L&W Autoline Tear measures the tearing strength of paper, in the machine (MD) and the cross (CD) direction. The Autoline Tear method was developed year 1995 by Lorentzen & Wettre, and has become the de facto standard (ISO 18 522) for automated tear strength testing. The values obtained can also be recalculated to Elmendorf-method values by a formula available in the Autoline software system.

Why measure tear?
Tearing strength is an important parameter for many paper grades as a component for predicting web breaks. These paper types include newsprint, SC, LWC and ground wood-based grades. The addition of long fibered chemical pulp is directly controlled by the reading signal from tear measurements. Tearing resistance is a very important property for sack paper, such as sewn sacks, where the needle holes can be a source of an initial cut. Good tearing resistance is needed in almost every packaging or graphical application, including tear strips that open packages, hanging displaces for blister packages, book covers, brochures etc.

BENEFITS
• Industry standard for automated paper tearing strength testing
• Measurement reliability and reproducibility
• Fast and complete CD analysis, including MD/CD-ratio

FEATURES
• Wide range high precision load cell
• Uses de facto method developed by Lorentzen & Wettre
• Simultaneous MD and CD measurement

Measurement results
Manual testing according to Elmendorf has several drawbacks. For example, precise test piece cutting and alignment in the clamp are critical for correct test results. With L&W Autoline Tear, there is no need for test piece cutting. In manual testing a stack of sheets is used, and the stiffness and friction between the sheets can influence the tearing process. Also, different pendulums are needed depending of the tearing strength. L&W Autoline Tear only use one wide-range load cell that covers all paper grades. Fully automated tear measurements simultaneously in MD and CD will give fast feedback to the production.
Testing procedure
The test platform consists of a V-shaped body with low friction surface, it is fitted with a knife that makes the initial cut. The V-shaped body, with knife, is pressed against the paper sheet, the initial cut is made and then the paper is torn along four paths. The average tearing force is recorded and reported as the tearing strength. The total measuring time for one spot is about 10 seconds. During this measuring sequence, the paper sheet is held flat against a steel-platen, firmly in place.

L&W Autoline Tear requires no test piece preparation, and no test piece handling and fitting in jaws and it is insensitive to tearing speed, initial cut and the length of the path torn.

Measurement principle
A V-shaped body is pushed through the paper sample. The force needed is recalculated to tearing strength.

Paper sample showing after MD and CD test of tearing strength.

Technical specifications
– L&W Autoline Tear, code 622

<table>
<thead>
<tr>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Method</strong></td>
</tr>
<tr>
<td><strong>Range</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Installation requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power</strong></td>
</tr>
<tr>
<td><strong>Air pressure</strong></td>
</tr>
<tr>
<td><strong>Air consumption</strong></td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
</tr>
<tr>
<td><strong>Net weight</strong></td>
</tr>
</tbody>
</table>

Possible combination modules
L&W Autoline Burst (possible to combine with bursting strength from lower side)

Standards
ISO 18522

The information provided in this data sheet contains descriptions or characterizations of performance which may change as a result of further development of the products. Availability and technical specifications are subject to change without notice.

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