ES FIBERVISIONS

# AL-Thermal - Shortcut Fibers for Wetlaid Processes

In response to the growing interest for bicomponent fibers from the paper and nonwoven industries *ES FIBERVISIONS* presents:

**AL-Thermal fibers**

The fiber has been developed to match the needs of the paper manufacturing industries, where thermal bonded products are required.
In blends with wood pulp the AL-Thermal fibers function as a binder and form a strong three- dimensional reinforcing network in the final product. *ES FIBERVISIONS'* AL-Thermal thus has a major impact in obtaining products with good integrity, low density, high bulk, and high strength properties.

The bicomponent structure of the fiber is of vital importance to the manufacturing process and the properties of the final product:

- The polyethylene sheath serves as a binder during thermal bonding and ensures a proper bond between fibers and wood pulp, whereas
- The polypropylene core remains unchanged during thermal bonding and creates a network throughout the entire product, providing integrity and strength.
  This reinforcing network maintains a certain elasticity or flexibility, which gives the final product strength and durability.

**Bicomponent Fiber Advantages**

The fiber has the following advantages:

- The AL-Thermal fiber is unaffected by moisture (water, acids or alkalis), which ensures high wet strength of the final product.
- With the AL-Thermal fiber chemical bonding is not necessary, which makes the product environmentally friendly.
- The network of AL-Thermal fibers ensures good web integrity which minimises later breakage problems.
- The final product will have a more textile-like surface due to the softness of the AL-Thermal.
- The fibers disperse easily in the paper manufacturing process.
- The AL-Thermal is furthermore characterized by a low shrinkage level, giving the final product a better dimensional stability.

## *Typical technical data for ES FIBERVISIONS AL-Thermal fibers*

**Fiber Properties (Typical Values*):**

| | |
|---|---|
| Dtex: | 1.7, 2.2 and 3.3 dtex |
| Tensile strength: | 2.5-4.0 cN/dtex |
| Elongation: | 40-100% |
| Fiber length: | 3, 4, 6, 12 mm |
| Crimp frequency: (acc. to customer's requirements) | 0-100 |
| Spin finish (durable): | 0.3-0.5% |

**Thermal Properties:**

| | |
|---|---|
| Softening point: | |
| - of polyethylene sheath: | 110-120 ºC |
| - of polypropylene core: | 140-150 ºC |
| Melting point: | |
| - of polyethylene sheath: | 131 ºC |
| - of polypropylene core: | 162 ºC |

*Polyolefin fibers consist of 99% carbon and hydrogen. The remaining 1% consist of water and applied spin finish. The fiber bales are protected with polyolefin foil and closed with polyester straps. The product and the packaging materials are suitable for recycling and combustion. Inhouse waste should be kept clean to facilitate direct recycling. In disposal of any waste, be certain all applicable regulations are met.*
*For further information contact your ES FIBERVISIONS representative.*


Further Information:
**www.es-fibervisions.com**

USA: *ES FIBERVISIONS Inc.*
1885 Olympic Drive,
Athens, GA 30601
Phone: +1 706 357 5139
Fax: +1 706 357 5101

Europe: *ES FIBERVISIONS ApS*
Engdraget 22
6800 Varde, Denmark
Phone: +45 7994 2200
Fax: +45 7994 2201

Asia: *ES FIBERVISIONS HK Ltd.*
Room 1002, 10/F
Far East Consortium Bldg
204-206 Nathan Road, Kowloon
Hong Kong
Phone: +852 2970 5555
Fax: +852 2970 5678


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