

CEPI-CTS NEWSLETTER 2024

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Foreword

Welcome to the 11th issue of the CEPI-CTS Newsletter.

In this issue we will tell you about new tests which we are currently considering for implementation in the CTS and we will show what is new in the most recent releases of two ISO standards, ISO 535:2023 Cobb and ISO 3037:2022 ECT.

We will also describe the new Report H of the CTS and the development of an ISO standard for the S-Test, currently at the DIS stage.

We greatly value your feedback and suggestions to improve the Service: if you have questions, doubts or requests do not hesitate to contact your national Distributing Laboratory or myself at the contacts listed on the left.

Fulvio Savagnone
CEPI-CTS Chairman

New tests in the pipeline

We in the CEPI-CTS strive to keep the Service in line with the new developments in paper testing and with the ever-changing needs of our clients. One way to do so is implementing new tests to go with the current ones (more than one hundred!) or just to add a new level of control to an existing test.

The implementation of a new test is a complex procedure that involves the procuring of suitable sample materials, the selection of Qualified Laboratories, a series of preliminary tests and so on. Sometimes these tests do not show the necessary statistical reliability, and the implementation has to be postponed, for instance until a more homogeneous sample material is found.

Currently we are considering the implementation of two new tests: Peel adhesion (90°) at 300mm/min according to FINAT FTM2 and Disintegration in water of tissue products according to EN ISO 12625-17. For the first one a preliminary pre-test round among the Qualified Laboratories has been launched while for the second suitable sample materials are being sought.

New ISO standards for Cobb and ECT *(S. Moreau-Tabiche, CTP, X. Joppin, Celabor)*

Two important ISO standards were recently significantly revised: ISO 3037 “Corrugated fibreboard — Determination of edgewise crush resistance (non-waxed edge method)”, issued in November 2022, and ISO 535 “Paper and board — Determination of water absorptiveness - Cobb method”, issued in March 2023. In the following paragraphs the main changes with regard to the previous releases are described.

In the title of ISO 3037 the term “non-waxed edge method” has substituted the previous “unwaxed edge method”. The scope has not been technically modified but details about the corrugated fibreboard grades have been introduced and it is stated that the method is also applicable to test samples taken from converted products; furthermore it is now clearly mentioned that all flute types can be tested if no buckling and/or tipping occurs during the measurement. If printed areas are tested, it shall be mentioned in the test report and the approximate ratio of the printed area to the test area shall be specified. Last but not least, a requirement on the constant compression speed of $(12,5 \pm 0,25)$ mm/min has been introduced.

The main changes in ISO 535 are first of all a limitation of the scope: the method is now not applicable anymore to papers with a grammage less than 50 g/m². Then, requirements on the test water to be used and on the water uptake of the blotting paper have been added. A suggestion has been given that printed areas should be avoided, but if this is not possible it shall be mentioned in the test report; a further contact time (600s) has been introduced and the procedure to follow with corrugated board has been more extensively detailed. Finally, several explanations on the rejection of test pieces have been added.

The new Report H and the CEPI-CTS statistical tools *(W. de Groot, Topos, F. Savagnone)*

Our clients will have noticed that the Report H has a new format with two histograms, one showing the distribution of all clients, the other showing the distribution of clients within the Action Limits.

In the past we used to have two separate Reports, respectively the Report H-WG (confidential to the CEPI-CTS Working Group) with the histogram showing the distribution of all clients, and the Report H (for the clients) with the histogram showing the distribution of clients within the Action Limits. Then we decided to have only one Report for all purposes, the H-WG, simply renamed H.

Reasons for this were not only to save resources (more than 400 Reports were produced and circulated every year, half of them containing almost identical information to the other half) but also scientific: we thought important to let our clients see their position with respect to the distribution of all clients results, in order to show a photography of the state of the European industry as it is: bear in mind that sometimes the clients do not perform the test according to the standard (e.g. applying shortcuts), conditioning may be neglected, instruments can be old and not in line with modern ones, or, vice-versa, they may have very modern, industry-widespread devices but that perform the test not exactly according to the relevant standard (Autoline devices come to mind). All this brings in a high variability, worth knowing. That is also why we do not check for statistical outliers in the client round.

