**Market Trend**

One of the key trends in the Nonwovens market is to more garment-like construction; thinner, softer and more body-conforming. These developments improve comfort, performance and discretion of absorbent hygiene products such as baby diapers, feminine napkins and adult incontinence briefs. This is especially true in adult incontinence products where these are top priorities.

Innovations such as thin absorbent cores certainly support this trend. For example, market leaders have introduced baby diaper products featuring the innovative pulpless absorbent cores supported by Nordson technology. Other companies have followed suit with traditional absorbent cores made thinner through use of a high SAP (super absorbent polymer) to wood pulp ratio, in some cases as high as 80-20. These developments are expected to carry over to other product segments.

Thinner cores are, however, not without challenges. These cores are inherently more fragile. A compromised core structure can reduce performance and comfort, resulting in reduced consumer satisfaction. In recognition of the increased importance of stabilizing these thinner absorbent cores some adhesive suppliers have introduced formulations tailored to optimize core integrity and applied using Nordson material delivery and dispensing equipment.

**Application Description**

The primary function of disposable absorbent hygiene articles is to acquire, transfer and store liquids. At the heart of the diaper is the absorbent core or "pad". The core typically consists of wood pulp impregnated with SAP and is more often than not wrapped in a tissue material. An acquisition and distribution layer (ADL) often serves as an intermediate layer between the topsheet (in contact with the skin) and the absorbent core, improving efficiency of liquid transfer and storage.

When the diaper pad is very thin, the ADL is increasingly important and an adhesive, often with special properties, is used to add strength to the diaper core when it is wet. This integrity adhesive is especially useful when SAP content is higher than 25% of the total pad weight.
Core Stabilization Market Advisory

**Benefits of the Application to Consumer/End User**

- Enables thin core construction supporting a garment-like product quality:
  - Thinner – more discrete
  - Increased comfort
- Improved core stability and integrity:
  - Retains performance
  - Avoid discomfort result from core disintegration

Note: There are additional advantages to the manufacturer such as reduced costs to transport as well as decreased retail shelf space.

**Why Use Nordson Equipment?**

- Nordson's experience and proven expertise in material delivery and high-speed dispensing as reflected in a large, global installed base of core stabilization applications on baby diaper and adult inco machines.
- Flexible system layouts adapt to current production layouts and can accommodate future requirements.

**Typical Core Stabilization / Pad Integrity Materials**

Materials from leading suppliers have been successfully tested for compatibility with the Nordson equipment solution. Additional materials are available from numerous suppliers and as such a comprehensive list of materials is not possible. Please consult material supplier websites for details regarding the availability of these materials.

**Typical Application**

Typical core stabilization patterns consist of a series of spirals produced with either CF® or Summit™ nozzles. These nozzles use a series of pattern air holes positioned radially and tangentially to impart the swirling of the adhesive filament(s). The swirl patterns are highly desirable since process air dissipates quickly and movement of the core prior to stabilization is minimized.

**Nordson Equipment Recommendation**

**Melter**

Standard AltaBlue® or VersaBlue® melter
- Holding and pump capacity sized for the application
- Standard PR-series pump
- Standard 0.15 mm filter screen
- Other melter options are according to specific customer requirements

**Heated Hose**

Core stabilization materials are compatible with standard Nordson hoses.

**Applicator and Nozzle**

Identification and selection of the correct applicator depends on the production speed being supported. AltaSpray™ applicators equipped with UM25 Universal™ modules should be considered for production speeds of 300m/min or less, Universal applicators with UM25 Universal modules for production speeds of 400m/min or less and Universal applicators with Speed-Coat® spray modules for 400m/min or greater. Other factors, including consistency with installed base and local sales strategy, should be considered as well. Note that applicators and nozzles are purchased separately.
### APPLICATOR OPTIONS

<table>
<thead>
<tr>
<th>AltaSpray Applicator with UM25 Modules</th>
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<tbody>
<tr>
<td>&lt;=300m/min</td>
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<tr>
<th>Universal Applicator w/UM25 Modules</th>
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<td>&lt;=400m/min</td>
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<th>Universal Applicator w/ SpeedCoat Modules</th>
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<td>&gt;400 m/min</td>
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### NOZZLE OPTIONS

<table>
<thead>
<tr>
<th>CF</th>
<th>Summit</th>
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**Note:** Summit nozzles are available in partial width designs, allowing pattern resolution in 5-6mm increments.

**Recommended Action**

This document has been prepared to alert the field to an opportunity and to facilitate quoting of a Nordson solution. For system quotations or if you have additional questions about core stabilization applications for disposable hygiene products, please contact your local sales representative.
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