Voluntary Technical Standard

Paper Honeycomb Panel

DISCLAIMER

EMPHA operates within the regulatory framework of competition law as set out by the European Union and national legal systems and respects all rules thereof. The purpose of EMPHA Voluntary Technical Standards it to support the use of paper honeycomb by making its properties clear and measurable. EMPHA does not accept responsibility or liability for any misuse, abuse or exploitation of the contents addressed on this document.

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Foreword

EMPHA is the European Manufacturers Paper Honeycomb and Paper Honeycomb Panel Association, with headquarters located in The Hague, The Netherlands.

Within the EMPHA organization, a Technical Task Team has been created to address the issue of Voluntary Technical Standards. The goal for this committee is to create a set of technical standards and methods that can be used, on a voluntary basis, to create and maintain transparent and measurable parameters that define the specific quality of the paper honeycomb.

Introduction

Paper Honeycomb Panel applications demand the control of thickness within predetermined limits. The EMPHA Technical Task Team recognizes the method of measuring the thickness by the C-shaped hand held gauge.

The EMPHA Technical Task Team judges the widely used hand held gauge, suitable for commercial use. As it is widely used this method is commonly accepted though should be judged and used with care. The digital unit excludes the reading error and is therefore preferred over the analog unit.

1. Determination of Thickness

1.1 Scope

This Voluntary Technical Standard specifies the method to determine Paper Honeycomb Panels thickness.

1.2 Normative references

ISO 187 - Paper, board and pulps -- Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples

ISO 5725-2:1994 - Basic method for the determination of repeatability and reproducibility of a standard measurement method.

1.3 Terms and Definitions

Paper Honeycomb: In the context of EMPHA, paper honeycomb panel is considered as a paper product consisting of paper strips glued together in a way that forms hexagonal shaped cells when expanded and paper-covered one or both sides.

Thickness of Paper Honeycomb panel: dimension measured on both parallel sides.

1.4 Principle

The hand held gauge method: A C-shaped thickness measuring gauge with two parallel contact probes is held perpendicular on to the paper honeycomb panel with sufficient pressure to get a reading without crush the panel.

The reading is in mm with a one (analogue) or two (digital) decimal precision. This means that the digital type gauge is preferable.

1.5 Apparatus

C-shape hand held gauge:

Figure 1

1.6 Sampling

- Test pieces are taken randomly from the Specimen.
- Samples shall be taken in equal numbers from right, centre and left sides of the width of the paper honeycomb panel.
- The frequency is determined in relation to the needs of the supplier as well as in relation to customer requirements.

1.7 Conditioning

EMPHA recognizes only not dried samples for thickness measuring in accordance with ISO 187.

1.8 Preparation of test pieces

Test pieces shall have sufficient length as to allow measure to contain 10 cells sequential and sufficient width to allow measurements of two rows of cells (see fig. 2):

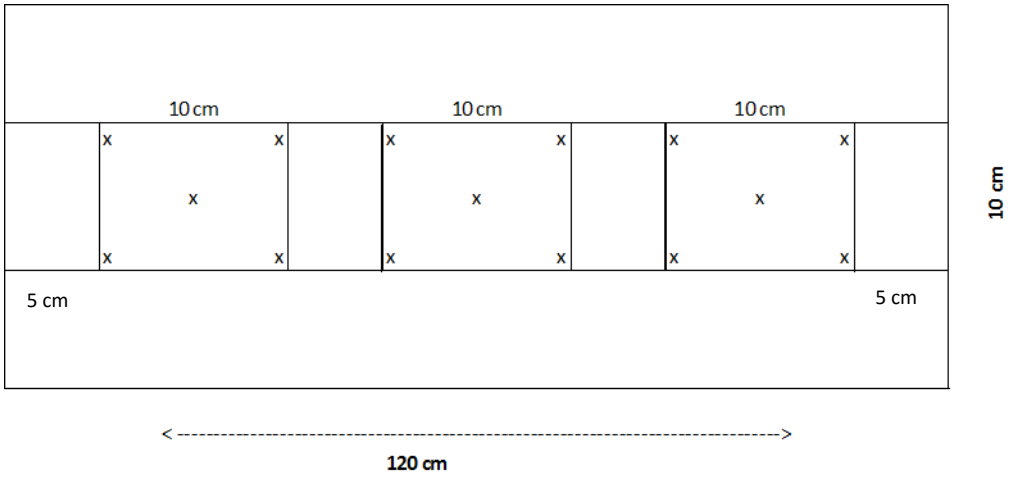

Figure 2

1.9 Procedure

Hand held gauge method:

- This test method is being advised only to be used as a indicative method.
- The hand held gauge method is widely used in the industry due to the fact that it gives a fast result and can be used in line. Due to the fact that this test is indicative it is not needed to condition the sample.
- The test is performed to obtain at least 10 valid results per sample of the right, center and left side of the panel.
- Select the appropriate probe dimensions for the measuring device in order to measure the panel not not into the empty cell.
- Set the measuring force at a value of 4 – 5 N.

1.10 Expression of results

The specimen thickness value is considered to be the average of the valid results. Of these results only one may be less than 0,1 mm outside the specified tolerance of the manufacturer. Thickness results shall be reported in mm.

1.11 Test report

The test report shall include the following information:

a) a reference to this Voluntary technical standard
b) the date and place of testing and the person that executed the tests
c) a description and identification of the product tested
d) the type of tester used.
e) the dimension of the top and bottom probes
f) the measuring pressure applied
g) test pieces conditioning – ISO 187
h) results for the specimens:
    a. each individual measured height
    b. average thickness for the 10 valid results from each test piece

2. Compression

This will have to be measured both flat and lateral. The existing standard ISO12048 can be used for this.

3. Bending stiffness

The EMPHA Technical Task Team decided to only measure the bending stiffness of the panel so without any load. The existing standard EN310 can be used for this.