ISO 8065:2024-05 (E)

Composites and reinforcements fibres - Mechanoluminescent visualization method of crack propagation for joint evaluation

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Terms and definitions 1

4 Principle 1

5 Specimen preparation 2
5.1 Specimen 2
5.2 Surface pre-treatment 2
5.3 Preparation for mechanoluminescence paint 2
5.4 Method of applying mechanoluminescence paint 2
5.5 Post-treatment 2
5.6 Scale labelling on specimen 2

6 Test equipment and testing procedure 4
6.1 Measurement equipment for mechanoluminescence 4
6.2 Test conditions 4
6.3 Recording conditions of mechanoluminescence 5

7 Data analysis 5
7.1 Position of crack tip 5
7.2 Delamination analysis 7

8 Test report 7

Annex A (informative) Mechanoluminescence (ML) material 9

Annex B (informative) Example of conditions for ML measurements 13

Annex C (informative) Demonstration: Effect on quality of mechanoluminescent paint coating for monitoring performance of crack tip 19

Annex D (informative) Examples of determination methods of the highest ML point 20

Annex E (informative) Demonstration -- Synchronising ML line on adherend and failure from in bond line 21

Annex F (informative) List of samples in DCB testing 23

Annex G (informative) Results of interlaboratory tests in DCB and SLS test 25

Bibliography 26