We considered having a single Report H feasible because the performance of the client is in any case measured against the Assigned Values and their Warning and Action Limits.

Unfortunately in some cases, for instance when there are too few clients or when there are results very different from the others (when the application of an outliers test such as Grubbs—as it is done in the pre-test round—would eliminate them) the resulting histogram was quite irregular, thus carrying insufficient information. We had a number of ad-hoc meetings of the Executive Committee of the CTS and we decided to modify the single Report H to show both distributions; not only that, we revised the whole statistical procedure with regards to the construction of the histograms and to the outliers treatment on the pre-test round. In addition to the two histograms, the new Report H contains the following data:

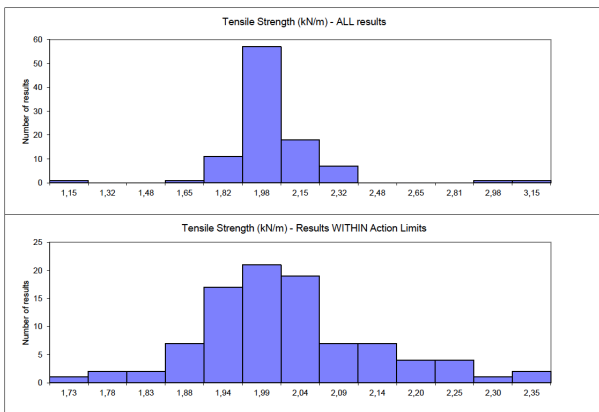
- the CEPI A-Mean, its standard deviation within and between and the CEPI Warning and Action Limits;
- the number of client labs and the number of clients labs reporting results outside the CEPI Action Limits;
- the number of valid values, both in the distribution of all clients and in the distribution within the Action Limits;
- the grand mean and standard deviation within and between of the client population, both in the distribution of all clients and in the distribution within the Action Limits;
- the minimum and maximum values, both in the distribution of all clients and in the distribution within the Action Limits;
- the number of bars and the width of classes of the histograms, both in the distribution of all clients and in the distribution within the Action Limits.

The two examples in the next page clearly show the influence on the two histograms of client results at the far end of the total distribution.

We believe that the new Report H now carries more accurate and useful information for our clients.

	CONFEDERATION OF EUROPEAN PAPER INDUSTRIES COMPARATIVE TESTING SERVICE	
	PROPERTY:	Tensile strength
METHOD:	ISO 1924-2	
CEPI-TEST:	2.1(a)	
REPORT: H	SAMPLE: Level - 1	
ROUND: 2023-1	UNIT: kN/m	
ISSUED BY: INOVHUB-SSI		

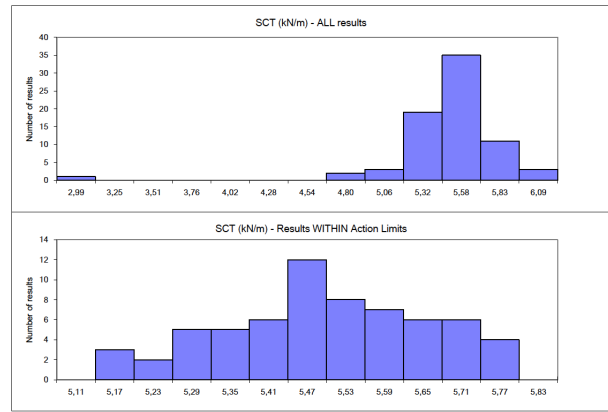
RESULTS OF A-ROUND		RESULTS OF CLIENTS	
NUMBER OF LABS	13	NUMBER OF LABS	97
CEPI-A-MEAN	2,04	OUTSIDE ACTION LIMITS	3
CEPI-SD-WITHIN	0,100		
CEPI-SD-BETWEEN	0,130	OVERALL WITHIN LIMITS	
		MEAN	2,04 2,02
CEPI-RANGE:		SD WITHIN	0,118 0,103
WARNING LIMITS		SD BETWEEN	0,221 0,119
CEPI-A-MEAN - 2,0 SD	1,78	MINIMUM	1,07 1,70
CEPI-A-MEAN + 2,0 SD	2,30	MAXIMUM	3,23 2,38
ACTION LIMITS		DATA FOR HISTOGRAM	
CEPI-A-MEAN - 2,6 SD	1,70	NUMBER OF BARS	13 13
CEPI-A-MEAN + 2,6 SD	2,38	WIDTH OF CLASS	0,166 0,052



