FOR IMMEDIATE RELEASE

Afera's 2024 edition of *Test Methods Manual* includes newest TM Dynamic Shear

- **The latest test method to be developed and added to the 138-page European tape industry publication is Determination of Dynamic Shear Strength of Double-Sided PSA Tapes**
- **Afera Standardisation Consultant Karsten Seitz tells us why it is important, how it works and how it was created**
- **Other test methods in development by Afera's Next-Level Test Methods Working Group include a revised Peel Adhesion TM for ISO, contribution to Cepi Lab TM on recyclability of fibre-based packaging, and a new Time-to-Failure TM.**

The Hague, The Netherlands, 1 July 2024
Afera, the European Adhesive Tape Association, recently released the 2024 edition of the *Afera Test Methods Manual*, most notably including the latest test method (TM) to be developed and finalised by Afera's Next-Level TMs Working Group: *Determination of Dynamic Shear Strength of Double-Sided PSA Tapes*, or Dynamic Shear. The contents of the *TMs Manual* has been developed, edited and provided as a resource for the European adhesive tape industry. The new, exclusively digital, 138-page edition includes 24 TMs. It is available free of charge to all Afera Members and at a cost of €150 to non-Members, who can access and purchase it online here.

Why the Dynamic Shear TM was developed

The new Dynamic Shear TM complements the well-established static shear TMs for PSA tapes, adding additional insight into the nature of joints adhesively bonded with PSA tapes. The term "dynamic" emphasises the fact that the mechanical load is constantly increasing over the time of measurement, in contrast to the TMs which employ constant, static loads. The new TM addresses double-sided tapes which are widely in use for mounting applications, in particular adhesive bonding of rigid substrates and, moreover, those which are exposed to shear loads, the type of loading which should dominate in a properly constructed part.

"Joints bonded with double-sided tapes in actual applications are often exposed to combinations of constant, static and varying dynamic loads, or they do not carry any static load, e.g. the weight of a part, at all," explained Afera Standardisation Consultant Karsten Seitz, who also heads Afera's Next-

Level TMs Working Group. “Examples of such loads are wind loads which play an important role in the construction of windows and doors or forces that stem from the bonding of dissimilar materials which have different thermal expansion factors. For these cases, the new Dynamic Shear TM can provide data to support the planning and/or evaluation of adhesively bonded joints with double-sided tapes.”

Dynamic Shear should not be seen as replacing the internal TMs of Afera Member Companies but offers a standard reference by defining a set of parameters for measurement, such as the substrate materials, the bonding geometries and the speed of separation.

How Dynamic Shear works

The shear strength of a single lap joint is measured by subjecting the joint of a rigid-to-rigid substrate combination to a shear force which increases as a constant speed of separation is applied until failure of the bond occurs. The result is the maximum stress which is recorded during the measurement.

The result indicates the stress value at the moment of failure, while standard static shear tests result in a time to failure. This underlines the complementary nature of the two TMs.

Once the test specimens have been prepared and properly conditioned, the TM is performed within a few minutes, a feature which makes it attractive for quality control purposes. Dynamic shear can be performed on standard modern tension testing machines. Access Afera’s corresponding list of equipment suppliers here.

How the Dynamic Shear TM was developed

The concept of the TM was developed by Afera’s Next-Level Test Methods Working Group and optimised in two subsequent round robin testing sequences, the first with three and the second nine Afera Member Company labs, each testing three different double-sided tapes. “From the first conceptual draft to the final version approximately 15 months later, the Dynamic Shear TM is a nice example of what can be achieved through intensive and dedicated teamwork,” Mr. Seitz commented.

