed value, only product of which a representative sample has been tested and have shown a specific Energy Absorption (Eabs) value will be shipped.

- Eabs:  $\geq 245 \text{ J} / (\text{kg/m}^2)$  against 9 mm Parabellum Full Metal Steel Jacket

However, please note that this number should under no circumstances be interpreted to imply that similar tests carried out subsequently on a ballistic test sample made out of the Dyneema<sup>®</sup> product supplied should or will give the same results; nor should any conclusion be drawn as to the ballistic performance of any end-product made with the Dyneema<sup>®</sup> product supplied. Similarly, the effect of visual defects on ballistic performance of a specific end-product can and should be exclusively assessed by the customer.

[www.dyneemamatters.com](http://www.dyneemamatters.com)

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Dyneema<sup>®</sup> UD is suitable for use in anti ballistic/ protective applications.

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### Life Time Expectancy

SB21 is expected to preserve its quality for a period of at least 10 years during storage\*\*\* from the date of delivery, provided that the material:

- is stored under dry conditions at normal ambient temperature;
- has not been subjected to peak temperatures exceeding 90°C;
- is protected against long-term direct exposure to sunlight;
- is not exposed to unusual wear and tear.

*\*\*\*Storage means the period of time during which the material leaves the DSM facility until any subsequent processing applied by the converter.*

The lifetime expectation is derived from accelerated aging data, using acceleration factors typical to the material and assuming no wear or tear. If the material is exposed to more extreme conditions and unusual wear and tear, it may have shorter life time expectancy.

Most of the actual longer term accelerated and prolonged storage evaluation have been performed on a specific fiber/matrix UD construction. There are no reasons to assume a different long-term behavior for other Dyneema® UD materials for soft ballistic applications. The relation between aging and the ballistic performance has been assessed using the 9 mm Parabellum Full Metal Steel Jacket bullet in a STANAG 2920, Eabs test. Other threats and different target constructions might give deviating results.

### DSM Dyneema Reference Documents

- The areal density is measured according DSM Dyneema Test Method, LP152;
- The visual defects are determined according to the DSM Dyneema Inspection Method, LP180;
- The length is measured according to the DSM Dyneema Test Method, LP60;
- The width is measured according to the DSM Dyneema Test Method, LP199;
- The energy absorption is measured according DSM Dyneema Energy Absorption Test Method, LP16;
- The handling risks of the material are explained in the Safety Data Sheet, LP235.

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