Issued by Dr D. Bussini for INOVHUB-SSI as a member of the CEPI CTS service Date: 22-Jul-2023 Page 1/5

	CONFEDERATION OF EUROPEAN PAPER INDUSTRIES COMPARATIVE TESTING SERVICE	
	PROPERTY:	Compressive strength (short span test)
METHOD:	ISO 9895	
CEPI-TEST:	2.5	
REPORT: H	SAMPLE: Level - 3	
ROUND: 2023-1	UNIT: kN/m	
ISSUED BY: PTS		

RESULTS OF A-ROUND		RESULTS OF CLIENTS	
NUMBER OF LABS	9	NUMBER OF LABS	74
CEPI-A-MEAN	5,47	OUTSIDE ACTION LIMITS	10
CEPI-SD-WITHIN	0,240		
CEPI-SD-BETWEEN	0,150	OVERALL WITHIN LIMITS	
		MEAN	5,49 5,51
CEPI-RANGE:		SD WITHIN	0,279 0,264
WARNING LIMITS		SD BETWEEN	0,392 0,161
CEPI-A-MEAN - 2,0 SD	5,17	MINIMUM	2,86 5,16
CEPI-A-MEAN + 2,0 SD	5,77	MAXIMUM	6,22 5,79
ACTION LIMITS		DATA FOR HISTOGRAM	
CEPI-A-MEAN - 2,6 SD	5,08	NUMBER OF BARS	13 13
CEPI-A-MEAN + 2,6 SD	5,86	WIDTH OF CLASS	0,259 0,060



Issued by Ms M. Pritsche for PTS as a member of the CEPI CTS service Date: 7.Jul.2023 Page 3/4

Developments in the standardisation of the S-Test (Dr.-Ing. H.-J. Schaffrath, PMV, TU Darmstadt)

"Testing of paper and board — Compressive strength of a sample fixed in s-shape": this is the full title of a new standard prepared by ISO/TC 6/SC 2/WG 45. The standard is at the DIS-stage, where DIS stands for Draft International Standard. It is expected that by the next meeting of the WG 45, on January 16th, 2024, the work will be completed and the standard ready for voting. The standard will be published as ISO 7763.

The present document is quite close to DIN 5014; however, discussions in the ISO working group have shown that the sequence in which the clamps that hold the sample close may influence the test results. Therefore the sequence has been changed when compared to DIN 5014.

In addition, suggestions are given in the Annex to evaluate the correct clamping of the sample and tolerances on the relevant dimensions of the testing equipment have been introduced to enable the use of instruments manufactured by different suppliers.

In case of positive vote the standard will be published during next year.

Come to meet us and share technical ideas!

Every year CEPI-CTS organises a Technical Meeting to discuss paper-testing issues relevant to the Service and a Technical Workshop to have a hands-on experience on selected technical topics.

Both the Technical Meeting and the Workshop are open to the public: they are therefore a unique occasion to discuss state-of-the-art technical matters with scientists and technicians from the most important European research institutes that manage a proficiency testing scheme that has no equal in the world with regards to scientific soundness, scope of availability of tests, efficiency, number of satisfied clients and last but not least, historical tradition.

The 2023 CEPI-CTS Technical Meeting and Workshop were held @ Smithers, Leatherhead, UK, in person for the first time since the start of the COVID 19 pandemic: the Workshop was focused on durability testing of Machine Readable Travel Documents, specifically passports, and on the requirements for self-adhesive labels for marine shipping of dangerous goods.

To make your attendance even more fruitful, we will strive to organise such meetings in correspondence with national or international fairs, conferences and so on. We will adequately publicise our next Technical Meeting and Workshop, don't miss this opportunity!

What they say about us

"The Service Is very useful for our Quality Management System."

I. Egurbide, Don Bosco Paper

The next issue of the Newsletter will be out December 2024