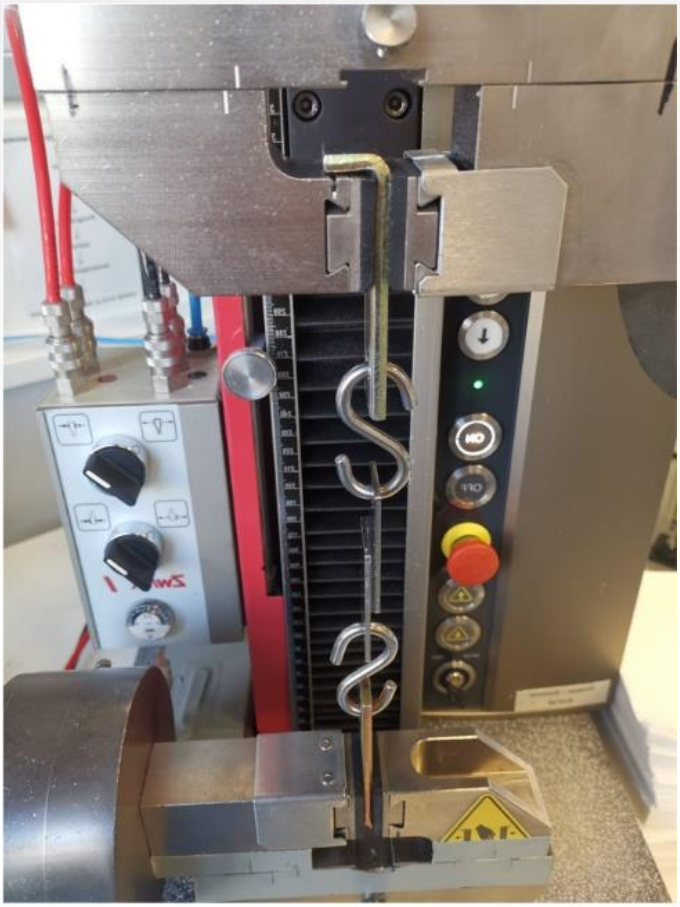
Dynamic Shear was also discussed at the latest Global Tape Forum and Global Test Methods Committee Meetings which took place in April in Shanghai, China. The TM is available for adoption by the other GTF Members, which include the adhesive tapes trade associations of China, Taiwan, Japan and North America.

More Afera TMs in the pipeline

Revision of ISO 29862: Measurement of Peel Adhesion of Adhesive Tapes. Afera's TM-WG has produced a revised Peel Adhesion TM, which was submitted to the International Organisation for Standardisation. Approval and publication of the revised standard is planned for the end of 2024. Afera 5001/GTF 6004 will then be adapted accordingly.

Contribution to Cepi (Confederation of European Paper Industries) Laboratory TM on recyclability of fibre-based packaging. Afera has worked out a proposal to specify a certain aspect of the TM which is relevant to adhesive tapes. This was submitted to 4evergreen in March.

New Time-to-Failure TM. Currently under development, this TM uses static shear loading on bonds made with double-sided tapes and systematic variation of the load level as an approach to understand better the behaviour of double-sided tapes under static shear loads. A round robin sequence has been performed involving seven labs, the results of which will be used to optimise the TM's description.



"Afera Test Methods provide a uniform standard for the definition of adhesive tape performance for both manufacturers and users," explained Afera Technical Committee Chairman Reinhard Storbeck, who is also director of R&D at tesa SE. "It is a key priority of the Afera TC to identify, develop and maintain new TMs for the benefit of the adhesive tape industry."

The 2024 edition of the *Manual* contains the newly developed, internationally harmonised GTF (Global Tape Forum) TMs for the most important tests, which include some of those that are both Afera and ISO (International Organisation for Standardisation) and/or CEN (European Committee for Standardisation) certified. Most of the others are both Afera and CEN certified.

More details can be found at www.afera.com.

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Afera, the European Adhesive Tape Association unites stakeholders along the value chain of the European tape industry, to ensure and increase the relevance of the tape business in the world of tomorrow. The go-to community of the European tape industry is comprised of 120 member companies from 20+ European countries that include adhesive tape manufacturers, suppliers (raw materials, machine and packaging), converters, national tape organisations, research institutions and universities. With the goal of making the tape industry future-proof, Afera actively studies and involves itself in relevant market, standardisation, sustainability and regulatory issues, provides platforms and programmes for discussion and learning, and facilitates contact among its members and all other pertinent bodies at national and international levels. Founded in Paris in 1958, Afera has operated with its head office in The Hague, the Netherlands, since 1999 under the management of Lejeune Association Management.

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