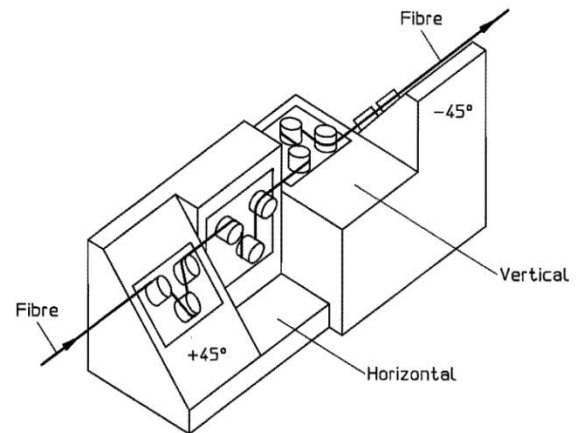


BIMESPRO FPT 4-point proof test system

Introduction

Conventional techniques for proof-testing apply tensile strain to the fiber which is wound between two capstans. In-between them a load is applied to the fiber using torque control or weighted pulley. This method is used successfully to proof test fiber at strains from 0,2% to about 1% elongation, but at higher levels than this it is difficult to proof test without damaging the fiber especially when special coatings are used (e.g. polyimide or metal coatings) or when low refractive index special coatings are applied to large diameter laser fibers. At high loads there is considerable pressure between the fiber and the capstan and consequently the fiber surface or coating can be damaged (scratched, deformed, delaminated). To mitigate these shortcomings, the 4-point bending proof test principle was designed.



4-point proof test characteristics



Because the strain is induced to the fiber by bending, the back tension in the fiber is very low (~20 g) and hence high proof test levels can be reached without damaging the fiber. With this device stress levels up to 300kpsi are possible by selection of suitable sized rollers.

The rate of strain removal is extremely fast compared to the contact time and consequently the effects of crack growth during unloading are minimal.

The disadvantage of this system is that only the fiber surface is strained to the maximum value and while moving to the

center of the fiber the strain value gradually decreases. Since most of the (problematic) defects lie on the surface of the fiber almost all are detected. With a single bend test the entire fiber surface is not under the same stress, therefore bending proof test must be performed under 4 different angles.

Description

FPT unit is built on a removable base plate and support that can be easily mounted into the fiber line on the front face of any standard proof tester or optical fiber rewinder, allowing fiber path bypassing proof testing capstans. Size of the rollers has to be adapted to customer fiber dimensions and test level. Example: standard acrylate coated SMF fiber for 300kpsi test would require rollers with xx mm diameter.

Specifications

Parameter	Value
Size	200 x 70 x 70 (W x D X H) in mm Depends on tested fiber thickness/roller diameter
Material	stainless steel
Line speed	1 – 100 m/min recommended
Min. fiber diameter	100 µm
Max. fiber diameter	1100 µm
Proof test level	up to 300 kpsi

Options

- Custom FPT roller design according to customer specification (fiber geometry)
- Custom brackets

For more information and quotes please write to sales@bimespro.com or info@bimespro.com